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Cooperating in a Time of Conflict: Norwegian-Russian Science Collaboration for Fisheries Management in the Barents Sea

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Declaration

I, Bjørg Miriam Dahle, declare that this thesis is a result of my research investigations and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

Date: 15.05.2023

Signature: 

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Abstract

The scientific collaboration between Russia and Norway has been vital in creating the foundation for sustainable fisheries management in the Barents Sea. After Russia invaded Ukraine in February 2022, the Norwegian government enforced academic sanctions on Russian research institutes as a part of an extensive set of sanctions. The recommendation was to pursue scientist-to-scientist collaborations instead. However, fisheries research is one of the few exceptions to the sanctions. The long tradition of scientific collaboration and management over fisheries between Russia and Norway can be seen as a pillar in the relationship between the bordering countries. There are still some implications for management and science due to the current geopolitical situation in the northern region.

To analyze the matter, the research questions of the thesis are “*How is ongoing fisheries science between Russian and Norwegian scientists affected by the restrictions on academic collaboration imposed by the Norwegian government towards Russia?*” and “*What are the consequences for fisheries management in the Barents Sea, given the changes taking place in the scientific collaboration?*”. The questions have been analyzed through data gathered from eight semi-structured interviews and literature.

Both from the Russian and Norwegian sides, scientists acknowledge and value the long cooperation and see its significance for the ecosystems in the Barents Sea. On the political level, the Norwegian government has, through many years, balanced political aims to preserve a good relationship with Russia. However, the tension has started to rise in the last decade. The analysis in this thesis shows that Norway’s decision to exempt fisheries from the sanctions sends a strong message of the importance of collaboration over science and management of fisheries. There is, however, reason to believe that the collaboration will not inevitably be resistant to all geopolitical tension, as the situation can escalate further.

Keywords: Science Collaboration, Fisheries Management, Russia, Norway, Academic Sanctions, Arctic Geopolitics, The Barents Sea, Common Fish Stocks

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Acronym list

EBM: Ecosystem-based Management

EEZ: Exclusive Economic Zones

GRU: The Main Directorate of the General Staff of the Armed Forces of the Russian Federation

ICES: International Council for the Exploration of the Sea

IMR: Institute of Marine Research

JNRFC: Joint Norwegian-Russian Fisheries Commission

JRN-AFWG: Joint Russian-Norwegian Working Group on Arctic Fisheries

NEA COD: Northeast Arctic cod

NRK: Norwegian Broadcasting Corporation

PAME: Protection of the Arctic Marine Environment

VINRO: Russian Federal Research Institute of Fisheries and Oceanography

TAC: Total Allowable Catch

1. Introduction

“The Norwegian government is now suspending all dialogue with Russian authorities, and all institutional agreements between Norwegian and Russian research and educational institutions have, as a general rule, been put on hold” (Forskningsrådet, 2022).

The Norwegian government declared in March 2022 that the Ministry of Education was to suspend all dialogue with the Russian government after the invasion of Ukraine (Kunnskapsdepartementet, 2022). The main focus of these sanctions is on institutional scientific collaboration. Furthermore, on that exact date, it was announced that the scientific collaboration of fisheries would not be a part of the sanctions (ibid). This is important to research and investigate further, as the sanctions towards Russia could impact the science used for fisheries management. All fisheries management in Norway is determined to be grounded in scientific advice (Regjeringen, 2011). If fisheries management is not based on correct scientific data, it can seriously affect the fish stocks in the Barents Sea. This thesis examines the consequences of Russia's invasion of Ukraine on the Norwegian-Russian scientific collaboration in fisheries management in the Barents Sea.

In 1975, the Joint Norwegian–Russian Fisheries Commission (JNRFC) created a foundation for sustainable fisheries resource management in the Barents Sea. Since then, fisheries cooperation between Norway and Russia can be seen as a pillar in the relationship between the bordering countries (Edwardsen, 2022b). Even after Russia invaded Ukraine in February 2022, the Norwegian Minister of Fisheries and Ocean Policy remarked that it was good that Norway had entered into an agreement with Russia for a new fisheries agreement for 2023 (Regjeringen, 25.10.2022).

There are other arenas where the collaboration has been more complicated. The Arctic Council is the pre-eminent intergovernmental platform in the Arctic, where cooperation between the Arctic nations is promoted (Arctic Council, n.d.). The tension in the Arctic has now even reached the Arctic Council, a council characterized by little conflict; however, due to the circumstances around the war, this seemed to change. Seven of the remaining countries have agreed to pursue further, although limited, collaboration without Russia. The situation in the Arctic is particularly tense as Russia is currently in the role of Chairmanship, which Norway

will obtain in May 2023. While the Arctic Council is feeling the rising tension, there is a far colder front in the scientific collaboration between Russia and Norway.

Considering this information, this thesis will explore the significance of Russia's invasion on scientific collaboration and management of fisheries in the Barents Sea. To research this matter, I investigate two research questions that will explain two related issues: *“How is ongoing fisheries science between Russian and Norwegian scientists affected by the restrictions on academic collaboration imposed by the Norwegian government towards Russia?”* and *“What are the consequences for fisheries management in the Barents Sea, given the changes taking place in the scientific collaboration?”*

By using information gathered from the Norwegian Government, I first present a description of how science is structured and organized in Norway. The information is placed within a model called “Systems of Science” (Kunnskapsdepartementet, 2022). In order to describe the landscape of actors and their interactions, I draw on the resource regime framework proposed by Vatn (2015, p. 134). The descriptive model regarding science and the theory of resource regime will be described further in the theory chapter. The methods chapter will explain how I have gathered primary data by conducting eight semi-structured interviews. Afterward, I clarify the gathering of secondary data through peer-reviewed articles, reports, and newsletters. The main findings will be presented according to each research question, and the same structure will follow in the discussion chapter.

1.1 The Current Geopolitical Situation

“We are faced with a different Russia. I want to warn against the fact that some people see this as something that is going to pass. The situation has changed. And it has changed profoundly. There is no going back to some sort of normality or some sort of back-to-normal business. Because that normality does not exist. » (Interview with Ine Eriksen Søreide in 2015: Østhagen, 2023)

This statement was made by the former Norwegian Minister of Defense, Ine Eriksen Søreide, when CNN interviewed her in 2015 about Crimea. This was before she became a foreign minister. The interview was one year after Russia annexed Crimea in 2014. The statement raised much attention, and she later addressed the issue and stated that what she said went too far

(Holm-Hansen, 2023). However, later in 2018, she declared that the shared values between Russia and the West had drifted further away. Søreide made it clear through her statement that Norway was in a new era regarding national safety politics (Østhagen, 2023). The timeline between the annexation of Crimea in 2014 and when Russia invaded Ukraine in 2022 has created a new geopolitical situation in the Arctic and challenged Norway’s political position. The Arctic has become, as the French minister of defense said in 2019, “*The new Middle East.*”. In the current multipolar world order, the Arctic can be seen as an arena that can create conflict and rivalry (ibid). The map in **Figure 1** illustrates the region of the Barents Sea and the scope relevant to the thesis.



Figure 1: The Barents Sea (Source: IILSS-International Institute for Law of the Sea Studies, 2023)

After the Norwegian government declared that all scientific and institutional cooperation between Norway and Russia would be postponed until further notice, there were strong reactions. The critics argued that it could negatively influence Norwegian-Russian scientific collaboration and that this was closer to Putin's own agenda of isolating the Russian scientific community (Aasmundsen, 2022). On the other hand, there were also clear responses to the decision to allow for some scientific cooperation, whereas others, like climate research, were not excepted (Fanghol, 2022a). The sanctions were a reaction to condemn the Russian invasion of Ukraine. In addition, there have been defined policies for Norwegian scientists to follow, created by the Norwegian *Forskningsrådet* after guidelines from the Norwegian government. These guidelines relate to whom scientists can collaborate with, funding towards projects, and applications for new projects (Forskningsrådet, 2022).

There have also been established economic sanctions. The Norwegian Government describes the severe economic sanctions against Russia as historic and unparalleled (Kunnskapsdepartementet, 2022). Since February, the sanctions have increased, the latest in June being a ban on transporting Russian oil to Norway by sea (Regjeringen, 2022, June 17th). I saw the sanctions' impact on a visit to the Russian mining town Barentsburg in Svalbard in August 2022, where large masses of coal were stored near the seaside along the town, as they could not ship and sell it abroad.

The current situation with the academic sanctions has created significant concerns for ongoing research. In an interview in *Forskerforum* with researcher Hanne Hvidtfeldt Christiansen, she describes the problem for Arctic scientists (Christensen, 2023). She explains that she and many other researchers' science depends on data from the whole region but that there is now a need for more data from the Russian part of the Arctic. This is problematic as Russian land covers 50% of the Arctic (ibid). Therefore, scientists are uncertain about creating correct calculations for modeling development within different study areas. Christiansen describes the situation with a term associated with the Cold War – *a new Iron Curtain*. She explains that scientific partnerships and collaborations take time to develop and that the links between scientists that are now broken will limit future collaborations. The complications of research collaboration will be, according to Christiansen, dependent on the duration of the war. Nevertheless, she agrees that the substantial restrictions regarding research collaboration and pausing all institutional work is the right decision in this situation. The same reasoning argument can be found in the article “*For the Climate's Sake, Keep Arctic Communication Open*” (2022). The

authors argue that pausing science and climate cooperation would be short-sighted. Russia is a crucial actor in the Arctic, as the Russian territory comprises about half of the circumpolar Arctic, which Christiansen also pointed out. Therefore, scientists from the different Arctic nations need to ensure that lines of communication are open. **Figure 2** illustrates the long Russian border to the Arctic.

In science, the most significant impact of the war between Russia and Ukraine is felt by Ukrainian scientists, who are facing direct threats and having their institutions bombed (Gaid et al., 2022). Russian scientists are working through the sanctions and boycotts endorsed as a reaction to Russia’s invasion of Ukraine. The fields where the research is already affected are space, physics, food security, climate science, and energy (ibid). Arctic research is considered one of the eminent areas of partnership between Russian scientists and scientists from different countries (ibid). Partnership and collaboration are particularly prominent in the research on climate change. Climate scientist Kim Holmén specifies, *"To study the Arctic climate, we need data from the entire Arctic."* Further, he states that the limitations of sharing data will gravely affect research quality.



Figure 2: *The Arctic Circle* (Source: Grid Arendal, 2005). It illustrates the long Russian border to the Arctic.

Fridtjof Nansen Institute's researcher Andreas Østhagen argues that there will be increased military tension in the Northern areas as a natural consequence of the invasion of Ukraine (Valberg, 2022). The earlier Norwegian strategy from the Ministry of Foreign Affairs had been to nurture strong alliances with the US and NATO while not creating tension between Russia and Norway (Østhagen, 2023). However, in 2018 The Norwegian Intelligence Service described a shift toward a possible new normal in the Northern military situation (ibid). As a result, the Norwegian Intelligence Service shifted its focus in 2019 from the Northern and Arctic regions in favor of a more significant focus on Russian activity (ibid). Before this, it was decided in 2016 that the US Marine Corps would have a presence in Norway, as this was upon request from the US. This got Søreide critiqued by the newspaper Nordlys that she had moved past this earlier aim of balancing between having strong alliances and not creating more tension (ibid).

1.2 Norwegian-Russian Collaboration in Fisheries Research

The Joint Norwegian-Russian Fisheries Commission (JNRFC) was established as a way for the two countries to cooperate with fisheries management in the Barents Sea. Since their first meeting in 1975, meetings have been held every other year. The representatives from each respective country agree upon quotas for common fish stocks and regulations regarding fishing within the other country's economic zones. Scientific evaluations of fish stocks' condition and fishing methods' long-term viability determine these quotas. A researcher at the Institute of Marine Research (IMR), Bjarte Bogstad, described during a presentation for the Norwegian Association of Marine Scientists (NHF) that there is a well-functioning scientist-to-scientist relationship between Norwegian and Russian scientists and that their successful partnership has led to sound management of the fishing stocks (Bogstad, 2022). Furthermore, the bilateral collaboration has been mentioned positively by Anne-Kristin Jørgensen and Geir Hønneland, both senior researchers at the Fridtjof Nansen Institute (ibid). They have both focused on fisheries in the Barents Sea as a central part of their science.

There have been more prominent differences between Norwegian and Russian research traditions (Bogstad, 2022). The academic strength within Norway has previously been related to quantitative research, whereas ecology has been a strength within Russian research. However, this has developed to become more even between the two countries. The different areas of research where Russia and Norway today collaborate are related to demersal fish,

oceanography, pollution, ecology, pelagic fish, and shellfish. To share data about the content of fish's stomachs, a shared database was created in 1987 (Bogstad, 2022).

The Russian Federal Research Institute of Fisheries and Oceanography (VINRO), founded in 1921, has been the leading institute the Norwegian IMR cooperated with. VINRO is stationed in Murmansk, close to the Norwegian border in the north. VINRO is still referred to by the earlier name PINRO by scientists (Bogstad, 2022). VINRO was founded during the Soviet Union, but the meetings were kept to business as usual even after the dissolution of the Soviet Union (ibid)

The overall perception of the Norwegian-Russian partnership regarding fisheries management has been seen as successful and necessary (ibid). However, the situation for the Norwegian-Russian scientific collaboration, in general, changed because of the invasion of Ukraine. One week after the invasion, the Norwegian government paused all research collaboration between Norwegian and Russian research institutions as a part of the sanctions, as mentioned earlier. (Forskningsrådet, 2022). The Research Council of Norway created a set of policies that would make it easier for the affected scientists to know what to do with their ongoing research projects (ibid). The policies were based on guidelines given by the Norwegian government.

The Research Council of Norway defines the main restrictions that dictate whom Norwegian scientists can continue collaborating with, as well as funding issues. Research funds will not be given to Russian partners in Russia, until further notice. The instructions clearly show there will be no collaboration with Russian research institutes and that collaboration through scientist-to-scientist is encouraged. It is up to the individual Norwegian research institutes to consider whether the project can be pursued without transferring funds to Russia (Forskningsrådet, 2022). There are 43 projects with Russian partners financed by The Research Council of Norway, but more scientists could be involved with their projects where the guidelines are relevant.

1.3 Norwegian-Russian Collaboration on Fisheries Management

The export of fish has, since around 1100, been one of Norway's most essential commodities, and there are long traditions of managing marine resources (Regjeringen, 2011). In addition, the long Norwegian coast stretches across The North Sea, the Norwegian Sea, and the Barents Sea, giving Norway access to large fish stocks. As one of the most significant seafood exporters,

Norway has long research traditions regarding fisheries management and marine science. The Norwegian government describes it as a fundament in the Norwegian fisheries management to harvest marine resources sustainably to ensure that the ecosystems in the ocean can function optimally. In 1900, IMR and the Directorate of Fisheries were established and have since been essential for marine science and fisheries management.

Norwegian scientists collaborate with scientists from different countries in the International Council for the Exploration of the Sea (ICES) to ensure sustainable management and preserve fish stocks. According to ICES, Ecosystem-based Management (EBM) is the primary strategy for controlling human activities that impact marine ecosystems (The International Council for the Exploration of the Sea, n.d., p.1). The Norwegian Government refers to EBM as a strategy that demands knowledge and scientific data about the ecosystems connected to the fish stocks. The government also bases the fish quotas on recommendations and advice from ICES. To describe how different natural management and regulation of fish happens in regions like the Barents Sea, the Norwegian government created a descriptive model of “*Reguleringskretsløpet*” (The circuit of management and regulation) (Regjeringen, 2011). It contains nine stages that are all important to each other and contributes to the management of fish, illustrated in **Figure 3**.

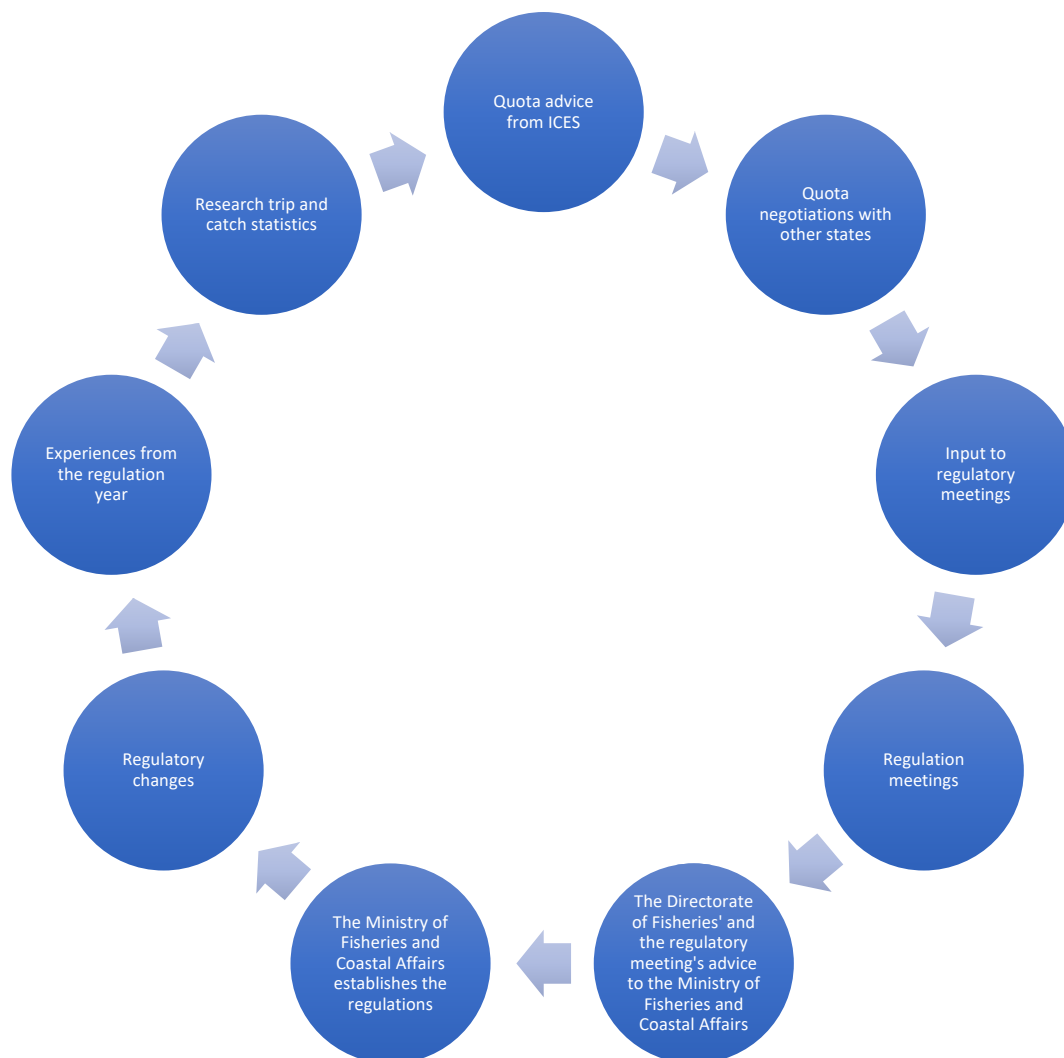


Figure 3, *The circuit of management and regulation (text directly translated from Regjeringen, 2011)*

1.4 Deviating from the Norwegian Strategy: From High North, Low Tension to High North, High Tension

Some aspects of history are relevant to mention to understand the context of the current situation of scientific collaboration. An important historical event that has been a part of defining the situation today is the Russian Annexation of Crimea in 2014. Incidents like the oil and natural gas prices dropping and the annexation of Crimea have been external events that have increased the tension in the North and for the Norwegian Government at that time to increase investments in the North (Østhagen, 2023). In 2010, the historic agreement on the boundary between Norway and Russia was signed (Bakken & Aanensen, 2010). This was an important event as the negotiations had been going on for 40 years, and the current prime minister, Jens Stoltenberg, described it as “(...) *a sign that the close collaboration we have developed over several years is continuing to evolve*” (ibid).¹ This incident is exceptionally interesting in the

¹ Translated from: «Det er et tegn på at det nære samarbeidet vi har utviklet gjennom flere år, utvikler seg videre»

aspect of how Vladimir Putin, only three years prior, had a diatribe at the Munich Security Conference where he strongly critiqued both the Western world and the US (NRK, 2007).

Østhagen describes what Søreide has accomplished through foreign policies as an art of balance (2023). She has mobilized a more substantial relationship with allies and hindered further tension in the northern region. However, the situation up north has become tenser. One of the reasons could be Norway's relation to NATO, as it grows stronger. After the annexation of Crimea, it has been, according to Søreide, in Norway's interest to strengthen allies and their interest in the northern Norwegian areas (Østhagen, 2023). The former Norwegian prime minister Erna Solberg traveled with Søreide to Washington DC in January 2018 after winning the election in 2017. The message to the new administration led by Donald Trump emphasized the importance of Norway as an ally in the North and the Norwegian contribution to both NATO and the US.

There has also been a change within the Arctic Council. Rottem et al. describe the relationship between the actors and groups where research is collected (2020). Similar to Østhagen, the authors describe a council that had previously been characterized by little to no political conflict; however, the reality is quite different today. The authors elucidate that there needs to be more research on the role of the Arctic Council regarding international regulations and national administration. Further, they question the different actors' aims in using the Council's knowledge. The same goes for the research Norway implements in its environmental management; Rottem et al. use the example of whether Norway aims to promote national interests or to represent itself as an Arctic nation.

1.5 Scope of the Thesis and Definitions

The scope of this paper will be limited to a focus on fisheries management. However, other areas of climate cooperation in the Arctic worth mentioning are pollution, biodiversity, conservation of flora and fauna, and tackling the critical issues of climate change, as the effects are gravely more significant in the Arctic than the global mean. The Barents Sea will be the context of the thesis. Large populations of whales, seals, and other marine animals and fish stocks are crucial for commercial fishing in the Barents Sea. Furthermore, the area is vital for oil and gas exploration and production, which, if not handled appropriately, can have serious adverse effects on the ecosystem. Regardless, this thesis will focus on the fisheries science of

common fish stocks between Russia and Norway and their bilateral management of them. The main actors involved in this paper consist of international non-governmental organizations (INGO) like the Arctic Council, research institutes from Norway and Russia, and actors related to governing research (e.g., ICES). I look at bilateral agreements like the fisheries agreements between Norway and Russia, like the Joint Norwegian-Russian fisheries commission.

1.5.1 Relevance of the Thesis

As the war broke out last year, the issues surrounding the war are all current events, which means there will be less research on the field. In this thesis, I explore the consequences of cooperation in the field being hindered due to the war, as what is happening in the Arctic is vital for the rest of the world. New research published in August 2022 shows that since 1979 the Arctic's temperature has been warming four times faster than it does globally (Rantanen et al., 2022). This new research can express a layer of uncertainty created by climate change and make it even harder for scientists to develop sustainable advice and quotas for fisheries management.

1.5.2 Sanctions defined by the Norwegian government

The Norwegian Government summarizes academic sanctions toward Russia into six main points (Kunnskapsdepartementet, 2022). Numbers 5 and 6 are especially relevant to this thesis.

1. *“The Ministry of Education and its subordinate agencies suspend all dialogue with Russian authorities.”*
2. *“The Research Council's joint call for proposals with Russia is stopped.”*
3. *“The Norwegian-Russian education agreement is suspended.”*
4. *“The negotiated research agreement with Russia is put on hold.”*
5. *“As a general rule, all agreements between Norwegian and Russian institutions will be put on hold. Institutions may choose to maintain agreements, but a thorough assessment must be made in each individual case. Any agreements and cooperation within nuclear preparedness and fisheries management will continue as before, for the time being.”*
6. *“At the same time, it is desirable for researchers to continue to have contact with each other across borders (so-called scientist-to-scientist cooperation).”*²

² All points are translated from Norwegian. The original formulation is found in the source.

2. Theory

This thesis is about how the war has influenced scientific collaboration, how that has influenced fisheries management, and how this can affect the fish populations. To do so, I have divided my theory into two sections to fit with the respective research question. The first section will later allow for a discussion of fisheries management's different aspects and create a framework with what should be included. The second section will then look at the practical use of research in Norway, which will be relevant when discussing the significance of continuous research for Russian and Norwegian scientists. I describe how these theories will be connected to the research questions. Firstly, I illustrate how science in Norway is structured and organized by the descriptive model of Systems of Science, created based on information from the Norwegian Government. I then further explain the war's effect on science. Secondly, I use the resource regime framework by Vatn (2015, p. 134) to describe the landscape of actors and how they interact.

2.1 The Structure and Use of Science in Norway

The Norwegian government uses the term “*Forskningssystem*” (Systems of Science) to explain the relationship between the actors who develop, use, and influence science and who the actors are (Kunnskapsdepartementet, 2022). There are three levels of the main actors, with the political actors at the top, then the strategic, and then the actors at the executing level, illustrated by model 1. However, I want to point out that this way of understanding science is written by the Norwegian Ministry of Education and Research and how they understand Norwegian science. It should then be understood within that context. It should be noted that the structure of research is not necessarily this linear and that what they call the “Executing sector” (“*De forskningsutførende sektorer*”) is not inherently subject to what is decided at the political level. There is independence in the different levels that should be taken into consideration. In addition to the three levels, I have included two at the bottom, as shown in **Figure 4**. In this thesis context, the resource's state should be considered the elementary issue that sets all conditions for different levels. The various institutions from the other levels will all impact the health of the fish stocks. Further, I have also included the management of fish stocks as an area under the pyramid, as science and management should be understood as dependent on each other. I expand on the three levels defined by the Norwegian Government.

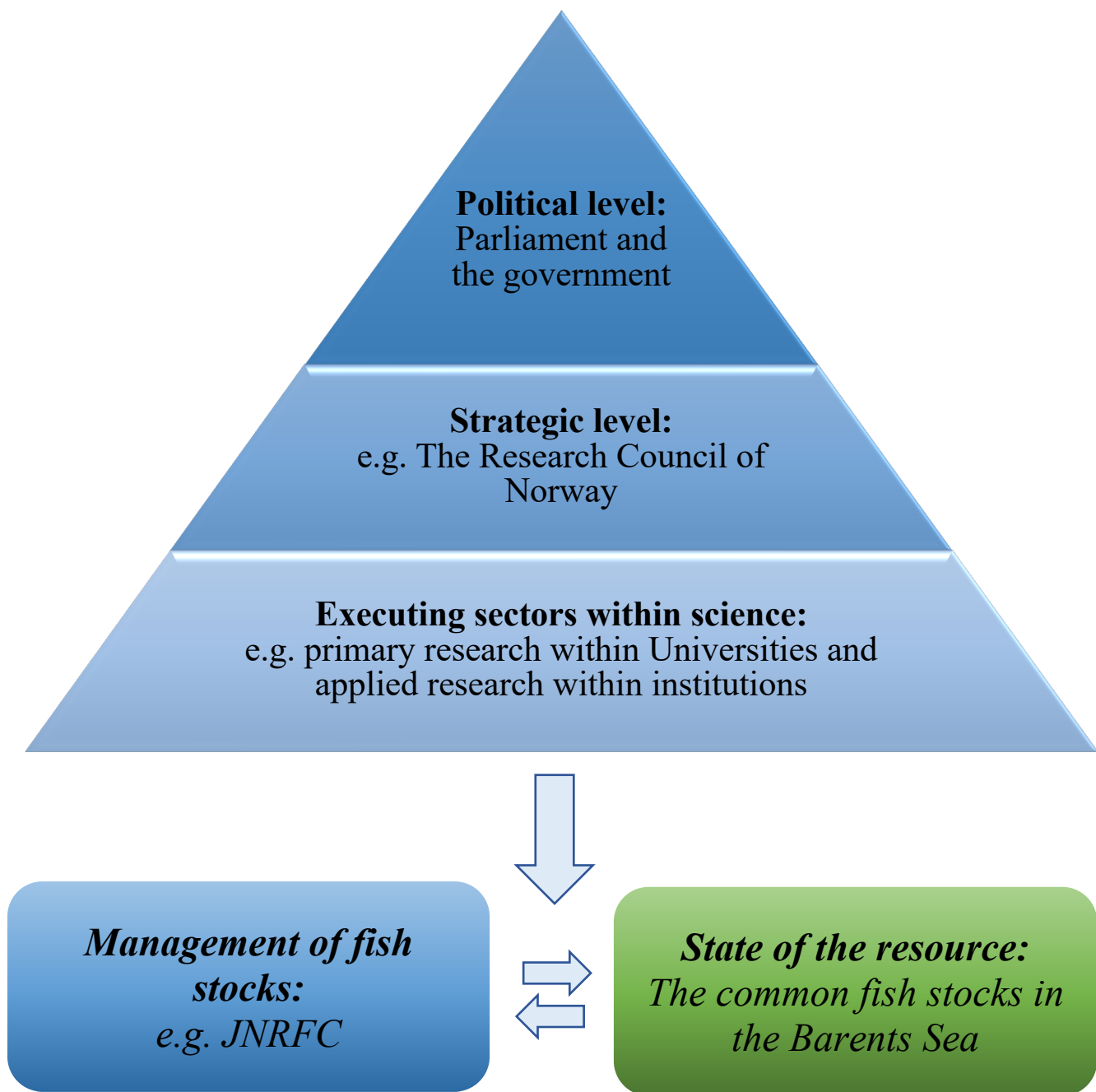


Figure 4: Systems of Science (“Forskningssystem”)

2.1.1 The Executing Sector within Science (“De forskningsutførende sektorer”)

Science and data in Norway are gathered and collected from different research institutions (Kunnskapsdepartementet, 2022). Most primary research is gathered from universities and colleges, but there is also a large institute sector. The institute sectors represent a heterogeneous unit covering various science institutes. In Norway, these institutes play an essential role in, e.g., nature management and business.

The main actors within this sector relevant to this thesis are the researchers at IMR and VINRO working with marine science in Norway and Russia. In both institutes, the researchers conduct surveys and investigations to determine how fish stocks are holding up. For example, in March 2022, IMR and VINRO presented an ecosystem survey that is conducted annually and monitors the biotic and abiotic factors in the Barents Sea (Prozorkevich & van der Meeren, 2022). This research can then further be used at the next level.

2.1.2 The Strategic Level (“Strategisk nivå”)

The Research Council of Norway is one of the primary institutions at this level and plays three roles (Kunnskapsdepartementet, 2022). First, before the government takes any decision, it is often consulted with advisors from the research council. Second, the Research Council is the most crucial entity for implementing the government's overall research agenda. Third, it is considered a platform for different actors to develop policies related to or based on science.

The Research Council has, as mentioned earlier, developed specific guidelines to help Norwegian scientists maneuver in the current challenging situation with Russia, as they are not allowed to work with Russian institutes. The work done by the Research Council is often tightly connected with the Norwegian Government, and what is determined together is essential for the prerequisite of what scientists can do. The situation is, however, different for researchers within IMR, as they are a part of the science where they are allowed to work with the Russian institute VINRO.

2.1.3 The Political Level (“Politisk nivå”)

The principle of sectors (“*sektorprinsippet*”) is essential within this level and describes the ministries' financial responsibilities (Kunnskapsdepartementet, 2022). Each ministry is responsible for its respective research area related to its sector. The government and the parliament communicate and create different priorities and goals related to science and politics.

I refer to the third level, the political level, to discuss issues related to institutional collaboration. As the government has announced that the collaboration of fisheries should continue with Russia, they have also made an exemption for institutional research between Russia and Norway. This is one of the few fields where Norwegian and Russian institutions still share data and have meetings. VINRO in Russia has the necessary data for Norwegian scientists, as they

cannot gather data within the Russian zones. This is, however, nothing new, as it was like this before the invasion of Ukraine in 2022, as the researcher from IMR described it.

2.2 Environmental Governance

The discipline of environmental governance studies how different policies, practices, and laws in society affect the health and welfare of the environment. Managing natural resources is essential to the governance and the systems that regulate their use and extraction. Taking mitigating measures can minimize the possible risks of harm that human activities can have on the environment. Environmental governance is also accommodating in working for the sustainable extraction of natural resources. The different stakeholders included in the discipline are various actors on different levels. For example, there are actors of the community, civil society, the private sector, and the government. The stakeholders then work together to find solutions through decision and policymaking. This can be illustrated by the different aspects of environmental governance related to fish stocks that focus on ensuring the marine ecosystems are healthy and limiting activities that can harm them, like overfishing and pollution. In this thesis, I focus on resource regimes, which are a part of the larger environmental governance framework by Vatn.

2.2.1 Resource Regimes

To understand the complexity of natural management, I first explain what Vatn refers to as *resource regimes*. Second, I illustrate how this theory connects to the case of this thesis. Vatn connects the term resource regime to how different institutions protect and govern various environmental resources and processes (Vatn, 2015, p. 134). He splits the term into two categories of institutions – rules of access and rules of interaction. Access to environmental resources concerns property and use rights in addition to conventions and norms. Rules of interaction portray how different actors that have access to resources interact. Vatn uses the term institution broadly, as “...*the “means” that humans use to coordinate activities and to handle conflict.*” (Vatn, 2015, p. 7). He further describes that institutions can be rules and conventions and a tool that can facilitate coordination and protect values or interests.

The environmental resource is, within this context, the fish stocks in the Barents Sea. The relevant institutions can be considered tools that form management rules which affect sustainability. This can, for example, be the science that the JNRFC follow when they set the regulations and quotas for common fish stocks. Likewise, rules of interaction set the frame of

what can be expected when VINRO and IMR meet in JNRFC to discuss and review what is necessary to ensure sustainable fisheries management in the Barents Sea.

2.2.2 Property and Use Rights

Vatn defines the property and use rights as “‘access’ to benefit streams from a resource” (Vatn, 2015, p. 135). According to Schlager and Ostrom, the right to access, withdraw, manage, exclude, and alienate are different ways to benefit streams from a resource (ibid). However, this is a narrow definition, according to Vatn, as it only describes the physical dimension. Vatn further points to alienation as the right to destroy or consume the resource that should be added to selling or leasing.

Property and use rights are in this thesis shown by the main coastal states that have access to the benefit stream of fish stocks, which, in this case, would be Russia and Norway. The quotas that the JNRFC of the Barents Sea sets are a part of managing the benefit stream and the rules that should be followed by those who access and benefit from the fish stocks. However, as Vatn points out, other rights can be considered involved, like the alienation right (Vatn, 2012, p. 135). This could include the right to consume or destroy the resource (ibid).

There are different types of property rights. Property rights are often divided into private property, common property, state property, and open access (Vatn, 2015, p. 135-136). *Private property* is usually considered owned by an individual, whereas a group holding private property is *common property*. *State property* is the possession held by the state. The case of no property where no one is the owner is considered *open access*. Having ownership comes with certain rights and obligations for conserving the resource. In the case of open access, it is a privilege for everyone to access. However, it might be wished by some individuals to have special exclusive access and can regulate the usage of the resources. Regulation can prevent overuse, a scenario described by the “*tragedy of the commons*.” The understanding of the individual degrading a shared resource through overexploitation has since been problematized and critiqued (Burke, 2001). The critique is concerning its oversimplicity over more complex situations. The complex social systems are affected by, and effects, human behavior and institutions. Some critics also question whether it should be defined as a “tragedy of open access” or a “tragedy of the ungoverned commons.” Vatn exemplifies a common property organization that can increase production with fish cultivation. This is an example of how the type of resource involved can affect the institution's aims.

The fish stocks in the Barents Sea can be seen as **state/public property** where the interaction rules are based on **commands**, as illustrated in **Figure 5** (Vatn, 2015, p. 143). The quotas used for regulating fishing can be considered private property after they have been divided between Russia and Norway.³ Regarding managing natural resources in the Barents Sea, laws and regulations are international, bilateral, and unilateral. The United Nations Convention on the Law of the Sea (UNCLOS), also called the Constitution of the Sea, is the primary institution that sets regulations and management rules for the oceans of the world and their resources (UNCLOS, n.d.). This is international law. The regulations set by the JNRFC are bilateral. Norway has unilateral laws like the Marine Resource Act; however, it is not restricted to the Barents Sea. It covers all the Norwegian waters (Directorate of Fisheries, 2015).

<i>Type of property/use right</i> →	<i>Private property/use rights</i>	<i>State/public property/use rights</i>	<i>Common property/use rights</i>	<i>Open access</i>
<i>Type of interaction</i> ↓				
<i>Trade</i>				
<i>Command</i>		✓		
<i>Community rules – cooperation, reciprocity</i>				
<i>No rules defined</i>				

Figure 5, The Resource Regime (Vatn, 2015, p. 143)

³ After the quotas has been divided between the participating countries, they are split between individual operators (Vatn, 2015, p. 307). The quotas are sometimes tradable, making them individual tradable quotas (ITQs). Trading of ITQs is heavily debated and outside the focus of this thesis.

3. Research Methods

This thesis is focused on the repercussions of Russia's invasion of Ukraine and the consequences this has on research and fisheries management. Therefore, this is considered a case study. I draw on qualitative methods with a case study approach. Further in this chapter, I elaborate on how I have gathered my data through interviews and written material. For the sake of transparency, I critically assess this process by discussing the limitations of the thesis. Finally, at the end of the chapter, I suggest further research within this field.

3.1 Qualitative Methods

One of the research strategies is collecting data through qualitative methods; however, viewing qualitative methods as *one* singular strategy can be complicated. Therefore, Bryman argues that the nature of qualitative research should be discussed (2012, p. 381). Bryman demonstrates that there are different categories within qualitative methods, like qualitative sociology or qualitative inquiry, that can be helpful for scientists to place their research within (ibid). Qualitative interviewing contests various interview styles (Bryman, 2012, p. 383). Qualitative research often differs from quantitative research as the latter usually is less open-ended (Bryman, 2012, p. 412).

3.1.1 Case Study Approach

Bryman describes a case study design as an intensive and detailed analysis of one specific case (2012, p. 66). Case studies often relate to qualitative methods but not necessarily. The case should be considered as “(...) *an object of interest in its own right*”, he argues, and the researcher aims to contribute with a comprehensive explanation of this (Bryman, 2012, p. 69). The particular characteristic of the case is vital for the researcher to enlighten, and this is recognized as an idiographic approach (ibid). In this thesis, I use the case study approach to understand better why and how the war affects fisheries management through scientific collaboration. The phenomenon is complex, and using the context to frame and limit the thesis is practical. The aim of using a case study approach here is to analyze the complexity to understand the context better.

3.2 Primary Sources and Secondary Sources

I have gathered data from primary and secondary sources for this thesis. I have conducted semi-structured interviews with researchers from the Fridtjof Nansen Institute (FNI), the Norwegian

University of Life Sciences, an anonymous Russian research institute, and the Institute of Marine Research. The number of informants is 8.

As a result of the recommendations from researchers I have been in touch with, I have gathered new informants and have received various documents (e.g., articles, PowerPoint Presentations, and newsletters). This form of gathering new data is called the snowball sampling method. Therefore, I have used snowball sampling methods to find relevant articles and contact scientists as interviewees. Snowball sampling is one of the three primary categories of non-probability sampling, according to Bryman (2012, p. 201).

3.3 Primary Data: Semi-Structured Interviews

I have conducted semi-structured interviews, which allow for more ebb and flow in the conversation (Bryman, 2012, p. 471). Before the interviews, I asked all my interviewees for permission to record them through a recording device, and the majority approved. For the interviews where I was not allowed to record, I took notes during the interview, where I experienced that more details needed to be recovered as it was challenging to both listen, take notes, and ask follow-up questions. This can also be related to my lack of experience, as this is the first time I have conducted interviews. For the interviews where I was allowed to record, I transcribed the interviews the same day to make sure a limited amount of data was lost if the recording was indistinct. I borrowed a sound-recording device from the NMBU Learning Center instead of my phone, as this was recommended by SIKT – the Norwegian Agency for Shared Services in Education and Research. Most interviews were conducted in Norwegian, whereas two were done in English.

The focus of the interview changed a bit, considering who the interviewee was. When interviewing the researchers at Fridtjof Nansen Institute, where the majority have a social science background, the focus was more on the political structures and how they created limitations and opportunities for collaboration between researchers. The interviewees also had various topics of interest, and the interview questions were customized accordingly. At FNI, the subjects were mainly related to The Arctic Council, Russian climate politics, Arctic security, and The Barents Sea fisheries.

There is a division between social and natural scientists, where the research outcomes differ for the two groups. The natural science interviews focused more on what was currently happening regarding their research collaboration with Russian partners. I had mainly reached out to social scientists before understanding that I needed to include more natural scientists.

Natural scientists: Having one representative from each institute was desired to create a more even picture of the collaboration between Russian and Norwegian scientists.

- Norwegian Institute of Marine Research: Online interview, with recording.
- Russian Research Institute: Online interview, without recording

Social scientists: Interviewing social scientists was helpful as they are researching the current geopolitical situation

- Fridtjof Nansen Institute: There was a total number of four interviewees from the institute. One of the interviews was done physically at their office in Lysaker, and three were done online. All were recorded. They are referred to as Researcher 1, 2, 3, and 4.
- Professor at NMBU, Department of International Environment and Development Studies: They were suggested through another professor, as they have experienced disruptions in their current project due to the war. Physical interview at NMBU, without recording.

3.3.1 Questioning

The questions were mainly open, and some were repeated to the different interviewees to see if the outcome would be the same. This was mainly regarding the guidelines from The Research Council of Norway to see if they were sufficient and manageable for researchers to follow in practice. All interviewees were asked in some way about how they thought about future scientific collaboration with Russia (either in the Arctic Council or with Norway). When interviewing natural scientists, the focus was more on the practical issues and how their research was affected, and on a more detailed level. For example, one question could be how it will be for the researcher at the Norwegian Institute of Marine Research to collect and receive data from Russia through common data sources. The questions related to social science were more about “the bigger picture” regarding what it means that scientific collaboration is being put on pause. For example, two FNI researchers were asked what they thought the consequences would be if scientific collaboration could be postponed or canceled due to political conflict between countries.

3.4 Secondary Data: Written Material

The different written material I have used for this thesis has been mostly secondary data sources. I have actively used the website of the Norwegian Government, *Regjeringen.no*, to find regulations, policies, and public statements. After that, public websites like The Research Council of Norway and Norwegian news articles have been essential sources of information. To gain a better overview of Norwegian media coverage, I have used *ATEKST*, which provides access to most of the most prominent Norwegian newspapers, local newspapers, and professional journals. I have used that search engine to write keywords like “*Fiskerisamarbeid, Norge, Russland*” and then analyze what has been published in the last 365 days. The total amount for those specific keywords was 197.

I have used the NMBU University online library “*Oria.no*” to get an overview of existing peer-reviewed literature. The search engine makes it easier to access articles, journals, etc. For example, for research question two, related to fisheries management, I selected some keywords to understand better what is already known about the topic. The keywords I used were “fisheries management,” “Barents Sea,” “Russia,” and “Norway.” Here I found 35 articles and ended up downloading 20 of them. The 20 was from the year range of 1998 to 2019. While looking through the different peer-reviewed articles, I looked after specific criteria. Bryman refers to four criteria developed by J. Scott 1990 that can be looked after when evaluating the quality of documents: authenticity, credibility, representativeness, and meaning (2012, p. 543-544).

3.5 Triangulation

The concept of triangulation means that more than one source of data or method is used to research a social phenomenon, and it can be used for both qualitative and quantitative methods (Bryman, 2012, p. 392). In addition, triangulation can strengthen the credibility of research (Bryman, 2012, p. 396). In the context of this thesis, triangulation has been used through the combination of written material and semi-structured interviews. I started gathering data by reading literature and documents to understand the different elements that constitute the situation for Norwegian and Russian researchers. Then, after getting my SIKT application approved, I first reached out to researchers at FNI and held four interviews over two weeks. After the interviews, I had a different understanding of what issues were relevant to focus on and could continue reading about this. I experienced from the first interview that having more

detailed questions would help the interviewee answer. Having time between the interviews allowed me to adapt and change my questions for the next interviewee.

3.6 Limitations

3.6.1 Language and Translations

Some aspects should be pointed out regarding the methods of this thesis. First, as the interviews were mainly conducted in Norwegian, there is an issue of translation since the thesis is in English. However, this can also be considered in another aspect, as Norwegian were mainly the mother tongue of the interviewees and allowed them to speak perhaps more freely than if they had had to talk in English. The way that talk is forged contextually and structured are two of the three language assumptions described by Heritage (Heritage 1984, 1987, as cited in Bryman, 2012, p. 524-525).

Secondly, another aspect of limitations regarding language is that since I do not speak Russian, I have a limited number of sources from Russian newspapers or official websites (like VINRO). Therefore, I have not been able to create a representative picture of the situation to the extent I primarily wanted. Furthermore, as I have mainly spoken to Norwegian scientists, there is, therefore, an issue that can compromise the credibility of the thesis. However, I got one interview with a Russian science institute, which will remain anonymous. Being able to arrange an interview will be further examined in the discussion chapter, as this interview has a more significant meaning than purely data collection.

3.6.2 Physical and Digital Interviews

Another limitation is that most interviews were digital, whereas two were in person. I experienced interviewing in person as something very different than having them online. The experience of the interview will also be different for the interviewee. Meeting people in person is much more personal. However, people are pretty used to online meetings after the Covid-19 pandemic. There were also great benefits of time efficiency and flexibility for me as an interviewer. I would save 4-5 hours of traveling per interview at FNI if I had the interview online. All online interviews were held on Zoom, with little to no technical difficulties. The only issues were related to sound, and sometimes there were some delays or “freezing” of the picture. The sound quality depended on whether the interviewee used headphones or spoke into the computer, and it was noticeable when some interviews were more challenging to transcribe than others.

An issue with having digital interviews is that non-verbal communication is, to a certain degree, lost. It is more difficult to sense the interviewee's facial expression and body language, which can tell more about the discussed topic. Bryman argues that engaging with the interviewer is more challenging in digital interviews (2012, p. 667). Different emotions and attitudes from the interviewee can be more difficult to sense.

3.6.3 Following a Moving Target

Early in the semester, I realized I would encounter issues as the situation with Ukraine and Russia constantly changed. During the semester when I was writing, the war had only been going on for a year, which created specific concerns. The first concerns the need for more research and information, as only some relevant articles exist today. I have not included as many peer-reviewed articles as they mainly apply to the thesis theory. Earlier in the chapter, I discussed the different written material I focused on instead to tackle this limitation. This will change as more academic articles will most likely be published, but since the war started over a year ago, there needs to be more research on the issue as it is ongoing. There is, however, a rich tradition of research related to fisheries management in the Barents Sea before the war. Secondly, there has been an issue with keeping up with the newest information. I have encountered changing data, as further details might surface, changing the outcome of what I previously wrote. This has resulted in me needing to delete or alter my previous paragraphs. New information is published daily, and the situation between Russia and Ukraine constantly evolves.

3.7 Ethical Reflections

An essential issue for me to mention is the feeling of triviality when researching a topic related to war. What is happening within research and fisheries management can, of course, never be measured with the Ukrainian and Russian lives that are lost and families that are destroyed.

Through my research, I have tried to describe the consequences fisheries management and science are enduring due to the war between Russia and Ukraine. The situation is much more complex situation than I can explain in a master's thesis. The issue of complexity is often present in social sciences, and some of the problems will further relate to ethical dilemmas that will be discussed in part of the chapter.

My interviewees have all been informed before the interview what the thesis is about and have given informed consent to being interviewed. They had also been asked before the interview about audio recording. Two requested to see the questions in advance, which was sent several days before the interview. The parts of the interviews that have been used have been sent to the interviewee for confirmation that it was what they meant and how it has been used in the specific context. All the interviewees were informed that they would be mentioned anonymously in the thesis.

My thesis changed from a critical, or even negative, focus on how the war was limiting science to a more neutral or positive focus on how scientists managed to still work together under the conditions of the war. While I was in Svalbard in the autumn of 2022, I asked the Governor of Svalbard if someone in the office would partake in an interview for my master's thesis. I explained my topic as “*geopolitical contestations over the invasion of Ukraine and how it has affected climate cooperation in the Arctic.*” The adviser of communication at the office replied that the Governor usually did not comment on issues related to geopolitics or security that applied to Svalbard. As my topic shifted focus toward the scientists, it would have been more relevant to interview a scientist connected to the University Centre of Svalbard instead. However, ethical dilemmas have been prominent in all my interviews, as the topic of war can raise strong feelings. Therefore, formulating the interview questions has been difficult regarding the emotional aspect of the war and not creating questions that could appoint certain opinions to the interviewee. Consequently, I have actively used the book by Bryman to ensure the interview experience would be professional for the interviewee. Bryman describes that ethical dilemmas should be considered an essential part of social research, not an obstacle to overcome (2012, p. 108).

Interviewing the representative from the Russian institute was, in some ways, more challenging than the other interviews. The interviewee requested that I send out the questionnaire in advance, which I had also done for other interviewees. However, I followed the script more strictly to avoid the interviewee would experience that the interview was something other than what was agreed upon. I referred to the war as “the current situation with Ukraine” to avoid putting the interviewee in a difficult position.

3.8 Bias

An issue I have encountered is tightly connected to having little Russian data, as some of the written material I have used can create certain biases and favor perceptions. We would expect all research from social scientists to be objective, as Bryman writes (2012, p. 39). However, the issue of values is more complex. Our different values can echo our feelings, or personal beliefs can affect research. In the discussion of values, Bryman describes a position in the debate over bias and values that even though we cannot be bias-free, that explains that we can be aware of our biases through self-reflection (ibid). As a Norwegian master's student, I have certain biases shaped by my knowledge of politics, history, culture, and media. The latter is significant as newsletters are an essential source for this thesis. Therefore, my subjective understanding of the situation can, to a certain degree, have shaped the angle of the thesis. However, I have constantly tried to be aware of my bias and actively reminded myself of how my values affect my understanding of the thesis.

The issue of potential bias should also be discussed due to the use of public websites as data sources. This accounts for the website of the Norwegian Government and the different ministries, as much as the various newspapers. Therefore, I have mentioned in the text where it is necessary to know where the data is from.

3.9 Future Research

There will most likely be more research on the topic with time, and there are few articles because of the short time since Russia invaded Ukraine. However, I recommend some areas within the scope that can be researched. First, more comprehensive data-gathering can be done through more interviews with a more assertive Russian representation from, e.g., VINRO. Then, it would be possible to create a more even picture of how the situation is understood from Russia's side. Secondly, it would be interesting to compare how fisheries management in other Arctic countries collaborating with Russia has been affected. One of the interviewees also mentioned a similar idea, as they were curious to see if there were any other institutional scientific collaborations between Russia and other Western countries.

4. Results

In this chapter, I elucidate how Russia's invasion of Ukraine influenced scientific collaboration on fisheries management in the Barents Sea, using information from the interviews and literature. The chapter is structured according to the model of Systems of Science. First, I present the results of the first research question, which focuses on scientific collaboration. The first three levels of the pyramid are presented. I start at the top of the pyramid, describing the political level with policy changes, before moving down towards the second last step of the pyramid: the executing sector within science. I use the two last parts of the model, the management of fish stocks and the state of the resource, for the second research question, which relates to the consequences of fisheries management.

4.1 Findings on how the Fisheries Science between Russia and Norway has been affected by the Restrictions on Academic Collaboration

4.1.1 Political level: Potential Tension between the Norwegian Government and the Russian Government

Christiansen described, as mentioned in the introduction, that the current situation could be described as a *New Iron Curtain* (Christensen, 2023). However, the situation today can be distinguished by one major issue. Even during the Cold War, there were no academic sanctions as we are witnessing today (Fanghol, 2022b). Even though science collaboration within fisheries is not affected, it reflects the strength of the sanctions the Norwegian Government is using. Rowe and Hønneland describe *The Law of the Sea* and fisheries management in the Barents Sea as one of the three pillars of the relationship between Russia and Norway (2010). This shows that even though the Norwegian Government decided to pause institutional scientific collaboration, the fisheries sector can be considered too important to be tempered with, as it is vital for both the management of the common fish stocks as well as Norway's relation to Russia. The unique situation of the fisheries was also mentioned by Researcher 3 from FNI when asked about the Norwegian discourse regarding Russian collaboration:

*“The fisheries cooperation has been used to symbolize the good neighborly relations - at the time when we could still talk about relations between Norway and Russia in that way. Today, however, the cooperation has become a challenge in a way, as there has been critique, not only from Ukraine but from other European countries, as well as domestic critique, against Norway's decision to continue to let Russian vessels land fish in Norwegian ports.”*⁴

⁴ «Fiskerisamarbeid har vært brukt som et symbol nærmest på et godt naboforhold i den

As Russian fishing vessels are allowed to continue fishing in three Norwegian ports, there has been critique and attention around this issue (Ulvin et al., 2022). The three ports are in Kirkenes, Tromsø og Båtsfjord, all located in the Northern part of Norway. The ports are only open for fishing vessels, as regular Russian vessels were banned entrance through sanctions in April 2022 (Utenriksdepartementet, 2023a). The Ukrainian government officials issued a letter to the Norwegian Government and parliament, asking them to reconsider their decision and ban Russian fishing trawlers (Bye, 2022). Bjørnar Skjæran, Norwegian Minister of Fisheries and Ocean Policy, was backed by the Norwegian Government when he stated that the fisheries cooperation in the Barents Sea with Russia is vital for Norway to protect (ibid). Østhagen points out that if the Russian vessels were banned, it could lead to more immense long-term repercussions that could damage the fish stock management cooperation (ibid). However, the fisheries cooperation between Russia and Norway would not stop immediately either if Russian vessels were denied access to Norwegian ports, he argues further.

One of the questions I asked two researchers from FNI was about scientific collaboration being placed within the political sphere. What are the consequences when research collaboration is stopped due to political disagreement between countries? Both answers had some of the same wording. Researcher 2 discussed back and forth how one could wrongfully create a dichotomy between limitations on academic freedom on one side and depoliticized research on the other. They argue that there is often not one or the other. In both the Arctic and elsewhere, political processes often set limitations and opportunities for research. They ask a rhetorical question about whether the goal is for research to be free from politics and points out that there is a certain correlation between the two that cannot be broken. Researcher 1 from FNI answers the same question this way:

«That is the big question. I have been cautious about being political myself. Still, I have gone as far as saying, if one should open for normalization, which will happen at one point, scientific collaboration is one of the first places to start and more scientific collaboration in the Arctic.»

perioden vi kunne snakke om et godt naboforhold. I dag har det blitt en utfordring på en måte, fordi det har vært kritikk, ikke bare fra Ukraina, men en del fra andre europeiske land, jeg vet ikke helt konkret hvor mange utspill det har vært snakk om, men også intern kritikk fra noen i Norge at man fortsatt tillater russiske fartøy å lande fisk i Norge.»

*It is a collaboration where one has common challenges; one must stand together to solve global climate change. There is also a historical reason, as scientific collaboration was one of the first areas one was able to have a good collaboration with the earlier Soviet Union after the Cold War. The Arctic Council was also a product of the Cold War. If one were to go back to a type of normalization, this collaboration would be one of the natural places to start.”*⁵

4.1.2 Strategic Level: Implementation of the Regulations set by the Research Council of Norway in Practice

As mentioned in the theory chapter, the Research Council is the primary advisor for the Norwegian government within research and research policy. It can be understood from the government's website that the advice the council gives is essential for the government to create policies (Regjeringen, 2022, November 15th). Three of the four researchers from FNI were asked about guidelines for scientific collaboration given by the Research Council and how it has been in practice to follow them. Two of them mentioned how, in practice, the guidelines were more complex than they first seemed. To repeat the guidelines briefly, there should be no collaboration between Russian and Norwegian scientific institutes, and one should instead focus on scientist-to-scientist collaboration. In reality, there is a “grey area” where the Russian scientist is difficult to distinguish from the Russian institute. Researcher 1 commented on another aspect while describing the issue's complexity, that there is also a possibility of creating difficult situations for Russian researchers based in Russia. Therefore, Researcher 1 argues that there are so many aspects to consider in this complex case that it is also important not to make any decisions without guidance if one is unsure. Researcher 2 understood the current situation that there is a stronger wish from the Russian side for scientific collaboration, as many were afraid of becoming completely isolated from international scientific communities due to being mistaken as an “international agent.”

⁵ «Dette er jo det store spørsmålet. Jeg har vært varsom med å være politisk selv, men har gått så langt som å si at når man skal åpne opp for normalisering, det vil jo skje en gang, er forskningssamarbeid et av de første stedene man må se, og mer forskningssamarbeid i Arktis. Dette er et samarbeid hvor man har felles utfordringer, man må stå sammen for å løse de globale klimaforandringene, det andre er mer historisk; det var et av de første stedene man klarte å få et godt samarbeid etter kalde krigen med tidligere Sovjetunionen. Arktisk råd var også et produkt av slutten av den kalde krigen. Hvis man går tilbake til en type normalisering, vil dette samarbeidet ville være et av de mest naturlige stedene å gå.»

4.1.2.1 Arctic Council: Usage of Knowledge within the Council

The Arctic Council is also an important stakeholder within the Barents Sea that should be accounted for. Within the Arctic Council, there are six working groups. One of these working groups is PAME, whose aim is to protect the marine environment in the Arctic. “Protection of Arctic Marine Environment” was established in 1993 and has since been working to protect the marine environment by promoting sustainable use of the Arctic marine areas. Out of the working groups connected to the Arctic Council, PAME focuses the most on policymaking. The knowledge created and shared through PAME is widely used. Management of the fish population is a topic that Norway does not wish to discuss (Rottem et al., 2020).

Rottem et al. point to four factors to describe how the Arctic Council uses knowledge from the various working groups (2020). The four factors consist of scientific acknowledgment and precision, that the science is not controversial politically or academically, and that there is widespread attention to the topic and “organization.” The latter means the relationship between the actors involved.

Rottem et al. elucidate that there needs to be more research on the role of the Arctic Council regarding international regulations and national administration (2020). Further, they question the different actors' aim in using the Council's knowledge. This can relate to the research Norway implements in its environmental management; the authors use the example of whether Norway aims to promote national interests or represent itself as an Arctic nation.

4.1.3 Executing Sector within Science: Stronger Knowledge of Fisheries Management and Aid for Political Stability

VINRO and IMR can be understood as institutions of the executing sector within science in each respective country. As mentioned earlier, these two natural science institutes collaborate on the science used for fisheries management of fish stocks in the Barents Sea. The science the institutes conduct is, therefore, directly influencing and changing governance structures. Vatn points to the governance structure change as a critical element of environmental governance (2015, p.179). The most apparent finding for the executing sector within fisheries science is that the political level has exempted fisheries from the overall academic sanctions. Therefore, fisheries science is uniquely positioned as the exemptions are very few. The following quote from the IMR researcher explains how both institutions rely on each other for a complete overview of the ecosystem.

*“We are completely dependent on joint surveys to monitor the ecosystem. There is still an agreement to have joint surveys, but last year on the largest joint survey they have for the ecosystem, which takes place in August/September, the Russians were not able to participate. The Russian zone was not covered that year. This has, of course, had some negative consequences. Now there is a joint survey in the winter, which is currently happening, and it appears that Russian participation is going as planned. There is still joint survey activity, but the fact that it has been difficult to survey the Russian zone has been a long-standing problem, not something caused by the invasion.”*⁶

By allowing continuous research collaboration, researchers from IMR and VINRO have a more comprehensive knowledge of the ecosystem in the Barents Sea, which is crucial to develop an ecosystem-based approach to management. This is one aspect of how the political level has influenced the executing sector. Another aspect to consider is what the director of IMR, Nils Gunnar Kvamstø, elucidates during an interview in the newsletter *Khrono* about the joint research survey of the Barents Sea (Svendsen, 2022a). He highlights that *«The government sees that continuing this collaboration (referring to the bilateral fisheries collaboration) can help prevent the conflict from spreading to the Arctic regions»* (ibid). It can be understood that the actors at the political level have enabled scientific collaboration of fisheries as a part of a larger political strategy to maintain stability in the northern region. While almost the entire Western part of the world has put scientific collaboration with Russia on ice, Russian fisheries scientists from VINRO were still allowed to visit IMR in Bergen in May 2022 (Svendsen, 2022b). This shows that the government's exception for this sector is rare, not only in Norway but for other countries in the Global North.

4.2 Findings on the Consequences of Fisheries Management in the Barents Sea

4.2.1 Management of Fish Stocks: Joint Norwegian-Russian Fisheries Commission

⁶ *«Vi er heilt avhengige av felles tokt for å overvake økosystemet. Det er fortsatt enighet om å ha felles tokt, men i fjor på det største fellestoktet de har av økosystem som går i august/september, så kom russerne seg ikke ut. Russisk sone ble ikke dekket det ene året. Dette har selvsagt hatt en del negative konsekvenser. Nå er det et felles tokt på vinteren som pågår nå, og det ser ut til at russisk deltakelse går slik som planlagt. Det er fortsatt felles toktaktivitet, det at det har vært i liten grad lov å gå inn i russisk sone har vært et problem som har vart lenge, ikke noe invasjonen forårsaket».*

For almost 50 years, while the commission has existed, the JNRFC has been responsible for creating advice for sustainable fishing in the Barents Sea. The knowledge from the commission is used to create an effective management regime so that the fish stocks are not harmed. For example, one management strategy includes total allowable catch (TAC) levels. The quotas are set for national and shared stocks for Russia and Norway, in addition to creating catch quotas for so-called “third countries.”

After Russia was excluded from ICES, there was a need to create another arena for collaboration. The researcher from IMR made this statement about what kind of repercussions could occur for both the fisheries management and scientific environment if the war continued to become a long-term issue:

“Several researchers have utilized their contacts. For instance, I have been traveling to Murmansk since 1991 and therefore have more connections. I met some of the researchers I still collaborate with today as early as 1990. However, for new researchers, it's challenging to imagine how they can establish connections and contacts. This will become an obstacle for them, as they must build networks with people they have never met. On our side, we haven't recruited new researchers, but we have hired new technical staff who haven't been in the game for long and haven't met many people due to the pandemic.”⁷

“Continuity” was described by the researcher from IMR as necessary for the partnership between Russian and Norwegian scientists. Even though there are vast cultural differences, they argue that a cooperation culture of its own has occurred over many years of collaboration.

⁷ «Flere forskere har brukt kontakter, for eksempel jeg har reist til Murmansk siden 1991. Jeg hadde møtt enkelte av de jeg fortsatt samarbeider med alt i 1990, og da har jeg flere kontakter. For forskere som er nye i «gamet», hvordan skal de klare å knytte kontakter? Det blir vanskelig slikt sett. Da må de knytte kontakter med folk de aldri har møtt. På vår side har vi ikke fått inn nye forskere, men vi har fått nytt teknisk personale, som ikke har vært i gamet så lenge så det har truffet lite folk, også pga. pandemien.»



Figure 6: Norwegian scientists from IMR had visited Russian scientists in Murmansk for almost 20 years before the JNRFC was established in 1975. This photo is from the first time in August 1958, in front of PINRO, as it was called before it changed its name to VINRO (Source: The Independent Barents Observer, 2019)

Tree researchers from FNI also mentioned the importance of already having established contacts before the war broke out. Whether collaborating with Russian scientists or researching the scientific collaboration between Norway and Russia, all three commented that these relations take a long time to develop. As mentioned in the introduction, UNIS researcher Christiansen also noted how pausing current scientific research could limit future collaboration. However, the situation with Christiansen and what the FNI researchers are talking about is within another scientific domain, as the scientific fisheries collaboration is still ongoing.

4.2.2 Institutions Governing the Policy Process: JNRFC

The natural science institutes VINRO and IMR collaborate on science for fisheries management of fish stocks in the Barents Sea. The work is done with representatives from each institute in the commission, the JNRFC. The science the institutes conduct is, therefore, directly

influencing and changing governance structures. Management of natural resources involves establishing policies and regulations to ensure that resource utilization is sustainable while avoiding overexploitation of the ecosystems. To make these policies, the advice given by VINRO and IMR is vital to know what sustainable fishing quotas can be.

The quotas are essential to preserving the shared fish stocks and creating advice to ensure the ecosystem's wealth. According to the IMR researcher, the JNRFC itself had been little affected, and the collaboration between Russian and Norwegian scientists has changed little despite the situation with the invasion of Ukraine. There are, however, two main changes that have affected the collaboration. The first issue is that there are no face-to-face meetings and that the meetings are now online. This issue is not necessarily a new obstacle to the scientists, as they had gotten used to working under similar conditions with online meetings during the Covid-19 pandemic. However, it is not unproblematic. The Russian scientist described it as regretful that there was no face-to-face communication and that certain things cannot be done online, like agreeing upon methodology and discussing details of images of species traits or register structures. Nevertheless, it was announced in September 2022 by Geir Huse, research director at IMR, that the process of defining the quota recommendation for cod, haddock, and deepwater redfish had proceeded almost as usual (Hommedal, 2022). The second issue is that VINRO is excluded from ICES, which complicates the situation as the assessments prior have been conducted under ICES. However, there are now organized bilateral meetings between Russian and Norwegian scientists for evaluations and advice. The ICES's decision to exclude Russian participation will be further elaborated on later in this chapter.

There was, however, another aspect mentioned by the Russian researcher that made the collaboration more cumbersome. The surrounding bureaucracy has changed into becoming stricter and more time-consuming. As the timing of the approval of documents has increased, the issue of time has become an obstacle as they are under stress for exchanging data and doing assessments of the shared stocks. The meeting with JNRFC is usually held in November, and before the commission comes together, the advice should be prepared beforehand. Most of the data is traditionally shared online through files. The collaboration has worked as such: one party of each country covers an area for a survey, and vice versa, then there is a mutual exchange of data. It must also be said that even though this process today is more time-consuming, they have still been able to provide each other with the data successfully; it has only taken more time

than usual. The Russian interviewee described the problem if one lacks data from an area in the Barents Sea as such:

“It would be bad because we have shared stocks in the Norwegian and Russian zone. If we only have parts of the survey, and only certain parts of the data, we will not receive the full picture of the whole stock. This situation would not be good, as we will not know enough about our shared stocks. It is just a waste of time and money if we only have a survey of only parts of the whole area”.

The Russian researcher then explained what they assumed would be the most significant consequences for research if the situation with Ukraine lasted for several years to come. They described that it would be a challenging situation and would decrease the number of surveys, data, and research finance. The result would then be that there would be less knowledge about the ecosystems, the environment, and the shared stocks with changes in abundance and distribution. This would continue to have a poorer ability to manage the shared stocks. It would be more challenging to assess limits for the fisheries with technical measures, making the uncertainty of assessing higher. Writing advice for quotas would become more complicated, which can be especially damaging as the current situation is already more demanding due to climate change. The case is especially problematic with short-living species, the Russian researcher argues, as these stocks can quickly change, which can be dangerous for the ecosystems.

4.2.3 State of the Resource: Fish Stocks in the Barents Sea

One of the newest reports on the fish stocks in the Barents Sea is the *Report of the Joint Russian-Norwegian Working Group on Arctic Fisheries (JRN-AFWG) 2022*. As ICES temporarily suspended all Russian participation in March 2022, the JRN-AFWG was constituted (Institute of Marine Research, 2022). Using the same methodologies agreed upon at ICES benchmarks, JRN-AFWG became an arena for assessing the state of the fish stocks that could not be advised for by ICES: Northeast Arctic cod, haddock, and beaked redfish (ibid). However, it is repeatedly written in the report that this is explicitly not ICES advice. Before the Russian invasion, ICES published an ecosystem overview with Russian participation in 2021. Some key signals mentioned within the ecosystem and the environment are rising temperatures, a decrease in mesozooplankton, a decrease in fisheries landings, and changes in where the cod stock extends.

The central pressures influencing fishing are particular species extraction, abrasion and substrate loss, and smothering (ICES, 2021).

The state of the fish stocks depends on which species. For example, regarding NEA (Northeast Arctic) cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*), the advice from JRN-AFWG is to reduce the catches to preserve the fish stocks. Whereas in the case of the beaked redfish (*Sebastes mentella*), a more significant amount will be allowed to catch for 2023 and 2024. The reason is that the biomass of the fish is continuously rising, and the stock is in a healthy state (Howell et al., 2022). The redfish (*Sebastes norvegicus*) is, however, one of the stocks that are in danger.

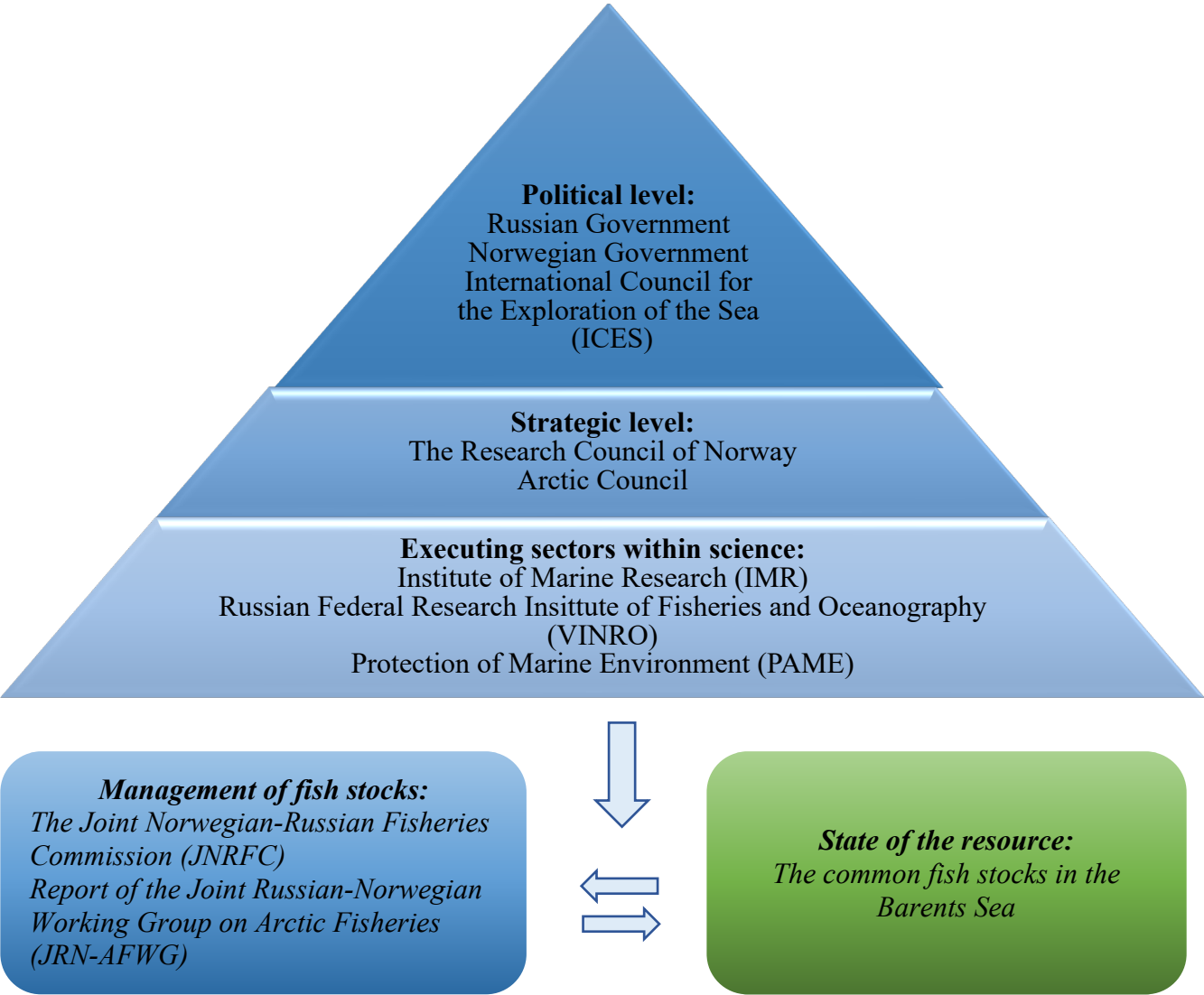


Figure 7: The different actors involved divided into the Systems of Science model.

The different actors and institutions have been placed in the Systems of Science model at each respective level. This is a way to illustrate the relationship between them, as well as see the impact they have on the different levels. By dividing them accordingly, **Figure 7** helps to get a visual orientation, as well as understand science from the perspective of the Norwegian Government.

4.2.4 Actors and Changes of their Agency

4.2.4.1 The Governments

Norwegian political actors have yet to create regulations that directly influence fisheries management, as science within fisheries is excluded from the institutional scientific sanctions. When asked if any guidelines from the Russian government had been implemented, the Russian researcher referred to the arrangement between Russia and Norway established in 1975, which was the introduction of the economic zones and the establishment of JNRFC. It was then said, when asked differently to ensure the question was understood, that there were no Russian guidelines, rules, or limitations for whom they could collaborate with from the Russian side. Through the commission, there are meetings and workshops where the different specialists and scientists work together. This should be seen together with a statement from Researcher 1 from FNI, where they mentioned that they had been contacted more by Russian researchers outside of Russia that are not based in Russia nor want to return.

4.2.4.2 ICES

As mentioned earlier, over a month after Russia invaded Ukraine, there were consequences for Russian participation in ICES activities. Some of the representatives and scientists were instructed by their respective member countries (unknown which, there are 20 member countries in total) to avoid engagement or boycott activities where there would be a presence of representatives from the Russian Federation (Statement from ICES Council, 2022). In the public statement from the ICES Council, the announcement of the suspension is declared after a description of the intergovernmental marine science organization and how the war is “(...) *undermining this broad participation in many multilateral science organizations, including ICES*” (ibid). A designated committee, called *ICES Bureau*, will monitor the situation and recommend that the suspension be lifted when and if the time is right.

4.2.3 *Scientific Collaboration between Norwegian and Russian Institutes*

During the interview with the researcher from the Institute of Marine Research, the interviewee was asked about what they believed could be future consequences for natural management if primary research is limited in an area for a period and if there is concern among researchers in his field:

*“There are some concerns. There are some economic limitations on the Norwegian and Russian sides, which are unrelated to the invasion unless we are out at sea. I believe that as for the quotas, which are the most concrete things, there might not be as much influence. There has been much talk about ecosystem-based guidance and considering pollution and all ecosystem levels. There have been many words, and maybe not so much in reality.”*⁸

While discussing the issue of quotas, they continued:

*“The quota arrangement is favorable for Russia and is not taken up for discussion each year. There is a 50/50 % division, but more than 50% of the cod is in the Norwegian zone. There should be a lot of climate change before they (Russia) have a good reason to change the deal. (...) In the Barents Sea, Norway and Russia have been against so-called third countries. So, Norway and Russia have been cooperating against the rest, and it can be difficult long-term, especially if the EU is getting involved. That is a challenge with Svalbard.”*⁹

The Russian scientist was asked the same question, to which they replied by describing the wish of Russian scientists to keep the long-term collaboration. Their personal opinion was that it would be unfortunate to lose such a long tradition of cooperation, as well as “unwise” and “unreasonable.”

⁸ «Det er en viss bekymring. Det er litt økonomiske begrensninger på begge sider som ikke har med invasjonen å gjøre at vi er mindre på sjøen. Jeg tror kanskje at det som går på kvoterådet som er det mest harde konkrete tingene, kanskje ikke det blir så stort påvirket. Det er mye snakk om økosystembasert rådgivning, ta hensyn til forurensning og alle nivå i økosystemet. Det har blitt mye ord og kanskje ikke så mye realitet.»

⁹ «Avtalene er gunstige for Russland, kvotene er ikke tatt opp til diskusjon hvert år. Det er 50/50% fordeling, men mer enn 50% av torsken er i Norsk sone. Det skal skje mye klimaendringer før de har et godt argument av den typen til å endre andelene. (...) I Barentshavet har Norge og Russland vært på lag mot resten som vi kaller tredje land. Så der har Norge og Russland spilt på lag mot resten, det kan bli vanskelig på sikt spesielt hvis EU begynner å blande seg. Det er en utfordring med Svalbard.»

5. Discussion

Even though academic sanctions were implemented towards Russia – fisheries science was one of the few exceptions¹⁰. This shows that the fisheries science collaboration between Russia and Norway holds a unique position. In this part of the thesis, I describe the main findings of each research question, focusing first on the issue of fisheries science before moving on to the use of scientific results in fisheries management. Vatn’s theory of resource regimes is used to understand the interaction between the involved actors.

5.1 Why Fisheries Science Collaboration Has a Unique Position

5.1.1 Solving the Complex Issue of Fisheries

Vatn describes regulating fisheries as something known for being very demanding (Vatn, 2015, p. 250). This could be a reason why the cooperation or fisheries research between Russian and Norwegian scientists in the JNRFC is being focused on as very successful, knowing how complicated this form of resource management is. Much financial gain is involved in the resource, and the fish drift across national waters and open seas (ibid). Stokke points to three main reasons why the overall situation of the world’s fish is not satisfactory (2012, as cited in Vatn, 2015, p. 251);

- 1) *“Firstly, many coastal states have not taken the obligation to conserve resources seriously.”*
- 2) *“Secondly, many fish stocks straddle from national zones into high seas and remain available to distant-water fishing vessels.”*
- 3) *“Thirdly, technology developments tend to outpace regime development.”*

In some ways, the scientific cooperation within the JNRFC can be seen to have tackled at least the first reason Stokke argues for. The long tradition of scientific collaboration shows that Norway and Russia early created an institution and common arena where scientists could create TACs (total allowable catch) to conserve the common resource. As their advice has been considered and used as guidelines for official laws and policies, there is reason to argue that the coastal states of Russia and Norway have taken the obligation to conserve fish in the Barents Sea seriously. For the second reason, the pattern of where the fishes move in the Barents Sea is

¹⁰ The only other area mentioned formally in the Ministry of Education and Research press release was agreements and collaborations within nuclear preparedness (Kunnskapsdepartementet, 2022).

known to scientists, but it does not change the 50/50 division between Russia and Norway. This will be discussed further in subchapter 5.2.3, *An agreement in Russia's favor*. However, there might be a reason to speculate that there is value in allowing the ecosystem and the fish stock not to be disrupted, even though it might benefit certain actors or countries. The researcher from IMR describes that it is well known by scientists that if the fish were to be only fished in the two countries' respective zones, it would have a grave impact on the stocks.

The technology issue Stokke mentions is interesting in highlight of what the two natural scientists mentioned in the interviews (2012, as cited in Vatn, 2015, p. 251). Especially the Russian scientist argued that it is crucial to have physical meetings, as it allows for better cooperation, for example, by developing a common methodology. The Norwegian scientist from IMR points out that joint boat surveys ("*tokt*") are vital for scientific cooperation within the JNRFC. It, therefore, seems like the technology used within the JNRFC is not the issue, while not being able to come together is a larger concern. Similar to the boat surveys with scientists from the JNRFC, research trips are the preliminary step of creating quota advice for ICES. This is shown in the previously mentioned descriptive model of the Circuit of Management and Regulation (**Figure 3**). The way science is fundamental for creating quotas illustrates the strong implementation of science in management.

Vatn writes that fisheries earlier have primarily been under the open access category (Vatn, 2015, p. 250). Overexploitation through increased catches can therefore be an expected consequence of the type of property right. Still, the issue of fisheries is too complex to have such a short explanation. The fish stock resource is mobile, making it challenging to observe (ibid). This issue describes one of the ways the fish stocks of the Barents Sea stand out. Even though the fish stocks are traveling between exclusive economic zones (EEZ), the JNRFC can tackle the issue of resource mobility through strong scientific cooperation. One way is through the TACs, which have been necessary for regulating common fish stocks. The regulations are required for the *command* interaction, as part of Vatn's framework of resource regimes.

5.1.2 *The Links between Science and Management*

Cod is one of the stocks where the decreasing stock can be stabilized, according to the population manager of NEA cod at IMR, Bjarte Bogstad (Edwardsen, 2022a). The condition is that the advice from the JNRFC is followed. The recommendation for the total quota of 2023 is 20% lower than in 2022. Towards the end of 2022, it was decided through digital negotiation

to follow the recommendations based on advice from the JNRFC and set the total quota to 566 784 tons (Regjeringen, 2022 October 25th). This is the lowest it has been since 2009. 20% is the lowest a quota can be lowered to, as it is an administrative rule that it cannot be reduced more. The situation was the same when the quotas were set for 2022, where the advice was to decrease the quotas by 20% less than in 2021. The 20% rule is established as a rule for management (“*forvaltningsregel*”) to ensure that the quotas can be more predictable and, through this, provide stability to the fishers. According to Bogstad, the goal is to offer sustainable resource extraction without affecting the people relying on fisheries for their livelihoods (Lorentzen, 2022). If this case is placed within the context of the Systems of Science model, the model shows that the state of the resource and management (e.g., through quotas) directly impact each other. The fish stocks set the ground for what can be considered a sustainable extraction.

5.1.3 *The Relationship between Russian and Norwegian Scientists*

While there is no explicit evidence of hegemony between Russian and Norwegian scientists in fisheries science, the relationship between Russian and Norwegian scientists can be further assessed. Russia and Norway have a long and robust fisheries research tradition, and previously, each has had its specialties. The exclusion of Russia in ICES for critical science on the marine environment and fisheries can be considered as a change in the rules of interaction in the resource regime. Russia is then not allowed to influence decisions regarding their common fish stock with Norway. The newly established JRN-AFWG allowed Russian scientists to participate in research that will gravely affect Russian fishers through fisheries management. By following the argument of Schlager and Ostrom (1992), the property and use rights of the common stock cover more than just having 50% access to the common resource. As mentioned earlier, there is also a right to management, which gives the actor “*the right to regulate internal use patterns and transform the resource by making improvements*” (Vatn, 2015, p. 135). It could then be understood that when ICES excluded Russia's participation from the council, they also limited Russia's property and use rights.

However, the long tradition of bilateral collaboration between Russian and Norwegian scientists is facing an alarming issue. An incident was described during one of the interviews that illustrates a sense of loyalty between the scientists. The IMR researcher mentioned that they had been asked to exclude the Russian scientists from the author list in a presentation on an ICES symposium, *The Symposium on Decadal Variability of the North Atlantic and its*

Marine Ecosystems: 2010-2019. It was in Bergen in the summer of 2022, some months after they had been excluded from participation in ICES. However, it is important to note that even though the incident happened in association with an ICES event, it was not mentioned by whom the request was made during the interview.

*“I have experienced a situation where we had a presentation to present at a symposium in Bergen, and we were asked if the Russians could be removed from the list of authors. We responded by saying that they could withdraw the entire presentation. It is about being fair.”*¹¹

The central issue at hand is the possibility of being discriminated against based on having a Russian nationality. Requesting the exclusion of researchers based on their nationality from the author list could be viewed as threatening to scientific integrity. It can be understood as harmful to the significant collaboration over common fish stocks, where the scientists that have produced scientific data are at risk of not being acknowledged for their work. In addition, it can undermine the contribution of the Russian scientists. The Vancouver Recommendation, which provides ethical and practical guidelines for writers when publishing scientific articles, points to the integrity of the contributions to co-authorship and the importance of identifying what the different authors have done (Forskningsetikk, 2020). As they were requested to remove the names of the Russian authors who had contributed, the decision was afterward made to withdraw the presentation. This illustrates a strength between the scientists where ethical norms are followed. The strong reaction described by the IMR researcher that they would rather scratch the presentation instead, which they ended up doing, shows both integrity of the scientific collaboration and the seriousness of such a request.

5.1.3.1 The Elephant in the Room

The JNRFC has been through different eras of the Norwegian-Russian relationship. Therefore, one might have expected significant changes or obstacles in the collaboration in historical events, e.g., the fall of the Soviet Union in 1991. However, the IMR researcher described a peaceful transition and normality in the commission. The two practical changes were in terms

¹¹ «Jeg har vært utfor at vi hadde artikkel/presentasjon som skulle legges frem på et symposium i Bergen og fikk beskjed om de kunne ta russerne ut av forfatterlista og da sa de at de kunne trekke hele greia. Det handler om å være “fair”.»

of language and technological developments¹². This implies that the commission has been involved in few significant conflicts. As a result, there might be disagreements within the commission but not so severe that it has affected or hindered scientific collaboration.

This also shows a professionalism within the JNRFC, that there is an ability to work together but avoid political issues. “*The elephant in the room*” was the metaphorical idiom the IMR researcher used to describe the war between Russia and Ukraine when asked how research collaboration is in practice now in contrast to before the war. It is important to remember that the invasion of Ukraine was not the first time there had been tension between Russia and Norway, for example, the annexation of Crimea. There have probably been several elephants in the room that have not been discussed. Nevertheless, this shows that Russian and Norwegian scientists have the professionalism and ability to avoid political issues. Working together with a common aim – to preserve the fish stocks – can also help prevent conflict.

5.1.4 *A Wish to Cooperate*

Having an interview with a Russian interviewee based in Russia for this thesis can demonstrate that there is a positive attitude toward bilateral scientific cooperation. However, the value of this specific interview was more significant, as it allowed for an insight into how the understanding of the situation was for one of many Russian researchers. The topic was avoided as the war was not mentioned and referred to as the current situation with Ukraine. However, it created the frame around the questions. The Russian researcher said that they wished that scientific cooperation would continue, not only for the sake of science but for the value science has for nature. This is one aspect of the wish for scientific cooperation from a researcher's perspective. There can, however, be other agendas or aims of continuous research collaboration.

5.1.4.1 *The Financial Gain*

It can be considered inevitable in the long term to operate within the Arctic without any collaboration with Russia, as the Russian land covers, as mentioned earlier, 50% of the Arctic. There might, however, be different understandings of **why** collaboration is essential. One *Nature* article stated, “*For the Climate’s Sake, Keep Arctic Communication Open.*” (2022). The wording, *for climate’s sake*, implies that collaboration in the Arctic is essential because it should

¹² During the earlier meetings up to 1990, their common practice was to use a translator. However, this has been used less regarding communication between scientists (Bogstad, 2022). The usage of translators is mainly during official meetings.

be a priority to preserve nature for the value of nature itself, which cannot necessarily be measured in money. However, there is not necessarily a clear division between making financial gains and sustainably extracting the fisheries resource. Managing the fish stocks without overfishing will allow several generations to use the resource and allow for continuous financial gain. Even though the quotas set by the JNRFC are low enough to allow the NEA cod stock to stabilize, there is still reason to believe that there still is much money in the industry. In 2022, Norway exported seafood for a value of 151,4 billion NOK (Norges Sjømatråd, 2023). There is no doubt that maintaining the fish stocks will be necessary for both Norway's and Russia's economies and that it seems like it's within both countries' interest to preserve the resource through scientific work in the JNRFC.

5.1.5 Different Understanding of Consequences for Delayed Scientific Collaboration

One assumption that can be made from the interviews is the different understanding of how critical it is if scientific collaboration is delayed. The impression from the Russian natural scientists was that it was very problematic for the fish stocks in the Barents Sea if there were any hindrances to the scientific collaboration. The same goes for UNIS professor Christiansen; however, her science field is directly affected, which differs from the natural scientists interviewed for this thesis (Christensen, 2023). Researcher 1 from Fridtjof Nansen Institute argued that the severity of the situation could depend on whom you ask. As for the Russian researcher, there can also be another aspect: a concern about being excluded from international scientific cooperation. Researcher 1 mentioned that Russian researchers had contacted them more for collaboration, which is not without reason, as they are working under academic sanctions and are not allowed to collaborate with Russian research institutes.

One of the professors at the University of Tromsø, Tore Nettet, describes how Russian scientists are part of a larger political game. He raises the possibility of President Putin having a strategy of isolating Russian researchers from the “harming” influence of the West (Fanghol, 2022b). He further argues that it is not given that the Russian president understands it as a negative consequence if Western universities were to cut collaboration with Russian universities (ibid). However, according to the Russian researcher, there were no limitations from the Russian side for whom they could collaborate with. What Nettet describes raises the issue that this situation is beyond complex. The actors involved have a history together, and the institutions can have many different agendas.

5.1.6 Differences within Science Fields

In the thesis, I have used science as a broad term when there are significant differences, even within science, in fisheries. The results imply that distinguishing between social and natural science can be important. The primary research on fisheries would have been affected severely had it not been because the government had not decided to spare the science of fisheries from the sanctions. In other areas of research, one lacks data from Russia, creating substantial obstacles to gathering a comprehensive picture of the situation in the Arctic.

As for the social science researchers I talked to at FNI, they are not exempt from the sanctions in collaboration with Russian research institutions. They perform research on the social systems, for example, work in the Arctic Council and what repercussions can be within the council if the sanctions last. It was mentioned that some of the researchers had contacts with whom they had built up their relationships for years, which were important contacts for them now. Referring to the definition of academic sanctions, the possibility for institutions to assess each individual case was highlighted. This was also mentioned by Researcher 1 from FNI that if they were insecure about whether they could continue cooperation, they would get guidance from their research institution.

There can be seen a difference here between social science and natural science, but there is also a difference between long-term and short-term effects. There is a clear division between short-term effects for natural science and social science, the most prominent being that natural scientists within fisheries can continue institutional scientific collaboration. However, social scientists researching the political situation over fisheries are not exempted from the sanctions. While both areas of science can have long-term effects, they can be vastly different. Social science has a discontinuity in terms of the ebb and flow between scientific communities. Due to the sanctions, the current social scientists depend on earlier contacts, making it harder for new scientists to establish essential connections. The long-term effects of natural science can be more affected by a lack of data, where the geopolitical situation can create obstacles for science that are used for management. The issue of data scarcity can be another layer to the problem of discontinuity between scientists. The Russian natural scientist described the scenario of data scarcity as a severe consequence for scientific collaboration in the future. However, this again highlights the issue of who is assessing the severity of the problem. It is difficult to foresee whether it will be easier to resume scientific collaboration within natural or

social science. Still, there is no doubt that being excepted from the sanctions is beneficial for natural science.

5.2 The High Significance of Fisheries Management in the Barents Sea

5.2.1 Keeping the Door Ajar: The Primary Approach to Russia

According to the results, the overall impression is that there is a common understanding of how vital collaboration over common fish stocks is – from Russia and Norway. As the war created substantial uncertainties surrounding the collaboration with Russia, many actors have taken the approach of “keeping the door ajar.” However, Researcher 1 from FNI mentioned, the scientific collaboration will be a natural area for pursuing normality when the war ends. Therefore, there is a possibility both in the Arctic Council and ICES for Russia to join the scientific work when the sanctions are lifted.

ICES has been a key institution in creating the resource regime's access rules as they decided to exclude Russia. Before this, the Russian researcher explained during the interview that the leading country Russia had been collaborating with in fisheries management was Norway, naturally due to the shared stocks. The researcher further described that as Russian participation was suspended from ICES, communication and collaboration with other Arctic States decreased. The only exception was Norway. Therefore, one can ask if the war between Ukraine and Russia has, in some ways, strengthened the scientific relationship within fisheries between Russia and Norway, even considering the obstacles. Even though the challenges affect ongoing primary natural research, the expressive dimension of how one recognizes the collaboration can have changed. Both countries are continuing the collaboration despite the extraordinary situation that Europe is in. There is reason to argue that even though Russia is excluded through sanctions, it is apparent that it is temporary. This can be explained by a quote from Researcher 1 from FNI, when asked about the future of collaboration as the seven remaining countries of the Arctic Council resumed the work without Russian participation in June 2022:

“They (ref: Arctic Council) are cautious with not calling it meetings, the resumed collaboration is called “informal gatherings.” (...) There are no agenda or minutes from the meetings. The Arctic Council without Russia cannot be the Arctic Council for two main reasons. First, Russia

*has a long Arctic coastline, and second, The Arctic Council was a product of the end of the Cold War. It is a product of a bridge between east and west.”*¹³

5.2.2 Managing Two Agendas: Norway's Diplomatic Challenges in Balancing Fisheries Cooperation and Security Concerns with Russia

As mentioned in the introduction, Østhagen (2023) argues that the primary strategy of the Norwegian government has been to balance two opposing agendas. On the one hand, having a substantial relationship with allies has been a priority. On the other, a focus has been on maintaining stability by avoiding conflict with Russia. The case of the political situation with Russia and Norway is, however, in constant change. As mentioned in the methods section, following the current situation can be described as following a moving target. On the 13th of April, it was declared by the current Norwegian Minister of Foreign Affairs, Anniken Huitfeldt, that 15 people from the Russian embassy in Oslo were reported as unwanted in Norway (Grimstad, 2023). Even though they were in Norway as diplomats, they were accused of being intelligence officers, which was described as a threat to Norwegian interests. Shortly after, they were sent out of the country.

This is not the first time, as three Russians had to leave Norway at the beginning of April 2022 due to the same accusations (Foss, 2022). The reaction from the Russian side back then was to expel three Norwegian diplomats from Russia in exchange. On the 26th of April 2023, it was announced that ten Norwegian diplomats had to leave Russia within a week, as they were declared unwanted (Ottesen et al., 2023). More than half of the Norwegian diplomats was forced to go, as nine are left in the embassy in Moskva. These are very significant numbers. Incidents like this will naturally create tension in the Norwegian-Russian relation, also within fisheries. This could become an issue also with fisheries, if Russians based in Norway are accused for being there on the wrong premises. Then, more people can become suspects, also scientists.¹⁴ As there has been an incident of Russian spies at Norwegian universities in the

¹³ *De (Arktisk Råd) er uhyre forsiktig med å kalle det møter, gjenopptakelsen er «informal gatherings». Det er ingen dagsorden eller referater av de møtene. (...) Arktisk Råd uten Russland er ikke Arktisk Råd lenger. Da er det noe annet, og det er 2 hovedgrunner til. Den første er at Russland har den arktiske kystlinje, og for det andre, er Arktisk Råd et produkt av slutten på den kalde krigen. Det er et produkt av en brobygging mellom øst og vest.*

¹⁴ *During my time as an exchange student at the University Centre in Svalbard (UNIS), we experienced mid-semester in October 2022 that the doors of the university were locked even during opening hours. We had to use our student cards and personal codes to access the building. This was because a Brazilian guest lecturer at the University of Tromsø was accused by The Norwegian Police Security Service of being a Russian Spy (Arnesen & Svarstad, 2022). The UNIS building was then not possible to access if you didn't have an access card and personal code.*

Northern part of Norway, it is not unreasonable to expect that some Russian researchers – or Norwegian collaboratives – can become objectives of suspicion. Russian researchers collaborating with Norwegian researchers over fisheries can also be a tempting target for the Russian government in the search for informants. Even though the overall impression and history show that Norway and Russia are collaborating well over fisheries in the Barents Sea, it should not be taken for granted. Nor should it be understood as unfailingly resistant or unaffected, even though the overall impression is given.

Late in April 2023, the Norwegian Broadcasting Corporation (NRK) exposed that the general consultant of Barentsburg on Svalbard, Andrei Chemerilo, had connections to GRU - The Main Directorate of the General Staff of the Armed Forces of the Russian Federation (Aarsæther et al., 2023). Østhagen argues that the rising tension in the Arctic region is a reason why Russia is focused on having control over what happens in the area and that he was not surprised by the connection between Chemerilo and GRU. Neither was one of the professors at the University of Tromsø, Stain Bones. This links tightly to the trust between scientists from different countries that work together and research institutions. As Østhagen comments – this is just another piece to the pile of the negative spiral currently happening in the Northern region and between Russia and Norway in general (ibid).

While Norway has received critique from European countries for allowing for continuous fisheries collaboration, one can ask what the goal of maintaining this connection with Russia is (Albrechtsen & Østrem, 2022). Minister Bjørnar Skjæran argues that ongoing collaboration can stipulate stability in the Northern regions and secure sustainable fisheries management (Bye, 2022). There might, however, be other agendas of interest. Allowing for research cooperation can be understood as one of the more apparent reasons the bilateral agreements help sustain the common resource, but what about allowing Russian fisheries boats to trawl in the Norwegian zone? Could the short-term economic benefits weigh more than the diplomatic and environmental benefits? There are significant financial resources in the fisheries industry. From the 24th of February 2022, when the war broke out, to the beginning of May, there were delivered fish from Russian trawlers to Norway for the value of 600 million NOK (Ytreberg, 2022).

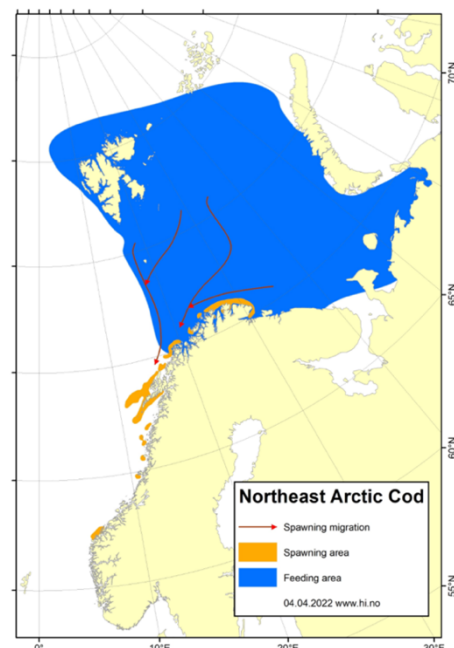
Allowing Russian fisheries boats to trawl in the Norwegian zone is not the same as enabling scientific cooperation. Researcher 1 from FNI briefly mentioned a dimension to Norway's role

in fisheries collaboration, which is how Norway wants to be portrayed. Is the aim for Norway to be viewed as a nation that cares about the environment and is successful in its purpose of being sustainable? Working towards sustainable development was mentioned by the Norwegian government as a strategy, as it was a part of the national budget already in 2008 (Finansdepartementet, 2007). There is, however, not necessarily a clear division between an aim for sustainable management and economic gain.

5.2.3 *An Agreement in Russia's Favor*

As mentioned earlier by the Institute of Marine Research researcher, the division of quotas is 50/50 between Norway and Russia, even though the Norwegian zone is the host for more than 50% of the cod stock. There was some concern in the beginning if there was any possibility that Russia could use scientific collaboration as a form of pressure point to counter the sanctions (Solheimsnes, 2022). However, as this has yet to happen, it is reasonable to believe that the collaboration is considered too significant from the Russian side to risk. It can be regarded as too necessary because of two main reasons. The first is that canceling the agreement would not be profitable by measuring monetary value, as the fish is small in the Russian zone. The migration pattern of the cod is illustrated in **Figure 8**. The second reason is that it could lead to ecological collapse if it is fished before it has had the chance to spawn in the Norwegian zone – which would not benefit anyone.

Figure 8: This map shows the pattern of the NEA cod as it migrates to the Norwegian zone to spawn. (Source: Institute of Marine Research, 2022).



Even though there is a 50/50% division in the quotas, it is possible to question whether this is coherent with the power division on both the institutional and governmental levels. The power dynamics can be significant in shaping the resource regime of the Barents Sea fisheries. Vatn

describes knowledge as one of the defining sources of power (Vatn, 2015, p. 88). Historically, geographically, and socially, Russia and Norway are vastly different countries. History shows great division that can have led to differences in prospects and opportunities. Geographically, there is also a difference as Norway has a far smaller population and area. Norway's small and primarily homogenous population contrasts Russia's large and diverse population. The power dynamic can, however, be explained by what the researcher from IMR explained about their previous collaboration with VINRO since 1990. They described that during that period, there were usually greater English and technology skills on the Norwegian side, but this evened closer to early 2000. This can be understood to have created different starting points for the researchers from Russia and Norway. For example, English-written research could have been more accessible for Norwegian scientists. However, this was not the overall impression of the collaboration of fisheries research, as there have earlier been fields within research that each country has now exceeded.

5.2.4 The Scientific Significance of Natural Management

The science of climate change shows that despite scientific proof of the desperate need for change, not enough is necessarily done (Corner, 2013). This raises the debate of whether it is critical if scientific collaboration were to be put on pause. Still, one aspect could be if the science on fisheries, gathered from the executing sectors within science, is properly accounted for when rules and regulations are defined on the political level. The answer, however, is yes – but it depends on where the science comes from.

The results show a difference in where the research comes from. In the case of the Arctic Council and the working group PAME, Rottem et al. (2020) argue that PAME is one of the few working groups where stakeholders often include science PAME produces. Other working groups within the Arctic Council, like CAFF (Conservation of Arctic Flora and Fauna), were created to be a forum for preserving biodiversity. Rottem et al. conclude that CAFF focuses on building knowledge rather than creating obligations for the parts involved through national management. This is different from PAME, as they mainly focus on policymaking. This could be an issue that the knowledge generated from PAME is easier to implement to protect the Arctic marine environment. Whereas the expertise and research from JNRFC strongly influence what is set by regulations in terms of quotas. This shows a type of hegemony in research, where certain types of research are more accounted for than others.

5.2.4.1 Fisheries as One of the Few Areas Where Research is Successfully Integrated into the Natural Management

Since the collaboration of the JNRFC started, it has been an essential arena for sharing science and data to ensure sustainable quotas for the fish stocks in the Barents Sea. As a result, fisheries, and maybe especially the fish stocks in the Barents Sea, have been considered one of the few areas where research in bilateral scientific cooperation is successfully integrated into natural management (Bogstad, 2022; Eide et al., 2013). In this context, the cod stock can again illustrate how science and political regulations can work together to sustain fish stocks. For example, there was an issue at the beginning of the year 2000 with IUU – illegal, unreported, and unregulated fishing (Jakobsen, 2020). However, the Norwegian and Russian governments managed to combat the illegal fishing in the Barents Sea. In addition, the governments created management plans (“*forvaltningsplaner*”) based on scientific evidence (ibid). There were also created stricter regulations for foreign vessels. The cod’s reproductive age is seven, so it is crucial for sustainable fishing not to fish the cod before it has passed its reproductive age (ibid). The governments' management regulations aligned with the cod's reproductive age, creating three strong generations of cod in 2004, 2005, and 2006. At its peak, the cod stock was six times higher than in the 1980s.

5.2.5 The Issue of How a New Generation Will Take Over

There is not necessarily a clear division between the new and old generations involved in the JNRFC. As the collaboration has been going on for almost 50 years, there might have been differences through the years in the commission's goals and aims. This can be a natural cause as new research and ecosystem changes must be considered. Will there be a need for the more recent generations to create their own traditions within the JNRFC? And is there room for it?

As mentioned by the researcher from the Russian research institute, there is a lack of physical workshops between Russian and Norwegian institutes. This is a direct complication due to the war, even though there are not any academic sanctions that set this restriction. The situation makes maintaining the current well-functioning research environment and relations difficult. Several interviewees from natural and social science institutes point out the importance of preserving and nurturing the relationship, as a good relationship is built over time. An essential prerequisite for cooperation is a mutual agreement over the overall aims and goals. The Russian researcher also mentioned how vital the physical workshops, where researchers from Russia and Norway meet, are for cooperation. Even though researchers got used to online meetings

and the limitations Covid-19 brought, it has yet to make today's situation easier. Many who have experienced the transition from physical meetings and class attendance to meeting other people primarily online can understand and confirm the limitations of online meetings. Moreover, if the physical workshops are continuously postponed or rarely held, it can create distance between the researchers.

An interesting aspect related to the work between scientists is the value of trust. To create quotas for the sustainable extraction of fish in the Barents Sea, the Norwegian and Russian scientists must be confident in the data, knowledge, and expertise the other part produces. In the scientific community within JNRFC, there can be assumed trust in the accuracy of the shared scientific data. As several of the Norwegian interviewees had built personal relationships and collaborated with Russian scientists for years, trust has been built over time. Trust between people can also be disturbed, by, for example, incidents like the 15 diplomats being thrown out of Norway (Utenriksdepartementet, 2023b). These incidents can create suspicion against each other, especially if new people are introduced into the cooperation. This illustrates a possible issue regarding personnel changes, where younger scientists are brought into the scientific community. Will they create the same trust when the current geopolitical situation does not allow scientists to meet physically in workshops and become acquaintances in an informal environment? A strength earlier in the JNRFC is that a common goal is worked for – creating advice for fishing quotas based on scientific evidence. There is reason to believe that there could be issues in the cooperation if one of the actors thinks the other part has a different agenda in mind. The same goes for the different levels in the Systems of Science model; there must be trust between the different levels.

Overall, the fisheries collaboration between Russia and Norway can be considered successful (Eide et al., 2013, Bogstad, 2022). The main highlights that can be used to describe the well-functioning partnership can be divided into four issues. The first describes the founding of JNRFC, creating a platform that allows for cooperation and correspondence between Russia and Norway. The second represents the good use of scientific data to formulate fishing quotas and develop rules for fisheries management. The third embodies the appliance of fishing quotas that has ensured sustainable resource extraction and hindered overfishing. The last and fourth illustrates that Russia and Norway have committed to responsibly fishing and working together against IUU fishing (illegal, unreported, and unregulated fishing).

6. Conclusion

This thesis aimed to analyze how fisheries science, used to formulate fisheries management regulations in the Barents Sea, had been affected by the Russian invasion of Ukraine. The invasion triggered academic sanctions, and the fact that fisheries were exempted sends a strong signal concerning the significance of the Norwegian-Russian scientific relationship. The current situation is unique to what has happened in Norwegian-Russian scientific history, as academic sanctions had not been implemented before, not even during the Cold War. Having fisheries science exempted from the sanctions amplifies the impression that cooperation of fisheries is one, if not **the** pillar of Norwegian-Russian cooperation.

The first research question examined the scientific cooperation itself and whether the general sanctions had influenced it in any way. In this thesis, I have shown that even though fisheries science is exempted from the academic sanctions the Norwegian government implemented toward Russia, the geopolitical situation still had some effects. For example, there have been delays in sharing of data as well as a lack of physical meetings. This creates obstacles for the work done within the main coordination committee for fisheries science, the JNRFC.

The way science is structured in Norway has been illustrated by a descriptive model where the different actors and stakeholders correspond to how they affect each other. Even though it is not as linear in reality as described through the model, it gives the idea of how science is coordinated and the integration in fisheries management. The model is based on information from the Norwegian Ministry of Knowledge and should be understood within that context.

One of the most apparent findings on why the collaboration over fisheries science works as well as it has, is because there is a good foundation and a long tradition of cooperation. There is experience, both from the Norwegian and Russian sides, that the work done together is well functioning and that there is a common goal. There seems to be marginal distrust, and both sides are following unspoken norms – like not discussing current geopolitical issues that their respective countries are involved in. The experience the scientists have in successful cooperation – even when there is political tension – is beneficial in the current situation of the war between Russia and Ukraine.

Russian researchers outside the field of fisheries are in some ways dependent on other stakeholders and fellow researchers to still be included in scientific collaboration. This is illustrated by the specific case where the researcher from IMR was asked to exclude Russian researchers from an author list. If one were to imagine that fisheries would not be exempted from the academic sanctions, there would then be no common platform to create sustainable fishing quotas for maintaining common fish stocks. This shows that scientific collaboration, especially within the JNRFC, is a critical arena that enables Russian and Norwegian fishers to extract the resource of fish without damaging the ecosystems.

Since 2014, the annexation of Crimea has created tensions between Russia and Norway. Søreide-Eriksen's quote from 2015, where she underlines how Norway's facing a different Russia, suggests that the current challenging geopolitical situation with Russia could have been foreseen by some. While the Arctic Council has been resilient towards political tension, geopolitical tension has also reached this cooperation.

The second research question analyzed the consequences of fisheries management. The analysis of this matter shows that even though Russia has been excluded from important international arenas like ICES, Russian researchers have still been able to participate through new scientific networks. This is vital as scientific collaboration has a crucial role in fisheries management. For example, the establishment of *The Report of the Joint Russian-Norwegian Working Group on Arctic Fisheries* shows how vital bilateral collaboration is for creating sustainable management through quotas. This is an example of action put in place to ensure scientific collaboration, even when geopolitical tension suggests a colder front in the northern areas.

A clear pattern is that Norway's previous and current governments have tried to have a good relationship with Russia within fisheries. However, an important finding of this thesis is that even though there has traditionally been successful cooperation between Norwegian and Russian scientists, it should not be taken for granted. The current geopolitical situation in the spring of 2023 shows rising tension between Russia and Norway. Norway has expelled 15 diplomats, accusing them of using diplomacy as a cover while working for Russian intelligence activities. Trust between scientists can be weakened if these cases create suspicion among them. Dependent on further developments in the war, there can be additional obstacles to future cooperation and for new scientists. Further geopolitical tension can make it difficult in the future to maintain the strategy of keeping the door ajar for Russia.

However, there is no doubt that the benefits of fisheries management, as it is today, are important for Russia. The current agreements allow Russia to fish in the Norwegian economic zone, where the fish are substantially larger. If Russia could only fish in their respective economic zone, the fish would be caught before it would have time to reproduce, which would be destructive to the stocks. The short-term economic benefits are great, but the ecological benefits of having a well-functioning ecosystem could be considered more significant. Nonetheless, regulating through fisheries management has proven to help sustain the common fish stocks, which should be highlighted as a successful implementation of science in management.

As the fish stocks move between the Russian and Norwegian zone, neither of the two countries can have enough data to get a necessary overview by only analyzing and covering their respective zones. The cooperation between Russian and Norwegian scientists in the JNRFC is vital to ensure a sustainable ecosystem with the common fish stocks in the Barents Sea, as science is the foundation of creating fisheries management. The work between Russian and Norwegian scientists was summarized by the Russian natural scientist in this manner:

“I would be very glad if our cooperation would continue. Not only for us scientists but for our nature.”

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8. Figures

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