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The Russian Arctic vision: implications for Arctic governance in the context of climate change

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The arguments of the thesis have been the basis for the following publications.

- On the energy issue a paper has been published in the journal "Arktika i Sever" (Арктика и Север - The Arctic and the North, 2016: 25, pp. 5-19) in the 25th edition number of the Journal under the title *The "keep in the ground future" of Arctic fossil fuel resources*
  https://narfu.ru/upload/iblock/59b/01_lansetti.pdf
  On the same issue, another updated and revised article is being submitted for publication.

- A presentation was held at the Arctic Science Summit Week 2017 in Prague with the title "*The Russian Arctic Offshore Gas Projects: Facts, Scale, Prospects and Climate Concerns and Limitations*". The abstract of the presentation has been published in the *Book of abstracts of The Arctic Science Summit Week 2017 "A Dynamic Arctic in Global Change*" p.169.

- The security and militarization issue has been the starting point for a publication in co-authorship with my thesis supervisor prof. Stefano Soriani in the journal *Rivista Geografica Italiana* (ANVUR group A Journal, SSD 11/B1). The article has been accepted for publication: under the title: *Towards a "Militarization Rush" in the Arctic Region? Evidences, Recent Trends and Critical Issues in the Case of the Russian Arctic. Riv. Geogr. Ital.* 125(3), settembre 2018.

- A paper "*Russian Arctic uses, discourses and implications for climate change and sustainability of the region*" will be presented on the Russian Arctic vision at the IGU (International Geographical Union) Conference in Moscow, June 4-6, 2018; session: Cold & High Altitude Regions challenges and solutions for achieving sustainability.

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Introduction

The ongoing development of the human civilization, especially in its technological and demographic dimension, is expanding the human activities and its footprint across the globe into the Arctic region, which due to the disappearing sea ice, is becoming increasingly accessible and important for the developed and globalised world.

States and other stakeholders have been rapidly including the northern sea and circumpolar territories in their economic development plans and political discourses establishing also larger scale human activities there. The scheme of thinking, set of values and discourses dominating worldwide is being transferred to the Arctic along with the same rules and problems already affecting other world regions.

One of the most serious problems is undoubtedly the overexploitation of resources, the reduction of biodiversity and climate change. In the Stockholm Memorandum in 2011 up to 50 prominent intellectuals, among them 15 Nobel prize winners, stated:

> "Science indicates that we are transgressing planetary boundaries that have kept civilization safe for the past 10,000 years. Evidence is growing that human pressures are starting to overwhelm the Earth's buffering capacity. Humans are now the most significant driver of global change, propelling the planet into a new geological epoch, the Anthropocene. We can no longer exclude the possibility that our collective actions will trigger tipping points, risking abrupt and irreversible consequences for human communities and ecological systems. We cannot continue on our current path".
>
> The Azimuth Project, The Stockholm Memorandum[1]

The Arctic has been, and to a lesser extent still is, an area where states' nuclear systems are deployed and where their geopolitics and power have been dominating for many decades.

[1] URL: http://azimuthproject.org/azimuth/show/The+Stockholm+Memorandum

The regional strategic role has been already established through the extensive use of Arctic skies by civil aviation and by the future prospects of increased maritime uses, resource extraction and other human activities.

The polar region, for the state dominated geography, is still one of the last civilization frontiers left, so this external expansion could have a series of very negative consequences for the Arctic.

The circumpolar world is not protected from those overwhelming global dynamics and processes. Furthermore, the knowledge of the region is still relatively low, while the complexity of the Arctic and its influence on other ecosystems and on the global climate is very strong.

In addition, there is growing recognition that a globalising Arctic would require greater inclusion and awareness of the increasing interconnectedness of systems, processes and actors. As Keil and Knecht point out (2017), the Arctic as a globalised political region is still in its infancy and it is continuously debated how existing and ascent challenges for the region are to be governed, using which institutions, including which stakeholder groups, and how to design policy solutions.

On the background of such developments, however, the Arctic could be still an opportunity to search for and apply better, innovative and sustainable governance and management practices, which would acknowledge and take fully into consideration the complexity and importance of the region and the real needs of its territory and of its people with their traditional knowledge and geography.

It could be also a context where all the stakeholders could agree for a common sustainable future for the region. In addition, globalization, apart from the state-centred geopolitical practices, has also made the Arctic problems global and subject to globalised local actions, which could be seen as a counterbalance to the state power. They give the Arctic some kind of international protection. The polar bear for instance, has become one of the symbols of the global environmental activism and of climate change. There are many political initiatives across the globe at different places and times in support of Arctic struggles. They challenge the material geopolitical power of states and global institutions and the representations imposed by political and economic elites upon the Arctic region that are deployed to

serve their geopolitical interests (Routledge, 2003). The Arctic has been for many decades enclosed in the geopolitical paradigm in which Arctic governance is historically, geographically and legally bound by the interactions between the eight Arctic states in a political order that finds its institutional expression in the membership of the Arctic Council. (Keil, Knecht, 2017).

The Arctic name (in greek Arktikós – *arktos*: bear) derives from the ancient Greek word, meaning *the land of the North*. It relates to *Arktos*, the Great Bear, which is the star constellation close to the Pole Star. It is a unique environment due to its atmospheric conditions, sea ice presence and geographical peculiarities.

However, in the past its uniqueness was often related to the fact that the Arctic is somehow insulated from global processes and problems. It was represented somehow as a safe, pristine and unaffected environment. The recognition of the climate change issue for instance, and the growing environmental awareness have drastically changed this perception because the Arctic today is one of the most affected regions in the world.

Security and stability in the Arctic region are less endangered by military conflicts than by divergences about how best to keep the human and biological habitat liveable by properly addressing Arctic climate change (Haftendorn, 2013).

In contrast to Antarctica, where there is a special governance regime and agreement among the states to manage this unique and fragile continent, the Arctic is not a continent but a sea, and it does not have a special recognized status internationally. It is inhabited and surrounded by five coastal states and three other European countries which have a portion of their territory above the Arctic circle. Its governance is still largely dependent on states' internal policies and on interstate cooperation and relations, especially of the Arctic coastal countries. Without the cryosphere and the sea ice and the symbolical meaning of the North Pole, the Arctic would be a partially closed ocean prone to the typical sea management practices and uses.

Recently the Arctic has gone through a rapid transformation process, the sea ice is rapidly declining what implies new human plans and more intensive uses for the region. A more accessible Arctic would require improved forms of government

and good cooperation among all the Arctic actors in order to balance their interests, to protect the Arctic environment and its bio-social system, and even to prevent the emergence of major conflicts.

Against this background, this thesis is focused on the Russian Arctic. The Russian Federation has a long historical tradition of Arctic exploration, scientific research, extraction and exploitation of Arctic resources and industrialization of its northern territories. It has a 20.000 kilometres coast along the Arctic Ocean, while on its territory live about half of the four million Arctic people. For the purposes of this thesis, however, the most important recent development is the strong and resurgent Russian Arctic activity and the massive investments and ambitious plans that Moscow has for its Arctic zone. These dynamics could drastically change the equilibrium of the region and could possibly lead to increased tensions that could undermine the governability of the region.

According to the most recent IPCC report (IPCC, 2013) the Arctic has been already hardly impacted by climate change. In the polar region, the temperature increase in the last decades has been roughly two times higher compared to other regions. The IPPC AR5 projections for the future confirm a doubling of the rate of warming in the Arctic region compared with global temperature changes. Some areas, like for instance the island of Kivalina in the American Alaska, are predicted to be underwater due to sea level rise in a decade or two. The people of Kivalina will have to abandon their homes and a costly relocation would have to take place. Presumably, they would be one of the first real climate refugees.

The Arctic is intrinsically part of the modern global world. It has been strongly impacted by the outside, like for instance through exploration and conquest or more recently by pollution and climate change. At the same time, the region is extremely important for the external world and especially the global climate. These global-in and global-out factors foster the need to understand the nature and the extent of the Russian northern activities and what are Moscow plans and strategies for the region. It is also necessary to assess how and to what extent the Country is considering climate change. Russia could drastically change the Arctic environment

and international relations in the area. It is undoubtedly the most important Arctic stakeholder and the only non-NATO member with direct access to the Arctic Ocean.

The thesis is organized in three distinct yet interrelated parts. Part I aims to discuss the conceptualization of the Arctic from a geographical perspective. Part II focuses on the recent evolution and development prospects of the main uses of the Russian Arctic, resource exploitation, militarization and transportation. Part III analyses the most important elements that contribute to define the Russian Arctic vision.

The Chapter 1, Part I, introduces the main definitions of the Arctic. Abandoning the notion and the common idea of the Arctic as a well-defined area, it recognizes that there are many definitions of this geographical context, and they vary according to the criteria adopted. It assumes that defining the Arctic could not be reduced to a technical problem of definition and classification. In fact, different definitions imply different meanings of the geographical subject under consideration and, from this perspective, it is clear that the very concept of Arctic, and the nature of the problems to be addressed, change according to the different definitions one may choose. After summarizing the most important ones, in the conclusion Chapter 1 defines the *Russian Arctic*, which is the geographical context this thesis deals with.

Chapter 2, Part I, investigates the concept of the "global Arctic": in the XX century the Arctic was considered to be a "far" and "unique" geographical space, mainly because of the extreme environmental conditions, which made its humanization almost impossible. The interplay between technological innovation in various domains of human activities, the new jurisdictional arrangements brought about by UNCLOS III, the acknowledgement of its huge energy resource potential and, last but not least, the concern for the possible global implications of climate change impacts on the region, are all factors that are pushing the Arctic to become more and more "global". From this perspective, the Arctic is becoming a global and strategic stake from economic and financial, environmental and political

perspectives. With that in mind, the chapter first considers the Arctic with respect to the international debate on climate change and then it focuses on the most important implication of climate change for the area, which is the increasing accessibility. Finally, it considers the Russian role in the debate about how to cope with climate change.

Chapter 3, Part I, aims to deepen the analysis of the Arctic, and particularly of the Russian Arctic, from a "critical" geographic perspective: this means to put at the center of the analysis the most important discourses and the imaginary of this polar region, as the key elements for understanding its recent evolution as well as the main implications for its future governance.[2]

To attain this goal, the first section (3.1) introduces the concept – based on the so-called linguistic (and cultural) turn in social sciences that, geographical representations contribute to build meanings: from this perspective, the so-called *texts* (maps, speeches of political leaders, political and technical reports) contribute to construct a geographical subject/object, not simply representing it in neutral or impartial terms. According to this concept, it is clear that in this thesis the Russian Arctic is considered as a socially and politically constructed space, which is playing a basic role in the way Russia is representing and conceptualizing its national identity and role in the international arena.

The second section (3.2) interprets the Arctic according to the centre-periphery approach. As I'll argue, that approach contributes to a better understanding of the most important problems the Russian Arctic region, as a *peripheral space* is experiencing. Moreover, the Section shows how the current most relevant global economical and political trends contribute to reinforce this dynamic.

[2] From a geographic perspective, a "discourse" can be regarded as a particular way of representing, conceptualizing and understanding the world, one aspect of the world or a specific geographical object or process. A basic role in defining and promoting a discourse, and its effectiveness in power relations and therefore in territorial evolution (either in revolutionary or stability terms, with respect to a given geographical order), is played by a coherent system of texts (such as books, both academic and popular, media, iconography, policy and technical reports, political speeches, etc.) (Dell'Agnese, 2005; Fairclough, 2003; Jorgensen, Phillips, 2002; Minca, Bialasiewicz, 2004; Pedersen, 2009).

Section three (3.3) aims to theoretically justify the adoption of a "state-centred" perspective in the study of the Russian Arctic. As mentioned above, the Arctic is being transformed into a "global Arctic". Among other implications, this means that multi-level and multi-actor approaches in governance are becoming central in the debate about Arctic governance and evolution. Against this background, this section aims at answering the following question: why does it make sense to continue to adopt a "state-centred" approach to the Russian Arctic? As I will show, according to the political situation, geographical discourses and practices in the Russian Arctic still have the National Government as the main subject of reference. So, even though the Russian vision for the Arctic is more and more challenged by global perspectives, the centrality of the Russian state in its Arctic territory remains very strong. This is also confirmed by the main Arctic uses analysed in Part II of this thesis, and by the official discourses and articles in the Russian press (Part III).

The fourth section (3.4) focuses on the role of the Arctic in Russia's national rhetoric and in Russian geopolitical discourses. In the last decade, especially after Putin's second presidential term, there is a resurgence of geopolitics in the Arctic, confirmed by many related articles in the international press and scientific literature. In this context, a critical perspective, although still focused on a state-centred perspective, is helpful to understand how the statehood in the Arctic is being reinforced, how political, military and economic powers help to shape the Russian Arctic identities and how the Russian Arctic vision has a well defined political agenda behind. Following the concepts raised in section 4, section 5 (3.5) shows the relevance of the "frontier concept" in making the Arctic so relevant for Russia's national politics.

Finally, section 3.6 analyses what it is called the "Cold War geopolitical trap" in the Arctic. Even today, this trap continues to play an important role in the way that Russia considers and contextualize the Arctic Region. Moreover, the recent worsening of Russia-NATO relationships, as a consequence of the Ukrainian and Syria crisis, is contributing to make this trap increasingly relevant. This could cause new negative spill-over effects in the Arctic, thus threatening cooperation attitudes and initiatives in the region (this point will be extensively analysed in chapter 6).

Part II of the thesis focuses on the main Russian activities in the region and their future prospects. The analysis is focused on three important uses: fossil fuel extraction, maritime transportation, and security and militarization.

It would be difficult to predict the future of Russian Arctic endeavours, however, the recent trends and developments could be helpful to show the direction in which the region is moving. Natural resource extraction is still the priority in the Russian strategic documents for the region and fossil fuels extraction is leading the investments into the region. Along with the mineral, oil and gas exploitation and plans to increase the extraction of resources, Moscow is also developing the Northern Sea Route for the export of its resources to the world markets. In the future it would like to establish the Northern Sea Route (NSR) lane as an important international maritime transit corridor. Besides this, the opening Arctic is also exposing the Russian northern coast what is rising security concerns in Moscow; related to this, it is important to point out the fact that the Kola Peninsula is home to the Russian Northern Fleet with its strategic submarine division.

Against this background, Chapter 4, Part II introduces the general uses' framework, on the basis of Adalberto Vallega's approach. As one can see, the analysis confirms the complexity of the existing system of uses, characterized by many conflictual relations, which in turn exacerbate the potential effects of climate change.

Chapter 5, Part II extensively investigates the energy issue in the Russian Arctic. It focuses both on the supply and the demand side of the global energy market and incorporates the most recent developments in the global energy sector like the de-carbonization of the world economy, the carbon budget and the economics of the Arctic extraction mega-projects. Special emphasis is put on the future demand for fossil fuels which appears growingly uncertain. Currently the Russian Arctic is extremely important for Russian gas supply, however, a massive extraction activity offshore has not started yet. The Chapter tries to understand how the ongoing development of renewable energy and the Paris agreement goals could impact the future of Arctic fossil fuel industries. Special attention is put on a new

and recent development in the Arctic which is the LNG industry. Russia is currently finishing a huge liquefaction project called the Yamal LNG and is planning to build a second one in the near future the Arctic LNG2 in the same area of Yamal peninsula. These developments, however, although very important also for the development of Arctic maritime transportation in the form of destination transport, do not radically change the energy picture of the region. Some of the biggest projects, like the Shtokman gas field have been recently abandoned due to the shale revolution in the US, the complexity of the project and the high costs for its realization. The Chapter shows that discourses focused on the supply side of the energy market seem inadequate to give a broader picture of the current situation in the world energy sector. More attention should be put on the demand side and on prices which are extremely important for the future of the Arctic. In the conclusions the chapter rises and discusses the hypothesis and possibility that the majority of Arctic fossil fuels would be kept in the ground.

Chapter 6, Part II deals with national “hard” security and militarization. The rational for the analysis is that many experts, articles and reports, discuss the importance and threats deriving from the perception of a growing regional military activity, as confirmed by the fact that at almost every conference dedicated to Arctic topics someone raises the issue of security and militarization. Furthermore, it is very often argued that the (potential future) “rush for resources” can strengthen the scenario of confrontation and conflict in circumpolar territories. The underlying belief is that the “rush for resources”, accelerated by the expected effects of climate change, could result in new regional conflicts. In particular, greater emphasis has been recently put on the recent Russian military efforts in the region. From this perspective, this Chapter is focused on the northern military plans and capabilities of the Russian Federation. The factors that could influence Russian military and security thinking, and the scale of deployments in the region are considered. In particular, the following questions are addressed: are the current Russian military deployments a clear evidence of a new phase of Arctic militarization? What is the military and political logic driving these efforts? Are they reflecting a more global

and strategic perspective? Or are they increasing the possibility of a new confrontation scenario at a regional scale, among the circumpolar states?

Finally, chapter 7 deals with the Russian Arctic maritime transportation development and the Northern Sea Route. The prospects of the NSR are discussed and the current state of the route development is assessed. There are still many uncertainties and problems affecting the route feasibility for sustained trans-Arctic shipping. In 2017, the amount of cargo transiting the NSR for instance, has reached the 1989 levels of 7mln tonnes after more than 25 years. The route development in the near future will be based on the transportation of the Yamal liquefied natural gas to Asia in the summer months and to the transshipment hub in Europe in the other seasons. The development of the NSR has even a dedicated subprogram (one of the three) in the Russian government implementation plan of its Arctic strategic document. In the 2015 Russian maritime doctrine the route is even called The Russian Northern Sea Route in order to stress the Russian control over it. The chapter is useful to understand what are the drivers behind the route development and what has been done so far.

All the uses have the Russian state as the key actor. For this reason, trying to understand the logic of the state discourses and institutional mechanisms and reasons behind them, mainly through a critical approach, could be useful in order to understand the context in which climate change is happening and impacting the region. To achieve this goal, in Part III the Russian Arctic vision is considered.

In Chapter 8, Part III, the focus is on the historical evolution of the Russian Arctic involvement. It briefly describes the early Russian Arctic involvement, The Great Northern expedition of Peter the Great and the first Polar year. In the next section it tackles the Soviet period which represented the real breakthrough for the Russian Arctic. It describes the ideology driving the intense Stalinist northern push and the people suffering and the results of the Soviet policies. It shows clearly how the Arctic became an important piece in the Soviet propaganda puzzle and

perception of the physical spaces and Arctic indigenous people and culture. It provides also a brief description of the main Soviet achievements in the Arctic after the Second World War. In conclusion it briefly addresses the famous Gorbachev speech in Murmansk in 1987 at the end of the Soviet period. The third section (8.3.) describes the Arctic in crisis after the collapse of the Soviet Union, the economical problems and the demographical decline. It focuses also on the start of a more intensive Arctic international cooperation dealing with the massive stockpiles of Soviet nuclear fuel and submarine reactors and the creation of the Cooperation in the Barents Euro-Arctic Region and of the Arctic Council. This chapter is important to understand the role of the Soviet past in current Russian Arctic affairs and the importance of the Arctic for the Russian state and the Russian identity.

Building on the three main uses of Part II, which show the "practical" side of the vision the final Chapter 9, Part III, analyses the official speeches, documents and the Russian online press related to Arctic topics. It takes into consideration two prominent Russian newspapers and the articles published on Arctic topics starting from the beginning of 2015 until today. The reason for this temporal choice is that the year 2015 was very important for the climate debate because of the Paris Agreement. The next two years, 2016, 2017-18, on the other hand allow us to see and possibly understand how much space has been given to this topic in the Russian press after the agreement was reached and what are the consequences of this agreement on the Russian media coverage of climate change in the Arctic. Overall, more than 300 articles have been considered. The analysis has considered 24 key words and the topics and arguments of the articles. In addition, the attention was put also on the Arctic imaginary that the articles want to create. For this purpose, an overview of the images of the articles has been done.

In the analysis special focus was put also on the climate change issue and on Arctic sustainability. The goal is to understand how and to what extent the Russian press in the last three years is representing the issues. It is well known for instance, that in 2015, the international press has covered extensively the climate change debate in preparation for the Paris Agreement. The articles analysis is followed by a discussion regarding the climate change impact on the Russian Arctic vision. This part would like to answer the following question: how is climate change perceived

in the Russian Arctic debate? Does it have any impact on Russian northern policies? Does it modify the Russian Arctic strategy, and in the case of a positive answer, to what extent and in which direction?

PART I

DEFINING AND CONCEPTUALIZING THE ARCTIC

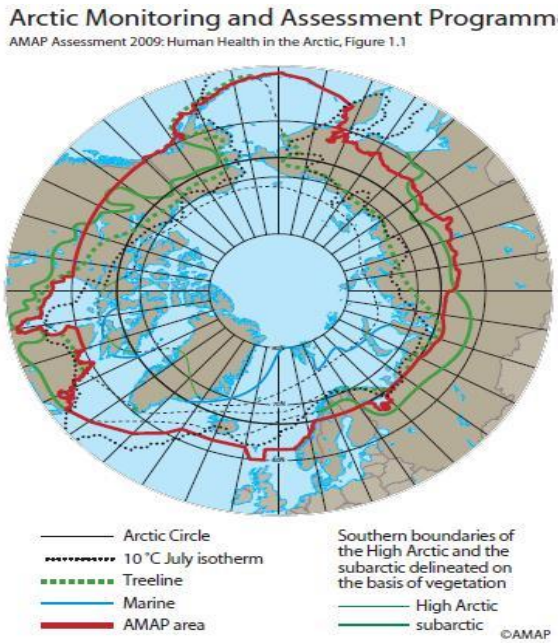
Chapter 1. The problem of definition

1.1. Arctic geographical definitions and maps

There are several Arctic definitions. Usually they differ about the criteria by which they are defined and even about the scope of the research for which a definition is needed. Every definition could have important practical and political consequences since they are social and political constructs that privilege certain visions and focus on some specific issues or set of problems/opportunities.

The Arctic Council, for instance, has eight Arctic states as permanent members. For a state to be part of the Arctic Council is enough to have a part of its territory in the Arctic Circle. In this case the defining element is the Arctic Circle. In recent years there was a series of meetings by the group of five Arctic littoral states called the Arctic Five. In this second case the access to the sea was the criteria chosen to be allowed to be part of the meeting[3].

There are several accepted definitions and maps with different Arctic borders.



1) Figure 1: AMAP Arctic map

[3] URL: http://www.arcticyearbook.com/briefing-notes-2016/208-the-arctic-five-versus-the-arctic-council

On the map above are represented the most important Arctic definitions. The temperature and the treeline definition, which are the most widely accepted, will be discussed at the end. The simplest and probably the less representative is the definition of the Arctic provided by the Arctic Circle. The Arctic Circle is one of the five main earth parallels, which approximates the southern boundary of the midnight sun. It does not take into account the presence or absence of permafrost, the mountains and other physical, ecological and geographical characteristics.

Another criteria used to define the Arctic is the territory north of the 60° while an interesting delineation is also the AMAP [4] boundary on the graph. Justifying their approach towards defining their Arctic territory the AMAP's researchers write:

> "Given the different definitions of the Arctic, based on physical-geographical characteristics as described above, and those based on political and administrative considerations within different countries, no simple delineation of the Arctic region was applicable for the purposes of the AMAP assessment. To establish a geographical context for the AMAP assessment, therefore, a regional extent was defined based on a compromise among various definitions. This incorporates elements of the Arctic Circle, political boundaries, vegetation boundaries, permafrost limits, and major oceanographic features"[5].

It Is clear from the AMAP scientists considerations of how difficult it is to accept a single Arctic definition and how limiting each definition could be. The first

[4] "The Arctic Monitoring and Assessment Programme (AMAP) was established in June 1991 by the eight Arctic countries (Canada, Kingdom of Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States) to implement parts of the Arctic Environmental Protection Strategy (AEPS). AMAP is now one of six working groups of the Arctic Council, members of which include the eight Arctic countries, the six Arctic Council Permanent Participants (Indigenous peoples' organizations), together with observing countries and organizations."

[5] *AMAP* Assessment Report; Chapter 2, Physical/Geographical Characteristics of the Arctic https://www.amap.no/documents/download/88 p.

three definitions are simple but they exclude/include territories which belong or do not belong to the Arctic.

Another definition is given by the Arctic Council working group on biodiversity CAFF[6].

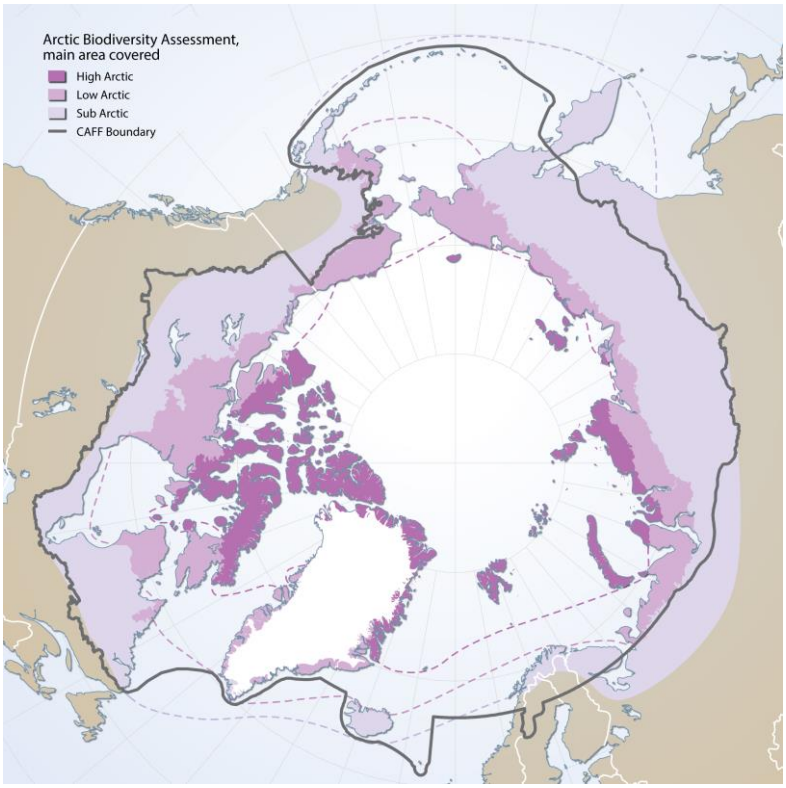


Figure 2: CAFF Arctic map[7]

This definition is recommended by the Arctic Council; however, again it is good only for certain research activities. The same CAFF working group for the Arctic Biodiversity Assessment acknowledged that another definition was needed as the scientists pointed out: a more scientific definition of the Arctic was needed than the CAFF boundaries, which are defined as much by political boundaries as by climatic and biological zoning, and therefore vary considerably among the Arctic

6 Conservation of Arctic Flora and Fauna

7 URL: http://geo.abds.is/geonetwork/srv/eng/catalog.search#/metadata/f0eb86a7-e408-4138-9432-dedb991f13d1

nations. Such a clear definition is a prerequisite for a meaningful account of Arctic biodiversity[8].

Figure 3: Arctic political map and climate and vegetation boundaries

The graph above is the political map of the Arctic with the main definitions based on climate and vegetation. There are two climatic definitions for the Arctic. The most used one is the Arctic being defined as the area north of the 10°C July/August isotherm, (i.e., an area with an average annual temperature of 0°C and within which the mean annual temperature for the warmest summer month is at or below 10°C) as the boundary line. On the political map it could be seen that this definition does not include Sweden and Finland. They are, however, in the Arctic Council, and their northern territories have Arctic climatic conditions inhabited by indigenous people. The Arctic climate varies significantly by location and season. It could be better understood as a series of regional climates with different ecological

[8] URL: https://caff.is/assessment-series/arctic-biodiversity-assessment/233-arctic-biodiversity-assessment-2013 p. 10

and physical climatic patterns. The second definition, which is partially based on climatic parameters, is the area of permafrost presence.

Another important Arctic definition is given by the tree line. The tree line is a transition zone between the tundra and the continuous boreal forest. The Arctic tree line is the longest ecological transition zone on earth's surface, circling through the northern landmasses of North America and Eurasia for some 8,300 miles[9]. In some places like in North America it can be just some kilometres wide, while in Eurasia it can be up to 300km wide. In many places the tree line coincides with the isotherm line, however, especially in the south it is more extended. Territories like western Alaska and western Aleutians are included in the Arctic by this definition.

It could be concluded from the definitions above that it is extremely difficult to agree a single Arctic map. However, despite the differences the region is more or less defined apart from its exact boundaries. This boundary flexibility could be even seen as a positive element for the Arctic since it allows a more flexible approach towards the research, management, and the governance of the region. It allows to include or exclude according to the subject of interest and it is not a standardized cartographic product. As Mark Nuttall points out it is difficult and perhaps inappropriate to define restrictive boundaries for the Arctic because of its incredible variability, diversity, and connections with the rest of the globe[10].

1.2. Arctic territory

The Arctic is an enormous region surrounding the North Pole that extends itself over more than 27 million km^2 while its land mass measures 10 million km^2 (taking the isotherm definition, the Arctic land area comprises about 7.1 million km2, or some 4.8% of the land surface of Earth) and is characterized mainly by tundra and Arctic desert. The terrestrial Arctic makes up about 5% of the Earth terrestrial surface. Its population is of about 4,6 million people and almost half of them live in the Russian Arctic. The Arctic is not a continent itself like the Antarctica,

[9] URL: http://earthsky.org/earth/decoding-climate-change-signals-arctic-treeline-tundra-alaska

[10] URL: https://www.climate-policy-watcher.org/canadian-arctic/arctic-definitions-and-boundaries.html

but a sea that includes parts of the Eurasian and American continents and many islands. The main islands of the American archipelago are Baffin, Ellesmere, Victoria, Banks, Davon and Prince of Wales and they have an extension of about 1.430.000 km^2. In the Arctic sector north of Europe there are two main Norwegian islands Jan Mayen (380 km^2) and Svalbard (62.700km^2) and Russian islands and archipelagos with an extent of over 200.000 km^2: Franz Joseph (16.100 km^2), Novaya Zemlya (82.600km^2) in the European sector and Severnaya Zemlya (37.560 km^2), and Novaya Sibirya (38.400) in the Asian sector. Many islands are inhabited while others have a few thousand people mainly Russian military personnel and indigenous elements.

The Arctic Ocean is the smallest of the oceans (total area c. 10 million km2). The name was given by French oceanographer Charles-Pierre Claret in 1797. It consists of a deep central basin, the Arctic Basin, surrounded by continental shelves. The Arctic Basin is further divided by the Lomonosov Ridge into the Eurasian and Amerasian Basins. Maximum depths (c. 5,260 m) are found near the Gakkel Ridge. The Arctic Ocean has the most extensive shelves of any ocean and they cover about 50% of its total area. The circumpolar marine Arctic comprises the Barents Sea, Kara Sea, Laptev Sea, East Siberian Sea, Chukchi Sea, Beaufort Sea, Canadian Arctic Archipelago and Greenland Sea. The Barents, Kara, Laptev, East Siberian and Chukchi shelves are shallow and broad (400-800 km) while the shelves from Alaska to Greenland are narrow (< 200 km)[11]. The ocean is enclosed by the Bering strait which is about 92 km wide and has depths of less than 50 meters, by the channels of the American Arctic archipelago. It extends itself for 1500km between Greenland and the Scandinavian peninsula. The limit with the Atlantic Ocean could be considered the submarine threshold between Greenland and Scotland which forms a barrier to the deep polar waters. The Ocean is mainly a closed sea and compared to the Mediterranean has a 5,6 times larger exchange of waters. The Arctic Ocean is connected with the Pacific Ocean through the Bering straight which is narrow and has swallow waters and with the Atlantic through the Davis strait (300-950 km) and

[11] URL: https://caff.is/assessment-series/arctic-biodiversity-assessment/233-arctic-biodiversity-assessment-2013 p. 488.

the Denmark strait (290 km). The largest passage is the Norwegian sea with 1100 km. Most of the Arctic Ocean is covered by ice on the surface while deeper, albeit the temperature of the sea varies from -0,4 to -0,8, the ice is absent because of water salinity.

The Arctic coasts are very articulated, they have many archipelagos and islands that delimit internal waters. There are several continental shelves with depths of less than 200 meters covered by bordering seas. The land surface is mainly plateu. Some parts have also reliefs like the Tamir peninsula (1146m) and islands east of Greenland (Gunbjorn 3700) the Baffin island (2591m) and Ellesmere (2926).

1.3. The Russian Arctic

Russia is the largest Arctic country, Canada (depending on the definition) has the biggest land area, and the Arctic represents 18% of the Russian territory i.e. 3.1mln km^2. The length of the Russian Arctic coastline is 22.600 km while the coastline of all the other polar countries combined is 38.700 km. More than 20000 km of Russian national borders go through the Arctic and 70% of the country continental shelf (more than 4mln km^2) is located there.

The territory is very rich in natural resources and has more than 80% of Russian gas reserves and 91% of the Russian gas is currently extracted in this region. In addition, there are very large quantities of oil and other resources like nickel, platinum, gold, diamonds. According to some western experts, the value of Russian northern natural resources combined could exceed 20 trln dollars (Slipenchuk, 2013, p. 86).

There are several names for the Russian Arctic, which is also called the Russian Arctic Zone[12] or the Russian North, although the last is generally understood as a larger territory.

[12] The term “zone” in Russian is associated with the prison and the Gulag. However, it is used extensively especially in juridical texts.

The definition of the Russian Arctic has gone through a series of changes and legislative proposals since its first definition in 1926[13], as Lukyn pointed out in 2014[14]: determining the population, gross regional product (GRP) of the subjects of the Russian Arctic, their share in the national economy today is quite a challenge, since almost for more than two decades the state could not legally define even the legitimate boundaries of the Russian Arctic, its status and composition[15].

The Russian Arctic Zone has been recently finally formalized by the Presidential Decree on May 2nd in 2014[16]. According to this official document, the Russian Arctic Zone is composed by the following territories:

1. Murmansk region.
2. Republic of Karelia as part of Louhski, Kemski and Belomorski municipal districts.
3. Arkhangelsk region as part of the Onega, Primorsky and Mezensky municipal districts, urban districts of Arkhangelsk, Severodvinsk and Novodvinsk, as well as administratively affiliated Arctic islands.
4. Nenets autonomous district.
5. Yamalo-Nenets autonomous district.
6. Krasnoyarsk region as part of the Taimyr (Dolgan-Nenets) municipal district, city okrug of Norilsk and municipal formation of the city of Igarka in the Turuhansky municipal area.
7. The Republic of Sakha (Yakutia) of 11 ulus - Abyisky, Allaikhovskiy, Anabar, Bulun, Verkhoyansk, Zhigansky, Olenek, Nizhnekolymskiy, Srednekolymsky, Ust-Yana and Eveno-Bytanayskogo.
8. Chukotka autonomous district.
9. The Republic of Komi in the composition of the urban district of Vorkuta, located at latitude 67 °29 '.

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13 The Committee of the Communist Party issued a decree "On the Proclamation of Lands and Islands Located in the Northern Arctic Ocean Territory of the USSR".
URL: http://observer.materik.ru/observer/N12_00/12_15.htm

14 URL: https://narfu.ru/upload/iblock/f41/04.pdf p.18

15 URL: http://narfu.ru/upload/uf/b49/aan-15.pdf p.49

16 URL: http://src-sakha.ru/wp-content/uploads/2015/07/Ukaz-o-suhoputnyih-granitsah-Arktiki.pdf

Figure 4: Russian Arctic Zone territories

Lukin Y.F., Eremin A.E., 2011[17]

The Russian Federation has the biggest Arctic population, with about 2,5mln people, while the total Arctic population is of about 4,6mln people. The northern Russian regions have experienced a rapid demographic decline in the last 25 years.

In 1989, according to the Soviet statistics, the population of the Russian Arctic was about 3,4mln and it has declined to 2,5mln in 2015[18]. In the 1989-2015 period it decreased by about 26%. The population in the larger Russian North has experienced the same trend since it declined form 9,4mln in 1989[19] to 7,3mln in 2015[20]. Some regions, between 1989 and 2015, have lost a big percentage of their population: the Murmansk oblast has lost 33% of the population from 1.140.000 to 766.000, Chukotka 69% from 157.000 to 49.000, and the Verkhutskij gorsovet[21] has lost 63% from 216.000 to about 80.000. The only positive trend has been registered in the Yamalo-Nenets autonomous district. The table below shows the detailed statistics for the year 2013.

Arctic population (in thousands) according to the Federal law and according to the State Programme of 2013

[17] URL: http://narfu.ru/upload/uf/b49/aan-15.pdf p.80. The numbers on the map follow the points of the list.

[18] Lukin Y.F. Status, Composition, Population of the Russian Arctic URL: http://narfu.ru/upload/iblock/f41/04.pdf p.22

[19] URL: http:// demoscope. ru/weekly/ssp/rus89_reg1.php

[20] URL: http://www.gks.ru/bgd/regl/b15_22/Main.htm

[21] Redefined as Vorkhutskij gorodskoj okrug today

n.	**States**	**Arctic regions**	**Pop. (Federal law)**	**Pop. (State programme)**
1	Russia	Murmansk region	796,1	780,4
		Arkhangelsk region: 3 MO --- Mezensky, Onega,Primorskiy, and 4 GB --- Arkhangelsk, Severodvinsk, Novodvinsk, "Novaya Zemlya"	661,8	657,2
		Nenets autonomous District	42,6	42,7
		Republic Karelia: ZMO on the coast of the White Sea --- Louhskiy, Kemskiy and Belomorskiy	51,6	EXCLUDED
		Republic Komi: urban region Vorkuta	95,8	EXCLUDED
		Yamalo autonomous District	522,8	541,6
		Krasnoyarsk region: 2 MO --- Taimyr, Turukhansky, 1 urban region Norilsk	216,8	230,5
		Respublic Saha (Yakutia) --- 11 (FZ) and 5 (GP) ulus	64,7	27,2
		Chukotka autonomous District	50,5	50,7
		Total Russian Arctic	**2502**	**2338**
2	USA	Alaska	710	731
3	Norway	Finnmark,Tromse, Nordland, Svalbard	466	472
4	Iceland		311	No info
5	Sweden	Norbotten	260	No info
6	Finland	Lapland	184	No info
7	Canada	North Western territories, Yukon, Nunavut, Nunavik	120	140
8	Denmark	Greenland	58	56

		Total in 7 Arctic regions	**2109**	**?**
		Arctic total	**4611**	**?**

Table 1: Arctic population

Source: Lukin Y.F. (2014)

The two definitions give a 6,5% discrepancy in the total number of people living in the Russian Arctic. However, in both cases Russia has more than half of the total population in the circumpolar region.

Chapter 2. The emerging of the "Global Arctic": Climate Change in the Arctic, and the role of Russia

Without question, the Arctic is becoming global, from different perspectives:

- its economic importance is steadily increasing because of its enormous potential for resources exploitation; moreover, it is becoming a "niche product" in the global tourism market (cruising)
- climate change can contribute to increase accessibility and, therefore to change the regional, and perhaps in the long-term even the global systems of maritime routes;
- from the political point of view, the Arctic is emerging as a global laboratory of new forms of territorial and environmental multi-level and multi-actor governance, inspired by cooperation, as the experience of the Arctic Council confirms;
- from the point of view of International Relations, the Arctic is acquiring greater and greater importance, as a global stake, and the increasing interest of China and other emerging Asian countries for the area clearly confirms this (Solli *et al*., 2013);
- the Arctic region has a global relevance from the climate perspective: what is expected to occur in this region, due to climate change, is likely to have global consequences; at the same time, to cope with this issue would require the development of global forms of governance, which are presently at the stage of infancy.

2.1. Climate Change

One of the main transformations in the last decades is the impact that humans are having on planet Earth. Many scientists are already speaking about a transition

from Holocene to Anthropocene when the human civilisation is radically changing the environment of the planet.

There is already an ongoing discussion in the geological community to formalize the Anthropocene[22] because in several areas the human civilization is severely impacting and changing the planet as for instance, the loss of biodiversity, land use change, ocean acidification and climate change.

According to the latest IPCC report (IPPC, 2013), human activities are continuing to affect the Earth's energy budget by changing the emissions and resulting atmospheric concentrations of radiatively important gases and aerosols and by changing land surface properties.

The most compelling evidence of climate change derives from observations of the atmosphere, land, oceans and cryosphere. Unequivocal evidence from in situ observations and ice core records shows that the atmospheric concentrations of important greenhouse gases such as carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) have increased over the last few centuries (IPCC, 2013) [23].

CO2 represents the main source of greenhouse gases and accounts roughly for 76% of global greenhouse gas emissions (65% fossil fuel and industrial processes and 11% forestry and other land use) while methane CH4 accounts for 16% and Nitrous Oxyde N2O for 6%.

Electricity is the main source of gases by economic sector and accounts for 25%, agriculture, forestry and land use account for 24%, industry for 21%, transportation for 14%, buildings for 6% and other energy for 10% (EPA)[24].

The CO2 concentrations have already reached 410ppm in May 2017, which is the highest concentration in millions of years[25]. They rise every year by about 2-3ppm and the trend is still accelerating.

In order to limit the temperature rise below 2°C, considering also the Paris agreement, the concentration of CO2 should follow the RCP2.6 pathway and not exceed 480ppm. In this case the temperature would rise between 1.1 °C to 1.7°C

[22] URL: http://www.nature.com/news/anthropocene-the-human-age-1.17085

[23] IPCC, Climate Change 2013: The Physical Science Basis, Chapter 1, Executive Summary, Human Effects on Climate, p. 121

[24] EPA, Global Grenhouse Gas Emission Data, URL: https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data

[25] URL: https://www.esrl.noaa.gov/gmd/ccgg/trends/

compared to the preindustrial era. The temperature rise is very likely to be between 1.1 °C to 2.6°C under RCP4.5 (480-530ppm) scenario[26].

2.2. Arctic climate change

The Arctic is probably the most impacted region by the warming planet. Over the past 30 years, it has warmed more than any other region on earth. Most scientists agree that Arctic weather and climate are changing because of human-caused climate change. In the Arctic, extensive land areas show a 20th-century warming trend in air temperature of as much as 5°C. Over sea ice, there has been slight warming in the 1961-1990 period[27]. According to IPCC under the most extreme scenario of human influence, the average surface temperature increase in the Arctic region in the latter part of the 21st century (2081–2100) is projected to exceed 9°C compared to the average surface temperature during the period 1986–2005. Satellite data show that over the past 30 years, Arctic sea ice cover has declined by 30 percent in September, the month that marks the end of the summer melt season. The Arctic could be considered as a refrigerator for the rest of the world so changes in its climate are extremely important. The Arctic region gives off more heat to space than it absorbs from the outside, which helps cool the planet. So changes in the Arctic climate could affect the climate in the rest of the world (NOOA)[28].

The Arctic climate changes affect multiple areas of its ecosystem and socio-political system and those of the rest of the world. The global effects are related to the many important positive feedbacks that can occur in the near future because of changes in this system. These are, for instance, the change in the albedo, the amount of radiation reflected off a surface, which would decrease since darker and free of ice surfaces reflect less and absorb more radiation what could turn the region from being a refrigerator to being a heater. Second the warmer ocean affects the land which has less ice and shorter periods of snow so it absorbs more heat,

[26] IPCC, Climate Change 2014 Synthesis Report Summary for Policymakers, pp. 9-10

[27] IPCC, Charter 16, Polar Regions (Arctic and Antarctic) executive summary

[28] NOOA, Climate Change in the Arctic, URL: https://nsidc.org/cryosphere/arctic-meteorology/climate_change.html

warming also the discharged water. However, the most worrisome feedback involves the release of seabed methane from the continental shelves of the Arctic Ocean[29]. In addition, the warming region could start increasingly thawing the Greenland ice shelf what can result in catastrophic sea level rise.

The regional effects would impact mostly the Arctic flora and fauna and the indigenous people. Many Arctic animals would not survive without the sea ice and this is forcing the indigenous people to change their diet and style of life. In addition, higher temperatures would bring new spices and plants to the Arctic circle changing completely its environment. Another important issue is the erosion of the coastal zones and the thawing permafrost that would probably force many Arctic communities to reallocate due to unstable permafrost conditions and due to sea level rise.

The most significant political outcome of the warming Arctic is undoubtedly its increasing accessibility.

2.3. Increasing Arctic accessibility

The melting sea ice and the advancements in technology are making the Arctic more accessible to human uses and exploitation. The first human activities in the Arctic could be related to the indigenous people and later to the first European explorers. However, it is mainly during and after the second world war that some Arctic nations overcame the obstacle of the Arctic ice using powerful icebreakers. In the last decades the Arctic sea ice extent and volume is decreasing continuously and almost every year it marks a new record in its minimum values for various months of the year. This is probably the most important reason behind the focus of many nations on the vast Arctic territory. Accessibility means new potential uses and possibilities to get rich profits out of the Arctic for those "outside" and non local actors. For some states it is also a security dilemma since they have a large Arctic coast and undefined national borders there. For those reasons the sovereignty and

[29] URL: http://e360.yale.edu/features/as_arctic_ocean_ice_disappears_global_climate_impacts_intensify_wadhams

state focused rhetoric has already entered the Arctic. It is very likely that with the disappearing sea ice and the new Arctic human activities like the growing tourism, increasing shipping and extraction and mining activities, many northern regions would soon become part of the global system and economy. There are some regions, particularly in Russia, that have been already for many years part of the global commodity supply network like for instance the city of Norilsk or the Red Dog mine in Alaska. A state dominated Arctic environment should have an established governance and a well defined security system in order to avoid tensions and conflicts in the area. However, most of the current and future Arctic activities depend on the future extension, volume and thickness of the sea ice and also on the navigation conditions and the presence of icebergs along the shipping lanes. Regardless of other developments in the global economy and in other sectors impacting the Arctic, accessibility is the necessary precondition for any extensive, non indigenous human Arctic activity.

It is important to stress the fact that the increasing Arctic accessibility is somehow impacting Arctic stakeholders differently. In the indigenous people communities there are many people who would like to have more access to the developed world and its living standards and to a modern life made possible by the development of new economic activities in the Arctic. However, on the other hand, many local people are afraid of losing their culture and identity and their territories which are part of their everyday struggle to find food and key to their subsistence. Subsistence is more than survival it is a way of life, a different development strategy, a spiritual heritage and memory[30]. For the Arctic and non Arctic nations the melting sea ice opens up a series of issues. The Arctic for many scientists is seen as a warning for the external world of the possible consequences of climate change. The Northern circle is impacted by forces outside of its control domain and responsibility like the greenhouse gases and pollutants that come from the south.

The governments' discourses give a mixed perception about the expectations for the region. According to some authors the region is isolated from the global action on climate change. It is deliberately relegated to a mere natural resources

[30] URL: http://www.infomine.com/library/publications/docs/McFarlane2009.pdf p. 42

and fossil fuel reserve role. In fact politically the Arctic regions do not have strong political leverage and tools to influence the decisions that could change their lives, like for instance the mitigation policies. It is somehow clear that the most wide-spread and popular state Arctic discourses are focused on an accessible Arctic. They take this almost as an accomplished fact and are trying to adapt their policies and strategies for the region accordingly. It is clear in this case that the states somehow "exploit" the results of climate change and of their own emissions. In order to further increase the accessibility still more Arctic warming is needed and everything seems to indicate that this trend will continue. Increased accessibility will imply that external forces, which are already dramatically changing the Arctic, would influence and impact the Arctic future still more intensively.

The increased Arctic accessibility could be somehow measured through the extension of the sea ice, its volume and its thickness. As can be observed in the graph below the decreasing sea ice seems to be a very well defined trend.

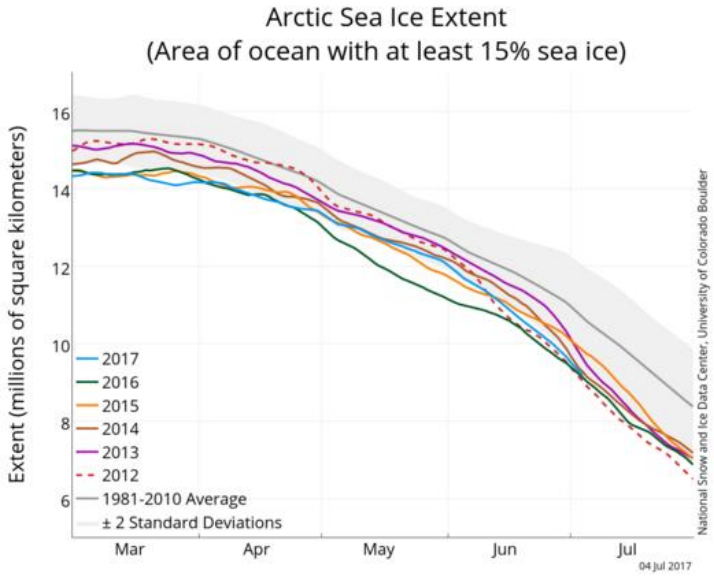

Figure 5: Arctic Sea Ice Extent

Source: National Snow and Ice Data Centre, July 2017

For navigation purposes, the two most important factors are the age and thickness of the sea ice and the summer sea ice extent. Currently nobody predicts

an Arctic ocean free of ice throughout the year so most of the navigation is occurring and expected to increase in summer months.

Sea ice volume is an important climate indicator. It depends on both ice thickness and extent and therefore it is more directly tied to climate forcing than extent alone. However, Arctic sea ice volume cannot currently be observed continuously and it is estimated using models incorporating the observations and through comparisons between models results and observations[31].

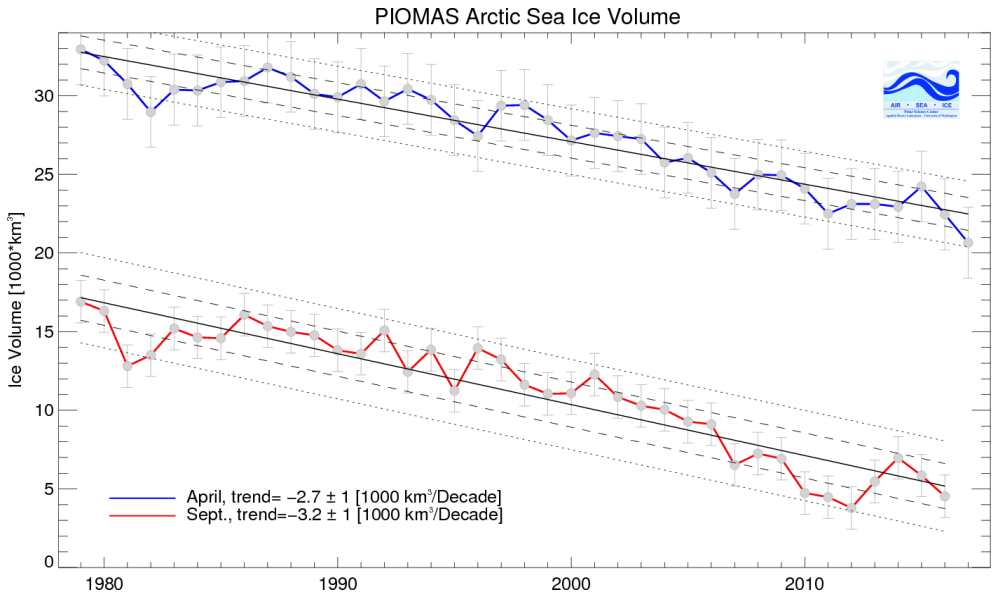

Figure 6: PIOMAS Arctic Sea Ice Volume

Source: Polar Science Center, Applied Physics Laboratory, University of Washington

An increasing Arctic accessibility is creating new governance and security problems for the region. For those reasons it is important to understand how is Russia prepared to deal with these new scenario and what are Russian climate policies and adaptation plans for the Arctic. Is it Russia just focused on the increased Arctic accessibility to exploit its potential economic benefits or it has a more complex approach which takes into account the negative effects of climate change on various aspects of the Arctic eco and socio system? What does increased Arctic accessibility means for the future of the Russian north?

2.4. Russia and climate change

[31] URL: http://psc.apl.uw.edu/research/projects/arctic-sea-ice-volume-anomaly/

> Climate change brings in more favourable conditions and improves the economic potential of this [the Arctic] region," Putin 30th March 2017

Russia has a long history of interplay between the human and the natural world. It is by far the largest country in the world and has some unique ecosystems and one of them is undoubtedly the Russian Arctic and the taiga which is the largest continuous expanse of forest in the world.

Before the first world war and the rapid industrialization of the country, the human impact on the environment was still relatively limited also compared to other more industrialized countries of the epoch. It is after the revolution and especially following the Soviet industrialization and rapid modernization push that the environment became victim of industrial human activity. After the revolution the Soviet Union implemented the New Economic Plan, which was still somehow resembling a capitalist production process. In this period environment was considered relatively important and also Lenin personally recognized this by starting the process of creating a system of 128 natural reserves called "zapovednik" in Russian.[32] Concerning the Arctic region its water resources were also important and especially the preservation of the fish stocks[33]. After Stalin came to power the

[32] Much of the answer begins with Vladimir Ilyich Lenin. In 1919, a young agronomist named Nikolai Podyapolski travelled north from the Volga River delta, where hunting had almost eliminated many species, to Moscow, where he met Lenin. Arriving at the Bolshevik leader's office to seek approval for a new zapovednik, Podyapolski felt "worried," he said, "as before an exam in high school." But Lenin, a long-time enthusiast for hiking and camping, agreed that protecting nature had "urgent value." Two years later, Lenin signed legislation ordering that "significant areas of nature" across the continent be protected. Within three decades, some 30 million acres (equal in area to about 40 states of Rhode Island) from the European peaks of the Caucasus to the Pacific volcanoes of Kamchatka were set aside in a system of 128 reserves. URL: https://www.nytimes.com/2017/08/07/opinion/lenin-environment-siberia.html?mcubz=0

[33] On March 30, 1921, Lenin signed a resolution of the STO (Council on Labour and Defence) to protect the fisheries that had fallen into a kind of anarchy of poaching and overfishing during the civil war. On April 6, the STO "militarized" the fisheries of the Russian Republic, including in the White Sea, to prevent poaching and increase production. Shortly thereafter, Lenin authorized 1.1 million gold rubles to buy equipment to assist in the recovery of fisheries through the Glavryba and in May signed another proclamation – in essence a declaration of the extent of the territorial waters to protect them and coastal fisheries (Josephson, 2014, p. 9).

situation changed and in the forties he started to change the natural environment and reduced the protected areas by about 89% to only 40[34].

However, the most radical change was the relationship towards the environment that has changed especially in the Stalin period and after it. As Josephson points out Soviet leaders sought to industrialize production across the Arctic Circle and they invested huge resources in building smelters, mills and mines. To identify and reach the resources they used airplanes and icebreakers which had also a big symbolical effect of demonstrating state power. He writes:

> "The Stalinist revolution had a long-lasting impact on the Arctic as a physical space, as a region to be fully incorporated within state economic and military programs, and as an ideological construct. This was to be expected given that central policy makers pushed rapid industrialization and collectivization into polar regions as well. They viewed the north both as a border to be secured and a source of rich natural and mineral resources that must be tamed in short order. They considered the north to be nearly devoid of people, abandoning earlier Soviet notions about the need to protect the cultures of nomads, seeing them as backward and in need of modernization: they were something like polar peasants who, like those in agricultural regions, had to be coerced to participate in the five-year plans" (Josephson, 2014, p. 65).

In trying to achieve those results they underestimated the human and environmental costs of industrialization and collectivization. As Jospehson clearly points out the combination of unrelenting pressure to tame nature for its contribution to the national economy, the primacy of the five-year plan for increasing production, and the shortage of capital to pursue more modern, efficient production processes contributed to the significant environmental costs of Arctic

[34] URL: https://www.nytimes.com/2017/08/07/opinion/lenin-environment-siberia.html?mcubz=0

development (Josephson, 2014, pp. 266-287). The Soviet Union policy left Russia with serious environmental problems since the environment was not protected. The Soviet environmental goals were more an objective to achieve rather than a standard to which to hold industry. The same ministries that were responsible for promoting industrial development were also responsible for pollution. Obviously the utilitarian view prevailed and the production targets were the absolute priority while the protection of the environment and pollution were quite low on the list of priorities (Rowe, 2013, pp. 30-31).

In the following years the situation improved and the environmental issues became more important, however, they are still subjugated to other state and private interests.

Considering this background it is not surprising that the current Russian state is not the leader in climate change debate and international negotiations. Another reason is of course that Russia is the biggest fossil fuel producer in the world. According to a recent survey conducted in Russia almost 40% of Russians do not believe to climate change, and they said that it is an invention, while 55% think that it would have negative effects for the state. The percentage of people who think that it will have a positive effect for Russia rose from 18% in 2007 to 27% today[35]. It is clear that the front of climate sceptics is quite large not even considering what people think about anthropogenic climate change. Russia's new climate doctrine lists the anticipated benefits of climate change, including a decline in the energy needed for heating, easier access to Arctic seas, and increased productivity in agriculture and boreal forest growth[36]. Russia for instance, has recently risen as one of the biggest wheat exporters in the world surpassing even the US in 2017 with a 18% market share[37].

Russia became an important player in climate negotiations in the period of its ratification of the Kyoto protocol, which was the deciding factor that allowed the agreement to enter in force. However, thinking that this was done due to Russian climate concerns would be a mistake. Russia had a detailed political agenda behind

[35] URL: https://ria.ru/society/20170724/1499019838.html

[36] URL: http://en.kremlin.ru/supplement/4822/print

[37] URL: https://www.bloomberg.com/news/articles/2017-11-13/how-an-oil-giant-russia-came-to-dominate-wheat-quicktake-q-a

this decision. First it wanted to improve its international image, second the ratification was on purpose uncertain until the end to negotiate the best deal. In exchange for the ratification, it received the European backing for its accession to the WTO and also mechanisms favourable to its position included in the agreement like the Joint Implementation (JI) projects and sale of emissions surpluses. By selling its emissions Russia could have received up to $2bln while it had also big opportunities in the JI projects. However, due to bad implementation and fears of corruption this was not achieved. In addition, the Russian Climate Doctrine lacks concrete measures on how to reduce emissions and on the policy that need to be implemented[38]. For the Soviet Union international environmental accords were an opportunity to expand positive relations with the West. As Wilson points out in the case of the Long-Range Trans-boundary Air Pollution to address the acid rain problem the Soviet participation was motivated by high politics rather than by the wish to address the acid rain problem. In addition, she writes that Russia quickly came to see domestic pollution as an asset rather than a problem, particularly if it affected more wealthy neighbours. And subjected prospective funders to "environmental blackmail" (Rowe, 2013, p. 32). Russia's ratification of the Kyoto protocol was a political and economical decision.

It is important to stress the fact that Russia after the collapse of the Soviet Union experienced a strong decline of emissions. They declined by about 46% from 1990 to 2015 which is the base to calculate Russian emissions reduction considering also LULUCF[39] as can be seen from the data below.

[38] URL: http://rusecounion.ru/ang_klimat_22514

[39] Land Use, Land Use Change and Forestry

Summary of GHG Emissions for Russian Federation

Base year (Convention) = 1990

	Emissions, in kt CO2 equivalent		
	Base year	2000	Last Inventory Year (2015)
CO2 emissions without LULUCF	2,589,895.6	1,504,292.5	1,670,650.4
CO2 net emissions/removals by LULUCF	130,565.8	-388,092.4	-555,713.0
CO2 net emissions/removals with LULUCF	2,720,461.4	1,116,200.1	1,114,937.4
GHG emissions without LULUCF	3,767,550.5	2,273,083.3	2,650,953.7
GHG net emissions/removals by LULUCF	162,205.4	-354,051.6	-518,491.4
GHG net emissions/removals with LULUCF	3,929,755.9	1,919,031.7	2,132,462.3
Indirect CO2	NE,NA,NO	NE,NA,NO	NO,NE,NA

	Changes in emissions, in percent		
	From Base year to 2000	From 2000 to Last Inventory Year (2015)	From Base year to Last Inventory Year (2015)
CO2 emissions without LULUCF	-41.92%	11.06%	-35.49%
CO2 net emissions/removals by LULUCF	-397.24%	43.19%	-525.62%
CO2 net emissions/removals with LULUCF	-58.97%	-0.11%	-59.02%
GHG emissions without LULUCF	-39.67%	16.62%	-29.64%
GHG net emissions/removals by LULUCF	-318.27%	46.45%	-419.65%
GHG net emissions/removals with LULUCF	-51.17%	11.12%	-45.74%

Figure 7: Summary of GHG Emissions for the Russian Federation

Source: www.climateactiontracker

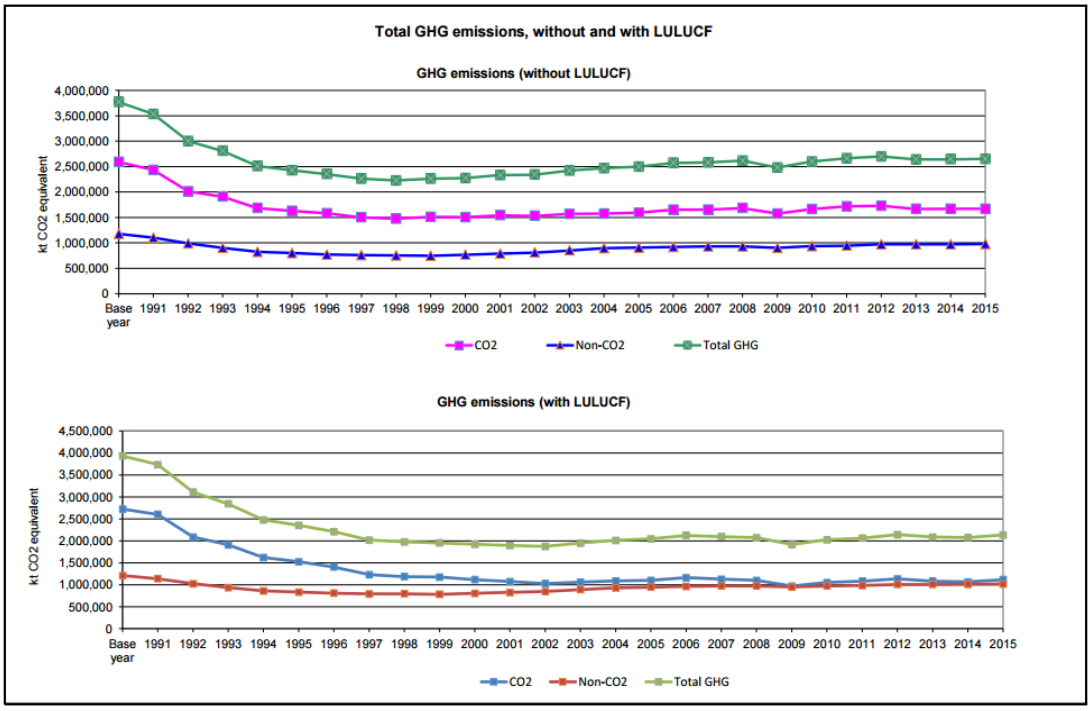

Figure 8: Total GHG emissions, without and with LULUCF

Source: climateactiontracker.org

It is clear that Russian pledges to reduce the emissions by about 15-25% until 2020 and 25-30% until 2030 could be easily achieved even with an emissions growth of about 15%. In addition, the state has still not ratified the Paris agreement showing how easily can Russian policies shift on this issue. It is important to remind the president speech in Paris which acknowledged climate change as a serious

problem for humanity, however, after the agreement the position has changed to the historically more sceptical positions. Climate tracker depicts very well the Russian insufficient contribution:

> "Russia's INDC emissions reduction target not only lies significantly above the emissions levels projected under current policies but also is one of the weakest put forward by any government. Russia's emissions targets are, according to our analysis, "inadequate" under all interpretations of a "fair" contribution to global mitigation efforts"[40].

After the ratification of the Kyoto protocol Russian climate policy started to link the mitigation efforts to the modernization and energy efficiency plans. The Russian government started to see the climate change issue as an opportunity to link it to other issues in order to modernize the economy which is too dependent on the export of natural resources. Doing this, it would also have the possibility to maintain the competitiveness of its economy, to free more resources for export and lower budget expenditures for energy[41]. As Henry and Sundstorm clearly point out the implementation of international agreements is more likely to result when executive leaders see an opportunity to advantageously link domestic and international challenges to further compel other actors to advance their agendas. Russian governments attention to climate change has been the policy priorities of the president himself, shaped partly by the close advisors he consults, and the ability to use international climate negotiations to reinforce his domestic agenda. This relationship also would imply that Russia's climate policy, if not well-institutionalised, is vulnerable to changing presidential agendas in the future (Henry, Sundstrom, 2012, p. 23). This happened after 2012 and the re-election of Vladimir Putin a long known climate sceptic.

During the period of Kyoto in Russia, following Wilson analysis, there were three climate framing (Wilson, 2013, p. 42).

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40 URL: http://climateactiontracker.org/countries/russianfederation.html

41 URL: http://www.ifc.org/wps/wcm/connect/de1e58804aababd79797d79e0dc67fc6/IFC+EE+in+Russia+Untapped+Potential.pdf?MOD=AJPERES p. 8

Frame	Causality	Agency	Responsibility
International	Greenhouse effect, anthropogenic	Governmental efforts to reduce emissions (Kyoto Protocol)	All developed countries
Cyclical	Natural cycles (solar, orbit)	Climate change cannot be stopped. Adaptation to modest, gradual changes needed.	Governments when it comes to adaptation.
Causal Agnosticism	Both, with greater emphasis on:		
➢ 2000–2004	cyclical nature of climate	Experts providing clearer assessment	US needs to ratify
➢ 2005–2007	greenhouse effect	reducing emissions should help	All major emitters (developing and developed alike)

Table 2: Different framing of the climate change issue in Russia

Source: Wilson, 2012, p. 42

The first was the international frame (being based on the international science and IPCC and necessitating governments' action to reduce the emissions); the cyclical frame, highlighting natural cycles and promoting the view that climate change can not be stopped and that some adaptation is needed and the third frame, called the Casual Agnosticism. This one emphasized both the anthropogenic causes and cyclical ones, with more focus on the last. According to it more knowledge is needed and reducing emission could be useful.

After the Kyoto protocol the second and third frame were dominating, especially the last one. It is still used today in Russian articles and newspapers and it is also the official position of the Russian government (Wilson, 2013, pp. 42-46).

In general, in Russia an open public climate change debate is absent and most of the articles on this topic follow the official positions. The official position, however, is changing. If during the Paris Conference the Russian President expressed concerns and support for climate action, later he spoke about volcano eruptions as a cause of climate change and natural cycles of the earth, clearly denying the anthropogenic factor[42].

[42] "It's about preventing temperature changes of 2 degrees," Putin said, adding that those at the forum "somehow do not yet feel that the temperature is rising. By the way, we should be grateful to President Trump. In Moscow, it's raining and cold and even, they say, some snow. Now, we could blame this all on American imperialism, that it's all their fault, but we won't." URL: http://www.businessinsider.com/putin-megyn-kelly-climate-change-election-hacking-2017-6?IR=T

Renewable energy development in Russia is very slow. The installed wind capacity in Russia in the middle of 2016 amounted to 11 MW all of which were built before the year 2013[43]. Solar installed capacity is of about 130MW and about another 400MW in Crimea. This is nothing compared to the rest of the world.

Renewable energy share is less than 5% in the energy mix of the country although the potential for development is very huge. Russia has also a higher energy intensity compared to other countries although it has been declining by about 3,4% every year, however, it is still much higher compared to other states and almost three times higher compared to the EU[44].

In conclusion, it is clear that climate change and mitigation is not a priority of the Russian Federation. Their position in climate change negotiations is dictated by the strong decline in emissions after the collapse of the USSR and the uptake of the boreal forests. Russia finds itself in a favourable condition that it could rise the emissions in the future while and at the same time reaching its emissions reduction targets.

Among the Russian scientists, there are many who do not support the international consensus on human induced climate change and the debate is mainly dictated by the state media and officials position on this topic. This is already well described by president's comments. In the medium-long term international climate change mitigation efforts will undoubtedly reduce the demand for Russian fossil fuels and the state will have to adapt. Adopting renewable energy would be also helpful to develop advanced and future technologies, which would not depend on the mere extraction and possession of resources. Russia is a huge natural resources exporter and its climate policy clearly reflect this. This is also shaping in large part the policy towards the Arctic region, where climate action is not among the priorities.

"Climate change brings in more favourable conditions and improves the economic potential of this [the Arctic] region," he said, during a panel interview with CNBC. "It [climate change] may be related to some global cycles or some greater outer space cycles. It's about how to adjust ourselves to it. The local communities will get adjusted." URL: http://www.iflscience.com/environment/climate-change-is-real-but-good-says-putin-because-were-all-doomed-anyway/

[43] URL: http://library.fes.de/pdf-files/bueros/moskau/13474.pdf p.7

[44] URL: http://www.zelenaenergija.org/blobs/9f077a8f-1386-4968-a72f-413249633a83.pdf

Chapter 3. Conceptualizing the Arctic: geopolitics and the Russian State in the Arctic

The geographical knowledge has been serving intentionally or unintentionally for many centuries the interests and visions of the powerful states and its decision makers. In every definition there is a certain amount of political and subjective decision and this is also the case in defining the Arctic region. Each definition prioritizes certain cultural beliefs, interests and political ideas and agendas. As Minca and Bialasiewicz point out "*All forms of geographical knowledge, geographical narrations and descriptions and representations of space are forms of specifying the political reality which have a political effect"* (Minca, Bialasiewicz, 2004, p. 69). Because most of the thesis will be focused on the Russian Federation (on a state entity) and the Russian Arctic region it is important to understand the meaning and the consequences of such a choice and approach and of those concepts.

Against this background, this chapter aims to introduce some concepts that belong to the "critical geopolitics" perspective (Dear, 1988; Dodds, 2007; O' Tuathail 2006; Painter, 1995). Even though the central part of my thesis (Part II) is focusing on the main uses of the Arctic, and how they are evolving, I believe that the "critical approach" helps to understand how the Arctic is represented and contextualized in the Russian vision and strategy; it helps therefore to clarify how the Russian Government's strategy and action contribute to the consolidation and spreading of a *given* vision of the Arctic, its main problems and prospects for future development, also with respect to Climate Change. In few words, the "critical approach" helps to make explicit what is "given for granted" in Russian discourses on the Arctic.

From this perspective, in section 3.1 I will consider some geographical concepts that help to contextualize the importance that the Arctic plays in the Russian national rhetoric.

Section 3.2 briefly summarizes the "centre-periphery" approach and links it to the Arctic situation; in fact, this approach can contribute to clarify the past and

recent evolution of the Arctic space; in this respect it is important to remind that this approach has been developed having implicitly the concept of the nation-state as the main term of reference; however, even today, when the importance of global/local dynamics are more and more important in the restructuring of the geographical space, this approach can contribute to understand the most critical problems the Arctic region is experiencing.

Section 3.3 aims to justify the rational for adopting a "state-centred" perspective to the Russian Arctic; in fact, while today much emphasis is placed upon the need for considering multi-level perspectives to environmental governance for the Arctic (e.g. the importance of considering the native people's view), the focus of my thesis remains the Russian State (or the National government level). This choice reflects, on one side, the importance that the Arctic has always played, and still plays, in the National Government strategy. As a consequence, it simply acknowledges that, according to the political conditions Russia is experiencing today, the State's voice is by far the most important and the dominant one in the debate about the present and future of the Arctic region. On the other side, the focus on the State is justified by the importance that national governments have, both from a theoretical as well as from a factual point of view in designing how climate change is perceived, conceptualized and addressed in the national agenda (Giddens, 2009)[45].

Sections 3.4 and 3.5 clarify the importance that the Arctic plays in the Russian discourses. Here, the concepts of the "frontier" and of "internal colonization" are considered in order to contextualize the Arctic within the Russia's national rhetoric.

Finally, section 3.6 considers the so-called "Cold War geopolitical trap"; in particular, attention is paid to the fact that this trap has continued to play an important role in the recent evolution of Post-Soviet's Russia. In this perspective, the Ukrainian and Syria crisis are contributing to make this trap even more actual and relevant.

[45] It goes nearby without saying that international environmental policy and environmental diplomacy continue to see the State as the key-actor in climate governance, as Kyoto and Paris Conferences confirm. This does not mean to underestimate the role that non-state actors can play in the debate on how copying with CC. However, particularly in the Russian case, the national level remains of basic importance.

3.1. Introduction: Geography, power and the construction of meaning

Being also a complex system of meanings, approaches and academic and popular practices aiming at representing and socially and culturally constructing the Earth, geography contributes to determine our relationship towards geographical space, which therefore becomes an ordered geographical domain (Minca and Bialasiewicz, 2004).

Usually geography uses a cartographic language of the world which is pushing us to imagine it as a space of boxes (regions, states, continents…). It makes us think that those are the results of spontaneous and natural processes of anthropization, while they are the results of complex cultural and political processes, which are very often "given for granted" (Farinelli, 1992). The most important example of this attitude and political process of construction of meaning is given by European colonialism, when many conquered territories underwent a (cultural and linguistic) (re)denomination process (translated into new cartographic terms), which was in itself a formidable tool of domination, actually the most important and performative one (Said, 1978 and 1993)[46]. Denominating and designating through the cartographic process corresponds to giving a meaning internal to the logic of the map and of the cultural system that has produced it. This meaning monopolizes the definition process and does not leave space to alternative interpretations and politics. However, this geometrical reduction of space does not impede to give opinions and to build projects on the basis of information that is the direct result of this abstraction.

This perspective has a series of consequences. One of them is the idea that individuals should necessarily belong to some kind of territorial box or entity and that all parts of the planet should be somehow included in a state entity (Agnew and Muscarà, 2012; Dell'Agnese, 2005). This geography undoubtedly established the

[46] The work of Said has played a key role in the definition of what "Orient" is and what it means; however, Said's approach has become over time the cultural paradigm for interpreting not only the concept of "Orient" but also the wider cultural, social and political process of definition of what "identity" and "otherness" are. On the role of geography and mapping in constructing the way Western societies have represented the "otherness", from the semiotic point of view, see also Vallega, 2003.

state as the fundamental spatial reference of our collocation in the world. It is the natural box in which everybody should be measured, counted, classified and even expelled. Most of the literature assumes statehood as given without discussing its defining elements and the fact that they are socially constructed and contested. This "state territorial trap" – that is, the idea that the world is naturally divided in states and the inter-national system has the state as its natural term of reference – is based on three distinct and related constructed assumptions: 1) the modern state requires clearly bounded territorial spaces; 2) a clear distinction between the inside and the outside which implies a fundamental opposition between domestic and foreign; 3) the territorial state is the geographic container of modern society (Paasi, 2003).

In addition, as Minca and Bialasiewicz pointed out (Minca, Bialasiewicz, 2004), the geography that coincides with the cartographic conception of modern knowledge, contrary to what is often believed, needs the presence/absence of other possible geographies to exist. Compared to those other possible geographies the cartographic geography imposes its order. The geographical space and its representations provide to politics an internal logic in which the material/discourse sphere and the thinking/action sphere are confused. They also allow to justify a continuous work of normalization, of putting things and people in order. On one side they show the efficacy of the material side (when the game is functioning) on the other side they build a space of imperfection, of exception in which the order (of the paper) has not yet arrived but has necessarily to arrive[47].

Implication for the construction of an Arctic geography. It appears clear that the logic towards the Arctic and the delimitation of its borders, also outside the states' exclusive economic zone, follows this geographical reasoning. The Arctic is clearly a space where the cartographic knowledge and approach is dominating and where it produces a series of specific discourses and plans for the region. The non-

[47] To represent the space/area to be conquered (think, for instance, the concept of frontier in geography and in other social sciences) as a space of anarchy or chaos, is the precondition for legitimization of an ordering-process, driven by the State and its powers, which very often tend to hide the political and economic dimensions at stake. For a general analysis of how the definition of the "otherness" as a chaotic or non-ordered space is a key pre-condition for the State-driven cultural and economic process of material expansion, see Borghi, Soriani, 2006.

Arctic world has been conquering the polar region through this knowledge. It is also competing with the indigenous people traditional geography, culture and traditions. The indigenous peoples movements and organizations, supporting traditional community and cultural identities, environmental values, and people's rights to land and traditional territories, struggle to affect legislation and the forms of governance that have been established by the hegemonic groups (Paasi, 2003). According to Dell'Agnese, "official" geography is defined as a science of modernity, which can establish a new space-temporary structure measurable in metric form. For this reason, such a structure is easier to control in political and economic terms than the practical spaces of religion or indigenous traditions. In this way official geography can impose itself over all others forms of spatial knowledge, thus becoming the natural and given for granted way of approaching the complex geography of spaces and regions.

The qualitative spaces of everyday life are included in a rigid social, economic and political geographical representation that can totally cancel the meaning of the popular geography. This new geography brings new instruments for widening the distance between the dominating and the subaltern discourses, with the latter that lose role and legitimacy (Dell'Agnese, 2006). It is in such a context that one can properly understand the greater and greater emphasis placed upon the contribution of indigenous people in the contemporary debate on environmental governance in the Arctic. In the same way, one can properly understand the important role that the Arctic Council is placing to the need for a greater and more effective involvement of indigenous people in decisions regarding the Arctic governance [48]. However, even if the role of local communities and knowledge is increasingly considered as relevant, the debate on the Arctic still remains based on a "State-centred" and "modern" (from the cartographic and geographical point of view) perspective. The great amount of literature on state centred practices and inter-sate

[48] Against this background, one can properly understand the wider and wider floor given to the indigenous view in international conferences and meeting on Arctic problems and opportunities (see, for instance, the list of panels in The Arctic Science Summit Week 2017 (Prague, 31 March – 7 April); or the important role played by indigenous groups in the activity of the Sustainable Development Working Groups of the Arctic Council.

relations in the Arctic confirms the view that the circumpolar north is being subjugated to the official geography of the state.

The above consideration is particularly important for the Russian Arctic. Here, the "state-centred" perspective is still dominating, and other and/or alternative approaches/logics - less state-centred -, which are emerging in other geographical contexts, are almost absent and therefore difficult to consider for the purposes of this work. The dominant geopolitical order seems not to be challenged by new actors and in the Russian Arctic discourses and imaginary, the importance of Arctic territories and resources is almost exclusively linked to notions of national security and state sovereignty.

This, as Keil and Knecht clearly point out (2017), restrains our understanding of what is to be governed (the prevalence of security issues), who governs (mainly the Arctic coastal states) and in which formats governance takes place (restricted clubs like the Arctic Council).

3.2. The "centre/periphery" interpretation framework, and the role of today's global dynamics in the Arctic

In the Arctic context the global-local interaction is having a critical role for the present and future state and development of the northern territories. This section aims at extending the reasoning to some areas that are shaping and defining the ongoing exchanges and tensions between the regional and global dimensions and show that the Arctic coast is the central geography in those transformations.

Before a short analysis of some main global forces, which are shaping the Arctic, it would be useful to address the concept of center/periphery for the Arctic first. The concept was introduced already at the beginning of the 20th century and it was revisited in geographical terms by Alan Reynaud in 1981. If the Arctic could be defined as the periphery of the adjacent states, of non-Arctic countries and more recently, of the global economy, this would undoubtedly improve the interpretation and understanding of the Arctic local/global interactions.

In order to accept this interpretation, there should be dis-symmetrical relationships between the two types of places: in this case the Arctic coastal zones and the states they belong to or the international corporations and investments. According to Reynaud:

> "The centre is central precisely because it benefits from this inequality and, in turn, the periphery is characterised by a deficit which maintains its dominated position. The hereby described system is auto-regulated: the centre reproduces conditions for its centrality and the periphery does the reverse. It is thus a pleonasm to talk about a "dominated periphery". However, precisely because it is based on a logic of (unequal) exchange, the system is dynamic"[49].

Looking to the development of the Russian Arctic for instance, this relationship is very strong since the Arctic territories were almost always considered from the centre's interests perspective. In the Soviet times, especially during the Stalin's era, the Arctic was considered metaphorically almost as terra nullius where the real Soviet sovereignty has to be established. It has opened a way to a long series of expeditions and personal heroic acts in order to bring the Arctic closer to the centre. The local people have been forced to embrace an imposed way of live and even the herding was pushed towards the 5 years development plans in order to feed the Soviet people (Josephson, 2014). The Arctic peripheries have been clearly under the domination of the centre.

However, according to Reynaud, the element of domination is not enough to speak about centre/periphery. There should be also other functioning elements in order to create such a relationship. Among the recent developments in the polar region especially the big natural resources extraction projects fit very well into this definition. The places were those activities are located could be defined as integrated and annexed peripheries, which Reynaud called "associated". In this relationship the fluxes are very intense with the centre while the local people are

[49] URL: http://www.hypergeo.eu/spip.php?article186

almost or entirely excluded from the endeavour. This could be the case, for instance, also for many so called "*monogorod*" cities in Russia, where an industry, usually an extractive one, was built from scratch using workforce and capital from the centre and fulfilling the needs of the centre. Most of such activities have been developed mainly on the Arctic coast which is also the fishing and living territory of many Arctic communities.

The associated peripheries follow the centre's rules. The centre relocates some activities there because of geographical reasons or other needs. According to Reynaud the socio-spatial relations are characterized by fluxes: a) of people: people from the center, partially they are specialists and educated workforce, go to work to the north and local people migrate to the center to get better possibilities or for education b) financial: the capital usually goes form the periphery to the center but in this case the center invests into the periphery to extract the resources and secure the profits c) of goods: in this case natural resources are exported to the center, however recently also standardized goods are imported to the Arctic d) of information: political directives go from the center to the periphery, but also cultural trends, technology, ways of life and ideologies[50]. Following the above analysis, it could be accepted that there is a strong center/periphery relation in many parts of the Arctic.

The role of global forces, today. Energy and resources. One of the most discussed and impacting activities in the Arctic region is undoubtedly the extraction of natural resources. Most of the past, especially Arctic Soviet development, was based on this logic and the Russian Federation is continuing this policy. The strategic documents for the region are still envisioning the same development paradigm based on the extraction of the northern natural resources.

The Arctic oil or gas projects usually involve huge investments, for example the ongoing construction of the Yamal LNG liquefaction facility would cost at least 27bln dollars, they are decided in the center and support the center/periphery order. At first the resources are found and confirmed, than the giant companies

[50] Based on a similar analysis made for the Maldives URL: http://revistes.ub.edu/index.php/ScriptaNova/article/view/15034/18387

decide the economics of their extraction, eventually an investment decision is done, and the project finally gets the green light, usually with massive state support.

Every such project, independently of the country where it takes place, is often unsustainable for the region and the local people in particular because of its scale. Many kilometres of the coast start serving the industry purposes and the resources are exported to the global markets.

Usually the bigger the project is, the better are its economics, especially because of the economies of scale. Such projects could completely change the geography of the region. They create highly protected or even closed coastal zones where the expensive infrastructure is built and maintained. This often resembles closed islands, which communicate almost exclusively with the center in political, practical and economic terms. They create a very well integrated periphery with the center, limited to the extraction facility and its workers, whereas there is a second periphery of the excluded local people left. This surrounding periphery could become a dead corner, however, the government, in order to avoid this, transfers some resources there creating, according to Reynaud, the exploited and assisted peripheries. This process could destroy the subsistence economies of indigenous people, since many times they lose their land on which they rely for food and living, and make them almost completely dependent on the centre's transferred resources.

It is important to highlight that, today the ultimate driving force behind those transformations is not the Russian state or any other Arctic country but the global market, which sustains the demand for the extracted resources. It is in this context that the global dimension can foster such often negative and radical transformations of the Arctic environment but also limit them.

Recently the rapid development of renewable energy and the electrification of the transportation sector, along with greenhouse gases mitigation efforts, could reduce the demand for fossil fuels. This could put an end to the logic of the huge Arctic projects, at least in the oil and gas sector (this element will be discussed in Chapter 5).

Cruising. Another activity, which could further strengthen the centre/periphery relation, if not developed properly, is undoubtedly tourism. If Arctic tourism develops in the direction of offering a relaxation and leisure opportunity for the richer non-Arctic people, the local people traditional geography would again be under pressure. With a massive inflow of huge cruise ships the indigenous people could not oppose to a strong wind of transformation. On one hand we have the cruise passengers claiming the Arctic panoramas for their cameras and their enjoyment. Clearly in this case the Arctic becomes a leisure periphery for the wealthy people of the centre. The ships are sent there by international cruise companies searching for new offers and adventures for their customers. The only serious limitations for them are the sea ice conditions and the stricter Arctic maritime navigation code. The local people, on the other hand, are forced somehow to accept thousands of foreigners on a single day if a port call is made in a small Arctic village. They would possibly show tourists their traditional way of life and earn some money. Clearly there is a possibility that the resort tourism will be developed in the Arctic too.

This will only strengthen the Arctic dominated position. The economics of the resorts would depend exclusively on the center from where the investments and customers would come from. The above arguments indicate that a new way of tourism should be considered, which would be highly regulated with a throughout involvement of local people. This could possibly make Arctic tourism more sustainable.

Trans-arctic shipping. A third important global activity which could strengthen the centre/periphery interpretation paradigm is trans-arctic shipping. In the last couple of years the transits between Asia and Europe through the NSR[51] along the Russian cost have been declining. However, there are concrete possibilities that with the receding sea ice the trans-arctic transits will become more frequent in the future. This would require a strengthening of the infrastructure, new ports, enhanced military security and increased investments especially on the coast. Also

[51] Northern Sea Route

in this case the Arctic periphery is completely dependent on events that are not in its own domain of decision making. The impact of massive Arctic shipping on the people and Arctic coastal zones could be profound. The question is not the quality of those transformations, if they are positive or negative, but the fact that they are all decided on the dominating global level. The local level has to accept and possibly adapt to them trying to minimize the impacts.

The Arctic as a "climate periphery". A last consideration could be done regarding climate change. In the past the Arctic was strongly affected by pollution coming to the north from the southern longitudes especially from the US and Europe and from China in the last couple of decades. This problem has been recently partially addressed and many pollutants prohibited. Furthermore it is in the Arctic that we have some of the first modern so-called climate refugees as has been already mentioned in the introduction.

In this case it would be inappropriate to speak about centre/periphery since this is a global problem and even a modern city like Miami or Dhaka for instance would face the same reality as Kivalina although probably delayed by some decays. However, there is a distinction that should be done. The Arctic people are not responsible for the rapid increase in greenhouse gases emissions of the last 150 years and they do not enjoy the living standards of the most polluting regions in the world. In this context, the Arctic could be seen as a climate periphery.

In conclusion, after a brief analysis, it appears that Reynaud's central/periphery conceptual framework can even today contribute to a better understanding of the Arctic processes.

All of the above mentioned activities like the extraction of natural resources, Arctic tourism and trans-arctic shipping would have the Arctic coast as their main geography. It is dominated from the centre and it is subjugated to a dis-symmetrical relationship satisfying mainly the needs of the centre. Arctic tourism and especially the resort model, if it would be implemented, could further foster the periphery connotation of some places on the Arctic coast. Trans-arctic shipping could be one of the main drivers of transformation in the near future. It seems, on the other hand, that the same global forces that sustain the unequal fluxes between the

Arctic and the centre could also play an opposite role. For a long time, especially at the end of the previous decade, the Arctic natural resources, in particular oil and gas, were seen as the most valuable future resource for the center. However, in the last couple of years the world has seen a rapid transformation in the energy sector which could make the Arctic less of an energy periphery. Only by breaking this centre/periphery relation could the Arctic region really embrace the sustainable path of development where the local people could decide the future of their coast, villages and sea. Climate change and also other forms of development could change the centre/periphery relations. However, a lot depends on how local people and their rights will be considered and who, how and where will the decisions be taken. Good adaptation to climate change, for instance would require a bottom-up approach where locally affected populations cooperate and unite their forces with the centre in order to mitigate the negative effects on their life. This could radically change the centre/periphery relations.

3.3. The rationale for a "state-centred" approach to the Russian Arctic

According to the previous section, the thesis would not consider other forms of geography like the indigenous people geography, the NGO's and other stakeholders but it would focus on the state centered geography instead.

Although other approaches, less state centered would be desirable, in the Russian case, where the state importance is growing and there is a consolidated centralisation of political and economic power, this would not lead to substantial results. The Russian resource frontier imaginary, the shipping development expectations and rising state security concerns reinforce the role of the state actor.

In other countries, especially in the European Arctic, there is an ongoing shift in practice and narrative towards more sustainable, decentralized and inclusive forms of governance; in Russia, however, this "paradigm shift" is not taking place at the same pace. This a very important element when considering the evolution of the Arctic governance, because Russia can be considered, from many different perspectives, to be the most important and influential Arctic actor.

A strong signal of the state-centered geopolitics was also undoubtedly the symbolic planting of the Russian flag on the sea bed at the North Pole in 2008. The deep-water submarine expedition strongly reflects the logic and the culture that has produced it.

The state, in this case the Russian Federation, wanted to impose its own meaning and interpretation of this space. The flag could be even somehow seen as violating the meaning and the symbolism of the North Pole which has been established especially after the Cold War. This move clearly gave to the competitive state rhetoric a boost in the Arctic after a period of increased international cooperation and the emergence of new non-state players in the region. What appears almost to be a normal development, is in reality a clear and well established political agenda.

Keil and Knecht argue that the dominant geopolitical order is increasingly challenged by new actors joining the Arctic community, leading to diffusion of a plurality of interests, ideas and ideals. They characterise this shift under the Global Arctic paradigm, which according to them has three main characteristics:

> "1) the sources and effects of a variety of problems and challenges in the Arctic are much more diverse and complex through the still largely under-researched interdependencies between processes and systems within and outside the Arctic Circle
> 2) governance of these Arctic-global linkages is decentralised and takes place in a variety of political forums from the local and subregional to the national, circumpolar and international level at which the Arctic states do not necessary dominate political controversies
> 3) connected to this, political agency is internationalised and involves a larger set of state and non-state actors with access to those political venues or other means of exerting influence, including the ability to frame Arctic imaginaries." (Keil. Kneth, 2017, p. 11)

So, if we agree on that, why does it make sense to continue focusing on a state-centred perspective to Arctic affairs? Among others[52], the main reason is that,

[52] The Arctic remains a very complex and difficult environment where to operate: this means that the state is still the actor that can best coordinate the technological, economic and financial actions needed to capitalize on its resources; secondly, the Arctic is still the arena for sovereignty issues: this means that the state is the most important player in this regard; thirdly, climate

in the Russian case, it is rare that the state does not dominate political controversies in international forums at the circumpolar and international level. Moreover, due to the limited press freedom, the state control or state affiliation of the majority of Russian environmental groups and research institutions, the capacity to frame alternative and non-state Arctic imaginaries is very limited, while the internationalisation of the political agency is limited. Moreover, as I will argue in Chapter 6, one of the most important consequence of Syria and Ukraine's crisis is the increasing distrust between Russia, Western Countries and NATO: in such a situation, as in many other periods of international tensions, the role of States tend to regain importance. And this is particularly true for Russia, which feels its national and international ambitions threatened by the international community. In particular, the recent distrust in Russia-NATO relations can have many spillover effects: without no doubt, one of this can be the re-emerging of a "confrontation" perspective in the Arctic (a political space, it must be reminded, so far characterized by cooperation), which inevitably put more emphasis on the role of the State, as key actor.

Of course, the climate change agenda is mainly shaped outside the Arctic and by many non-state actors, however, the signature and the final ratification of the Paris agreement is a state decision. The climate change debate and negotiations, especially in Russia, are almost completely dominated by the central state. In Moscow, the state and especially the presidential administration, have the major authority and power to frame the Russian climate change agenda. In addition, the UNFCC negotiations traditionally take place among the states and in Russia the negotiation strategies and decisions depend almost exclusively on the Kremlin.

In Western countries a more influential role is played by the public opinion, by the NGOs and other institutions, so that decisions are less state-centered compared to Russia, where there is also a more autocratic political system in place. This has a series of important repercussions on the whole Russian Arctic agenda, as it will be discussed later.

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governance is still in its infancy, and despite the increasing emphasis on the role of non-state actors, national government continue to play the key role in environmental diplomacy and its enforcement.

As Slipenchuk points out regarding the indigenous people in the Russian Arctic, the Russian Federation considers the mineral and other natural resources one of the priorities in the development of its northern territories. At the same time, the indigenous communities remain in minority and do not have suitable and available mechanisms to express and realize their interests. While the Russian Constitution and laws protect their rights to territory they are often just declarative and in contradiction among them. The result is that the industry interests are dominating.

This, according to Slipenchuk, shows how persistent is the mentality of conquering the Arctic and its resources, denotes the unwillingness to solve the problems and demonstrates the absence of an adequate knowledge and approach towards the Arctic affairs. The information and education of people in Russia is such, that the majority of them do not see any discrimination towards the northern people. They are still not ready for changes that were initiated in other Arctic countries in the last thirty years in order to try to better include local people in the management and governance of their territories (Slipenchuk, 2013, p. 236).

In many regions, especially where the presence of the extraction industry is stronger, the same companies that extract resources on the indigenous lands have the power to decide their future and the level of support for the local people. The industrial giants are dominating Russian Arctic interests and for this purpose they are supported by the official geography and its discourses, which ultimately reinforce the state actor.

This “resource frontier imaginary”, has largely shaped the Russian Arctic also in Soviet times, when new cities were built and the top priority was rapid Arctic industrialization and economic growth (Josephson, 2013). This Arctic vision excludes different aspects and alternative imaginaries of more sustainable development. In the case of the indigenous people, which are dependent on the big state companies, they could not seek different forms of management of their land and, since they are dependent upon the state, they could not challenge it. It appears, from the analysis done in this thesis, that there are many similarities between the approach towards the native people and towards the environment and climate change.

The vision of the Arctic as a strategic resource base in Russia has a series of consequences also for the sustainability of the region and climate change. As Kristoffersen and Langhelle have noticed (2017), Arctic development today is deeply entrenched in efforts and imaginaries of the prospects of fossil fuel production.

According to them, the Arctic has been in this way deliberately detached from global sustainable development concerns. In fact, they argue that contextualisation and imaginaries not only draw on different interpretations of sustainable development, but also place various sustainability challenges on different spatial scales. Arctic sustainability is defined by how and whether the various actors see the Arctic in the interconnectedness between global, regional, national and local.

Considering mainly the resource frontier imaginary, as Russia is doing, positions the Arctic outside a sustainable development path especially for what concerns climate change. In fact, the Arctic is mainly seen as a region from where to extract the resources, which would further increase the greenhouse gases emissions.

The Arctic in this way is detached from the global mitigation debate and the resources' fate is left completely to the market and future supply and demand dynamics or Russian state strategic interests in the area.

In this way, the region is also excluded from possible future mitigation agreements which could be an opportunity for the Arctic development in the longer run. Let's imagine, for instance, an international agreement to leave the majority of Arctic fossil fuels in the ground in exchange for a transfer of resources to the Arctic with the goal to develop other potential uses in the Circumpolar World.

It is important to remind the fact that according to the IPCC 2013 report (IPCC, Climate change, 2013), about 65% of the carbon budget, in order to keep the temperature below 2°C, has been already used. As Kristofeffersen and Langhelle point out, the Arctic Eight[53] climate policies are largely focused on adaptation in the Arctic, while the context in which mitigation efforts are placed is within their pledges under the UNFCCC and other agreements.

[53] The Arctic Council members: Russia, Usa, Canada, Norway, Denmark, Iceland, Sweden and Finland

Thus, the connection between oil and gas production in the Arctic and climate change has been put out of the Arctic and placed at the global and national level.

This implies that mitigation is tackled at a global level while adaptation is left to the regional/local level. The reason is that consumption of fossil fuels, and thus changes for mitigation largely happens outside the circumpolar territories. Such position unfortunately is ignoring the opportunities to selectively address also the supply chain of fossil fuels in different geographical areas in order to mitigate the greenhouse gases emissions in a more effective way and better protect the polar environment. In the case of the Arctic, the growing access to its oil and gas reserves is still framed as an opportunity and not in terms of the impacts that increased oil and gas production and usage will have on climate change (Kristoffersen, Langhelle, 2017).

The resource frontier imaginary does not always reinforce the state by definition, and probably the opposite can be true. The focus is usually put on the extraction of resources and not on the incorporation of the territory by various international oil and gas companies or state entities.

However, in the Russian case, Arctic operations are mainly left to state companies like Gazprom and Rosneft. The role of the private sector and international companies is restricted for state strategic and political reasons and by the western sanctions imposed due to the Ukrainian conflict and the Russian annexation of Crimea. It is clear that the resource extraction development model has a clear state political agenda behind, as the strategic documents for the Russian Arctic Zone would appear to confirm.

In conclusion, it could be reaffirmed that the state-centered perspective is not greatly challenged by other imaginaries in the case of the Russian Arctic. Therefore, in the Russian Arctic the three main characteristics of the above mentioned paradigm shift, that is more and more nurturing the debate about how to govern the Global Arctic, would appear to lose its “cross border” potential. From this perspective, even the possibility for other (and more local and place-based) discourses on the Arctic to emerge, as a key element for the definition and implementation of novel multi-level and multi-actor approaches in governance appears to be threatened.

For indigenous people, dependent on the state companies, the transcendent nationhood, which transcends not only state boundaries but also state ideals, does not apply. The environmentalist imaginary, which claims that the pristine, unique Arctic space is endangered and therefore should be protected and governed according to an ethic outside the state sovereignty and development prerogatives, is also ignored. Climate change is frequently described as an opportunity for the development of the Russian north. This view clearly ignores the regional problems and the global issues caused by climate change. And ultimately, the resource frontier imaginary, as it has already been discussed, has been also put under the central state "supervision".

3.4. Geopolitical discourses and practices: the role of the Arctic in Russia's national rhetoric

After the Second World War, geopolitics experienced a period of decline because it was largely linked to the Second World War disaster and to the theories of German geopolitical thought. At a certain point, however, it appeared clear that the ideas and geopolitical practices were still very present it the post-war world and that the ideas of Mackinder and other theoreticians have been playing a very important role in interstate relations, throughout the Cold War until today, although under a different name (Doods, 2007).

Modern geopolitics started as a geographical transcription of a series of imperial projections intended to enter in collision and to modify and reorder the magic lines of power, which were defining the aspect and the partition of the world political map. All this was covered in a special "scientific aura" (Minca, Bialasiewicz, 2004, p. 139).

During the British Empire the state geographers and other commentators used a variety of ways of viewing the world in order to set the new world order, which could be defined as a geopolitical vision. A geopolitical vision could not be innocent and it is always a wish portrayed as analysis. People see the world in a certain way because they want to highlight salient dimensions of a new world order they hope is emerging. Every state power produces its own distinct geopolitical

vision of the world and these different geopolitical expressions represent a mixture of geographical knowledge and strategies of the imperialistic powers (Dell'Agnese, 2005; Kearns, 2017).

Klaus Dodds cites the American geographer Nicholas Spykman who wrote that geography is the most fundamental factor in the foreign policy of states because it is the most permanent. While ministers come and go, and even dictators die, mountain ranges instead stand unperturbed. However, Dodds points out how critical geopolitical writers have argued that the world political order is actively constructed through particular modes of geopolitical reasoning. The result is that geographic knowledge is closely bound with power relations (Doods, 2003, p. 119). In the same way, and citing O'Tuathail, Minca and Bialasiewicz conclude that

> "Geopolitics could never be neither in part "objective" or partially "scientific", or legitimate in percentage […] the geopolitical discourse is political from its own conception […] it represents always, without doubt, the expression of a relationship between power and knowledge" (Minca, Bialasiewicz 2004, p. 182).

Following this reasoning, and according to the post-structuralist approach of Focault (Sim, 1999), the geographies of world politics are not a reflection of an objective situation but they are produced culturally and sustained politically through the discourses and representations of the statesmen who create and legitimate them.

The same is true for geographical theories which describe political phenomena. The critical approach to geopolitics is a way of politicizing the geographical knowledge which is produced by intellectuals, institutions and statesmen and to consider the geopolitical discourse as part of politics itself. Every geopolitical representation is just a specific representation of a situation and behind it there is the center and a political elite who has the power to produce representations that support such an view.

The world geography from the point of view of critical geopolitics is always an act of power because it imposes a certain order, a certain identity and certain ways of comprehension. Therefore analysing the various narrations and concepts and

different practices that give a meaning and origin to a geopolitical discourse is possible to understand the way in which they concur to write the maps of the global politics. Geopolitical texts produce systems of relations between space, power and knowledge and a series of practices which designate the actors, the stage and the dramas of world politics in a very (geo)politicized way. From this perspective the geopolitical discourse could be seen as an active production (ideological and strategic) of texts and maps which offer a vision of the world that is taken as obvious and considered as natural. Along the official discourses and texts there are also popular geopolitical practices like the media images and other rhetorical exercises which help the state to strengthen a certain identity and a particular geography (Minca, Bialasiewicz, 2004, pp. 66-76).

The construction of a state itself as a national community, and the process of legitimation of its elites and power networks, is a geopolitical act. This implies the gathering of different and heterogeneous stories in a "common past" which should be seen as coherent, credible, transcending and possibly glorious. The geopolitical imagination therefore represents a project linked to the construction of determined intellectual and political conditions, a project which undergoes a continuous negotiation. It is a never ending process of visual and repetitive projection of a determined spatial order. The important geopolitical discourses of world leaders which are recognized as geopolitics by everyone would not possible without practices and performances which prepare the ground for them in order that they appear credible and are accepted and supported by the public. Performant actions and narratives are therefore strictly linked, and aim to reproduce a given geographical order and to legitimate it. The State, as the most powerful and performant result of the modern organisation of the geographic space, clearly stands central in this complex process.

Without no doubt, it is possible to argue that globalization has dramatically eroded in the last few decades the traditional link between physical territory, collective/national identity and political power: and this has more and more questioned the very meaning and nature of the modern nation-state (McGrew, 2008; Luke, 2003; Martin, 2004; Murray, Overton, 2006). From this perspective, the

recent experience of post-Soviet Russia is a long attempt to reinforce and legitimate that link. And not surprisingly, the Arctic is a basic stage of this attempt.

Implication for the Arctic. The Arctic region has a huge symbolical and identity meaning for the Russian state, which was recently discovered again.

The Russian political elite is using the Arctic to showcase its political and economic achievements and to possibly reclaim a stronger position on the international arena.

Its political goals are clearly the development of Arctic natural resources and the strengthening of the Northern Sea Route and the delimitation of the extended continental shelf in favour of Russia.

The Russian Arctic goals do not differ much from those of other Arctic countries, however, they are pursued through state centred practices and different identity discourses.

The Arctic is also the perfect environment for state propaganda and for the glorification of the Russian national identity and state. State power, national identity, border threats, nuclear technology, shipping opportunities are just some of the state centered geopolitical subjects. It is still largely unclear how will climate change and sustainable development goals shape and change Russian Arctic geopolitics.

Today, as I will demonstrate in Part III, it is possible to argue that these elements are not shaping and changing Russian Arctic geopolitics.

3.5. *Arctic speciality, the "frontier concept" and the process of "internal colonization" in Russia*

It is important to make a consideration about what the Arctic is and how it is presented in literature and what is the approach of the non-polar world towards the northern circle.

In 1978 E. Said published his book Orientalism (Said, 1978) which opened a serious discussion about the relationship between the colonial centres and its

colonies and the West and the Orient. In accordance with the main view for the epoch, he distinguishes the first and the third world and describes the relationship between the metropolis and the others – the colonies.

Defining identity through a representation of a difference is a given fact. However, each representation has its limits and do not correspond to reality and when this happens the world vision is composed of strict dichotomies (inside/outside, colonizer/colonized…), which do not limit the *Other* only, but also *Ourselves*. So the definition of *Identity* is strictly linked to the definition of what *Otherness* is. They're the "two sides of the same coin".

Aleksander Etkind brings the perspective further to the Russian case and to the modern era (Etkind, 2002). Referring to Said's work, he writes that Orientalism is a *process* where any method is used to mark the difference, which does not allow the mixing, hybridization and the assimilation of the *Other*. Colonial situations are always built on cultural distance between the metropolis and the colony. Orientalism is therefore about building cultural distance which legitimises political domination.

The missionaries, ethnography and exotic trips are typical colonization phenomena and in Russia they were turned inside towards its own people. Reports about Russian shamans, epics, various relics and sects were not less sensational of those form overseas colonies. Russia colonized itself and in Russian case it was an internal colonization (Etkind, 2002, pp. 270-275). The construction of a certain image of the world justified also the concrete, material and organizational management of the territories described by such an image. It was also the cultural base for legitimating colonialism and imperialism (Minca, Bialiasiewicz, 2004).

Etkind's consideration is important because it still holds partially true today in the Arctic case. Many discourses about the north underline its specific nature and features and treat it as a different geographical entity. Arctic speciality is very present in the general public imagination about the polar region and also among Arctic scientist and states. This creates a series of approaches towards the region which could be only justified keeping this idea well in mind. There are museums like the Arctic museum in Saint Petersburg in Russia, which displays a large array of traditional indigenous culture artefacts and art along with heroic achievements of

earlier Russian Arctic explorers who could be considered the ancestors of the future colonization. This Arctic speciality could have both positive and negative effects on the region.

The Arctic is often seen and portrayed as a frontier and as a far and isolated cold region. It is also surrounded by a strong mythological aura. A frontier could be better defined as a band and a transition zone in comparison to the border which is a line. There are at least two possible meanings of a frontier. The frontier seen as a front line of the civilization, and the political frontier seen as a physical separation line between two civilizations. The first concept stresses the fact that this is a transition zone between an area which is highly anthropized and an area which, according to the geopolitical expansionist discourse, is still “virgin” (because of the extensive use of land typical of many indigenous people) (Dell'Agnese, 2005, pp. 89-91). In the Arctic case most of the times the first concept is used because the Arctic with the Antarctic and some Siberian regions is probably the only remaining unexploited and scarcely populated larger and “virgin” territory on Earth.

The concept of frontier applied to the Arctic makes it further exposed to various political discourses which put the region somehow outside and try to approach it separately and differently. It emphasizes the distance and indicates also that the region is special and should be considered accordingly. There are of course natural factors which clearly influence this vision, like for example, the sea ice, the North Pole and the limited accessibility and the low population density.

However, part of the reasons, is also the fact that it is hardly acceptable that there are still spaces on Earth which are not ruled by the world state geography and its logic. Furthermore frontiers in the past were territories where the rule of law was uncertain and places which should be somehow better controlled or even conquered. A frontier could be also a place of exchange, of trade and communication. The states that incorporated the Arctic territories were ignoring, discriminating and assimilating Arctic indigenous people for many decades.

Therefore it is hard to envision an Arctic frontier were state power is ready to cooperate to create a territory of exchange and communication on the basis of local people rights, knowledge and geography, although the Arctic scientific cooperation incorporates some of those elements.

Another important limit of the frontier concept is that it puts such a vast world region under one perspective. The Arctic is a vast territory with its peculiarities, different regions and people. It is hard to imagine how all those territories could be seen as a single frontier without falling victims of the cartographic logic and its normalization and standardization processes.

The Arctic speciality could have a number of consequences. First is the fact that the region is not treated equally and it would be very difficult to say for instance, that "we are the Arctic". In this sense, the region could be considered a periphery with all the related problems. The concept of periphery will be further analysed in a dedicated section.

Second, there are still many mythological and exotic discourses surrounding the North Pole region and its issues, people and problems, what allows a series of geopolitical practices to dominate the Arctic circle.

And finally this approach encounters a period of rapid Arctic changes which are mainly not caused in the Arctic but could strongly influence states development and adaptation strategies for their polar regions. Many problems are externally caused and need external support in order to be addressed properly. In order for such support to be effective and open for the real needs of the people the states should go beyond the frontier geography.

How geography represents, writes about and imagines the Arctic is extremely important for its future. There is a possibility that Arctic speciality and frontier concepts could be used to advance politics which are against the interest of the Arctic people and its ecosystem what has been already happening. The states want to dominate the region and to impose its geography. On one hand they pretend to exert their power there on the other they are less interested in dealing with the problems they create for the Arctic like for instance through their greenhouse gases emissions and pollution.

3.6. The Arctic and the Cold War geopolitical trap

The Arctic region was heavily impacted by the Cold War, which followed the period of earlier imperial geopolitics. The development of intercontinental sea launch ballistic missiles and the introduction of nuclear submarines have transformed the Arctic political geography.

As Doods points out after the disaster of the Kursk submarine in 2001, and even more recently, Russia is struggling to develop a new post Cold War national identity. According to him, the Russian armed forces demonstrated on the occasion of the Kursk sinking and rescue operations, refusing for several days foreign help, that the political practices and interpretative dispositions associated with the Cold War remain.[54] However, as it will be discussed in Chapter 6, this reminiscent "cold-war attitude" today is based on a weaker ideological framework; moreover, it is not supported by a strong economy as it had been during the Soviet period.

The Cold War was also a conflict of words, concepts and different geographical descriptions of the world in competition among them. An important goal was to impede around the world alternative politics and world views to develop.

In fact, every regional conflict was necessarily put into the Cold War framework as was seen in the US and USSR interventions and proxy wars in Africa and other places. American and Soviet national rhetoric played a basic role in this respect. Such rhetoric had the goal to impose a certain world vision in order to maintain a certain world order. It wanted also that it would appear as the only possible world order.

The Cold War was represented like the natural condition for the humankind, characterized by a clear and unavoidable geography of the "good" and the "evil" (Minca, Bialasiewicz, 2004, p. 187). From the American side, the Soviet Union was portrayed as the evil empire, the communist infection, the red flood and as an empire which is somehow genetically oriented towards the expansion. From the Soviet side, the USA and NATO were represented as the defenders of an iniquitous international system, which hid behind universally proclaimed values, the logic of capitalist accumulation.

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[54] "For many senior officers in the Russian armed forces, the Cold War was a powerful frame of reference which determined not only the strategic significance of regions such as the Arctic, but also the response to rival NATO armed forces such as the UK and the USA" (Doods, 2003, p. 205).

The Arctic stood central in such a confrontation: from both sides, it was a space where the nuclear deterrence logic was the key ordering element; a space that was mapped through the logic of the military confrontation. Moreover, from the Soviet side, it was also a space where to celebrate the greatness of the Soviet Union, its technological strength and the figure of the "Father of all nations" Joseph Stalin and other leaders who made those achievements possible. The Arctic, as Josephson writes, was therefore a strong propaganda tool.[55]

Against this background, it is possible to argue that the Arctic region still struggles to overcome the Cold War geopolitical trap. The Russian Federation leaders for instance, still use the imagery of the Cold War to advance their interests and vision in the Arctic. The images could be the giant Arctic projects or the display of navy military parades or the long range flight of the strategic bombers.

However, international cooperation, Arctic rapid change and the more accessible Arctic are elements that could contribute to change the Russian geopolitical vision in the north. Cold war geopolitics are not the only geographical discourse in the Arctic anymore. There is also more consideration for the indigenous people rights and geography and the sustainable Arctic development especially in the Russian scientific community.

Despite this, unfortunately, it could be noticed that state geopolitics and the interests of the political and economic elites are dominating the Russian approach towards the region.

The Arctic Ocean is still labelled as being strategic and the same holds true for its natural resources. It is still very uncertain which direction/s the Russian Arctic geopolitics will take in the future, following the rapid climatic changes, and if they have an impact at all on the Russian Arctic vision.

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[55] "In what ways was Arctic conquest significant for the Soviet people from a social and ideological point of view? [...] Programs for Arctic conquest in Soviet Russia served broader cultural purposes of indicating the superiority of the socialist political and economic systems. Explorers were "the first" to achieve some great feat, but they could not have been the first without the support of the people and, of course, of the Communist Party. Their achievements represented the glory of their nation. Soviet ideologues, writers, and journalists no less turned each step of the northward plunge into the tundra into an achievement of great national importance. Newspapers, journals, commemorative postage stamps, lacquer boxes and flags, books, and plays all revelled in these achievements and convinced the citizen of the grandeur of polar conquest" (Josephson, 2014, p.15).

In recent years the Arctic was portrayed mainly as a strategic resource reserve. Climate change could change this, making some natural resources, especially oil and gas, less important for the future Arctic development. This will be discussed in the chapter dedicated to Russian Arctic oil and gas.

PART II

ECONOMIC USES AND MAIN ACTIVITIES IN THE RUSSIAN ARCTIC

Chapter 4. The framework of Arctic uses

The analysis of the main Arctic uses is very useful in order to understand the stakeholders interests in the circumpolar north. In the introduction the logic behind the choice of the three uses was explained and some uses were also analysed in the sea use-use relationship model of Vallega. Here is important to stress the fact that the Arctic has been inhabited by indigenous people for many centuries and that the region is extremely important for the planet, its biodiversity and climate. Climate change and the melting sea ice has the potential to really change the region and to impact the many Arctic uses and stakeholders. The three uses investigated in this chapter represent just a partial picture of the Arctic dynamics, however, they are very suitable to understand the Russian Arctic policies and vision. Another important use which could be considered would be scientific research, but it is already happening and climate change could not radically change it. Climate change is having and will have a strong impact especially on the uses investigated in this chapter. Understanding them well would allow to have a better picture of the Russian strategy for the region and to assess how much realistic and suitable it is for the changing Arctic and how it is shaped by climate change itself.

4.1. Introduction: the "sea management" matrix

Three main uses for the Russian Arctic have been considered: oil and gas extraction, security and militarization, and transportation. The term "uses" is referred to the state uses or to the external uses of the Arctic. The region indeed has been inhabited by local people for millennia so that the Arctic has a long history of human presence. However, the three identified uses are extensive, globalised or industrial undertakings on a different scale, which could radically change the landscape and balance of the region and could have a huge impact on its environment, ecosystem, indigenous people and flora and fauna. The militarization use has already been a driver of radical change in the past with many negative impacts and consequences.

The reasons why these three uses were chosen is the common element that all of them have the potential to strongly impact the Arctic and that they are largely state centred and strategic activities. They are also included in the Russian strategy and policy for the north. Oil and gas extraction is the backbone of the Russian northern vision and is mentioned and discussed in all strategic documents for its Arctic zone. They attract also the biggest investments and are extremely important for the economy. In addition, an extensive oil and gas offshore development in the region could change the Arctic Ocean forever. Militarization and security have dominated the Arctic agenda and landscape for decades. The region was the polygon of hundreds of nuclear explosions and experiments and one of the centres in the Cold war confrontation. This left many Arctic areas contaminated with nuclear material and the disposals of the military bases, especially fuel barrels. Recently Russia has reopened some military bases and there are also growing needs to protect the Russian borders and interest in the region so that this use is still present today. Transportation could have a huge impact on the region since with its massive development the Arctic could become much more accessible. Arctic waters are a very dangerous navigation environment due to the presence of icebergs and sea storms and severe climate conditions and the poor and remote infrastructure. Massive Arctic shipping has the potential to change the Arctic Ocean. It could be very harmful for the environment and for Arctic mammals especially in the case of a major incident or oil spill.

There are also other important Arctic uses. The matrix below represents some of them and the relationship among them.

A: non existence of relationships

B: existence of relationships

- B1: neutral relationships
- B2: conflicting relationships
- B3: reciprocally beneficial relationships
- B4: relationships beneficial to use x1
- B5: relationships beneficial to use x2
- B6: relationship harmful to x1

B7: relationship harmful to x2

Arctic uses X1 / Arctic uses X2	**Scientific research**	**Security/militarization**	**Fishing**	**Tourism**	**Nat. Resources /Oil and gas**	**Shipping**
Scientific research	0					
Security/Militarization	B2, B3	0				
Fishing	B3	B2	0			
Tourism	B3	B7	B4, B7	0		
Nat. Resourc/oil and gas	B2, B3	B2, B3	B6	B6	0	
Shipping	B2, B3	B2, B5	B2	B4	B2, B4	0

Table 3: sea uses matrix

The matrix above better defines some important relationships between the different Arctic uses. It is clear that it represents a simplification of the relationships and many uses have different and multiple relationships. However, it provides an insight in the sea uses and their complexity.

Scientific research has a positive relationship with all the uses. In fact it is encouraged by all Arctic countries and stakeholders and there is also e recent Arctic Council agreement on scientific research. It has also a conflicting relationship with security and militarization, natural resources extraction and shipping since it can limit them and be disturbed by those uses. Science has played a very important role in recent years in Arctic dialogue and interstate relations and it was probably the main catalyst of good Arctic cooperation.

Security and militarization has mainly a conflicting relationship with other uses. Only shipping can benefit from secured trade routes and oil and gas development from a secure environment. Tourism could be damaged since many areas could be interdicted to tourists. The extraction industry can even finance the military to provide security.

Fishing has mainly a conflicting relationship with other uses. Shipping, the military, tourism and oil and gas development could pollute and destroy the ecosystem and reduce the fish stock. Only scientific research could be helpful to improve the industry.

Tourism could benefit from scientific research, it could be damaged by fishing and natural resource extraction. The relationship between shipping and tourism is difficult to define, however, shipping can improve infrastructure which could be used by tourist boats. The relationship between shipping and natural resources extraction is also complicated. Shipping offers the possibility to export those resources, on the other hand they are very dangerous for the environment and could damage the shipping development.

Form the matrix two main groups of uses emerge. One is the scientific research/security and militarization/oil and gas combination. The other could be scientific research/fishing/tourism. However, the two groups are not strictly defined and especially fishing and shipping are quite flexible uses and could be also included in both groups. The relationships have a stronger meaning for local and specific areas rather then for the whole Arctic.

Arctic uses X1 / Elements X2	Scientific research	Security Militarization	Fishing	Tourism	Natural resources/oil and gas	Shipping
Arctic warming	B5	B6	B4	B4	B4, B7	B4, B7
Adaptation	B5	B2	B4	B3	B3	B3
Biodiversity	B5	B7	B4, B7	B4, B7	B2	B2
Sustainability	B5	B2	B4, B7	B2, B3	B2	B2

Indig. people	B3	B2	B5	B3	B2, B5	B2, B5
Arctic governance	B3	B2	B4	B4	B2, B3	B3

Table 4: Relationship between uses and some issues

A: non existence of relationships

B: existence of relationships

B1: neutral relationships

B2: reciprocally conflicting relationships

B3: reciprocally beneficial relationships

B4: relationships beneficial to x1

B5: relationships beneficial to x2

B6: relationship harmful to x1

B7: relationship harmful to x2

The matrix above tries to consider the relationships between some important Arctic Ocean uses and some other issues.

Arctic warming has been taken as a proxy of Arctic climate change. Scientific research is beneficial for the warming Arctic since it allows to better understand and manage it. It has a negative effect on Arctic security since it increases the accessibility and the security problems. Arctic warming is good for fishing since larger free of ice areas are becoming available for fishing boats while the same is true for tourism. Better accessibility is also good for shipping and natural resource extraction. Oil and gas extraction, however, could also foster Arctic warming and the same is true for shipping and the black carbon emissions. Climate change and increased accessibility open the Arctic to more uses.

Adaptation has a beneficial relationship with the majority of uses. It benefits from scientific research while fishing, tourism, extraction activities and shipping benefit from adaptation. They also help to do adaptation since they bring resources to the area which could be invested for this purpose. The only use which is conflicting with adaptation is the militarization, however, even this relationship could have positive effects since the military could improve the infrastructure and do adaptation works on the ground.

Scientific research is beneficial for biodiversity, while all the other uses could be a disturbance for it. Biodiversity benefits fishing and tourism but it can be harmful to the shipping and extraction industry since it can limit their activity in certain areas.

Sustainability benefits from scientific research, while it has a conflicting relationship with the majority of uses included the military, oil and gas and shipping. Fishing could benefit from Arctic sustainability because of the conservation of fish stocks, while it could have a negative effect on it, especially in the case of unregulated industrial fishing. The relationship between sustainability and tourism could be both conflicting (unregulated tourism) both reciprocally beneficial (responsible, sustainable tourism) depending on the type and regulation of tourists activities.

Indigenous people benefit from scientific research and they can also provide their traditional knowledge for scientific purposes. They have a conflicting relationship with militarization and with natural resource extraction and shipping. The last two uses, however could also benefit local people since they could bring economical resources to their communities. They could have a mutually beneficial relationship with tourism, while they also benefit from fishing which is the central element of their traditional diet.

Arctic governance and scientific research have a beneficial relationship. Scientific research fosters and often creates the basis for good Arctic governance. The militarization and security have a conflicting relationship with Arctic governance. They should be restrained and subjected to practices of mutual trust building and transparency. Fishing and tourism benefit from good governance. Resource extraction activities could be both a factor of conflict, in the case of conflicting claims for the resources, and a catalyst for cooperation, if states want to develop them jointly. For this reason this relationship has been defined both as conflicting and mutual benefiting. Shipping should have a beneficial relationship with Arctic governance with the exception of some areas where there are contrasting positions regarding the jurisdiction over the shipping lanes.

In conclusion, it should be noticed that various Arctic uses have a different impact on the Arctic region. If sustainability, biodiversity, and indigenous people are considered to be the positive and desired elements and goals, than it appears that security and militarization, shipping, and oil and gas and the extraction of natural resources could have the most negative impact on them. They are probably also the activities which could bring more money to the states. Climate change issues are also negatively impacted by those uses. The choice to focus namely on these three uses seems to be justified also from this brief analysis.

4.2. Arctic oil and gas

Arctic oil and gas extraction is probably the issue which has received and is still receiving the biggest international and political attention in the Arctic region. States like Norway generate big profits form the extraction of natural gas and oil in its Arctic sector. Norway has also a developed offshore industry, however, its waters have less ice compared to the Russian regions. When assessing the oil and gas extraction use in the Russian Arctic, the attention is paid to the offshore sector, which is still largely undeveloped and presents new risks and challenges for the region. The media discourses and the rhetoric regarding Arctic natural resources are often misleading or non detailed on this point. It is important to stress the fact that the Arctic has been for many decades one of the centres of Russian extraction activities, however, they are located onshore and on the coast. In the Arctic, in Yakutia there are important diamond mines, the city of Norilsk is the world biggest nickel producer and the Yamalo Nenets region is the biggest producer of Russian natural gas. What's new recently is the attempt and plans to develop the offshore oil and gas sector and to use the liquefaction technology to export the liquefied gas through the Northern Sea Route to Europe and Asia. The offshore regions contains enormous reserves of oil and especially of natural gas.

In the chapter dedicated to Russian Arctic oil and gas most of the focus is put on the natural gas sector, since the estimates of oil reserves are lower. Recently Novatek is finishing the construction of the Yamal LNG project which is the first of

this kind and a unique opportunity to diversify the export possibilities for the Russian gas. An analysis of the gas sector is done and the economics and prospects of this and similar projects are also reviewed. The chapter makes some important conclusions regarding the future of those resources. First it contradicts the vision of the Arctic rush for resources which would probably not happen. There are at least three main reasons for this. The first reason is the high cost of extraction and development of those resources and the lower oil price, the second reason is the competing demand and the lower growth in world demand while the third reason are climate change concerns, the carbon budget and the rapid growth of renewable energy.

The recent environment of low oil prices and the western sanctions on Russia targeting the Arctic offshore sector have slowed the development of many Russian projects. Russian oil production which peaked currently is limited by the OPEC agreement and Arctic oil is more expensive to extract. Natural gas production in Russia is already served by an extensive pipeline network and the LNG terminals are very expensive to build. Yamal LNG experienced a period of uncertainty and it is only due to a massive Chinese investment that the project would be completed. Another similar project could see the light in the beginning of the next decade. However, although natural gas is considered as a bridge fuel to a zero emissions economy the transition leaves only one or two decades to the huge Arctic projects to materialize. After this according to the Bloomberg Energy Outlook 2017 utility-scale batteries will increasingly compete with natural gas to provide system flexibility at times of peak demand. In conjunction with small-scale batteries, this will help renewable energy reach 74% penetration in Germany, 38% in the U.S., 55% in China and 49% in India by 2040. Natural gas installations will grow only by 16% until 2040 and they will be largely used to meet peak demand and not as a transitional fuel as many believe[56]. Renewable energy will become cheaper and will start replacing the gas electricity generating plants. Arctic projects are expensive and these are investments planed on twenty or thirty years periods. Lower world fossil fuel demand and climate concerns will undoubtedly play a very important role

[56] URL: https://about.bnef.com/new-energy-outlook/

in their development, especially on the medium-long term. For this reason, the Russian northern strategy for the development of its Arctic offshore fossil fuel resources will have to be revisited. This has already happened with some huge projects like the development of the massive Shtokman gas field which was cancelled. In conclusion it is very risky today to envision an Arctic boom for the fossil fuel industry especially in the Russian offshore Arctic.

4.3. Russian Arctic security and militarization

The Arctic region has been for many decades on the maps of Soviet and American military strategists and experts. This is still true today, however, the importance of the civil uses and the new political Arctic reality is limiting the role and the importance of the military and traditional national security. Russia has by far the largest Arctic military capabilities, on the Kola peninsula is stationed the Russian Northern Fleet with a division of ballistic missile submarines and the biggest Russian fleet. The Russian Arctic remains strategic for the Russian security, however, in addition to the deterrence issue new regional security concerns are emerging.

The chapter analysing the security and military use of the Arctic is focused on the recent Russian Arctic deployments and capabilities and the new strategic role of the Russian Arctic zone. It points out at least five reasons which dismiss the fear and possibility of a massive rearmament in the north. They are the economy, the absence of an ideological confrontation, the good international cooperation which is very favourable for cooperation, the limits of the Russian defence budget and the new security concerns which are emerging in the Arctic in large part duo to climate change.

The recent Russian Arctic military deployment could not be seen only as a militarization push, they should be instead put in context. It is clear that the securitization agenda is familiar to many Russian leaders and that it is also very popular among the Russian public opinion and this could also justify the show of Arctic military hardware in the Victory parade in Moscow in 2017. However, behind this show of force the reality is quite different. The Russian navy is suffering from decades of under funding and its size has shrunk many times since the collapse of

the Soviet Union. A large part of the procurement navy budged is spent for building several ballistic and attack nuclear submarines, leaving the surface fleet in precarious conditions. The same is true for the other branches of the Russian Armed Forces. For this reason, the recent Arctic deployments and bases opening should be seen also as a modernization of the aging military. In addition, Russia wants to preserve its submarine nuclear capabilities and deterrence role. Another important reason which should be taken in consideration is the fact that with the melting sea ice Russia would have more than 20.000 kilometres of northern coast to control and defend. In conclusion, the recent Russian military activity should be put in context and analysed with other threats and goals in mind and beyond a mere traditional security approach. A larger militarization of the Russian Arctic as will be better discussed in the chapter is not happening for now and is not in the interests of the Russian Federation.

4.4. Transportation systems

One of the major opportunities for the future development of the Russian Arctic is undoubtedly its shipping potential. For many decades the Soviet Union first, and in the last decade Russia again, have been trying to establish it as an important international sea route. Contrary to the recent Russian government predictions, the route has recently experienced again another decline in the number and amount of gods transported through trans-Arctic shipping. The Route has the potential to shorten the transit time between Asia and Europe by many days even weeks on some destinations, however, the international shipping companies find it still to be very risky and unpredictable.

Also the recent international tensions between Europe, US and Russia has had a negative impact on the NSR traffic. In fact, due to the recent American sanctions against some Russian oligarchs and companies, among them the aluminium giant Rusal, Russia is planning to retaliate increasing the transit fees for US airlines over Siberia. To an external observer becomes easy to envision a similar scenario for the Northern Sea Route. Investing in ice-class ships, which would become dependent on the transit in Russian waters is perceived to be very risky.

However, the Northern Sea Route development has recently shifted to destination transport. Russian plans seem to bet on destination transport in order to develop the route with the desire to extend its use to trans-Arctic shipping in the future. The NSR is going to experience a two to three times increase in the amount of gods transiting through it especially due to the export of the Liquefied gas from Yamal. If the second liquefaction project the Arctic Lng 2 would be completed in ten years time the traffic could possibly reach about 40mln tones annually up from the 7mln tonnes today.

With the NSR in mind, it would be too early to speak about an integrated Arctic transportation system. However, Russia has plans to integrate again the route into its Siberian river transportation systems and strengthen its icebreaker fleet with three new Arktika project 22220 nuclear class icebreakers. This could strengthen the economic potential of the whole Russian Arctic coast.

Trans-Arctic shipping is still uncertain due to unpredictable sea ice conditions and if feasible it would mainly operate only in summer months. In the future with the rapid melting sea ice, the Northern Sea Route would face the competition of the North West Passage along the Canadian coast and especially of the Trans-Polar route which would be an international transit corridor free of Russian transit fees.

In the last decade a lot of progress has been done in order to regulate Arctic shipping with the adoption of the (IMO) Polar Code regulatory framework to ensure adequate environmental protections, vessel safety standards, and search-and-rescue capability in this unique and challenging polar ecosystem[57].

[57] URL: http://www.pnas.org/content/110/13/E1191/1

Chapter 5. Energy and Arctic fossil fuel resources

The increased international and media focus on the Arctic region has been until recently highly influenced by its estimated reserves of natural resources, especially oil and gas. The vast majority of actual publications cite the famous 2008 US geological survey (Bird *et al*., 2008). It has increasingly become one of the strongest arguments in favour of the resource exploitation Arctic paradigm due to its high estimates of undiscovered Arctic fossil fuel reserves.

There are, however, a series of reasons to believe, as some authors have already extensively discussed this issue (Emmerson, 2013; Hong, 2013; Le Mière, Mazo, 2013), that the offshore Arctic oil and gas will not play a crucial role in the economy and geopolitics of the Arctic and in the world energy supply, especially in the long term. This, undoubtedly, would lower the economical and geopolitical importance of the region.

Some northern areas have been and could be strongly impacted by the developments in the oil and gas sector, but on the wider regional scale, the Arctic oil and gas intensive exploitation has not materialized yet. This is especially true for the offshore sector, which could also have the strongest impact on the region's ecosystem and regional relations due to the harsh environmental conditions and possible border issues, which will not be addressed here.

In the Russian strategy for the North the extraction of natural resources and oil and gas is the top priority. The analysis will point out that the availability of resources does not mean that they would be extracted on a massive scale.

5.1. The major transformations in the energy market

This chapter analyses some recent developments especially in the gas sector and proposes some additional reasons which would suggest that the Arctic is far from being a place of an energy resources race among the Arctic and adjacent

countries. The oil and gas markets have become incredibly flexible with many analysts speaking about a new oil order referring to the fast cycle of shale oil[58].

Similarly, the increasing liquefied natural gas technology adoption has disrupted the long-term pipeline planning system and the bargaining power especially on the side of the suppliers. The remoteness of the North pole region, the difficulties in building infrastructure there and the two more recent step downturns in energy prices, with the last still ongoing, are strong arguments against widespread Arctic resource extraction. The pick oil arguments, which dominated the debate for many years, have been sided by a fierce price competition and rising non-conventional supply, which does not allow a dynamic of ever increasing oil prices to dominate the energy market.

The mega-projects which characterize the activity in the Arctic region are indeed becoming less and less attractive[59]. Russia has retreated from Arctic waters since crude's collapse began in 2014. According to the Russian energy minister the prices are too low for the operations to be profitable:

> "We estimate production costs for the Russian Arctic offshore in the range of $70 to $100 a barrel," Energy Minister Alexander Novak said by email. These reserves "are our backup stock,"[60]

In addition, many exploitation licenses have been guaranteed to only two companies mainly Rosneft and Gazprom, and both are currently experiencing problems, the first with the burden of repaying its debts and the second due to lower gas prices and the investments needed for other huge projects. The absence of the private sector could further reduce the future exploitation of Arctic resources in Russia[61].

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[58] From the horse's mou
oil-order (Accessed 5th May 2016)

[59] Oil Producers Curb M
http://oilprice.com/Energy/Energy-General/Oil-Megaprojects-Wont-Stay-On-The-Shelf-For-Long.html (Accessed 6th May)

[60] URL: https://www.bloomberg.com/news/articles/2017-03-28/russia-can-wait-for-70-oil-before-returning-to-arctic-waters

[61] URL: http://oilprice.com/Energy/Crude-Oil/Russias-Arctic-Oil-Is-Off-Limits-For-Private-Drillers.html

This can be observed also in the gas sector in the Arctic and also in other places like Australia or Canada where some big LNG projects have been recently cancelled. The main reasons are that such projects are characterized by big initial capital expenditures and long period returns on investments. Companies prefer more flexibility and faster returns concentrating instead on smaller projects[62]. Also the global LNG glut is discouraging companies from investing and launching new projects while the prices stay very low compared to the past[63]. In addition, the advanced economies have undergone a significant reduction in the energy intensity with China increasingly catching up. The energy intensity of the global economy dropped by 2.3% in 2014, more than double the average rate of fall over the last decade[64]. In China for instance energy intensity declined by 5,6% in 2015. With an economic growth of 6,9% the increase in primary energy consumption was only 0,9%[65]. This will also limit future oil and gas demand. Furthermore the energy intensity and energy efficiency improvements are being followed by a booming and rapidly evolving renewable energy sector which is already playing, and will have, a crucial role in the global energy planning and future capacity building. There is also an oncoming revolution in the transportation sector with the electrification of the transport vehicles, the sharing economy and improving energy storage which will gradually start reducing the demand for fossil fuels in the near future.

5.2. Renewable energy, innovations and climate change

The world has entered an energy revolution, which will completely change the way we produce and use energy. Renewable energy brings many benefits since it has been becoming cost effective and competitive already reaching grid parity with the fossil fuels in many parts of the world. In countries like Germany and the UK,

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62 URL: http://www.worldoil.com/news/2017/3/21/chevron-ends-lng-mega-project-after-88-billion-spree

63 URL: http://business.financialpost.com/commodities/energy/a-tragedy-for-canada-petronas-cancels-36b-lng-project-as-b-c-jacks-up-demands

64 IEA Special Report Energy and Climate Change. 2015. P. 11. URL: www.iea.org/publications/freepublications/publication/WEO2015SpecialReportonEnergyandClimateChange.pdf (Accessed 6th May 2016)

65 URL: https://www.iea.org/eemr16/files/medium-term-energy-efficiency-2016_WEB.PDF p. 14.

onshore wind is the cheapest electricity to produce[66] and according to the Bloomberg 2015 Energy outlook:

> "By 2040, the world's power-generating capacity mix will have transformed: from today's system composed of two-thirds fossil fuels to one with 60% from zero-emission energy sources. Renewables will command just under 60% of the 9,786GW of new generating capacity and two-thirds of the $12.2 trillion of investment.[67]"

The innovation in the renewable industry is so rapid that the past IEA reports underestimated its development[68].

Innovation is already playing a crucial role in the world energy market where what matters is not only the availability of resources but the cost to extract them. In addition, innovation is crucial for lowering solar, wind and other technologies costs so that they could compete with fossil fuels and replace them in the future. Renewable energy is also one of the key elements in the countries' struggle to limit climate change.

The recent COP21 Paris agreement in December 2015 will probably give a further boost to clean and renewable energy in order to limit the greenhouse gases emissions. The recent US withdrawal from the agreement will not affect it drastically since the current biggest emitter China is strongly supporting the Paris course. It is also the state with the biggest solar and wind installed capacity. Not less important is the carbon budget and the required 450-500ppm CO2 concentration limit[69] in order to keep the temperature below the two degree target, which implies

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66 Solar and Wind Just Passed Another Turning Point URL: http://www.bloomberg.com/news/articles/2015-10-06/solar-wind-reach-a-big-renewables-turning-point-bnef (Accessed 6th May 2016)

67 Bloomberg New Energy Outlook 2015 URL: http://www.bloomberg.com/company/new-energy-outlook/ (Accessed 6th May 2016)

68 The WEO 2010 projections for solar PV capacity for the year 2024 (180 GW) have been achieved in January 2015 and exceeded threefold the WEO projections for 2015. Real wind capacity in 2010 exceeded 260% and 104% the WEO 2002 and 2004 projections respectively for this year. WEO projections for wind energy from 2002 for 2030 had been achieved 20 years earlier, in 2010. URL: http://energypost.eu/renewables-iea-underestimate/

69 According to the 2014 IPCC report the increase of global mean surface temperature by the end of the 21st century (2081–2100) relative to 1986–2005 is likely to be 0.3°C to 1.7°C under RCP2.6 (430-480ppm of CO2) and 1.1°C to 2.6°C under RCP4.5 (480-530ppm) URL: https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf pp.9 (Accessed 6th May 2016)

that a certain amount of discovered fossil fuels reserves will and should be kept in the ground. This is also recognized by major oil companies like the recent French Total decision to invest in renewable energy and its growth strategies based on the 2C° scenario[70].

5.3. Towards a "keep in the ground" future?

The Arctic offshore oil and gas estimated recoverable resources, for all the above mentioned reasons, do not represent such a value that would force countries into conflict to control and exploit them. They are also expensive to extract and the vast majority of them is also found inside already established national borders or in the special economic zones. Further evidence against a massive oil and gas exploitation, is undoubtedly provided by the recent decision of several major oil companies to abandon the U.S. Arctic and relinquish their drilling rights there[71]. The Trump administration approved recently Eni's plan for drilling four wells in offshore Alaska and also ordered to review the Obama ban on Arctic drilling[72]. It is still unclear if this would trigger a bigger interest and extractive activities in the region, also considering the shell development and competitiveness with lower prices and the risks and costs of drilling in the Arctic. Moreover, the US president Obama, after seven years of strong fight, due to climate and environmental concerns, put an end to the XL Keystone pipeline extension which would bring the Canadian tar sands oil to the US market[73]. In March 2017 Trump issued a presidential authorization for the

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[70] URL: http://oilprice.com/Latest-Energy-News/World-News/Total-Jumps-On-Renewables-Bandwagon-Announces-Ambitious-Goals.html (Accessed 25th May 2016)

[71] URL: http://www.bloomberg.com/news/articles/2016-05-10/big-oil-abandons-2-5-billion-in-u-s-arctic-drilling-rights (Accessed 10th May 2016)

[72] URL: https://www.theguardian.com/us-news/2017/jul/13/us-approves-oil-drilling-in-alaska-waters-marine-life-fear

[73] URL: https://www.washingtonpost.com/news/post-politics/wp/2015/11/06/obama-set-to-reject-keystone-xl-project-citing-climate-concerns/?hpid=hp_hp-top-table-main_keystone-1120am%3Ahomepage%2Fstory URL: (Accessed 6th May 2016)

URL: http://www.bloomberg.com/politics/articles/2015-11-06/obama-said-to-reject-keystone-project-win-for-environmentalists (Accessed 6th May 2016)

project, however, its future is still uncertain mainly due to low oil prices and the tar sand oil and Canadian climate commitments.[74]

The Arctic is also an extreme environment where the human knowledge and technologies are tested to the limit so some countries and especially Russia, which is also the major Arctic player, do not have the technology and financial resources to individually and competitively develop the huge Arctic projects on a large scale[75].

The recent international sanctions against Russia were focused also on the Arctic offshore operations banning western companies any participation or technology transfer linked to this sector[76]. The new sanctions round passed by the US Congress and signed by the president further strengthened the sanctions regime[77].

There is an increasing possibility that the Arctic region will see a continuation of cooperation on environmental and other issues and that its estimated energy resources will not generate increased geopolitical tensions. The vast majority of the region's oil and gas would be probably kept in the ground.

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[74] Although the pipeline got a presidential permit, its troubles are far from over. In addition to opposition from environmentalists, the project faces extreme oil price headwinds. In light of Canada's commitment under climate agreements to reduce carbon emissions, combined with oil price dynamics, industry experts now expect the reduced development of Canadian oil sands reserves as a source of oil. URL: http://marketrealist.com/2017/07/focus-transcanadas-keystone-xl-pipeline-project/

[75] Burovaja ugroza URL: http://kommersant.ru/doc/2811635 (Accessed 6th May 2016)

Henderson J., Loe J. T*he* Prospects and Challenges for Arctic Oil Development // The Oxford Institute for Energy Studies. 2014. P. 22-39. URL: https://www.oxfordenergy.org/wpcms/wp-content/uploads/2014/11/WPM-56.pdf (Accessed 6th May 2016)

[76] New Directive 4 issued pursuant to E.O. 13662 prohibits the provision, exportation, or reexportation of goods, services (except for financial services), or technology by U.S. persons or from the United States in support of exploration or production for deep-water, Arctic offshore, or shale projects that have the potential to produce oil in the Russian Federation, or in maritime area claimed by the Russian Federation and extending from its territory, and that involve five listed Russian energy companies: Gazprom, Gazprom Neft, Lukoil, Surgutneftegas, and Rosneft. Treasury initially imposed sanctions against Rosneft, Russia's largest petroleum company and third-largest gas producer, pursuant to E.O. 13662 on July 17, 2014. Today's step, which complements Commerce Department restrictions and is similar to new EU measures published today, will impede Russia's ability to develop so-called frontier or unconventional oil resources, areas in which Russian firms are heavily dependent on U.S. and western technology. While these sanctions do not target or interfere with the current supply of energy from Russia or prevent Russian companies from selling oil and gas to any country, they make it difficult for Russia to develop long-term, technically challenging future projects. URL: http://www.treasury.gov/press-center/press-releases/Pages/jl2629.aspx (Accessed 6th May 2016)

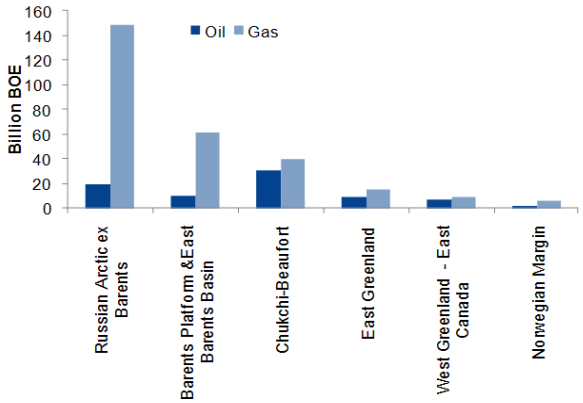
[77] "The rules approved by the Senate could bar US companies and individuals from working either as partners or suppliers on any shale, deep-water or Arctic oil project anywhere in the world where a Russian company has a stake, however small". URL: https://www.ft.com/content/c593a670-6ba4-11e7-b9c7-15af748b60d0

5.4. The Arctic gas sector

Although oil could be still seen as more attractive in the near term, it is natural gas that dominates the energy reserves of the region. Natural gas has lower Co2 emissions per unit of energy[78] and is therefore seen by many as the transitional fuel to the future zero emissions economy. The growing LNG market and its transportation flexibility could also sustain natural gas demand in the future.

The American Arctic is richer in oil and the onshore Prudhoe bay field, for instance, is still operating almost 40 years after its development and the Trans-Alaska Pipeline System construction in 1977 following the 1973 oil crisis. Analysing the USGS report, Philip Budzik provides the following conclusion:

> "Arctic oil and natural gas resources are not evenly distributed among the Eurasian[79] and North American continents. Eurasia is estimated to hold about 63 percent of the total Arctic resource base, while North America holds about 36 percent. The Eurasian resource base is predominantly natural gas and NGL, which account for about 88 percent of the total Eurasian resource base. The North American side of the Arctic is estimated to have about 65 percent of the undiscovered Arctic oil, but only 26 percent of the undiscovered Arctic natural gas"[80].



78 117 Pounds of CO2 emitted per million British thermal units (Btu) of energy compared to 157.2 for gasoline, 161,3 for diesel fuel and about 215 for coal URL: https://www.eia.gov/tools/faqs/faq.cfm?id=73&t=11 (Accessed 6th May 2016)

79 Combined continental landmass of Europe and Asia

80 URL: http://www.eia.gov/oiaf/analysispaper/arctic/pdf/arctic_oil.pdf (Accessed 6th May 2016)

Figure 9: Arctic oil and gas estimated reserves

Source: USGS from "The Prospects and Challenges for Arctic Oil Development" [81]

The Russian data from the Ministry of energy (Minenergo) is of 13bln tones of oil and 87tln cubic meters of natural gas[82], while other sources put the oil reserves higher as can be seen from the graph below:

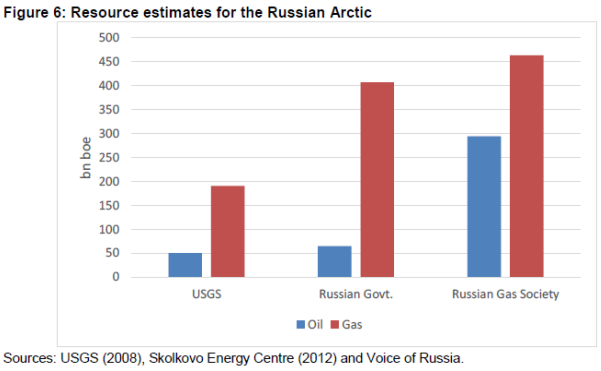


Figure 10: Resource estimates for the Russian Arctic

Source: USGS from The Prospects and Challenges for Arctic Oil Development

In this context, the Obama administration decision to review plans for Arctic drilling, while refusing to extent also already approved leases[83], is critical for the oil sector, although market factors largely anticipated this move and made Arctic drilling uneconomical under current oil prices.

Because of its predominance and economic and geopolitical value, the huge Arctic Eurasian gas reserves will be addressed here. Norway for instance, in 2015, exported for the first time more natural gas than oil in value.[84]

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81 Source: USGS 2008, taken from The Prospects and Challenges for Arctic Oil Development, The Oxford Institute for Energy Studies written by James Henderso and Julia Loe, November 2014 p.5.

It should be taken into account that the assessment methods are based on geological presumptions, which implies a large degree of uncertainty.

82 URL: http://izvestia.ru/news/588397 (accessed 7th May 2016)

83 URL: http://instituteforenergyresearch.org/analysis/obama-cancels-lease-sales-in-arctic-cedes-arctic-to-russias-vladimir-putin/ (Accessed 6th May 2016)

84 URL: http://barentsobserver.com/en/energy/2015/09/gas-bigger-oil-18-09 (Accessed 6th May 2016)

5.5. *Arctic natural gas supply and projects*

The Eurasian USGS estimates are of about 34500 billion cubic meters of natural gas[85]. To put this volume in context, this is equivalent to almost a century of the current EU annual gas consumption of about 450 billion cubic meters. A limited number of operating Arctic gas projects are located mostly in Norway and Russia.

Norway operates the Snøhvit LNG facility in the Arctic with a capacity of about 5 billion cubic meters annually and produces an additional 2,2 bcm of gas in the southern Norwegian waters[86]. The Statoil Norvegian company, with the state as the largest stakeholder, is also working on the Aasta Hansten gas field in the Norwegian sea in the Arctic circle. The field is estimated to contain 47bcm of gas which will be connected through the 482km Polarled 70 million standard cubm/day pipeline to the Norwegian gas grid[87]. The project is very complex and according to Statoil recovering the resources on Aasta Hansteen will be demanding since the discovery is located far from land and outside the established infrastructure. The water depth is significant and the weather conditions are challenging[88]. The project cost has risen by about 9% since its submission and amounts to $4,34bln. Its conclusion has been delayed from 2017 to the middle of 2018[89].

5.6. *Russian projects*

[85] 1219 trillion cubic feet

[86] In Arctic, Norway steps on the gas. URL: http://barentsobserver.com/en/energy/2015/03/arctic-norway-steps-gas-25-03 (accessed 7th May 2016)

[87] Statoil: Polarled gas pipeline crosses Arctic Circle. URL: http://www.ogj.com/articles/2015/08/statoil-polarled-gas-pipeline-crosses-arctic-circle.html (accessed 7th May 2016)

[88] Aasta Hansten. URL: http://www.statoil.com/en/ouroperations/futurevolumes/projectdevelopment/pages/aastahansteen.aspx (accessed 7th May 2016)

[89] URL: http://www.offshore-mag.com/articles/2015/10/statoil-pushes-back-production-start-up-at-two-offshore-northwest-europe-projects.html (accessed 7th May 2016)

The country which could have the biggest impact on the Arctic gas extraction is obviously the Russian Federation. Currently Russia is not exploiting any offshore Arctic gas field, while the onshore area is a very important region for its gas supplies. The Yamalo-Nenets region provides about 80% of Russian natural gas. Half of the region is located inside the Arctic circle. The offshore natural gas could be exported to the world markets through the liquefaction process which provides export flexibility and lower transportation costs on longer distances compared to the pipeline system as can be seen from the graph below.

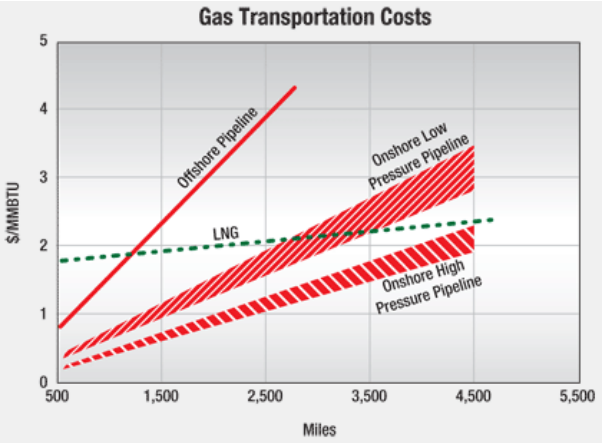

Figure 11: Pipeline vs LNG transportation cost[90]

Source: www.energytribune.com

Due to the permafrost conditions, the geographical limitations of a pipeline system, and long distances the Arctic offshore gas extraction is based on LNG technology.

Yamal, the second LNG terminal in Russia, should be finished soon. Its three LNG trains, presumably operational in 2021, would provide a total liquefied gas production of 16.5 mmt of LNG or 23bcm per year of natural gas.

The $27bln project has been experiencing financial problems due to the economic sanctions imposed on Russia and closed access to cheaper credit. A large part of the financial resources will be secured from Chinese investors through a $12bln loan. The Chinese partners have also recently acquired an additional 9,9%

[90] URL: http://www.energytribune.com/941/compressed-natural-gas-monetizing-stranded-gas#sthash.VROqacjV.dpbs (accessed 8th May 2016)

stake in the project through the Silk Road Fund providing €1,09bln. The Russian government provided financing from the National Wealth Found of $2.8bln and Russian banks recently agreed a further $3,6bln loan[91].

The project is owned for 50,1% by Novatek with Total and CNPC having a 20% stake each and the Silk Road Fund a 9,9% participation. Total detains also a 18,9% stake in Novatek bringing its indirect involvement in the project to almost 30%. The Yamal LNG has involved the construction of a major new maritime route for transporting liquefied natural gas to Europe and Asia.

According to Total, the Yamal LNG project is one of the largest industrial undertakings in the Arctic. It will eventually involve the drilling of more than 200 wells, the construction of 3 LNG trains, each with a capacity of 5.5 million tons per year, and a vast gas terminal, and the commissioning (a world first) of 15 icebreaker tankers, each able to transport 170,000 m^3 [92].

With the exception of the Yamal project in active construction phase, Russia has recently delayed important Arctic projects. One of them is undoubtedly the Shtokman gas field, which was discovered already in 1988. The development of this field was intended to sustain exports to the US market. Gazprom, with its partners, in 2012 couldn't find a technologically and economically viable solution for the development of the 4trillion cubic meters giant gas field. The field covers an area of 1,400m^2 and lies inside the Arctic 600km offshore in deep water. Successful development would require the construction of a long subsea pipeline in deep water in some of the harshest conditions on earth.[93] It is subject to icebergs weighing up to one million tonnes drifting at speeds of up to 0.25m per second, and 1.2m drift ice moving at up to 1m per second. Statoil left the project in 2012 and Total abandoned it in 2015 returning its 25% stake to Gazprom.

Furthermore, the US, in the last several years, has drastically increased the production of natural gas following the shale oil boom. The country has even become a gas exporter, which cut demand for Shtokman natural gas and lowered

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91 URL: http://www.reuters.com/article/russia-yamal-lng-loans-idUSR4N0ZC01I (accessed 7th May 2016)

92 URL: http://www.total.com/en/energies-expertise/oil-gas/exploration-production/projects-achievements/lng/yamal-lng (accessed 7th May 2016)

93 Is the time right for Arctic LNG? URL: http://mediaserver.dwpub.com/fjd-profile/30722/Arctic+LNG+November+2012.pdf (accessed 7th May 2016)

global natural gas prices. The development cost for the first phase of the Shtokman project was estimated at $12bln to $25bln ($50bln overall investment). The project, after the completion of the third phase, would have produced up to an impressive 71,1bcm of gas annually[94]. In February 2010, Gazprom postponed the phase I development of the project to 2016 from the original scheduled date of 2013. The field, according to those plans, should have started producing its first gas in 2016 and first LNG in 2017[95]. The project is currently frozen.

It is interesting to review the list of proposed LNG projects in Russia below, which if built, would bring the country's liquefied gas export capacity to about 117bcm annually.

Facility	Area	Status	Capacity (mil. Metric tons LNG/year)	Announced Start year	Owners
Liquefaction projects					
Sakhalin LNG	Pacific coast	Operating	9.6	2009	Gazprom, Shell, Mitsui and Mitsubishi
Yamal LNG	Arctic coast	Construc.	16.5	2017	Novatek, Total and CNPC
Baltic LNG	Baltic coast	planning	10	2018	Gazprom
Valdivostok LNG	Pacific coast	planning	15	2018	Gazprom
Sakhalin LNG (expans)	Pacific coast	planning	5	Post 2018	Gazprom, Shell. Mitsui and Mitsubishi
Far East LNG	Pacific coast	planning	5	2018-19	ExxonMobil, Rosneft, ONGC, Videsh, and SODECO
Arctic 2 LNG	Arctic coast	planning	16	2018-22	Novatek
Pechora LNG	Arctic coast	delayed	10	NA	Rosneft
Shtokman LNG	Arctic coast	delayed	30	NA	Gazprom

Table 5: Russian proposed and under construction LNG projects

[94] URL: http://www.gazprom.ru/about/production/projects/deposits/shp/ (accessed 7th May 2016)

[95] URL: http://www.offshore-technology.com/projects/shtokman/ (accessed 7th May 2016)

Source: EIA International energy data and analysis[96]

The recent downturn in global energy prices, the Russian recession and the international sanctions will impact all those projects. It is very likely that until 2020 only the Yamal LNG will become partially operational. All the other projects in the Arctic are postponed or will never come online at all.

James Henderson did an analysis of the potential for LNG projects in Russia and in the Arctic. Regarding this region he found out that under the most optimistic scenario the liquefaction capacity until 2035 could reach 78mtpa from the current 16mtpa under development in Yamal LNG. A second project the Arctic 2 LNG could start construction at the beginning of the next decade with a capacity between 12-18mtpa. In addition to Yamal LNG, according to the plans, another liquefaction train would be added bringing its capacity to 22mtpa. In order to reach 78mtpa, as Henderson points out, there is a possibility that Novatek would succeed to buy 4 gas fields form Gazprom in the same region. This could allow a construction of additional eight 5,5mtpa trains in Yamal. This scenario is the best projection until 2035[97].

Figure 2: Potential growth in Novatek LNG output

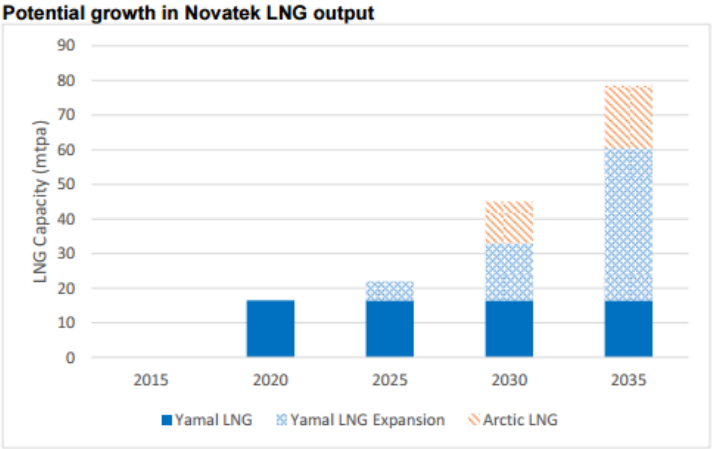

Figure 12: Potential growth in Novatek LNG output

Source: James Henderson, 2017

96 URL: http://www.eia.gov/beta/international/analysis.cfm?iso=RUS (accessed 7th May 2016)

97 URL: https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/03/Russian-LNG-%E2%80%93-Progress-and-delay-in-2017-OIES-Energy-Insight.pdf

With a total liquefaction capacity of 78mtpa the Yamal region and the Russian Arctic would play an important role in the world liquefied gas supply. It is however, uncertain if all those projects would be realized. Another important reason is the world gas demand and supply. According to some analysts, the gas demand is going to peak in fifteen years time so that some LNG Arctic projects would be realized in times of declining or uncertain future demand[98].

5.7. The Yamal LNG project

In order to try to understand the future of the Russian Arctic LNG projects, which are crucial for the future gas extraction activity in the Arctic, the Yamal LNG development could provide some data and interesting insights.

The project is the first of its kind and is not comparable to the Norwegian Snøhvit LNG facility, which is located in southern waters where the Gulf Stream keeps the sea free of ice all year round. The Yamal field consists of five shallow gas horizons and 27 deeper gas condensate horizons, with depths varying from 900 to 2,850 meters. 208 wells will be drilled from 19 well pads. A total of 188 kilometres (km) of gas gathering lines, 121 km of roads and 143 km of high voltage lines will be constructed[99]. It is very likely therefore that only after an initial evaluation and analysis of the Yamal operations additional similar projects could be approved. This will partially determine the development of the Novatek's Arctic 2 LNG project in Arctic waters with 16mmt or 18mmt LNG capacity which first train could becoming

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98 In a long-term outlook published last month, Bloomberg New Energy Finance predicted that gas's market share in global power generation will drop from 23 percent last year to 16 percent by 2040, and that gas-fired power generation capacity will start to decline after 2031… "Wind and solar are just getting too cheap, too fast" for gas to play a transitional role, said Seb Henbest, lead author of the BNEF report… The consultant estimates that onshore wind and solar power are already competitive with coal and gas in Germany, and that within five years they will be cheaper to build than new coal and gas plants in China, the U.S. and India. By the late 2020s, it will start to even be cheaper to build new onshore wind and solar power than run existing coal and gas plants". URL: https://www.bloomberg.com/news/articles/2017-07-17/big-oil-sees-salvation-in-gas-but-what-if-it-s-the-wrong-bet

99 Government Support to Upstream Oil & Gas in Russia URL: https://www.iisd.org/gsi/sites/default/files/ffs_awc_russia_yamalprirazlomnoe_en.pdf (accessed 8th May 2016)

operational in 2023[100]. The Arctic 2 LNG is moving forward and unlike Yamal LNG it will be based on a floating platform[101].

Novatek has yet to confirm any other shareholders in the Arctic LNG-2 scheme, and when it plans to reach a final investment decision (FID) on the project[102]. Shtokman LNG and the Pechora LNG projects are delayed. It is also important to consider that other reasons than economics could determine the development of important projects, especially in the Russian state, such as strategic planning or regional development plans.

This was often the case for the Soviet Arctic projects, many of which were often not justified from a pure economic perspective but were indeed considered important for regional development or strategic interests. As Handerson points out:

> "A 12-year tax holiday from Mineral Extraction Tax, added to the fact that Russia LNG exports pay no export tax, has improved project economics, and the Russian government has also subsidised the construction of the port facilities as part of its plan to develop the Far North of Russia. These factors have all been vital in making Yamal LNG a viable project in a low gas price environment Furthermore, it can be asserted that Yamal LNG forms an important part of Russia's broader plan to establish itself as an Arctic power, and it is interesting to note that Vladimir Voronkin, the deputy head of Yamal LNG, was quoted in 2014 as saying that "we are confident. The port and the plant are under the protection of the president and the government"[103].

The capital expenditures for Yamal LNG were assessed of being $26,9bln in 2013 when the FID[104] was taken up from $20bln initially estimated. The upstream accounts for $4bln, $4bln goes to infrastructure, while the other $19bln is attributable to the LNG liquefaction plant. According to a recent analysis of the Moscow broker Otkritie the total capex can raise up to $33 due to the impact of the

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100 Novatek presents plan for new Arctic LNG URL: http://www.thebarentsobserver.com/industry/2016/02/novatek-presents-new-plans-arctic-lng (accessed 8th May 2016)

101 URL: http://www.rcinet.ca/eye-on-the-arctic/2017/08/23/frances-total-will-play-crucial-role-in-arctic-russia-lng-project/

102 URL: https://newsbase.com/topstories/total-eyes-stake-arctic-lng-2

103 URL: https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/03/Russian-LNG-%E2%80%93-Progress-and-delay-in-2017-OIES-Energy-Insight.pdf p. 4

104 Final Investment Decision

sanctions imposed on Russia and more expensive capital[105]. In addition, there are other indirect costs taken by the government like for instance, the building of three LK-60 nuclear ice breakers for about $2bln[106], which would be also partially used for the export and operation of the Yamal LNG. It is also important to mention the unstable exchange rate of the Russian ruble, which has lost more than 50% in the last two years going from 33 rubles for $1 at the beginning of 2014 to 66 rubles for $1 in May of 2016[107] to about 60 rubles for $1 In 2017 on average. The project in rubles would cost 1,27 trillion[108] which is $40bln or $20bln according to the two different exchange rates. If the expenditures or the financing are in euro or dollars the depreciation could have a negative impact and rise the financial burden for the companies involved.

According to two different sources, the Yamal LNG would break-even at a price of $8.2MMBtu[109], while a recent Gazprombank analysis reported a price of $6MMBtu[110]. They write:

> "We estimate that Yamal-LNG will be breakeven and provide zero value to NOVATEK's target price at an LNG price of no more than $6 per MMBtu in 2017-20 and no more than $9 per MMBtu in 2021-24."

In 2016, the European Russian gas prices at the German border were $4,02MMBtu[111] or $145mcm while in June 2017 they stand at $5MMBtu, while in Asia the LNG stands at $5.6MMBtu. Additional pressure on prices will come from American LNG exports to Europe and new Australian export terminals. At these prices the Yamal LNG in Europe in the short-term is uneconomical and would not

105 URL: http://www.hellenicshippingnews.com/moscow-gives-a-boost-to-yamal-lng/ (accessed 8th May 2016)

106 URL: http://expert.ru/2015/05/26/kurs---na-sever/ (accessed 8th May 2016)

107 URL: http://www.cbr.ru/currency_base/daily.aspx (accessed 8th May 2016)

108 URL: http://www.vedomosti.ru/business/articles/2015/08/13/604610-yamal-spg-previshaet-planovie-rashodi (accessed 8th May 2016)

109 Russia's Yamal LNG still attractive despite capex hike – analysts URL: http://www.platts.com/latest-news/natural-gas/london/russias-yamal-lng-still-attractive-despite-capex-26563378 (accessed 8th May 2016)

110 URL: http://www.gazprombank.ru/upload/iblock/2f6/GPB_NVTK_TP_Update_230915.pdf (accessed 8th May 2016)

111 URL: http://www.bloomberg.com/news/articles/2015-10-23/gazprom-said-to-see-its-lowest-eu-gas-price-in-11-years-in-2016 (accessed 8th May 2016)

guarantee an adequate return on the $27bln investment taking into consideration also the higher Russian interests rates.

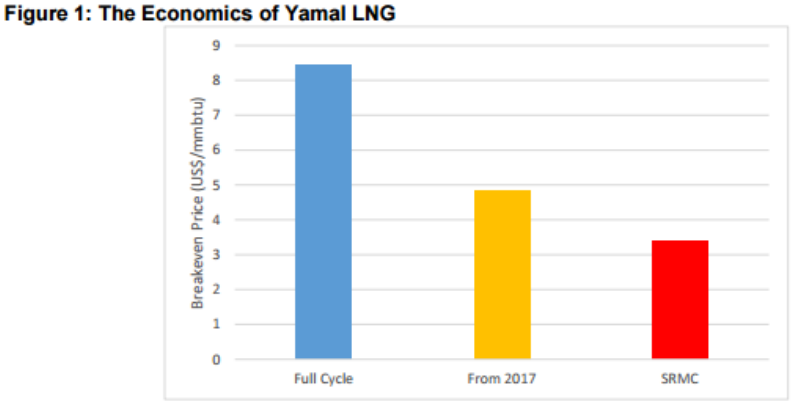

Figure 13: The economics of Yamal LNG

Source: James Henderson, 2017

The Gazprombank analysts point out the fact that the Asian spot LNG prices are not a good benchmark for Yamal future prices. The gas is also contracted for 90-95% and according to them it is not linked to LNG prices so they don't see possible impacts from LNG prices on Yamal. However, they are linked to crude oil prices benchmark. On the other hand, a recent analysis of the International Institute for Sustainable Development/WWF points out that the project's Net Present Value (NPV) is positive only due to the Russian government's subsidies and that otherwise Yamal LNG would not be economically viable regardless of infrastructure costs.

They also estimate the transportation cost for Yamal LNG from calculations made by Armstrong Atlantic State University. According to them costs are US$1.15/MMBtu to Europe, US$7.04/MMBtu to Asia via the Suez Canal and US$2.85/MMBtu to Asia via the NSR. Average transportation costs are thus US$3.7/MMBtu. With current LNG prices in Europe and Asia of about $4MMBtu the capital return margins are really very slim.

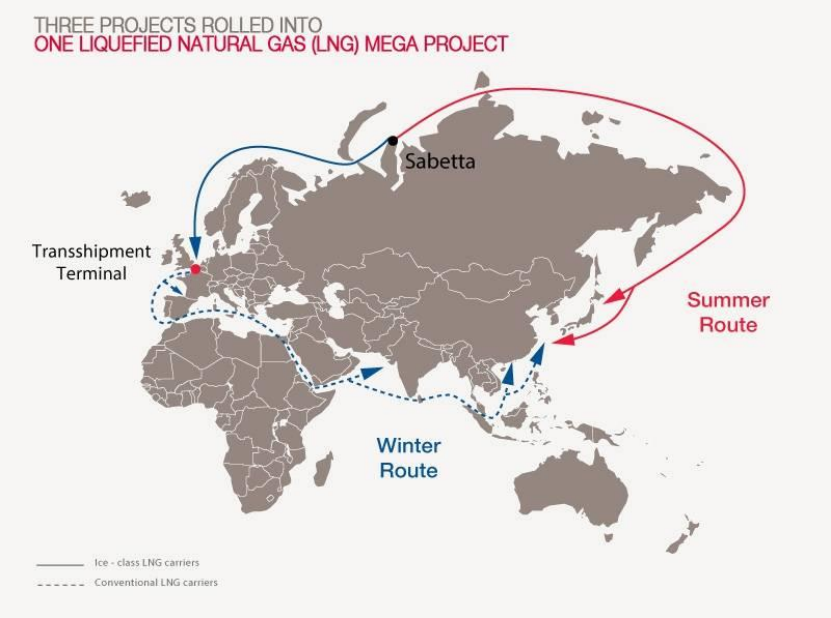

Figure 14. Yamal LNG transportation routes[112]

Source: www.total.com

The long horizon of such projects could partially offset current low LNG prices in the long-term. The Energy Center of the Skolkovo Business School in 2013 did a comparison of the LNG prices in Europe and Asia from different suppliers and it is interesting to see the competitiveness of the Yamal LNG in comparison to them.

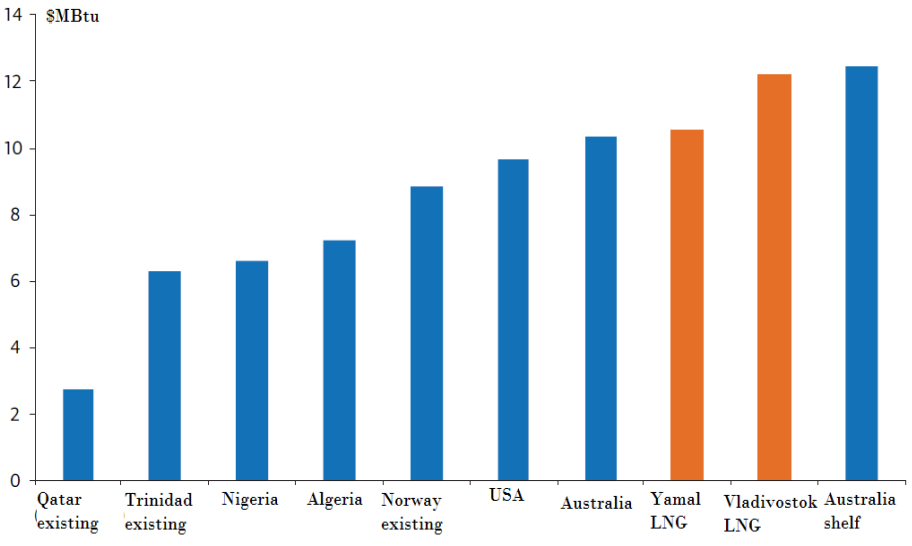

Figure 15. LNG delivered to Europe and LNG delivered to Asia

Source: Skolkovo business school energy center

112 URL: http://www.total.com/en/energy-expertise/projects/oil-gas/lng/yamal-lng-cold-environment-gas

Gazprombank in its analysis of Novatek “Pricing sanctions and Yamal LNG”, provides a different picture. They calculate that the Yamal LNG has the lowest capex per mln tonnes of LNG capacity of all the projects until 2020. They argue that even if the American projects like the Sabine Pass liquefaction facility has a capex of $0,74 per mln tonnes of LNG capacity this does not account for the upstream. The U.S. projects have to use outsourced gas from shale what, according to them, doubles the costs. Of course, also transportation costs have to be considered which are higher for Yamal LNG.

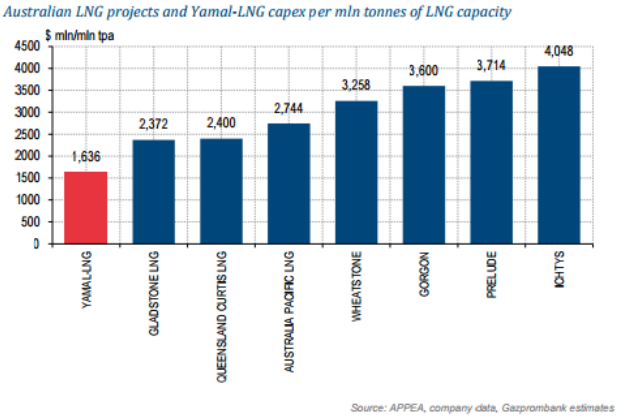

Figure 16: Comparison of projects’ capex per mln tonnes of LNG

Source: Gazprombank

5.8. Conclusions about Arctic gas

Arctic gas projects are very expensive long-term investments. The European market is already supplied by the existing pipeline system and the demand in Europe is flat and even declining after 2008. There is an ongoing recovery in gas demand in Europe only in recent years. However, it is still uncertain if the demand will reach previous levels and outgrow them. Similarly, China will soon receive 61 billion cubic meters of Russian natural gas from the project Power of Siberia and Japan is restarting some of its nuclear reactors. The renewable growth in China is impressive and the combined new renewable electricity generation from hydro, wind and solar power amounted to 153 TWh in 2016. This almost equals the

electricity generation by all German renewables in 2016[113]. This is lowering demand for gas fired power plants.

In addition, the U.S. has become a natural gas exporter and the Chinese economy is slowing, switching also to less energy intense sectors following the advanced economies. Of course, there are other potential buyers, however, currently the global LNG market is oversupplied. The international energy consultancy Wood Mackenzie sees the window of opportunity closed for new projects at least until 2025[114]. The liquefaction capacity at the end of 2015 was about 301,5MTPA and additional 141,5MTPA of capacity will be added until the end of this decade especially in Australia and in the U.S.

In the best scenario until 2025, the Russian Arctic could see two operating LNG projects the Yamal LNG and the Arctic 2 LNG which would not drastically change the picture of the region considering also that this would be only about 5% of the Russian annual gas production.

In addition, the Arctic projects would face strong competition from other LNG projects around the world especially in places with lower costs. Recently Qatar for instance, the main world producer, announced a 30% expansion of its liquefaction gas output in five to seven years time.[115] In 2025 the world will presumably face a new energy reality and soon after natural gas will probably be already on the declining path in the world energy supply.

5.9. Growing alternatives to fossil fuels

In order to limit climate change and to use infinite renewable and sustainable resources for the world's energy needs, renewable energy will be crucial for our future. In the last several years many countries across Europe, and more recently other countries too, have seen an important shift in their energy mix with an

[113] URL: https://blog.energybrainpool.com/en/power-statistics-china-2016-huge-growth-of-renewables-amidst-thermal-based-generation/

[114] URL: http://business.financialpost.com/news/energy/window-of-opportunity-for-new-lng-projects-is-gone-because-of-supply-glut-consultancy-says?__lsa=94c1-5c19 (accessed 9th May 2016)

[115] https://www.bloomberg.com/news/articles/2017-07-06/qatar-flexing-lng-muscle-puts-new-u-s-australia-plants-at-risk

exponential growth of wind and solar energy. For example, Italy and Germany, two important importers of energy, in particular of oil and natural gas, have seen in just a couple of years the combined share of solar and wind go up to 12,5% of total electricity generation in Italy and to almost 20% in Germany in 2015. In the EU28, for instance, renewable electricity generation grew from 678TWh in 2011 to 923TWh in 2015 while natural gas electricity generation decreased from 705 to 485 in the same period[116]. The graphs below show the share of renewable in Europe electricity generation.

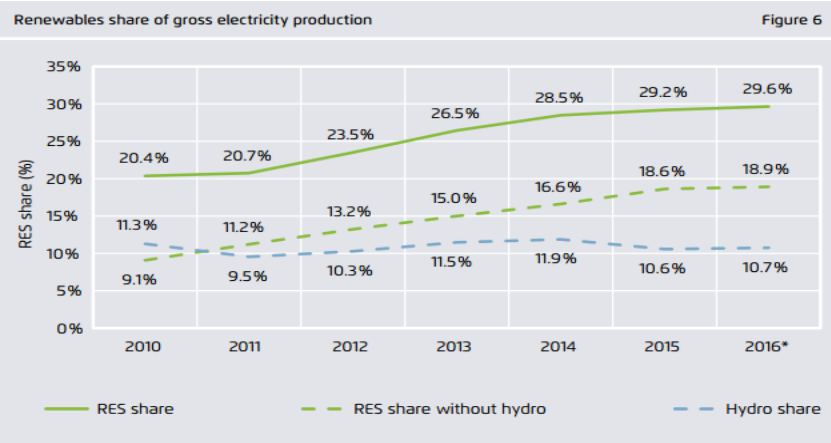

Figure 17: Renewables share of gross electricity production

Source: www.agoraenergiewende.de[117]

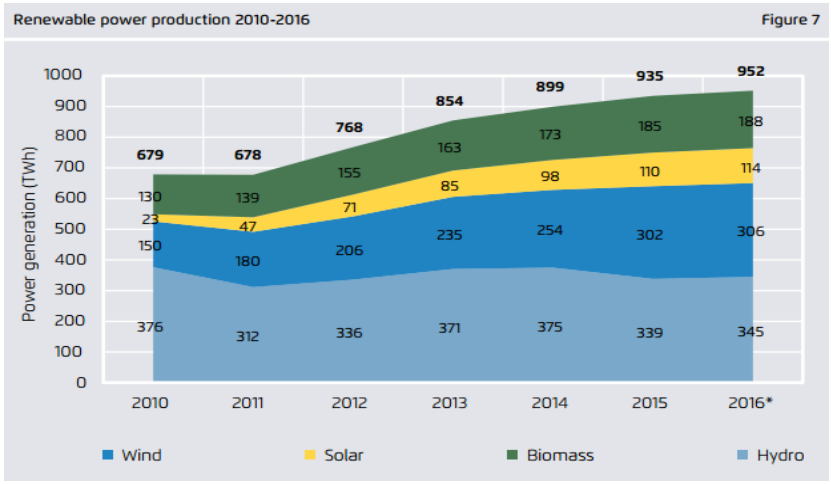

Figure 18: Renewable power production 2010-2016

Source: www.agoraenergiewende.de

116 URL: http://c1cleantechnicacom.wpengine.netdna-cdn.com/files/2016/05/europe-status-quo.jpg (accessed 9th May 2016)

117 URL: https://www.agora-energiewende.de/fileadmin/Projekte/2017/EU_Jahresauswertung_2016/Agora_State_of_Affairs_EU_2016_WEB.pdf

China is installing photovoltaic and wind turbines systems at a record peace in the last several years and plans to reach 150GW of solar photovoltaic installed capacity until 2020. It has also 262GW-thermal of solar heating capacity[119]. In the OECD countries solar and wind generation increased by 16% to 776 TWh in 2015 while fossil fuel generation decreased by 1%. Combustible fuels production was 6189TWh[120]. The total world wind annual installations are already above 60GW in 2015 with solar catching up. According to the latest projections, they will already reach 100GW annual installations each in 2020.

In the automotive sector there is a growing trend towards the electrification of the transportation sector. In some advanced economies like Norway, electric and hybrid cars in 2015 have already reached a 23% market proportion of new vehicles sales. Tesla Motors, for instance, plans to produce 500000 electric vehicles annually from 2018-2020 and all the major auto companies are shifting to hybrid and electrical cars production. According to some calculations this should start the displacement of oil already beginning from 2022[121].

Another important factor to consider is the carbon budget. The world can emit at the current levels for another ten-twenty more years to reach the limit. There are some projects which started incorporating carbon sequestration but they are very expensive and can not compete with renewables. Additionally, many important international investors have already started the divestment process from fossil fuels. With the recent COP21 climate agreement the countries agreed to keep the temperature below 2C° with the desire to keep it under 1.5C° if possible. This will undoubtedly foster policies towards a renewable energy future.

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118 URL: https://www.agora-energiewende.de/fileadmin/Projekte/2017/EU_Jahresauswertung_2016/Agora_State_of_Affairs_EU_2016_WEB.pdf

119 URL: http://www.pv-magazine.com/news/details/beitrag/its-official--china-has-the-most-solar-pv-installed-globally_100022939/#axzz48Hm3q1Wf (accessed 9th May 2016

120 Wind & Solar OECD Electricity Generation Grew 16% in 2015 URL: http://cleantechnica.com/2016/04/05/wind-solar-oecd-electricity-generation-grew-16-2015/ (accessed 9th May 2016)

121 The Peak Oil Myth and the Rise of the Electric Car URL: http://www.bloomberg.com/news/videos/2016-02-24/the-peak-oil-myth-and-the-rise-of-the-electric-car (accessed 9th May 2016)

5.10. Conclusions

The most important conclusive remark to be pointed out, is that the developments outside the Arctic region will largely determine the fate of its fossil fuel reserves. The pace of development of the extraction industry in the Arctic will be therefore strongly affected by how energy markets, technological innovation, price dynamics, geopolitical trends and climate change and environment awareness, both at regional and global scales will change in the next future.

The latest advancements in the energy sector and the increased awareness about the climate risks are changing the world's attitude towards energy. Natural gas is still seen as the transitional fuel to the zero emissions economy but probably it will be overtaken by renewables soon. The global market is actually flooded by natural gas and especially LNG with prices slipping to historical lows. For all those reasons, it is difficult to expect that the Arctic will experience a fossil fuel extraction bonanza. Arctic projects require huge capital investments and do not provide flexibility in the long term due to the high initial investment requirements. It would be very risky to predict a fresh wave of Arctic extraction projects in ten years time following the rapid cost reductions and technological breakthroughs of other energy sources. This chapter clearly suggests that the timing for new Arctic oil and gas extraction projects is limited and can be restricted to some decades and that there's the possibility that majority of Arctic fossil fuels reserves will be kept in the ground.

In this scenario, it would be extremely important for Arctic countries to adapt and to plan for such a future and to consider alternative ways for their northern development. The low Arctic fossil energy resources potential could benefit the sustainable development of the entire Arctic region since huge extraction projects could have a negative impact on the environment and the society. The assumption that a large part of Arctic fossil fuels will be kept in the ground, could help to reframe the governments' attitude and plans towards the region and strengthen the spirit of cooperation. Artic transportation, Arctic tourism and sustainable

development, for instance, contrary to huge extraction projects, require a continuous and ever improving forms of cooperation among the Arctic states, regions and communities.

Chapter 6. Security and militarization of the Russian Arctic

6.1. Introduction

The Arctic today has achieved high levels of cooperation, peace and stability. Despite this, there are many experts, articles and reports, which discuss the importance and threats deriving from the perception of a growing regional military activity (Emmerson, 2010; Giddens, 2009; Le Miere, Mazo, 2013; Scagnetti, 2010). At almost every conference dedicated to Arctic topics someone raises the issue of security and militarization (122). The fear of possible future tensions or even conflicts at the North Pole is persistent among the public and in the scientific community. Furthermore the narrative centred on the "rush for resources" is strengthening the scenario of confrontation and conflict in the northern territories (Anderson, 2008; Howard, 2009; Cannata, 2011; Caruso, 2015; Perrone, 2012). The underlying belief is that the "rush for resources" (123), accelerated by the expected effects of climate change in improving the region's accessibility as well as the economics of the Arctic extractive projects, could result in new regional conflicts among the circumpolar states. Such perspective is strengthening the concerns for the recent Russian military efforts in the Arctic region. In fact, in the last few years, Moscow has reopened some abandoned Arctic military bases, and new investments have been planned to sustain future military deployments.

According to Heininen and other scholars, however, the most important fact today in the circumpolar North is the high stability and peace of the "Arctic international order" (Heininen, 2016a; Kraska, 2011; Zellen, 2013).

Against this background, in order to understand the geopolitical, security and military dimensions of the current state of affairs in the Arctic, this paper is focused on the northern military plans and capabilities of the Russian Federation. Besides

122 See, for instance, Section 21: Security and Governance in a Global Arctic, The Arctic Science Summit Week 2017, 31 March – 7 April 2017, Prague, Czech Republic.

123 For a critical approach to the "rush for resources" narrative, see Emmerson, 2010 (who points out how slowly the Arctic resources are being exploited) and Lansetti, 2016 (who argues that there are growing important reasons to assume that the majority of Arctic underwater fossil fuel resources would not be exploited in the future).

this, some factors that could influence Russian military and security thinking, and the scale of deployments in the region are analysed. In particular, the following questions are addressed: are the current Russian military deployments a clear evidence of a new phase of Arctic militarization? What is the military and political logic driving these efforts? Are they reflecting a more global and strategic perspective? Or are they increasing the possibility of a new confrontation scenario at a regional scale, among the circumpolar states?

The paper is organized as follows: section 2 tackles briefly the Russian Arctic discourses focused on security issues and the securitization approach and the official documents related to Arctic security.

Section 3 analyses the strategical and tactical nature of the Russian military deployments. The facts on the ground would confirm that the Russian Arctic military forces have more a *global strategic role* rather than a *tactical regional one* (124). Moreover, Russia has also a 20,000 km maritime border along the Arctic coast, and with the increasing accessibility due to Arctic warming, there is also a growing need to protect, patrol and secure the established national borders. In the following part of the section a description of the current state of military deployments and capabilities in the Arctic region is done. Russia is modernizing the sea based nuclear arsenal while the other conventional deployments in the region, are mostly *defensive moves* and are part of a *modernization process and upgrade of already existing obsolete forces and infrastructure*. They do not resembles a Cold War style confrontation and they lack an offensive push and intention. The military is involved in research on the continental shelf and they provide also critical infrastructure for remote Arctic civilian operations, for communications and for monitoring and rescue operations and emergency response readiness.

In section 4, five points which we believe are important to conclude that a militarisation of the Russian Arctic is unlikely are discussed: ideology, the Arctic resource potential, Russian budget constraints, international environment and regional cooperation arrangements, and “soft” security issues.

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124 It should be noticed that the US submarine deployed missiles, for instance, launched from the northern Arctic Russian coast, could reach Moscow within 15 minutes.

In section 5, some conclusions regarding the nature and the role of the recent Russian militarization efforts are made, and the implications for the expected evolution of the Arctic are discussed.

The methodology for this article is mainly a critical overview of the international literature and of the Russian press in order to understand the Russian position on Arctic military affairs and the security agenda. Particular attention was put on Russian discourses and speeches of prominent figures related to the Arctic regarding the regional security, and on how the Russian leaders want to represent the Arctic to the domestic audiences and elites.

Although there are other important emerging security issues (e.g. environmental security, food security, etc.) (Hoogensen, 2014), the paper will follow a more classical approach and focus mainly on hard security, based on the concept of national security. The main reason for this is that the military and national security is still the dominating Arctic security paradigm for Russian leaders, in particular for those familiar with securitization discourses ([125]).

6. 2. Russian Arctic security discourses and policy documents

During the Cold War, the Arctic was one of the main arenas in the USA-USSR confrontation (Claval, 1994; McCannon, 2012). Moreover, for Moscow the Arctic was a strong propaganda tool, widely used to celebrate the greatness of the Soviet

[125] The notion of securitization is linked to the Copenhagen School and to the works of Barry Buzan, Ole Waæver, Jaap de Wilde and others (Collins, 2007). They keep the notion that security is about survival and according to them securitization is an act when an issue is framed as posing an existential threat to a referent object and extraordinary measures should be imposed in response. In this case the concern is moved from the politicized domain to the securitized one beyond the established rules of the game. Securitization allows extraordinary measures to be adopted. This could be a massive deployment of resources or strong popular support for a decision regarding the securitized issue. The Copenhagen School considers security as a socially constructed concept and central to the process of securitization is the "speech act". The success of the process does not depend on the final adoption of extraordinary measures but on the extent to which it has succeeded to convince the audience. In the Arctic case, many Russian government or military officials, like for instance the Chairman of the State Commission for Arctic Development Mr. Dmitrij Rogozin, often frame Arctic issues in securitization terms. In 2012 Rogozin stated that if Russia does not protect its Arctic economic interests, in the middle of the XXI century it will stop to exist as a state. In this case the issue of Arctic economic development is framed as an existential threat to the existence of the Russian state. There are many other similar statements and positions in the Russian press and among the elite.

Union, its technological strengths and the communist leaders who made the Arctic "exploration" and "conquering" possible (Josephson, 2014).

Even today, Moscow has the largest military in the Arctic and it is probably the most important northern country (Antrim, 2011; Fabbri, 2016). Against this background, as Staun pointed out (Staun, 2017), Russia's strategy is dominated by two overriding foreign policy directions. On one side, Russian discourses still put a lot of emphasis on Arctic security and the military aspects ([126]). On the other side, Russian discourses are often characterized by conciliatory and de-conflicted language, as President Putin's speech in Arkhangelsk on 29 March 2017 would appear to confirm ([127]).

From this perspective, the Arkhangelsk Conference, which was attended by the Finnish and Icelandic presidents, could be seen as an attempt to restore the relations with the neighbours and to show the domestic audience that Russia is not isolated internationally. However, even though the consideration of the Arctic as a "territory of dialogue" and cooperation has gained legitimacy and visibility in the Russian political rhetoric, the securitization perspective probably still remains the most widespread approach to Arctic affairs among Russian officials.

The Russian Arctic in fact is often represented as being threatened from other states, NATO, international oil companies and the international community. This language is also present in the official documents. In response to this, Russia is deploying long-range bombers and military ships from the Northern Fleet to Arctic waters and is also conducting large-scale exercises in the region. However, as Zysk has already discussed (Zysk, 2013), even if security and military issues remain

[126] This was recently also reaffirmed with the showcase of the new Arctic adapted air defence systems at the Victory Parade in Moscow on 9 May 2017.

[127] In his speech he argued that, "Russia proceeds from the premise that there is no potential for conflicts in the Arctic region. International norms clearly define the rights of both coastal and other states and serve as a solid basis for joint work in solving any problems, including such sensitive ones as the delineation of the continental shelf in the Arctic Ocean and preventing unregulated fishing in the central part of the sea, which is closed off from the exclusive economic zones of the United States, Canada, Denmark, Norway, and Russia". In his eighteen years in power President Putin is well known to change his language and position in a short period of time or depending on the occasion on which he speaks. One good example could be Putin's speech in Paris at the COP21 Conference, where he defined human induced climate change a threat to humanity. Months later he denied that climate change is human caused and spoke about volcano activity instead.

important, the latest Russian Arctic strategy is more and more focussed on the economic interests in the region ([128]).

For our purposes, there are three important recent official documents dealing with Russian Arctic security and military activities: "The Foundations of the State Policy of the Russian Federation in the Arctic to 2020 and Beyond", adopted by President Medvedev in 2008; "The Strategy for the Development of the Arctic Zone of the Russian Federation", approved by President Putin in 2013; and the new "Navy Doctrine of the Russian Federation", issued in 2015.

The strategy from 2008 is very clear regarding the main Russian priorities in the Arctic and shows how the Russian leaders see the Arctic. The main plans and priorities are the willingness to increase the extraction of the natural resources and to develop the Russian Arctic Zone, the jurisdiction of the Northern Sea Route (NSR), which according to the document is under Russian jurisdiction, the delimitation of the continental shelf, and the creation of a unified security system by 2015, including early-warning, prevention and crisis management capabilities. As Zysk has noticed (2013) the document is interesting because it departs from the 2001 document, which was build on zero-sum game and strong Realpolitik assumptions.

The second document from 2013, in Section 7 ([129]) illustrates, in line with the previous document, six important policy guidelines. National security and the military are only mentioned at the end. In Section 18 the first three points are dedicated to typical military issues while the following ones to the control of the Arctic territory and airspace, the sustainable economic and social development and the use of dual-purpose technologies underling the important role of the military in the research activity for the delimitation of the continental shelf ([130]).

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[128] It should also reminded that in the Arctic the economic and military dimensions are strongly interdependent; as Soroka pointed out, "The connection between economic and military drivers in Arctic policy is especially acute, as in the High North they are linked more tightly than in most other parts of the world due to the formidable logistics of operating in such an extreme environment" (Soroka, 2016, p. 371).

[129] *On the priority directions of development of the Russian Arctic zone and ensuring the national security.*

[130] The aim of sustaining the development of the industrial base and transport infrastructure, and that of addressing environmental and social problems were reaffirmed in 2014, with the State program on "Socio-Economic Development of the Arctic Zone of the Russian Federation for the Period up to 2020".

In July 2015, the Russian President signed the new "Navy Doctrine of the Russian Federation" where an entire chapter is dedicated to Arctic issues ([131]). According to this document, Russian national security is threatened by the aspiration of the USA and its allies to control the world's oceans and the Arctic waters, which are increasingly challenged by foreign naval powers. The main reason is the control of the hydrocarbon resources and the willingness to weaken the Russian control over the Northern Sea Route. The document uses hostile language towards the US and NATO, however, at the same time it recognizes the need to strengthen the cooperation between the FSB (Federal Security Service) and other countries border authorities.

To conclude, the evolution of the Russian Arctic vision is confirming the view that more and more emphasis is placed upon the economic development perspective and territorial issues. However, security and military issues remain important. Unfortunately, as the new Navy Doctrine indicates, the Ukrainian crisis has contributed to increase the military focus and language, also sometimes resembling a nationalistic rhetoric and practices that were more common during the Cold War.

6.3. Practical policies in the military fields

Strategic and tactical planning. The security debate today in the Arctic has already shifted to consider also other subjects and premises of security as for instance human security and food security, environmental security and climate change impacts on security and related issues (Finger, 2016; Hoogensen, 2014). However, traditional security is going to stay in the Arctic (Heininen, 2016a, 2016b).

Military and national security practices have undoubtedly the potential to strongly polarize Arctic discourses and overwhelm other important issues and developments. Furthermore, it is also the domain of security, which is still attracting the biggest investments from the Russian budget, compared to other security

131 Арктическое направление — Arctic Direction.

issues. However, also in the traditional security domain there is somehow a need to better define current Arctic military activities. While the nuclear system of the Russian Federation, based on SSBN (Ship Submersible Ballistic Nuclear) patrols, is playing a more global and strategic role, there is also a regional aspect of security and militarization. The first uses Arctic waters for other non-regional purposes such as global deterrence, while the other is oriented towards the security of the Russian northern borders and specific state interests there.

Although the two military dimensions could be somehow overlapping, the strategic considerations play a more important role in the modernization plans and decisions of the Russian northern armed forces. The strategic and global role of the Arctic still represents the most important element in the Russian Northern security vision. This is in line with the view that most of the current northern Russian military assets are too important to consider in tactical planning rather than to deploy them for strategic and deterrence purposes (Thomassen, 2016; Wezeman, 2016) [132]. This could also mean a more stable regional environment since deterrence practices should not escalate in local wars and tensions.

Arctic military activities. During the Cold War, the Arctic region became a military flank being a theatre of a massive military build-up and of an extensive militarization effort by the Arctic states and in particular by the Soviet Union. McCannon characterizes the Cold War Arctic as an atomic-era battlefield with a destroyed ecosystem, since the region has been contaminated with petrochemicals, PCBS, fuel, and other wastes from various military bases present in the region including the US DEW (Distant Early Warning) Line and nuclear tests' explosions (McCannon, 2012). In the 1970s and 1980s the Northern Fleet experienced a large modernization and strengthening effort, in part as a response to the US missile shield program or deterrence reasons, in part due to the implementation of the "technology models of geopolitics" (Heininen, 2016b, p. 18; Nieminen, 1991).

132 "Russia's expansion of its Northern Fleet and other land and air forces in the Arctic, the largest military force stationed in the region, also appears to be more a matter of providing protection for its SSBNS (Ship Submersible Ballistic Nuclear system) – as the Soviet Union did during the 1970s and 1980s – than a programme building up for a military struggle over Arctic resources" (Wezeman, 2016, p. 22).

Today, the two Arctic nations with global influence are the US and Russia ([133]). The US, apart from the ongoing modernization of its submarine force with the commissioning of the advanced Virginia class submarines, which also sometimes patrol and exercise in the Arctic ocean, does not have an agenda of drastically strengthening its Arctic military forces. The US has only one operational heavy icebreaker, which entered in service in 1976 and is planning to start building a new one only in 2019 (O'Rourke, 2017) ([134]). However, in response to the growing Russian submarine activity, which has reached Cold War levels according to NATO commanders, the US has recently announced a plan to return to the military base in Iceland while NATO has decided to re-establish the command post for the Atlantic. Despite this, the military activity of Arctic NATO Countries could be defined as limited and restrained.

Russia has recently reopened some abandoned Arctic military bases and established new ones and strengthened its military presence in the region. There are concerns among other northern countries that this could be just a beginning of a stronger future military deployment. In December 2014, on the basis of the Russian Northern Fleet, an inter-service joint strategic command "North" was formed. The command, according to Defense News, has a surface fleet and a submarine fleet of about 40 vessels each, although between 40% and 70% of those ships are currently unusable. It will ultimately feature an air defence division, two Arctic mechanized brigades, a naval infantry brigade, a coastal defence missile system, and the placement of missile regiments in outlying archipelagos in the Arctic Ocean. Moscow plans envision the opening of ten Arctic search-and-rescue stations, 16 deep-water ports, 13 airfields, and ten air-defence radar stations across its Arctic coast and a deployment of nine S-400 Triumph air defence missile systems to the coast.

[133] Canada and other European states are more regional players and could hardly change the overall military balance of the region.

[134] Russia has dozens of icebreakers.

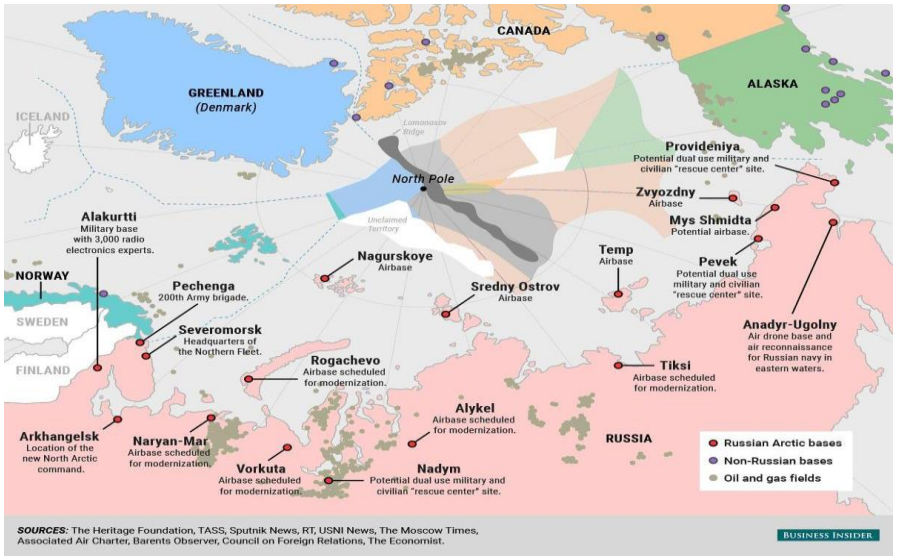

Figure 19: Arctic military bases and oil and gas fields

Source: Business Insider

When it comes to consider the relevance of above plans, it must be pointed out that after the collapse of the Soviet Union, the Russian Arctic military deployments suffered almost a complete collapse and most of the bases were abandoned and the military hardware too. The total number of nuclear submarines, for instance, which were the most important navy asset in the Soviet Union, decreased dramatically from 180 at their peak in the 1990s, to about 40 units today. The backbone of Russian submarine forces is stationed in the Northern Fleet so those numbers are representative also for the Arctic. The same decline can be observed also for overall submarines activity and patrols ([135]).

The Russian rearmament program is providing financing for eight strategic Borey class and only seven attack Yasen class nuclear submarines for a total of 15 modern vessels. In recent years almost no major surface ship has been commissioned in the Northern Fleet while the construction of new generation Lada class diesel submarines is delayed due to technical problems. During the recent navy deployment in Syria, for instance, Russia has deployed almost all of its fleets combined. Its only aircraft carrier has lost two jets during the low intensity operations showing the difficulties the navy is experiencing.

[135] The number of SSBN Patrols reached the peak in 1984, with about 130; then it decreased to less than 10 in 2006 (www.nukestrat.com). As we will show in Section 4, in the last few years, the Ukrainian crisis, the international tensions with NATO and the modernization of Russian submarine forces have contributed to increase the patrolling activity in Arctic waters.

Russia is currently lagging behind with the development of the fifth generation fighter PAK FA ([136]), and the new strategic bomber PAK DA ([137]). While the US has deployed the formidable F-22 fifth generation fighter in Alaska and is now deploying also the F-35, the Russians could not match this neither in quality nor in numbers. After the collapse of the Soviet Union, many military programmes were halted due to lack of resources, and due to the "brain drain" while Moscow has also a smaller military budget and corruption problems. According to commander Daniel Thomassen of the Norwegian navy, the aspiration to be a first-rate maritime power is beyond Russia's maritime potential and industrial capacity, and Russia's ambitions in the world's oceans are out of reach. According to him, a more prudent choice for Russia would be to develop a capable anti-access and area denial (A2/AD) force to supplement its proficient submarine force. Russia is capable of being a regional naval power in local theatres of choice (Thomassen, 2016).

In conclusion, a consistent part of the Russian militarization effort is related to sea based nuclear deterrence system. Following a long period of decline the recent commissioning of new ships and warplanes and the opening of some bases appears to be more a modernization of the existing obsolete forces rather than an expansion push in the Arctic. Most of the military hardware deployed is defensive while the opening Arctic is also increasing the vulnerability and threats to the extensive Russian northern borders. The Russian Arctic military doctrine is largely focused on strategic deterrence and on the protection of its northern territories, its sovereignty and the creation of a capable anti-access and area denial (A2/AD) force.

6.4. Evidence against a militarization rush

In my opinion there are five important reasons which should be considered against the militarization of the Russian Arctic.

[136] PAK FA - Перспективный комплекс фронтальной авиации – Perspective complex of frontal aviation.

[137] PAK DA - Перспективный комплекс дальней авиации – Perspective complex of long-range aviation.

Ideology. The main battleground in the Cold war was undoubtedly ideology. The Cold War struggle was centred also on the concept of modernity and on which ideological system was to be considered as better for the evolution of the world society and economy. Both Superpowers used to monitor and control a territory, and to promote its modernization in order to show the world the results and strength and universal applicability of their ideology. Symbolical achievements, were important to impress the rest of the word and reaffirm their technological superiority and efficiency of their political and ideological system (Westad, 2005). The Arctic conquests and undertakings were part of this struggle (Josephson, 2014).

From this perspective, the Russian Federation could not be compared to the Soviet Union. The current Russian ideology is more a reflection of its economic system, and of how it has evolved in recent times. It is the result of the wild privatization of the 1990s and of the struggle of different groups to take control of the Country and its natural and industrial resources. Russia is an extraction-oriented economy and its ideology is dependent on this. The centre is trying to control most of these resources and the capital inflows they generate. The very survival of this political regime depends on the incomes generated by this extraction economy, which allows a post-Soviet authoritarian and autocratic system to be in place.

The Arctic is seen as a strategic reserve of oil, gas and minerals for Russia. This could partially increase the military focus on the region but only to the extent that protects the Russian Arctic economic and strategic interests. The Cold War danger of inter-state or industrial war is today considered close to irrelevant in the north simply because it is impossible to see what can be gained (Anderson, 2013).

The Arctic resource potential. In order to exploit the potential of the Arctic resources, Russia would need to have a stable environment in its Arctic territory and across its borders. This could create market opportunities, attract foreign investments, allow technological transfers, foster cooperation and facilitate transportation. Natural resources exploitation apart, the medium and long-term economic opportunities are related to other sectors (e.g., the development of the NSR as an international and regional transit corridor, Arctic tourism, and fishing). The extraction development model is clearly a short-term development horizon. Russia

is too dependent on this sector and is in urgent need to diversify its economy and its exports. To achieve this goal good international relations are crucial.

A massive militarization of the region goes undoubtedly clearly against the goal of a sustainable Arctic development. Arctic sustainable development and resilience of its socio-economic system require a different governance approach towards the region based on scientific knowledge and a highest degree of cooperation in order to try to achieve this goal. It is important to consider what kind of development can be sustainable and desirable for the Arctic. In this perspective, it is clear that the acknowledgement of the potential role of the Arctic as strategic area for resource exploitation has become increasingly the dominant discourse regarding its future. Therefore, the debate on the sustainable Arctic development has been so far a concern mainly for the scientific community, international organizations and NGOs ([138]).

Russia intends to use is Arctic region as a strategic resource base (Slipenchuk, 2013). The Russian Federation would like to develop its long-term strategy to link its Arctic region to the rest of the world. The short-term drivers are clearly the development of natural resources and timely export of domestic production. This could foster the evolution of an Arctic region from a once-closed security bastion to a vast marine area more open for use and, potentially, integrated with the global economy (Brigham, 2013).

As can be seen on the map below the unassigned territory closer to the North Pole, which Russia claims, is just a relatively small part of its Arctic domain.

[138] "The politics of the Arctic and the conflicts over its future is less about territories and hegemony than it is about imaginaries of the Arctic and their discourses, which play a key role in politics. […] Currently Arctic development is deeply entrenched in efforts and imaginaries of the prospects of fossil fuel production. The Arctic has thus deliberately been detached from global sustainable development concerns" (Kristoffersen, Langhelle, 2017, pp. 21, 38).

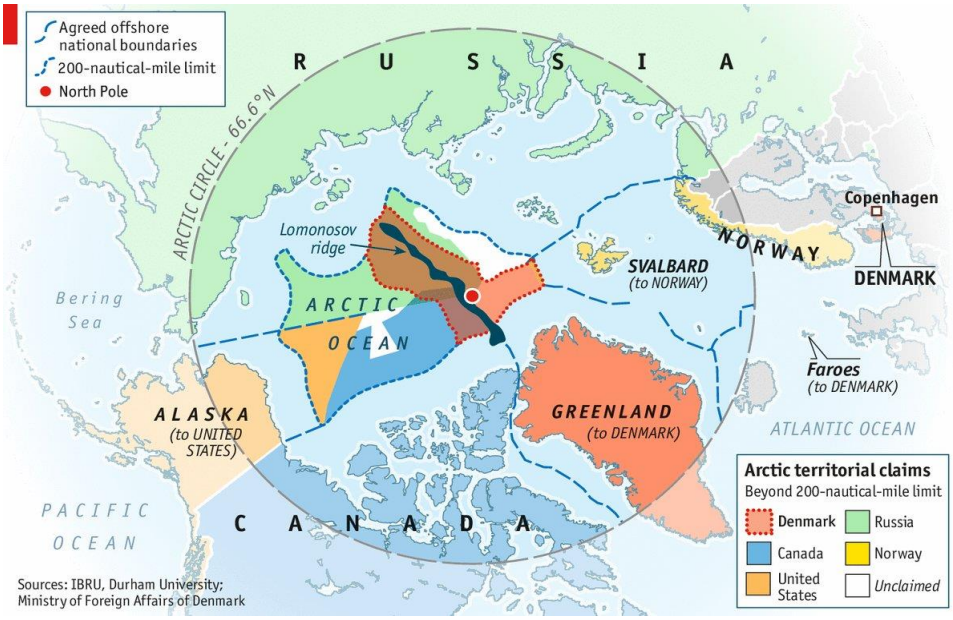

Figure 20: Arctic territorial claims

Source: Business Insider

The majority or even all of the current Russian interests and natural resources are concentrated on its territory and in its extensive 200 miles exclusive economic zone ([139]). It would not make economic sense for Russia to engage in local conflicts for small regional gains while most of the resources are already located in undisputed national territory.

Russian budget constraints. The military activity in general could be analysed also in terms of competition with the civilian sector for the use of land and infrastructure and not at least, also for the allocation of limited resources like the

[139] Moscow considers the expansion of the continental shelf an important priority of its regional strategy. In 2001 Russia argued that parts of the Central Arctic Ocean as well as parts of the Barents Sea, the Bearing Sea and the Sea of Okhotsk should fall under its jurisdiction, since the Lomonosov Ridge and the Alpha-Mendeleev Ridge can be considered extensions of its continental shelf. The rationale for this claim was found insufficient by the UN Commission on the Limits of the Continental Shelf, and no decision has been taken yet. Other claims were raised by other Arctic States in the following years. With regard to this controversy, it is important to point out that the ongoing delimitation of the borders through the UNCLOS process concerns the extension of the EEZ beyond the 200 miles limit. It is hard to imagine that the areas beyond the 200 miles delimitation line would become crucial for Russian Arctic oil and gas production anytime soon. In fact, as Soroka pointed out (Soroka, 2016, p. 363), "[…] out of 61 major oil and gas fields in the Arctic, 43 are located within Russia's borders, and more are continually being discovered and explored". Furthermore, due to several reasons it is very likely that a large part of Arctic underwater resources would not be extracted at all (Lansetti, 2016). In addition, all the countries, with the exception of the US are following the UNCLOS process and the international law in the delimitation process (Konyshev *et al.*, 2016). However, one factor not related to natural resources that could make the EEZ delimitation process crucial for the future of the region is the development of the Arctic transportation potential and the control of the Trans-Arctic shipping lanes (Sellari, 2013).

national budget and human resources. This is particularly important in the Russian Arctic where indigenous people depend on land and where the industrial and economic development should be accompanied or preceded by expensive and extensive infrastructure development. Military activities could also become an unsustainable burden for the national budget and economy as it was the case for the Soviet economy (Trachtenberg, 2014).

The collapse of the Soviet Union unlashed the process of privatization, which was highly unequal, unpredictable and unsuccessful due to the economic transformations, corruption and criminal infiltration. Many industries were abandoned and the result was indeed a massive demographic crisis in the Federation's northern regions.

The Russian economy, after a rapid growth and recover from 2001 to 2008, has suffered recently a second recession mainly due to the downturn in oil and gas prices. In addition, Moscow's involvement in Ukraine and Syria is also costly for the national military budget. Russia has recently focused on the Mediterranean again and is strengthening its Black Sea Fleet and will need to focus on the ageing Pacific Fleet which has almost lost any capacity of power projection in the important Asia-Pacific region. The Russian strategic missile forces are undergoing an expensive modernization process and the national military budget is restrained by the difficulties in the national economy and the size of the Russian economy.

In conclusion, the Russian economy does not have the strength and the resources to allow a rapid and massive militarization of the Arctic. Russia has other important interests, which rank higher in the political agenda also in other regions to pursue and defend, and a peaceful and demilitarized Arctic should be a desirable situation for its economy and development.

International environment and regional cooperation arrangements. – The Arctic is a unique environment of international scientific cooperation. This has been recently recognized and officially acknowledged by the Arctic Council third legal-binding Agreement on Enhancing International Arctic Scientific Cooperation.

The US, the only potential hegemonic power, has hence been unable and unwilling to enter into a hegemonic role, and remains a rather reluctant, but still strong "pole" in the Arctic system. While Russia stands out militarily, the opposite is

true with regard to its low scores on GDP per capita, administrative efficiency, technological readiness and general competitiveness (Wegge, 2010). Although being an important player, Russia could not unilaterally impose its own agenda and vision on its Arctic territory. What other countries do, and how they see the region, is extremely important for Russia too.

It should be also reminded that the Arctic has represented so far a unique opportunity to have at disposal an open and relatively stable northern communication channel insulated from other international tensions and events (Heininen, 2016a). In general, the Arctic international community, its states and other stakeholders, among them the indigenous people and the scientific community, are fostering an environment for cooperation. All these elements contribute to reduce the risk of conflict among Arctic states.

Against this background, it is important to consider how the Ukrainian crisis in 2014 has impacted on Arctic cooperation. On the one hand, this crisis had negative consequences on the northern economic cooperation, particularly in the energy sector: with the introduction of the Western sanctions, several exploration projects were in fact frozen or even cancelled (Belyi, 2017; Mae, 2016; Melas, 2016). Moreover, the Ukrainian crisis has contributed to mutual distrust and suspicion between Russia and the West in general, and with NATO in particular. On the other hand, even during the highest period of tensions related to the Ukrainian crisis (and the Syrian conflict), Russia has been reluctant to give up all those cooperative achievements ([140]).

In the post-Ukrainian crisis situation, Russia did not drastically revised its Arctic strategy, although it has made some corrections to its military posture in the North while the strategic documents after 2014 mention NATO as a major threat in the Russian North. Russia has strengthened the air defence units and deployed the Arctic brigade in January 2015 ahead of schedule to the Russian-Finnish border. The strategic command North was also established three years in advance in 2014 and

[140] As Konyshev *et al*. have pointed out recently, "[…] Moscow managed to bracket out the Arctic cooperation from its current tensions with the West and to keep its relations with other regional players on a cooperative track" (2016, p. 2).

there are plans to deploy a second Arctic brigade to the Yamal-Nenets autonomous district.

In contrast with some pessimistic expectations, however, there was no substantial change in Russia's perceptions of the military power's role in the Arctic (Konyshev *et al*., 2017). This is also confirmed in the Russian Foreign Policy Concept signed by Putin in November 2016. The document emphasised particularly the need to strengthen the regional multilateral institutions, such as the Arctic Council (AC) and the Barents Euro-Arctic Council (BEAC) and insisted on the need to keep the Arctic insulated from the current tensions between Russia and the West and prevent any military confrontation in the region.

Considering the international environment and its recent evolution, another issue deserves attention: the need for security- and confidence- building measures in order to avoid misunderstandings and misinterpretations of the other side's military behaviour. The Arctic is witnessing an increasing strategic submarine activity; following the opening of the new LNG terminal in the Yamal Peninsula, maritime transportation is rapidly increasing; the impacts of climate change in the region are expected to foster economic activities related to various sectors. All these elements make more and more urgent the need to have a functioning and effective confidence building system in place, through cooperation among circumpolar states and with the contribution of the main stakeholders. Monitoring, multilateral rescue and emergency response exercises and open channels for communication of military intentions could play a basic role in this regard.

As far as the military-to-military cooperation is concerned, after the Ukrainian crisis the bilateral and multilateral military exercises have been suspended, like for instance the Pomor exercise between Norway and Russia, and the North Eagle, which involved also the US. In addition, it seems that both Russia and NATO have increased the size of their recent Arctic military exercises. Therefore, in order to improve the "security landscape" in the future, in addition to the confidence-building measures also other mechanisms should be considered as for instance the

reduction of major weapon systems and the creation of demilitarized and "no-go" zones ([141]).

"Soft" security issues. – The security issue in the Arctic has to be re-contextualized according to the recent re-framework of security studies. A consensus has emerged in literature about the definition of security that, in broader terms it attains the threats to survival; and from this new perspective military security has become just one of the security concerns (Brauch, 2011). Although being enveloped in the traditional security paradigm, a shift towards other security issues is imminent and already ongoing. In this respect, the challenges posed by climate change can play a fundamental role (Heininen, 2016b).

The Arctic countries governments, especially after and in response to the hard work of Arctic scientists, indigenous populations and many NGOs, are becoming increasingly aware of the threats and challenges that they are experiencing and facing. The melting sea ice and the warming climate is completely changing the regional environment and a militarization of the region in response to those changes would not make much sense. The countries in this emerging northern security framework should try to minimize the consequences of man-made and natural changes through a bottom-up approach and a systemic and regionally coordinated answer instead of creating more stressors for the region, as would be in case of protracted military activities.

The emerging Arctic issues, like for instance climate change, food security, environmental degradation and biodiversity loss, require a common response and approach. Such growing problems should not leave enough space for strategic thinking and militarization initiatives to monopolize Arctic security. Northern

[141] The mandate of the Arctic Council, which has proved very effective in promoting cooperation among the Arctic states, particularly in the scientific sphere, does not include military and hard-security issues. However, it has represented a fundamental framework for supporting new approaches and initiatives aimed at reinforcing cooperation and coordination among Arctic states. Moreover, the *Agreement on Cooperation on Aeronautical Maritime Search and Rescue in the Arctic* (2011), which was negotiated under the auspices of the Council, and the establishment of the *Arctic Coast Guard Forum* (2015) represent important initiatives aiming at building an Arctic regional security regime (Deng, 2016). With respect to the security framework, also important are the *Open Skies Treaty* and the *Vienna Declaration*, established within the framework of the *Organization on Security and Co-operation in Europe* (OSCE), which already apply in the Arctic. From this perspective, Schaller suggests that specific arrangements to the above documents, aimed at providing more information on (and for) naval forces, could contribute to reduce the risk of interstate conflicts in the region (Schaller, 2014).

countries should instead be prepared to cooperate in order to improve adaptation plans and to allocate resources to alleviate people suffering and to minimize the damage to the Arctic ecosystem.

6.5. Conclusion

The Russian Arctic does not appear to be in a middle of a "militarization rush". In particular, there is evidence for maintaining that Russian militarization efforts are reflecting above all national security's concerns, more that testifying an increasing confrontation among Arctic States for regional and tactical reasons. It is true that Russian leaders put a lot of emphasis on the securitization agenda in the Arctic, however, there are important strategic and national security reasons which can justify this approach.

The Arctic is home to the Russian Northern Fleet, which has a strategic missile submarine division. Arctic waters, due to the presence of sea ice, are an excellent environment and a bastion for submarines patrols and for launching ballistic missiles hidden underneath the ice. These strategic systems are going to stay in the Arctic, however, they do not represent a new militarization agenda. Russia is modernizing its submarine fleet and in the future, there will be at least four modern strategic nuclear submarines stationed in the Arctic.

With the disappearing sea ice the Arctic is becoming more accessible and this could pose a threat to the Russian borders and Arctic geostrategic interests. It is also a historic opportunity for the Country to escape from the land encirclement and to leave the twentieth century geostrategy of containment on land behind. Moscow is currently reopening or establishing some new Arctic military bases which are also used to support the research on the continental shelf. Despite its sometimes-bellicose language and sabre-rattling, from the perspective of international law of the sea in the Arctic, Russia has a credible record. As Kraska pointed out very clearly "UNCLOS serves as a key mechanism for conflict avoidance in the polar north as it provides a widely accepted framework for resolving different kinds of

disagreements" (Kraska, 2011, pp. 247). Recent Russian Arctic deployments lack new offensive capabilities with the exception of the nuclear deterrence weapons and tactical nuclear weapons.

There are several reasons, which would suggest that Russia currently is not involved in a military confrontation in the Arctic. Although the securitization approach is still present, even more emphasis is put on the economic opportunities that the Arctic could offer for the current and future Russian development. The Arctic international community and relations are favourable for cooperation. The same is true for scientific cooperation, which in recent years has played an important role in overcoming mutual distrust and solving important problems to advance good Arctic governance. This allows Moscow to have a privileged northern communication channel open. Militarising the Arctic would be very costly in terms of international relations, lost economic and diplomatic opportunities and it could be an unsustainable burden for the Russian state budget.

It is hard to envision today a confrontation in the Arctic based on ideological premises since the ideological confrontation has lost its strength in current Russian relations with the rest of the world. Furthermore, the Arctic is experiencing abrupt rapid changes due to climate change and human related impacts. This is opening new sensitive and urgent security issues, which should be properly addressed.

According to Griffiths, the use of force in the Arctic is unlikely today. It could emerge only as a spillover of an "external conflict" and above all, not related to the regional security dimension. Secondly, because of its heterogeneity an Arctic-specific hard security agenda is very hard, if not impossible, to enact on a regional basis. In this context, climate change does serve to render the region rather more of an entirety for purposes of soft security and civil cooperation (Griffiths, 2011).

The Ukrainian crisis, although it has increased the mistrust between Russia and other Arctic states, has not radically changed the vector of the Russian Northern policy so far. Moreover, the Arctic region has maintained its role as an open channel of communication. However, the risk of future negative spill-over effects, related not only with the Ukrainian crisis but also with other potential international crisis, should not be underestimated. From this perspective, it is clear that the strong decline in Russia-NATO relations that followed the Ukrainian crisis, is posing

new challenges to the Arctic. Therefore, there's an urgent need to reinforce the confidence-building framework, through new cooperation efforts.

After being a nuclear polygon for decades, the Arctic today does not offer the freedom to use it extensively for military purposes anymore. It is extremely important to recognize the strategic and defence role of Russian military deployments and to engage in open dialogue with Moscow on Arctic topics. There is also a need to strengthen the confidence building measures and to have a discussion forum dedicated to the military and security issues, which are excluded from the Arctic Council. In the future the reduction of major weapons systems and the creation of demilitarized zones should be considered.

Ultimately, it is the responsibility of all Arctic states to keep a low military profile in the region, to show restraint in its deployments and military manoeuvres and to recognize that the military is not a solution for the Arctic and its growing new security issues. From this perspective, it is important to acknowledge, that Russia, with its Arctic history, knowledge, traditions and scientific prowess is a central pillar for the current and future governance and management of the region. Assuming this, the international community is right to engage Russia on Arctic topics while trying to insulate the Arctic cooperation from other issues not related to the circumpolar North.

Chapter 7. Arctic maritime transportation

7.1. Introduction

Maritime transportation is undoubtedly one of the main and most important human uses of the Arctic region. It has also probably the biggest potential to radically change the intensity with which industrial countries use the circumpolar waters (Sellari, 2013).

There are various forms of Arctic transportation; on the coast there are airports, roads and even some railways. However, especially roads and railways are difficult to build due to permafrost conditions and the remoteness of the region while the airports could be used only for limited cargoes. The ice roads are used mainly in winter, however, they are very dangerous and due to the warming Arctic, they are also becoming more and more difficult to maintain and use. The best transportation opportunity in the Russian Arctic is sea transportation, which is linked also to some important Russian river systems and could offer increasing transcontinental shipping opportunities in the future.

The state efforts to develop the Russian maritime Arctic sector could benefit also from the investments of big mineral, oil and gas companies. They are developing their own infrastructure for their needs and together with the state they cooperate to integrate their needs and infrastructure into a unique and diversified transportation system. In addition to the state-private cooperation, there is a growing understanding of the need for further integration. The ultimate goal would be an integrated network of navigable sea ways, ports, communication systems integrated with the land based infrastructure.

The chapter will be focused on Russian maritime Arctic transportation, especially on its inter-Arctic dimension and the international one linked to transit shipping across the Northern Sea Route. It will analyse the current status of development of Russian Arctic ports and related facilities and the drivers of demand for transportation.

The Russian government has grandiose plans for the Northern Sea Route and has been pushing hard this agenda since many years. It is also investing resources to establish the Northern Sea Route (NSR) as a viable and secure shipping lane. The future of the NSR will depend on different factors. The most important of them are environmental concerns and the sea ice conditions: its extent, age and thickness and the presence of icebergs. Other factors are transportation technology, international relations, Russian interest and strategic planning for the region and the demand for maritime shipping and not at least the commodities prices.

Currently the route is being used only in summer in all its extent while in winter time there are only limited operations involving mainly Russian nuclear icebreakers which can sail through the thicker ice. Some western passages of the route are also used year-round because some companies like the Norilsk Nickel have their own fleet of ice class vessels. With the current ice conditions, technology, and infrastructure the development of the entire route is envisioned mainly for the summer and early autumn period. Normal ships, without strengthened hulls and a certain level of ice class designation, require mandatory icebreaker escort, which is also very costly and are not permitted to sail in medium and heavy ice conditions[142].

The Arctic navigation environment is very extreme and dangerous for ships and only limited activity has been registered there in recent years and also during the Soviet period. After the collapse of the Soviet Union, the cargo volume transported through the NSR declined from about 7mln tones to just 1mln tones. It is growing after 2010 and has just recently reached 7mln tons again almost thirty years later in 2016[143]. The main driving force for transportation is the development of Russian Arctic natural resources. Transit shipping is very limited and not developed and there are many issues which should be addressed before its possible future massive development. The newest factor in the last couple of years is undoubtedly political. Many countries would not like to be dependent and rely on Russia for their maritime trade with many important commercial partners. Together with the uncertainties regarding sea ice dynamics, the above point is limiting the foreign investment in the NSR development.

142 URL: http://www.arctic-lio.com/nsr_tariffsystem

143 URL: http://www.arctic-lio.com/node/264

7.2. Trans-Artic transportation

For many centuries since 1490 the European explorers have been searching for a passage linking Europe to Asia through a shorter route. The Arctic Ocean is undoubtedly a sea which would permit shorter transit time and distance in navigation between Asia an Europe. However, due to the year-round presence of sea ice and icebergs such navigation has not developed yet on a larger scale. The Arctic Ocean has at least three viable shipping lanes, one along the Russian coast, also called the Northern Sea Route, one along the Canadian coast (the North West Passage) and a central and shortest route through the North Pole (the Transpolar route).

The Canadian passage is used sporadically in summer months for research purposes. It has serious problems with icebergs, which make appear its commercial exploitation still remote at the moment. The only real current viable route is the Northern Sea Route, which has also a more developed infrastructure and can count on the availability of the Russian Sovcomflot icebreakers to escort the ships.

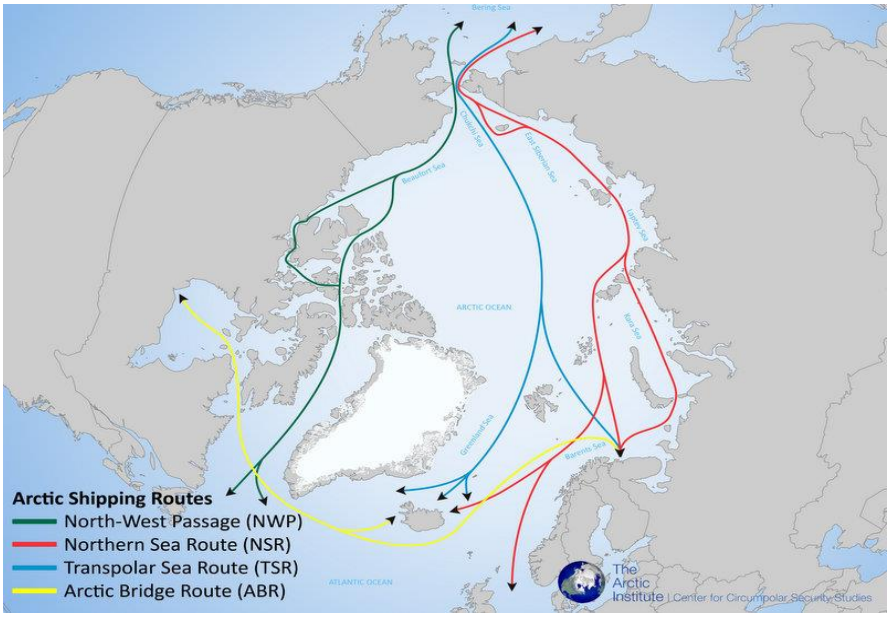

Figure 21: Arctic shipping routes

Source: The Arctic Institute

An important consideration has to be made regarding the Northern Sea Route. The use of this shipping lane would give Russia a strategic advantage in the Arctic since it could decide on and control its maritime traffic. At the beginning of the Ukraine conflict for instance, Moscow stated several times that it is ready to close the country's airspace for overflights of European cargo and passenger airlines in the case of harsh international sanctions[144]. Arctic navigation requires dedicated investments and specific ships adapted for Arctic environment so that companies would certainly face the same risk of political blackmail. This is particularly important for the period when only the NSR is available for navigation in the Arctic while the other routes are still closed.

The NSR development requires huge investments and Russia is clearly lagging behind its initial schedule. In addition, massive investments in the region are also risky since there is a lot of uncertainty regarding the future development of its natural resources especially oil and gas. If the ice will disappear there will be competition form the Canadian North East Passage.

Another important factor to consider are the prospects of the Trans-polar Route. If this route will be developed in the future shipping companies would undoubtedly choose this passage since it would be free of charge. Russia is currently imposing tariffs on the cargo transits through the NSR and if trans-polar shipping will develop Moscow would lose this potential source of revenue[145]. According to Scott Stephenson, a geographer at the University of Connecticut, from a geopolitical point of view the Trans-polar Route is the one to watch[146]. The tariffs are charged per ton of cargo and diminish gradually with larger tonnage transported[147]. They also depend on other factors: classification of the vessel, higher ice class ships pay lower tariffs, date and season of the voyage and the level of icebreaker assistance required.

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144 URL: https://www.cargoforwarder.eu/2014/08/06/breaking-news-russia-threatens-to-close-siberian-skies-for-eu-carriers/

145 "I'd be interested to see how the Russians would react if the Transpolar Route became a viable one, as it might. This part of the Arctic belongs to no one. Ships that pass along this route would avoid having to pay those fees or follow the rules. Russia's big investment in icebreakers, ports, and infrastructure would be threatened. URL: http://e360.yale.edu/features/cargo_shipping_in_the_arctic_declining_sea_ice

146 Ibidem

147 URL: http://www.arctic-lio.com/docs/nsr/tariffs/NSR_Tariff_Order.pdf

Russia would have to charge the costs of icebreaker services and building and of infrastructure development to the transiting ships and they could be relatively high.

Trans-Arctic shipping is influenced by the risks perceived by international shipping companies. The international shipping industry needs to have a stable and predictive environment before committing itself to massive investments to enter the region. The sea ice future evolvement and dynamics are still uncertain. It could be that the navigation conditions would worsen in the future. This is particularly important at the start and at the end of the shipping season.

Currently the navigation season along the NSR is open from the 1st of July until the middle of November. A shorter navigation period has already happened in 2014 and resulted in only a dozen ships transits. For international shipping companies it is extremely important to know in advance the ice dynamics in order to plan when to enter and exit the Arctic. In the case of miscalculations and delays ships could be trapped in ice during the winter time.

Arctic routes are now hardly providing the possibility to plan the voyage and to deliver the cargo on time what is extremely important. The large variability of ice conditions could make ships encounter unfavourable wind conditions. Wind can move ice into the route and even multiyear blocks, which are also extremely dangerous for ships. In this case the transit would take more days to complete than initially planned. This makes the routes more favourable for bulk carriers and tankers, which could have a more flexible schedule, while it would not attract container traffic. The savings along the shipping lanes depend also on the type of cargo. Cargo vessels which have high rates of charge per day could get the biggest advantage out of the routes since for them the 15-20 days saving in time would result in consistent savings for the company.

Another important issue to consider is the obstacle of Russian bureaucracy and the international shipping regulations to which Russia would have to abide to. In November 2014, the International Maritime Organization has approved the IMO

Polar Code which regulates, starting from January 2017, shipping in Arctic and Antarctica waters[148].

The Code's requirements for ships and crews are clearly more stringent, what could rise the costs of Arctic navigation. In addition, the Suez and Panama canals have both undergone recently an expansion and they would certainly fight for their market share on international shipping markets with lower tariffs. The recent downturn in energy prices has also made even the Suez canal unattractive in some cases. Dozens of ships are avoiding to pay the tax by circumnavigating Africa instead. [149] This shows that the price factor, with low bunker fuel prices, could make distance saving less relevant.

An important element to consider and which should be stressed again, is the seasonal character of current Arctic shipping. The majority of world shipping companies are not interested in the few months window of Arctic navigation but would be interested instead in year-round shipping. Russia is currently building a new class of nuclear icebreakers, the *Arktika* class, which would be the biggest icebreakers even built. They were designed to break up to three meters thick ice.

Furthermore there are plans to build a next class of icebreakers, the Lider class, which would be wider and stronger. It seems clear that such capabilities would not be needed for summer navigation. They are clearly being built for year-round navigation, what suggests that Russia has plans for using the route also in winter. However, at least today for trans-Arctic shipping this possibility seams more remote.

The international environment is also important since many countries would not cooperate with Russia under the current environment of tensions. The US sanctions, for instance, stopped the ExxonMobil and Rosneft cooperation on a project in the Kara Sea, so that Russia is ultimately going to scrap the nuclear icebreaker *Sovietsky Soyuz* built in 1989. The ship should have been modernized for operations on this project[150]. With the exception of the icebreaker *Fifty Years of Victory* launched in 2007, all the other nuclear icebreakers are more than 20 years

148 URL: http://www.imo.org/en/mediacentre/hottopics/polar/pages/default.aspx

149 URL: http://www.bbc.com/future/story/20160303-cheap-oil-is-taking-shipping-routes-back-to-the-1800s

150 URL: https://ria.ru/atomtec/20170831/1501471612.html

old. At the moment Russia has 4 operational nuclear icebreakers and three of them will be decommissioned in the near future. The ongoing building of three new ships of the project *22220 Arktika* will just maintain those numbers, although with more modern and capable ships. They should be commissioned in 2019, 2020 and the last in 2021.

Sustained trans-Arctic shipping is not a short-medium term possibility. There are few ice-class ships available. A serious commitment by the shipping companies in order to build them would be needed, which is not on a horizon. However, the issue will become more important in the future when the ice dynamics will become more favourable and when the summer Arctic will be possibly completely free of ice in summer this according to the majority of models and predictions.

Moreover, the ongoing development of destination transport out from and into the Arctic could become the basis for trans-Arctic shipping. This development depends largely on the attractiveness of the Arctic extraction projects. What is clear today, is that many countries are interested in these routes and are also starting to invest some resources for their future development[151]. China has been recently strongly involved in the financing of the Yamal LNG project for which it is providing about 60% of the $25bln financing. Of course the main reason is energy security and not NSR development. China in exchange for the investment obtained that about 80% of the equipment for Yamal LNG would be produced in Chinese shipyards. The Chinese want a controlling role in the projects they participate since they bring the investments that Russia desperately needs. Due to sanctions the Russian companies are mainly excluded from western markets[152]. The development of some Arctic natural resources could prepare the ground and necessary infrastructure for future more extensive trans-Arctic shipping.

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[151] "Having read the research reports and talked to shipping experts from Maersk and other big shipping companies, I was sure that a route through the Arctic was going nowhere", says Rob Huebert, an associate political science professor at the University of Calgary and a former member of Canada's Polar Commission. Yet Huebert said that after listening to the Chinese and other experts talking about the prospects at the fourth annual Arctic Circle Assembly in Iceland last month, "I realized that Arctic shipping is coming, and that it is, in some ways, already here. The Chinese are talking the long view and they're building ships, icebreakers, and ports to capitalize on the future, which may not be as far off as many think." URL: http://e360.yale.edu/features/cargo_shipping_in_the_arctic_declining_sea_

[152] URL: https://www.sipri.org/commentary/topical-backgrounder/2017/chinese-russian-energy-cooperation-arctic

7.3. Northern Sea Route: facts, scale and prospects

Transit navigation (Europe-Asia). The Northern Sea Route is part of the North East Passage and according to the Russian definition this is the route form *Novaya Zemlya* to the Bering strait. The route should be better defined as a series of routes since there are many passages or even the NSR area meaning a larger territory along the Northern Sea Route.

The route has a long history. In Russia the idea to connect the Atlantic Ocean with the Pacific Ocean dates back to 1525. The Russian populations of Pomor and the White Sea used the route already in the eleventh century. The first modern seasonal transit along the route was successfully carried on in 1934 by Glavsevmorput[153] on the Fedor Linke icebreaker. Its development started already before the revolution, however, it is after the revolution and especially in the Stalin's period, that it became strategic. Its importance was confirmed during the Second World War. In this period between 1942 and 1945, 120 ships transited through the NSR and delivered 450.000 tons of supplies for the Soviet Union. On its peak in 1987, the Northern Sea Route registered 1306 voyages and 331 ships were sailing through its waters. The western part of the NSR (from Kara Sea) was navigable year-round starting from 1978-79 with regular routes between Dudinka and Murmansk.

The history of the NSR could be divided in four phases: its exploration and settlement (1917-1932); the development of regular navigation, ports and infrastructure (1932-1950s); the transformation of the newly developed route in a established maritime connection in summer and autumn (1950s- 1970s); and finally the attempt to keep it open throughout the year (1970s-today).

[153] The administrative body of the NSR.

After the collapse of the Soviet Union, the development of the route stalled and its use decreased to the levels comparable to some earlier decades. In recent years there is an increase in traffic along the NSR.

During the first development period, the route was mainly used to supply the local communities with some attempts to exploit local resources as wood, furs, fish, coal and whales. In 1935 the route was officially opened and started its exploitation. In 1959 the Soviets launched the first nuclear icebreaker, the *Lenin*, which increased the possibilities of navigation even in more remote regions. In the 1980s the volume of traffic through the NSR was over 6mln tons.

In summer 2010, the Russian LNG tanker *Baltika* transited the NSR with 70,000 tons of liquefied gas from Murmansk to the Chinese city of Ningbo. In the same year, the first non-Russian commercial ship with a non-Russian crew, the *Mv Nordic Barents* successfully transited the route from Kirkenes in Norway, to China. The navigation through the NSR took 8 days at an average speed of 12knots. The route allowed to save 17 days in transit time. A similar trip through Suez would take 40-41 days to sail the 12,000 miles, while the distance through the NSR is of about 6,500 miles. The savings in fuel amounted to about $300.000, while the icebreaker fees were fixed on the same level as for Suez namely because it was a showcase trip in agreement with the Russian authorities.

Some Russian companies have also their own fleet of ice-class vessels like the *Norilsk Nickel*. They successfully operate their own fleet of ice class vessels. From 2004 to 2009, they received five *Arc7* class ships to sustain their operations.

In order to understand the importance of the NSR for Russian Arctic strategy it is very important to look what is going on today on the route and what are its future prospects. Clearly the current number of icebreaker is not enough to support increased Arctic activities. According to some experts and the head of the State Commission for the Arctic, Russia would need to have 5-6 nuclear icebreakers of 60-110MW, 6-8 non-nuclear icebreakers of 25-30MW and 8-10 non-nuclear icebreakers of 16-18MW[154]. These numbers have not been reached yet.

[154] URL: http://tass.com/economy/936410

Starting from 2010, it appeared that trans-Arctic shipping would become quite sustained with double digits yearly increases. In 2013 already 71 ships transited through the route for transit. However, after this the route experienced another decline in transits as can be seen from the graph below.

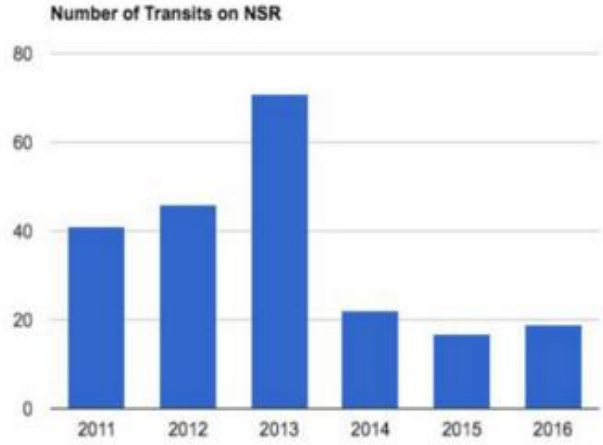

Figure 22: Number of Transits on NSR

Source: http://www.highnorthnews.com

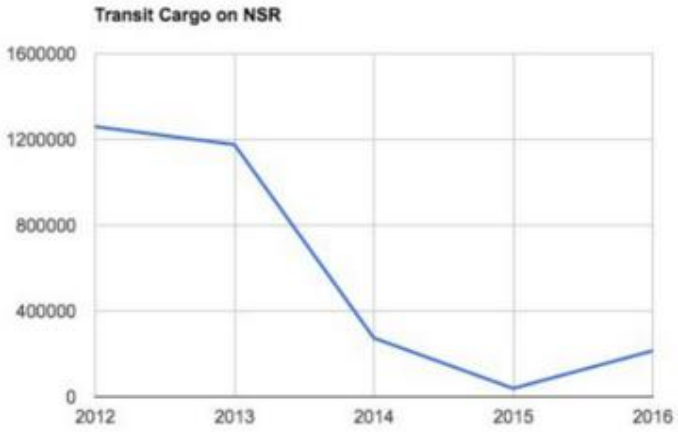

Figure 23: Transit Cargo on NSR

Source: http://www.highnorthnews.com

The recent amount of cargo and the number of voyages are quite irrelevant. To put the things in perspective in 2013, when the route saw its maximum of 71 transits, Suez had 18,000 transits what is almost 300 times more.

Transit cargoes declined again and in 2015 the volume was of only 39,000 tons. In 2016, 19 vessels carrying 214,500 tons of cargo travelled the full length of the route from Europe to Asia or vice versa[155].

According to a 2016 Platts' article, many companies today have lost interest in trans-Arctic shipping. This is the case for instance for Statoil which pointed out several reasons. A representative of the company said that the route should be safe both as far as the vessel, the cargo and the environment are concerned. In addition they should perceive the route to be commercially attractive and competitive against the alternatives. Its attractiveness depends on direct costs, and sailing time as well as the market characteristics of the respective commodities at the time of sailing. For Gazprom Neft the problem is the limited navigation period and the need to use the ice-breaking escort, which offset the advantages such as cheaper freight payments and shorter delivery time. The vice-president of non-commercial Partnership for Coordinated Use of NSR pointed out that also the anti-Russian sanctions have a role in the drop in cargoes' transit[156].

According to the AMSA assessment the transit shipping in the Arctic has many problems and challenges ahead:

> "There are many challenges facing trans-Arctic shipping, mainly the lack of rigorous economic analyses of potential routes that would be ice-free for only short periods in summer; other global social, environmental, economic factors are hugely influential"[157].

In conclusion, transit shipping is still not developing on the Northern Sea Route. It is very uncertain what would happen in the future, however, many companies would not like to put their investments in the hands of the Russian government who can allow or not the transits, according to political considerations.

They can even use this threat as a political leverage as it has already happened for the airspace. For these reasons, the alternatives like the North West Passage or

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155 URL: http://www.highnorthnews.com/shipping-traffic-on-northern-sea-route-grows-by-30-percent/

156 URL: https://www.platts.com/latest-news/shipping/moscow/feature-despite-russian-aspirations-international-26397694

157 URL: https://pame.is/index.php/projects/arctic-marine-shipping/amsa

the Trans-polar Route should be considered extremely important. They allow to invest also in the NSR, knowing that the alternative routes would be available in the case of political tensions and problems. In an environment of low oil prices Arctic shipping is undoubtedly less attractive. The new ships that are being build today, could save up to 30%-40% percent of fuel due to new technologies or LNG powered engines. This factor makes the NSR still less attractive. In an environment where, due to reduction in fuel costs ships can avoid the transit through Suez, it would be obvious that they do not want to face the risks of Arctic shipping and the Russian tariffs and bureaucracy. Arctic navigation is still very dangerous and the environmental risks are very high. The only option for transit through the NSR in the short-medium term seems to be certain type of cargoes especially those that require the shortest possible shipping time. In this case, the route becomes attractive. However, at the moment transit shipping is almost absent.

Notwithstanding the above mentioned fact, the Northern Sea Route has seen a recent growth in traffic. The reasons will be explained and analysed in the paragraphs dedicated to destination transport.

Destination transport (mainly export of Arctic resources). While transit traffic has not been developing on the NSR yet, the same is not true for destination transport and regional transport. Last year the amount of cargo transported on the NSR reached a record value.

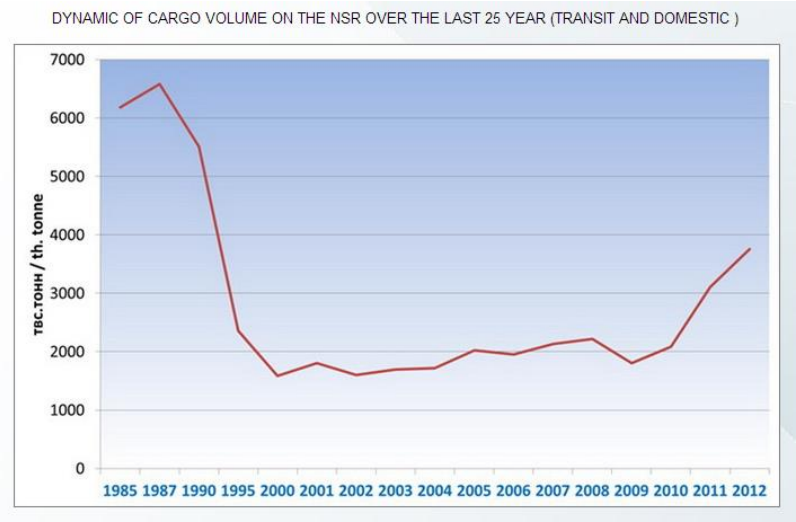

Figure 24 : Cargo valume on NSR dynamic

Source: http://www.arctic-lio.com/

Analysing the historical data for the route it could be noticed that the amount of cargo reached the 1987's historical maximum only thirty years later in 2016, when the cargo volume has risen to more than 6,9mln tons[158]. The graph, which shows the volumes until 2012, is already depicting an increasing trend starting from 2010.

An important contribution to the growth is the ongoing construction for the Yamal LNG project. The port of Sabetta in Yamal, saw the arrival of a total of 120 vessels delivering 505,000 tons of goods and construction material.

The development of the NSR is lagging behind schedule and government projections made in the past. At the Valday forum in 2011 for instance, the projections made by presenters for the transit volumes across the route for the year 2011 were many times higher compared to what happened as can be seen from the graph below.

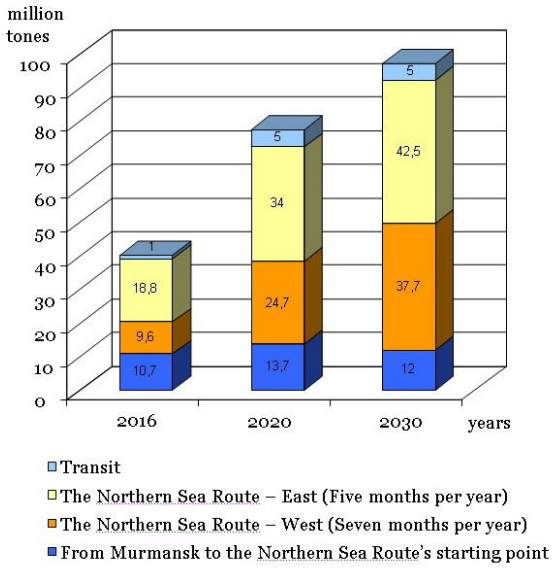

Figure 25: Current and future NSR transit

Source: Valdaiclub.com[159]

158 "In total, 19 vessels carrying 214,500 tons of cargo travelled the full length of the route from Europe to Asia or vice versa. This represents a significant increase in cargo volume over 2015 when the route saw a record low with just 18 transits carrying 39,000 tons". URL: http://www.highnorthnews.com/shipping-traffic-on-northern-sea-route-grows-by-30-percent/

159 URL: http://valdaiclub.com/a/highlights/the_issues_and_prospects_of_an_expanded_arctic_transportation_network/

The projections for 2016 were for almost 40 mln tons of cargo while in fact a little more than 5mln tons were transported. It is important to take these facts into consideration in handling the Russian projections which seem to be often too optimistic. However, the Arctic resources, especially LNG and some oil projects, in the best scenario for the extraction industries have the capacity to bring the number up to 100 mln tones in 2030. The Yamal LNG for instance, with its 15 tankers will already bring more than 16mln tons of cargo on the route until 2020. In addition, if the second project, the Arctic 2 LNG, will be realized, this would put at least additional 15mln tons of cargo on the route. For those reasons, the goal of reaching 50mln tons of cargo delivered through the NSR in ten years seems realistic.

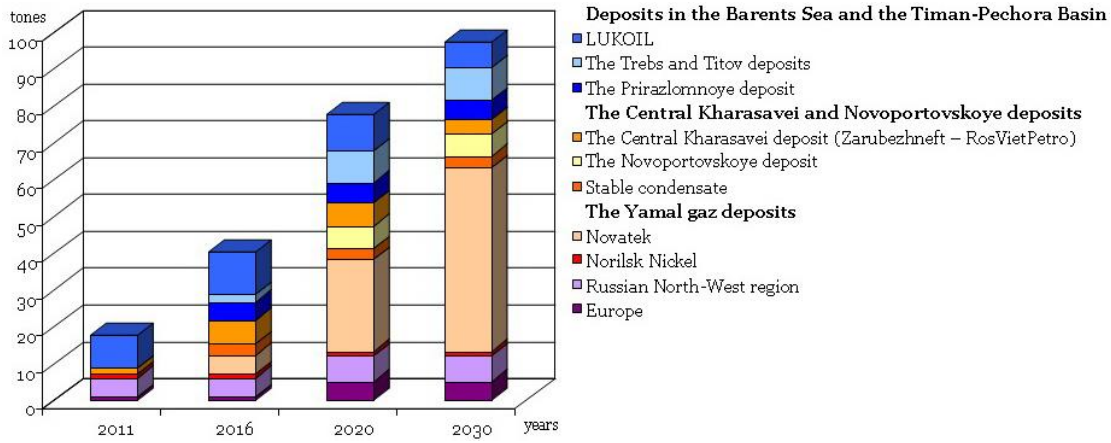

Figure 26: regional oil and gas deposits

Source: Valdaiclub.com[160]

The graph indicates clearly that there is a real potential for the route expansion in the transportation of natural resources out of the Arctic to the world's markets. The biggest share is undoubtedly the Yamal peninsula with the Novatek's LNG projects. In this case a lot will depend on the factors analyzed in the chapter dedicated to Russia Arctic natural gas projects.

The largest part of the extracted natural resources will be transported westwards to the European markets and a part to Asia through the NSR, especially in summer months. To sustain those operations the icebreaker fleet would be very

160 Ibidem

busy and there would be little capacity left for the transit voyages with the current number of icebreakers in the *Sovkomflot* fleet.

The NSR is an opportunity also to develop the Russian northern regions and Siberia, which are connected to the Arctic Ocean through extensive river systems. Dr. Bjørn Gunnarsson, Managing Director of the Centre for High North Logistics (CHNL) of the Nord University in Norway, clearly points out that the route is a big potential also for other northern parts of Russia to develop:

> "The large Russian rivers which all flow north into the Arctic Ocean can also act as major transport connections from the internal part of Russia to the NSR, but also the other way around as Russian rivers such as Ob, Yenisei and Lena Rivers offer logistical possibilities for transportation of goods and project cargo from the NSR into the inner parts of Russia promoting further industrial development. In short, NSR is the ideal throughway for Russian Arctic resources and industrial products westwards to European markets and eastward to markets in NE Asian, and for promoting regional industrial development[161]."

Figure 27: Russian river transportation links

Source: Center for High North Logistics

In conclusion, it is very likely that the NSR will see an increasing volume of maritime traffic and cargo delivered through its waters in the near future largely

[161] URL: http://www.maritime-executive.com/editorials/future-development-of-the-northern-sea-route

due to the development of maritime destination transportation. A lot will depend on the development of the Russian energy projects in the region. Some of them will be finished in the next years as the Yamal LNG, which will bring 17mln tones of liquefied gas on the NSR.

The largest contributor should be namely the development of the LNG Arctic sector. The current Russian icebreaker fleet is aging and the country is building three new nuclear icebreakers to sustain those operations. However, such capacities would not be enough to allow a parallel massive increase of transit traffic and of natural resources extraction. Transit traffic development is currently almost halted. A partial solution could be convoys where more ships follow one icebreaker, but this is only a partial solution to the problem since it is time consuming to put them together.

Destination transport could be an opportunity to slowly develop the route and build the necessary infrastructure possibly for future more intensive operations. One of the most important spillovers of destination transport is that it could foster the development of the Russian northern regions. This is actually still not happening because most of the increased activities are centred on some megaprojects with imported workforce. In the future this could change since the government has plans to keep the money of the tax flows in the Arctic. Novatek, for instance, is just finishing a factory in the Arctic region to build the necessary LNG infrastructure in Russia.[162]

Sustained destination transport is a recent important new development in the region. It is having an impact on the economic opportunities and attractiveness of the Russian north and it is making the Russian Arctic resources more accessible on European and Asian markets. However, its strategic value is still limited by the low number of projects developed and their future prospects as was already discussed in the previous chapters. A key factor for the NSR regional development are also environmental impacts of those operations since a larger oil spill could change the fate of those projects. In response, Russia could be forced to close or halt many of

[162] URL: http://cfts.org.ua/news/2017/06/19/v_rossii_sozdadut_4_ostrova_pod_verf_gde_budut_stroit_morskie_kompleksy_po_proizvodstvu_spg_41194

its Arctic operations which would drastically reduce the cargo volumes of the NSR. This is also the most significant environmental concern identified by AMSA[163].

Ports and Infrastructure. A central element in a maritime transportation system is undoubtedly infrastructure; in this case ports, search and rescue capabilities, icebreaker fleet, navigational aids, communication systems, weather forecasts, maps and other elements.

The Russian Northern Sea Route experienced a continuous development in the Soviet Union; however, after its collapse many ports and infrastructure facilities were abandoned. Some ports are being just recently modernized and refurbished for the needs of the oil and gas industries. The aim of this paragraph is to briefly discuss the development and some problems related to the NSR infrastructure.

Shipping along the NSR is very risky, due to the long distances not supported by ports and other necessary maritime infrastructure. Ships today practically find themselves to navigate thousands of miles far from the nearest port in extremely difficult conditions. The situation appears more critical especially in the eastern part of the NSR where there are less ports and the traffic is lower.

Arctic transit shipping would be based on transhipping what implies that two logistical hubs would need to be built. One in the western part, and one in the Asian part where cargo would be reloaded for transhipment to other destinations. For Yamal LNG for example, in the European part, the Zeebrugge port in Belgium has been chosen with a contracted possibility to deliver up to 8 mln tons of liquefied natural gas[164] and in addition, 1mln tones would be delivered to the Montoir-de-Bretagne LNG terminal in France.

The two transhipment terminals would allow ice-class ships to operate continuously mainly in Arctic waters thus reducing the time they spend outside the Arctic. This would also provide the possibility to build specialized ships. At the moment there are many discussions regarding the two logistical hubs but no decision has been taken so far. Also the almost non-existent transit traffic is

163 Release of oil into the Arctic marine environment (accidental release or illegal discharge) is the most significant threat from Arctic shipping.

164 URL: http://www.fluxys.com/belgium/en/NewsAndPress/2015/150306_YamalLNG

delaying this process since there are few investors willing to inject money into this project.

The main concern regarding Arctic shipping is undoubtedly safety for the crews, passengers, the cargo and the environment. This is probably the main reason why many shipping operators are still avoiding the Arctic waters.

If the focus is briefly put on cruising ships the Arctic environment is considered to be extremely dangerous for their operations. Summer waters have many icebergs while the storms could be very extreme and the larger ships do not have ice navigation capabilities. In many areas the infrastructure is thousands of kilometres away and the rescue capabilities are very limited and not able to rescue thousands of people. For these reasons going into the Arctic for those ships is a huge risk and the proportions of the disaster could be immense.

The *Arctic Marine shipping Assessment* (AMPA) clearly pointed out the problems related to Arctic shipping. In the assessment released in 2009 under the paragraph dedicated to Arctic Marine Safety the following issues were identified:

A. Linking with International Organizations: Arctic states are requested to, on a case by case basis, identify areas of common interest and develop unified positions and approaches with respect to international organizations, such as the International Maritime Organization (IMO), the International Hydrographic Organization (IHO), the World Meteorological Organization (WMO) and the International Maritime Satellite Organization (IMSO) to advance the safety of Arctic marine shipping.

B. IMO Measures for Arctic Shipping: Arctic states, in recognition of the unique environmental and navigational conditions in the Arctic, could decide to cooperatively support efforts at the International Maritime Organization to strengthen, harmonize and regularly update international standards for vessels operating in the Arctic.

C. Uniformity of Arctic Shipping Governance: Arctic states have to implement measures for cooperating in the field of shipping governance, by adopting common standards.

D. Strengthening Passenger Ship Safety in Arctic Waters. The Arctic waters are home of new maritime routes for cruising ships. These waters remain very

dangerous. Arctic coastal states are encouraged to improve monitoring and rescue systems in order to improve ships and passengers safety.

E. Arctic Search and Rescue (SAR) Instrument: Arctic states decide to support developing and implementing a comprehensive, multi-national Arctic Search and Rescue (SAR) instrument.

It is clear form the points above that the international dimension and cooperation is central to sustainable and safe Arctic shipping.

The AMSA assessment provides also recommendations regarding Arctic infrastructure:

A. Addressing the Infrastructure Deficit: the current Arctic transportation system suffers from many weaknesses, due to the underdeveloped infrastructures. Arctic states are encouraged to plan a coherent system of port facilities and related infrastructures, taking care of the environmental fragility of the region.

B. Arctic Marine Traffic System: Arctic states should support continued development of a comprehensive Arctic marine traffic awareness system to improve monitoring and tracking of marine activity, to enhance data sharing in near real-time, and to augment vessel management service in order to reduce the risk of incidents, facilitate response and provide awareness of potential user conflict.

C. Circumpolar Environmental Response Capacity: Arctic states decide to continue to develop circumpolar environmental pollution response capabilities that are critical to protecting the unique Arctic ecosystem. This can be accomplished, for example, through circumpolar cooperation and agreement(s), as well as regional bilateral capacity agreements.

D. Investing in Hydrographic, Meteorological and Oceanographic Data: Arctic states have to foster cooperation in science activity and data gathering and exchange.[165]

Some recommendations have been partially implemented after the assessment release in 2009, however, a lot more has to be done. The recent

[165] URL: https://pame.is/index.php/projects/arctic-marine-shipping/amsa

international tensions between Russia and other Arctic states in other world's regions have had little impact on Arctic cooperation so far. However, the situation can change.

Recently the eight Arctic countries' representatives of the coast guards signed a joint statement adopting doctrine, tactics, procedures and information-sharing protocols for emergency maritime response and combined operations in the Arctic[166].

This was the first important result of the Arctic Coast Guard Forum launched in 2015. The presence of Russia makes cooperation more difficult since some sensitive information could not be shared; however, cooperation with Russia on these issues is crucial for the region because it shares extensive borders with other Arctic countries.

The Northern Sea Route is more developed in the west where are also located the deepwater ports. In the east, in the Laptev and East Siberian seas, there are few ports and they have shallow waters. In the case of a ship in distress, it could not enter them, because their maximum depth is of only about 7 meters. On the map below are indicated the Russian Arctic ports.

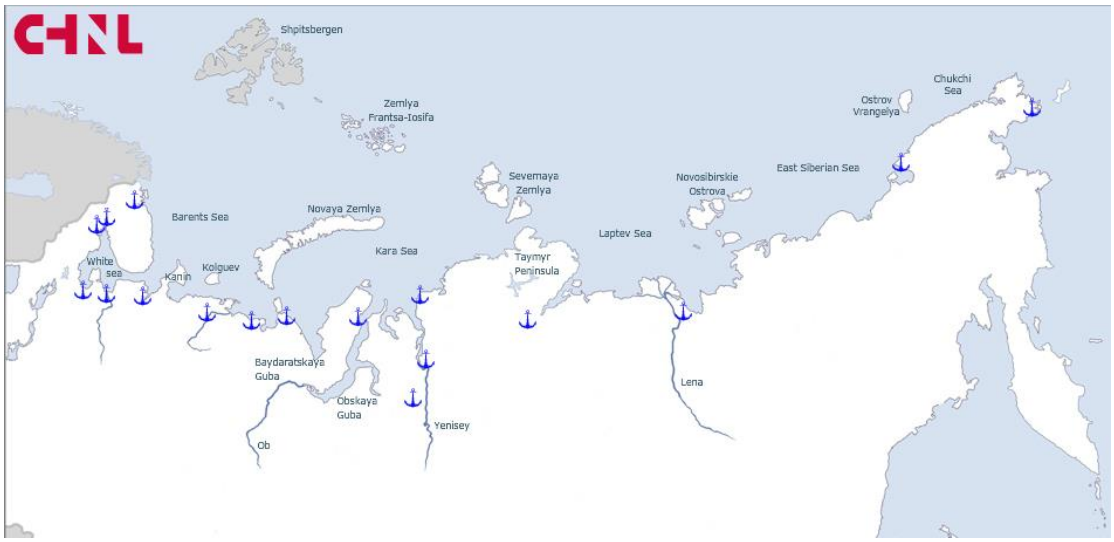

Figure 28: Russian Arctic projects

166 URL: https://www.maritime-executive.com/article/arctic-coast-guard-forum-agrees-protocols

Source: www.arctic-lio.com/[167]

The development of Arctic shipping, and especially of transit shipping, would require region-wide infrastructure development and improvements. The Russian government could not develop all the necessary infrastructure alone, also considering the risks regarding the future traffic volumes and the large capital expenditures which are required. It seems currently that the path chosen to develop the infrastructure is the private-public cooperation, where the government helps, with subsidies and financing, some huge Arctic extraction projects. This allows to develop the ports, airports and roads in a particular Arctic area making also the projects economically sustainable for the companies involved. In the future the same formula could be applied to shipping.

Dr. Bjørn Gunnarsson from the Centre for High North Logistics believes that a completely new and innovative approach would be needed in the future to fully develop the Arctic maritime potential. He believes that existing ports are not reliable since the waters are too shallow and they are also developed below the needed standards. To overcome this limit he proposes to build integrated offshore platforms which would cover many uses, from search and rescue, to logistics and to supporting the oil and gas industry. Such offshore platforms are also mobile and could be moved if necessary.

It is clear that the NSR development is still in its initial phases. In my opinion a lot more has to be done especially internationally in order to secure the necessary resources, support and guarantees to develop it. However, it is dubious that some countries would like to depend on Russia for their maritime routes without the possibility to partially control them or at least to have their rights protected. This is especially true for the US, which for many decades has been supporting the freedom of navigation and does not favour a single route development. This could spur other countries, especially Canada to invest in their route, which would compete with the NSR. It has to be seen what will be the developments in the next

[167] URL: http://www.chnl.no/publish_files/WP4_Bjorn_NSR_Economic_and_Strategic_Significance_and_Future_Prospects.pdf

decades. A deciding role will be left to economical and environmental considerations.

Environmental impacts and considerations. One crucial element in the development of Arctic transportation is undoubtedly the fragile Arctic environment. The Arctic cryosphere has some unique ecosystems on Earth and is very important for the world's climate. In the Arctic Ocean waters live many rare and protected animals which could be severely impacted by sustained shipping activities. The circumpolar waters are closed in the east by the Bering sea and in the west by Greenland and other islands and the exchange of water with the Pacific and Atlantic Ocean is limited. The closed waters could rise the damaging impacts that could be caused by shipping especially in the case of oil spills.

Since January 2017 the Polar Code has become mandatory for ships operating in Arctic and Antarctica waters. This is undoubtedly a positive development; however, for many experts this is not enough to protect the Arctic environment. Some argue that the regulations relating to ship structure, stability, communications, and oil spill planning does not go far enough[168]. In addition, it is not clear what international mechanism is in place to control the application of these norms especially in the Russian Arctic for Russian ships and crews.

The AMSA assessment has focused on the following issues and made important recommendations:

A. Survey of Arctic Indigenous Marine Use: Arctic states should consider conducting surveys on Arctic marine use by indigenous communities where gaps are identified to collect information for establishing up-to-date baseline data to assess the impacts from Arctic shipping activities.

B. Areas of Heightened Ecological and Cultural Significance: Arctic states should identify areas of heightened ecological and cultural significance in light of changing climate conditions and increasing multiple marine use and, where appropriate, should encourage implementation of measures to protect these areas

[168] URL: http://e360.yale.edu/features/cargo_shipping_in_the_arctic_declining_sea_ice

from the impacts of Arctic marine shipping, in coordination with all stakeholders and consistent with international law.

C. Specially Designated Arctic Marine Areas: Arctic states should, taking into account the special characteristics of the Arctic marine environment, explore the need for internationally designated areas for the purpose of environmental protection in regions of the Arctic Ocean.

In addition to the above points, greater attention has to be paid to the following issues: protection from Invasive Species, Oil Spill Prevention, Addressing Impacts on Marine Mammals, and Reducing Air Emissions.

The issues which should be addressed and studied to understand them better are many. In order to protect some unique ecosystems some Arctic Areas are interdicted to shipping. Noise from shipping can be very disturbing for Arctic mammals like whales. The icebreaker activity propagates sounds up to 50km away under water. The ballast water from ships is bringing new invasive species in the Arctic Ocean and this is of great concern along the effects of climate change on Arctic biodiversity[169]. Arctic shipping could disrupt the migration routes of big mammals and provoke collisions between them which could kill the animals. Another concern are the emissions from ships. Diesel exhaust from ships contains high concentrations of black carbon which deposits on ice and thus reduce its albedo. This would foster Arctic warming.

In conclusion, it is clear that the environmental challenge for intensive Arctic shipping is incredibly big. There are many environmental issues, which should be properly understood and addressed before a more sustained shipping development. The Arctic ice is not going to disappear soon and the navigation conditions will be very difficult in the future too. The increasing environmental awareness of many people, organizations, companies and governments would certainly influence the development of Arctic shipping. In the Russian case, even if the Russian government seem to be little concerned, this would happen through international channels like from future reduced demand for oil and gas. In addition, the companies involved in

[169] URL: https://www.sciencedaily.com/releases/2014/02/140214075511.htm for more: Arctic Biodiversity Assessment

transit shipping are European and Chinese and a lot would depend on their environmental considerations.

The scientific community is doing a lot to make the navigation safer and less dangerous for the Arctic and the same holds true for many Arctic Council initiatives. It is very likely that after an assessment of the current increasing activities due to the extraction of oil and gas further considerations will be made. In addition, it is important to stress the fact that in many cases Arctic shipping would allow to reduce the shipping time and the fuel consumption what could actually reduce the greenhouse gas emissions from shipping. However, at the same time it can also change forever the fragile Arctic region. This consideration should not be considered as a sufficient reason to expose the Arctic to possible oil spills and similar risks. It is not clear, in the case of a major oil spill, how would proceed the cleaning operations especially in freezing waters. The companies operating in the Arctic know the risks and should be also responsible for the damages they could do to the Arctic. Monitoring their activities is an absolute priority. Another important issue which should be improved is also the insurance.

To conclude, the shipping potential represents one of the major opportunities for the future development of the Russian Arctic. However, contrary to the recent Russian government predictions, the route has recently experienced again another decline in the number and amount of gods transported by transit shipping.

The Route has the potential to shorten the transit time between Asia and Europe by many days or even weeks on some destinations, however, the international shipping companies find it still to be very risky and unpredictable. Also the recent international tensions between Europe, US and Russia has had a negative impact on the NSR traffic. Investing in ice-class ships which would become dependent on the transit in Russian waters is perceived to be very risky.

The Northern Sea Route development, however, has recently shifted to destination transport. Russian plans seem to bet on destination transport in order to develop the route with the desire to extend its use to trans-Arctic shipping in the future.

The NSR is going to experience an increase of up to five times the current traffic of gods transiting through it, as a consequence of the developing export of the liquefied gas from *Yamal*.

From this perspective, the NSR can foster the development of an integrated Russian Arctic transportation system, also connected to Siberian river transportation systems. To get this aim, Russia is modernizing its icebreaker fleet.

Trans-Arctic shipping is still uncertain due to unpredictable sea ice conditions and if feasible it would mainly operate only in summer months. In the future with the rapid melting sea ice, the Northern Sea Route would face the competition of the North West Passage along the Canadian coast and especially of the Trans-Polar route which would be an international transit corridor free of Russian transit fees.

In the last decade a lot of progress has been done in order to regulate Arctic shipping with the adoption of the (IMO) Polar Code regulatory framework to ensure adequate environmental protections, vessel safety standards, and search-and-rescue capability in this unique and challenging polar ecosystem[170].

[170] URL: http://www.pnas.org/content/110/13/E1191/1

PART III

THE RUSSIAN ARCTIC VISION

Chapter 8. A historical perspective

8.1. Introduction

The Russian Arctic has gone through different phases and intensities of people struggle to dominate and subdue those immense territories to the law of the progress, industry and different ideologies. Although insulated for many centuries from the main centres of industrial and civilisation development, the Arctic has started growingly to reflect the projects and the vision of the powerful Russian state from the beginning of the twentieth century. This became particularly evident after the October Revolution when national designs on the polar cap grew significantly (Josephson, 2014).

The historical review of the Russian Arctic involvement shows clearly how the Russian Arctic vision has been changing through the years to a point when the Arctic became something bigger than a mere northern territory to develop. It started to be the target of strong interest in order to use its symbology and imaginaries for purposes that largely exceeded even the most ambitious designs of Soviet ideologists. In fact even today, the meaning and the importance surrounding the Arctic fairly exceeds the number of people that inhabit it, the economic importance and the uses developed in the region. Although the Arctic provides about 20% of the Russian GDP, and as the part 2 on the uses has already shown, it is still considered a strategic region for resource extraction, potential maritime expansion and national security, there is still a lot of northern mythology and discourses that fascinate the Russian audience and the same time the Russian leaders that promote those imaginaries and narratives. This is reflected in the Russian discourses on the Arctic. On one side there is economic pragmatism, the wish to extract Arctic resources and develop the region, on the other it appears that the Soviet past has not been left behind and is still hunting the Arctic, especially in domestic Russian affairs.

The relics of the Soviet legacy could be well understood in the icebreaker imaginaries and case. The first icebreakers entered the Arctic at the beginning of the twentieth century. They were technical ships providing escort services or used for transportation needs. However, soon they became one of the symbols of the greatness of the Arctic conquests. Some icebreakers, like the first nuclear icebreaker Lenin are museum pieces which Russia conserve and show with pride and some nostalgia for the great Soviet past. They are the commemoration of the man power and of the proveness of the Russian state to achieve such results which impress the world. Russia today has a bigger number of icebreakers than all of the other Arctic countries combined. Although they are very important and essential in Arctic operations, this is also a heritage left by Arctic Soviet legacies towards the Arctic. The Russian state is a prisoner of the past since a declining number of icebreakers would be seen as a sign of Russian weakness and retreat from the Arctic. Many articles in the Russian press analysed in this chapter show how persistent is Russia in showing that it uses the Arctic. Undoubtedly, this is also strongly linked to the boundary dispute and the fear of losing the Arctic through a internationalisation of the Arctic governance. To avoid this and show that this could not happen, a lot of media attention is given to the process of building and commissioning new and bigger nuclear powered vessels which would allow and show that Russia is using the Arctic. However, media scoops an audience apart, the current icebreaker storyline seems to continue the Soviet legacy. This does not diminish the important role that those ships are having in Arctic international research and navigation.

The same rhetoric appears in the military sphere, where articles on new missile systems and Arctic deployment get a lot of attention, shares and comment by the Russian public. This is followed also by images of the nuclear powered cruiser in the Arctic, of the president standing in front of a newly built icebreaker or surface to air missile batteries. In addition, it appears clear that another popular approach is playing the geopolitical agenda of the encircled Russia, of the threat of the United States and similar discourses. They are built on the Soviet Cold War narrative and approach, however they could not be compared to this period as has been already shown in the chapter on Russian Arctic security and militarization.

There are many Arctic dimensions and many Arctic visions in Russia. One important divide is undoubtedly the national and international dimension. This could be clearly seen in the climate change debate where there is strong ambivalence in Russian discourses on the subject. On one side Russia has signed the Paris agreement recognizing the threat and the urgency to act on climate change, while on the other side it appears from the analysis done in the following chapters that to the internal audiences the climate change issue in the Arctic is mainly framed in terms of opportunity. This is less clear internationally, however climate change and sustainable development are not one of the main topics in the Russian press. In fact, the national factor, security , transportation and resource extraction get at least ten times more attention.

The historical analysis allows to separate at least three important phases of Russian Arctic recent history: the early development, the Soviet era and the post-Soviet Arctic. The first period followed a well established and classical imperial design to conquer and use the territory. This early phase of development did not impacted the Arctic very much because of technological, financial and other constraints. In this regard the early phase of Arctic development was more friendly towards the region compared to the following decades although it posed the basis for the future Soviet great leap in the region in terms of the state centred approach, of exploitation of resources and development of the NSR. It was also a period of some major expeditions undertaken by Ferdinand Wrangel and later by Stepan Matyuskin who expanded Arctic cartographic knowledge.

The Soviet period was the real breakthrough for the Russian Arctic. The Lenin period was relatively short and the greatest changes and achievements were done in the Stalin period. In those years the Arctic was hardly impacted by the central state and thousand of hundred of people perished and saw their life changed by the Arctic. Even today in many Russian Arctic regions which are mostly closed to foreigners there are still vivid memories of Soviet gulags and labor camps. This is

probably one of the darkest sides in recent Russian history. The Rapid Soviet industrialization forced by Stalin changed the Arctic forever. Many new cities were built and the Arctic people were also organized in community farms and had to change their traditional way of life. Many of the great Russian Arctic explorer and scientists of the epoch were brutally imprisoned, subjugated to the *zimovka* in extreme Arctic conditions or executed.

8.2. Early Russian Arctic involvement

The Russian presence in the Arctic dates back many centuries to the Pomor people and their maritime activity along the Arctic Ocean and Siberian rivers and the expeditions by international and Russian explorers who were mainly limited to "*placing*" their names on the new lands as the Austrian explorer Karl Weyprecht stated at the time:

"Immense sums were being spent and much hardship endured for the privilege of placing names in different languages on ice-covered promontories, but where the increase in human knowledge played a very secondary role.[171]"

The first major Russian Arctic effort dates back to the 18th century when the Great Northern Expedition took place. This term refers to a series of expeditions between 1725 and 1743 supported and wanted by Peter the Great who entrusted the Danish navigator Vitus Johansen Bering for this endeavour. Today the strait between the US and Russia is called upon Bering who discovered it in 1728. The central stage of the expedition took place between 1733 and 1743 under the command of Aleksey Churov. They discovered Alaska, the Aleutian Islands, the Commander islands and the island of Bering. The Great Northern Expedition is considered one of the greatest such projects in history and the cost of those activities represented one sixth of the Russian state budget in 1724. The expedition has improved considerably the Arctic knowledge with 62 maps and geographical charts of the Arctic and Kamchatka. It is interesting to notice that for this historical

[171] The First International Polar Year URL: https://www.nytimes.com/2007/02/26/science/26webpolar.html

period the cartographic knowledge of the Arctic was better compared to North American lands which still haven't undergone the cartographic denomination and classification processes[172].

It is only in the middle of the 19th century that the Tsarist government made the first organized efforts in the Arctic, while a major Arctic involvement begins only during the First World War in some northern regions of the Russian Empire. The importance of those lands to the Tsarist state of the time could be also understood through the 1867 agreement to sell Alaska to the United States. To a modern observer it appears clear that the importance of the Arctic to the expanding empires was still very low at the time. In fact, the main activities in the Circumpolar World were whale hunting, fur trade and fishing. The sell of Alaska is being often criticized and portrayed even today in the Russian public and press as a big mistake for Moscow Arctic interests[173], while the Americans at the time criticised the deal arranged by senator William H. Seward as as "Seward's Folly" or "Seward's Icebox"[174]

In 1881 the world has seen the first Polar Year. The event was not important because of the data that was collected, there were in fact 14 research stations by 11 countries involved, but it was the first time that a serious partially coordinated international scientific effort was undertaken in the Arctic. Science, as one scientist of the time stated, was no more an exclusive or elitist pursuit, often jealously guarded for reasons of national or institutional prestige. Arctic science became international and the focus has started to shift to the quality of the research undertaken at the time. At the end of the Nineteen century, the Russian Arctic research and exploration was stimulated by economic interest represented by the economic potential of Siberia, by the interest for indigenous people and their precarious life, and the wish to expand research in order to have more data

172 URL: https://pame.is/images/02_Document_Library/Reports_to_Ministers/06_AC_Meeting/olgaamsa2009report.pdf p.43

173 In fact it was sold for 7,2 million dollars at the time an equivalent of 125mln dollars today

174 150 years After Sale of Alaska, Some Russians Have Second Thoughts URL: https://www.nytimes.com/2017/03/30/world/europe/alaska-russia-sale-150.html

available for expanding the fisheries (P. Jospehson, 2014). During the Russo-Japanese war of 1904-1905, the strategic role of the Arctic as a transportation corridor was firstly being fully understood when Russia could not move the navy in time to Japan while the Transiberian railroad was overloaded and would be finished only later in 1916. In those years the Tsarist government began a series of investments in order to develop the navigation through the Northern Sea Route. However, although many industry representatives, coal mines owners were asking for better infrastructures and more government founding, the Route would still have to wait for more intensive exploitation and practical and enduring government support.

It is during the First World War and the Russian Revolution that the Arctic became important in the international struggle. During those years six icebreakers were built in the city of Newcastle in England between them the biggest one was the 5000 ton *Krasin*. This vessel became famous later for saving the General Nobile of the D*irigibile Italia* in 1927.

The first decades of Russian Arctic exploration and internal colonization do no differ much from similar practices in other Arctic countries in terms of goals and approaches. The Tsarist approach did not carry a strong ideological imprint because it was more a desire to explore the territory, to collect more knowledge about the Arctic people and of course to exploit the resources. What clearly distinguishes this period from the following Soviet one, is a lower degree of propaganda, ideological pressure and the absence of the ambitious five years plans. The early Soviet Arctic endeavour could be defied as a wartime mobilization industrialization and conquest keeping in mind its stakhanovism, grandeur and immense people suffering.

8.3. Soviet Arctic legacy and policies

It is from the beginning of the Civil war and the Bolshevik revolution that the Russian Arctic started to rapidly transform. The Soviet period radically changed the

Arctic and left its industrial and ideological heritage for today generations. There was a strong belief in this epoch that science and technology would solve the problems that specialists, workers and Soviet citizens encountered in the harsh and desolate northern latitudes. The Soviet people and party officials believed that the working class, by sizing the control of the capital, would grow into a society of plenty and leisure.

Already during the Russian Civil war the port of Arkhangelsk was used for Western supplies to the White Army, which was fighting the Bolsheviks across the Country while there were continuous efforts to re-establish trade between the Siberian and European parts of Russia. After the White Army defeat, the Bolsheviks started to change the newly born Soviet state and the Arctic was no exception. The first years were characterized by war communism policies, while in 1921 Vladimir Ilic Lenin approved the New Economic Policy which intended to modernize the Soviet industry and economy after years of civil war and decline. In the same year Lenin signed a decree establishing a floating maritime scientific research institute in the Arctic. Lenin was directly interested in Arctic development[175].

Lenin firmly supported technology as a way to overcome the Russian backwardness what strengthened the Soviet belief in a modern industrial utopia. Science and technology were seen as the drivers towards a glorious communist future. The Soviets wanted to impose the Marxian model economy in the Arctic tundra and taiga. In this period the role of state power grew exponentially compared to the Tsarist period. The industrial and technological deterministic euphoria reached its peak in the Stalin period (P. Josephson, 2014). Soviet leaders had the goal to remake people in order to create a new civilization and master nature in the Arctic and throughout the vast Country.

However, according to Jospehson, the Soviet Arctic conquer had four weak points and tensions: 1) the practices, approaches, technologies from the center did

[175] Lenin, Science and Education (Леинн, наука и просвещение) URL: http://leninism.su/books/3601-lenin-nauka-i-prosveshhenie.html?limitstart=&showall=1

not work properly in harsh Arctic conditions so the production targets could not be meet; 2) inconsistencies between the utopian visions of a fully Soviet Arctic and Arctic realities, 3) scarcity of resources and supply problems due to the rapid industrialization process. The officials under pressure to reach the targets underestimated the fragility of the Arctic climes and accelerated environmental degradation; 4) the imposition of a rapid and centrally controlled industrialization overwhelmed if not rejected the local knowledge, culture and beliefs (Josephson, 2014).

The NEP economic policy, which was implemented until 1929, was still based on capitalist forms of production. During those years the Arctic recovered. Moreover, in this period there was a great improvement in scientific knowledge in many fields like oceanography, chemistry and geophysics what is the basis for understanding the Arctic systems. This was made possible also by a surge in the exploration activities. However, after Stalin sized power in 1924, the Soviet Arctic expansion had no obstacles anymore. Ultimately the state power established itself as the main actor in the region. Under the Soviet rule the Russian Arctic became subjected to the diktats and a victim of the over-ambitious economic plans emanating from the center. The region has become important for economic and military reasons and as an ideological construct. As Josephson writes the Arctic filled with new people like the gulag prisoners, communist volunteers, *kulaks* in exile and other people who were employed to build the industry and infrastructure in the remote cold regions.

Rapid industrialization goals, technology modernization and military security impacted the Arctic environment and local people. In the Soviet period native Arctic populations had undergone the process of classification and categorization. David Anderson argues that ethnography was used as a first instrument of social power. The practical result was the official acknowledgment of ethnic belonging and the formation of the sense of belonging to a specific nationality and the classification of ethnic groups. This has inflated the feeling of nationality. According to him, this classification was not useful only for better governance of the territories but it was

also a useful instrument for colonization goals and settlement of Russian people to the north. He shows how authorized identities and identity policy became a powerful historical force integrating the social dynamics of economy, politics, and culture. Soviet ethnographers wanted to distinguish northern Siberian aboriginal groups in terms of origin, culture, and territory. Those distinctions became the basis of bounded territories and nationalities during the 1930s, as traditional occupations were adapted to the institutional frameworks of collective and state farms (D. Bartels, 2001[176]). Officials came to see indigenous people not only as people backward, but as hostile elements in need to be modernized and collectivized. During the whole Soviet period until the Brezhnev era, the Arctic was a target of strong settlement policies supported by forced prisoners and exiles camps. The population density of non-native people increased by many times.

In 1932, the Second Polar Year was approaching. These decades saw the appearance of airplanes and motorized transport and new instruments to investigate the physical world what stimulated Soviet scientists to become the leaders in Arctic research. In the same year, the administration of the Northern Sea Route was established called the Glavsevmorput. This centralized institution would have a central role in Arctic affairs until the end of the Soviet Union. Today, a similar institution called the "Northern Sea Route Administration" has been re-established in Russia in order to coordinate the development and to manage the NSR.

In the years before the Second World War the Stalinist system reached its peak of cruelty. Starting from the Thirties, the Arctic became the privileged place where political prisoners and opponents were massively sent and where many of them ended their life. They built most of the current Arctic cities and infrastructure including the Belomorkanal connecting the White Sea to the Arctic Ocean. Many tens of thousands of people perished during its construction. The Stalin terror reached its maximum brutality between 1936 and 1938. In this period millions of people were imprisoned and killed across the Soviet Union and the Arctic was not

[176] D. Bartels 2001 Identity and ecology in Arctic Siberia: the number one reindeer brigade (Oxford Stud. social cult. Anthrop

an exception to this. The targets of the Stalinist purges were also many well-known Soviet heroes, scientists and explorers who contributed to Arctic science and exploration. In addition, the Arctic institutions were also hardly hit. According to Sergei Larkov and Fedor Romanenko, in Glavsevmorput and in Arctic scientific institutions about 750 people were arrested, 340 of which were executed (S. Larkov et al. 2010)[177].

In the Second World War the Arctic became again strategic for allied supplies to the Red Army. The Arctic convoys delivered to the Soviet Union vital support for the war efforts. During this operation between 1942 and 1945, in total, 104 Allied merchant ships were sunk with the Arctic convoys, along with 18 warships; 829 merchant mariners and 1,944 navy personnel were killed aboard them. The Soviet Union lost 30 merchant ships and an unknown number of personnel[178].

After the Second World War and the death of Stalin, the Arctic policy did not radically change although the repressions abated and many millions of exiled people gradually returned home. During these years, the first nuclear icebreakers were built, the Soviet Union was very actively developing the Northern Sea Route for the transport of goods across the country's northern borders and the Arctic became a theater in the East-West confrontation. Some Arctic areas became intensively militarized and unfortunately also heavily polluted by nuclear waste and nuclear test explosions. All of the major Soviet Arctic cities increased their population and they became fully integrated into the Soviet planned economy.

Security concerns apart, the post-war Arctic became strategic for the Soviet and Russian extraction industry. This is one of the major developments in the recent Arctic history. However, today the oil and gas industry future appears uncertain due to the future peeking oil and gas demand and climate change concerns as has been already extensively discussed in the section dedicated to the energy issue. In the

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177 See Враги народа за польярным кругом Романенко

178 *Arctic Convoys 21 Aug 1941 - 30 May 1945 URL: https://ww2db.com/battle_spec.php?battle_id=298*

first years of the energy bonanza, the Soviets approached the Arctic with the typical Soviet productivism with no culture for the conservation or resource management, which according to them would only distract the Soviet engineers and pioneers from reaching the production targets as Tchurilov, an oil industry worker has pointed out[179]. Those decades were also characterized by intense scientific efforts in the Arctic and many missions were carried through on drifting stations doing scientific research. In 1978 on the Northern Sea Route was established a year-round navigation.

In 1986, the Soviet Union submarine forces reached their peak in activity with almost 200 active nuclear submarines patrolling Arctic and world seas. One year later in October 1987, Gorbachev held the famous speech in Murmansk at the ceremonial meeting on the occasion of the presentation of the order of Lenin and the gold star to the city of Murmansk. He stated that the military confrontation in the Arctic region has reached worrisome levels and intensity. He therefore invited the states to discuss the burning security issues and to start to cooperate[180]

Gorbachev pointed out six very important points. This speech is regarded by many as the turning point in Arctic governance and cooperation. It also helped to turn many security issues into non-security issues[181](K. Åtland, 2008).

Gorbachev envisioned and proposed:

1) a nuclear-free zone in Northern Europe.

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179 "It was all too easy for the government to become complacent and believe that the oil Eldorado would go on forever. Back in the 1950s... we did not have to worry about methods of enhanced recovery. The crude oil just came gushing out on the ground... as long as the oil gushers in the Volga/Urals region, and later in West Siberia and Kazakhstan. were coming on line, no real investment was made in research and development. We just did not bother to develop advanced oil field equipment. All that our leaders wanted was quantity, quantity and more quantity" (C. Emmerson, 2010).

180 "to take simultaneously the roads of bilateral and multilateral cooperation. I have had the opportunity to speak on the subject of "our common European home" on more than one occasion. The potential of contemporary civilization could permit us to make the Arctic habitable for the benefit of the national economies and other human interests of the near-Arctic states, for Europe and the entire international community. To achieve this, security problems that have accumulated in the area should be resolved above all." Gorbachev, Murmansk speech 1987

181 Kristian Åtland: Mikhail Gorbachev, the Murmansk Initiative, and the Desecuritization of Interstate Relations in the Arctic

2) restricting naval activity in the seas washing the shores of Northern Europe.

3) according to him the Soviet Union attached much importance to peaceful cooperation in developing the resources of the North, the Arctic. Here an exchange of experience and knowledge would be extremely important. Through joint efforts it could be possible to work out an overall concept of rational development of northern areas. He proposed, for instance, reaching agreement on drafting an integral energy program for the north of Europe.

4) sharing Arctic scientific exploration and research where the Soviet Union had a wealth of experience what would be important for the whole of mankind.

5) protecting the environment in cooperation with other Arctic countries. The urgency of this to him was obvious.

6) the development of the Northern Sea route as the shortest sea route from Europe to the Far East and the Pacific Ocean passing through the Arctic. He envisioned the opening of the North Sea Route to foreign ships, with the Soviets providing the ice-breakers services[182].

It is debated in literature what was the real meaning and message behind the Murmansk speech. Some argue that this was a tactical maneuver in order to decrease the tensions and security spending which the Soviets could not afford anymore on such high levels. In fact, in the same period, the Reagan administration was involved in the Strategic Defense Initiative and the Soviets were worried of being left behind. However, it was the collapse of the Soviet Union that provided most of the opportunity for the concretization of those proposals and initiatives. The first years of circumpolar cooperation were aimed strategically at creating space for discussion in a vulnerable and unstable Russia. The speech however, provided inspiration for some tangible achievements, and those have provided the foundation for the Arctic region as it stands today[183]. This period is also very important because it represented the start of the reframework of national security and cooperation paradigm. This was also confirmed by the counsellor for the

[182] URL: https://www.barentsinfo.fi/docs/Gorbachev_speech.pdf

[183] URL: https://www.adn.com/arctic/article/how-gorbachev-shaped-future-arctic-policy-25-years-ago/2012/10/01/

Department of Arms Limitation and Disarmament in the Ministry of Foreign Affairs of the U.S.S.R, Granovsky, who acknowledged that real security could not be achieved by military means and that security is linked and part of the security of others. In addition, according to him security is achieved through international cooperation in solving common problems of a transboundary nature – "ecological, economic, social, and humanitarian. (C. Ortman, 2009). Security after Gorbachev speech was extended beyond pure military issues to include the environment and economy. Results in those spheres could be achieved only through cooperation. In this regard international cooperation became the basis for good Arctic governance.

8.4. Eltsin's Russia in crisis and the return to the Arctic

The collapse of the Soviet Union had a series of important consequences for the Arctic region. It affected all spheres of Arctic life and economy and these developments are still evolving today.

The outcome has been a mixed result with positive and negative aspects and developments.

To an ordinary Russian, who for many decades was watching the Arctic through the news of important Soviet accomplishments, which inspired pride for the Soviet motherland, this period is usually perceived as a period of decline and problems. This is understandable because, the glory of the past great achievements apart, these years were also characterized by high level of unemployment, criminal activity, poverty and people suffering that strengthened the nostalgia for the ordered and secure Soviet system. From the international and environmental perspective, however, this was also the decade when current international cooperation was established in the Arctic. Already in 1993, the Cooperation in the Barents Euro-Arctic Region was launched. It is operating on two levels: intergovernmental (Barents Euro-Arctic Council, BEAC), and interregional (Barents

Regional Council, BRC), with sustainable development as the overall objective[184]. Later in 1997, the Arctic Council was established which is becoming increasingly important and expanding to new observer states.

In the same period the states started to address the problem of nuclear fuel waste disposal left by the large number of deactivated Soviet nuclear submarines. The region saw also a rapid decline in the number of deployed military forces and many bases were abandoned throughout the whole Circumpolar North. The economic policy changes affected negatively the Arctic economy which was mostly dependent on the *monogorod* model and the heavy Soviet industry. The lack of jobs and opportunities has impacted the demography in the Russian Arctic zone which decline is still continuing today. The Northern Sea Route development and use was almost abandoned and many Russian Arctic ports became relics of the past. Russian Arctic scientific exploration and research also suffered due to lack of funding.

The cooperation agreements signed in the late Nineties left many durable and positive results. One of them is the Arctic Military Environmental Cooperation (AMEC) signed in 1996, which was mainly focused on North-west Russia and the Kola Peninsula. In 1993, Russia finally acknowledged that for many decades nuclear waste was being disposed in the Arctic and this prompted urgent action in order to address the huge environmental threat. The Kola Peninsula at the time had the highest number and concentration of nuclear reactors in the world. In total, 220 reactors were present in this area, 116 on still active submarines and 101 on deactivated vessels and four on surface ships (C. Ortman, 2009[185]). In 2003, at the conference in Tucson, after the competition of the first integrated spent nuclear fuel transshipment storage facility in north west Russia, the authors of the report described the environmental nuclear threat as very serious and that the Russian nuclear reprocessing and storage facilities did not meet health and safety, and

184 URL: http://www.arcticgovernance.org/the-barents-euro-arctic-region.4668610-137746.html
185 URL: https://www.spri.cam.ac.uk/people/ortman/mphil.pdf

physical security requirements[186]. In the same period the Start 1 and Start 2 have started limiting the number of nuclear weapons what made the large Northern Fleet nuclear force too large. In addition, Russia had no funds for maintenance and to keep the nuclear fleet in operational status and to safely dismantle hundreds of nuclear submarines reactors.

In this context, the AMEC agreement provided urgent funds and assistance to address the issue. In 1991, the US also established the Cooperative Threat Reduction Agreement with the goal of thwarting the military and nuclear proliferation threats, although the Defense Department portrayed the issue in terms of advancing US national security interests. The AMEC enhanced Russian radioactive waste and SNF transport infrastructure and reprocessing facilities by adding temporary storage capacity and improving the health, safety, and physical security requirements of existing infrastructure.

As Ortman clearly points out regarding the importance of such international cooperation arrangements stability is a prerequisite for security. Stability could be only achieved through sustainability so that in the end security could not exist without sustainability. The AMEC declared goals were to improve Arctic sustainability, and this was achieved by addressing a military and security issue. However, accepting and recognizing the interconnectedness of factors and forces means also eliminating the boundaries and separations among the various issues. It follows from this assumption that also state boundaries become less relevant and international cooperation is clearly a more suitable and powerful way to effectively address the Arctic problems. This was clearly shown by the western assistance to

186 "Northwest and Far East Russia contain large quantities of unsecured spent nuclear fuel (SNF) from decommissioned submarines that potentially threaten the fragile environments of the surrounding Arctic and North Pacific regions. The majority of the SNF from the Russian Navy, including that from decommissioned nuclear submarines, is currently stored in on-shore and floating storage facilities. Some of the SNF is damaged and stored in an unstable condition. Existing Russian transport infrastructure and reprocessing facilities cannot meet the requirements for moving and reprocessing this amount of fuel. Additional interim storage capacity is required. Most of the existing storage facilities being used in Northwest Russia do not meet health and safety, and physical security requirements." (Dyer et al, 2003).

Russia under the AMEC agreement which certainly helped to avoid major environmental damages to the fragile Arctic environment.

In the nineties until recently the military activity in the Arctic declined drastically. Russian submarine nuclear forces decreased many times and many military bases were abandoned. This issue was addressed in the security and militarization chapter of the thesis in part 2.

Another consequence of the Soviet Union collapse was the reduction of the NSR use. Russia also halted the development and construction of new icebreakers[187] for many years and only recently those programs are being revived. The Northern Sea Route traffic has reached again the maximum levels of the late Eighties only this year due to the export of liquefied natural gas from the *Yamal* peninsula.

One factor which has not improved, however, is Russian Arctic demography. In recent years the rapid decline in Arctic population has been slowed. Some regions like Chukotka have lost about 65% of the population which passed from about 150 thousands people in the late Eighties to 50 thousands today. They were mainly Russians who left the region, while the native population numbers are actually increasing. Defining exactly the population of the Russian Arctic is difficult because it depends on the definition and boundaries which are taken into consideration. However, considering all the regions and also those that have a part of their territory in the Arctic zone the population decline has been of about 3mln people from 10,8mln in 1991-2 to 7,8mln in 2015.

Considering only the Russian Arctic cities population the decline was of about 20% between 1989 and 2010 from 2475255 to 1997769 (V. Fauzer et al. 2016[188]). In the last couple of years the population decline in the Russian Arctic Zone was

187 The exception was the commissioning of the Fifty Years of Victory icebreaker in

188 URL: http://en.ibrae.ac.ru/docs/2(22)2016_%C0%F0%EA%F2%E8%EA%E0/040_050_ARCTICA_2_2016.pdf

slower and it decreased from 2439 thousands in 2010 to 2391 thousands in 2015 (by 47784 units) (D. Rudnenko, 2015)[189].

The first Soviet research drifting station was established in 1937 while the second one in 1950. Between this period and 1989, 29 more drifting stations were organized for a total of 31 missions during the whole Soviet period. Between 1991 and 2001, no mission has taken place ending a fifty years old tradition of ice monitoring and scientific data gathering. It is only recently that new missions were restarted, however, due to climate change and the limited resources available the current missions are shorter compared to the Soviet ones. Currently Russia is involved in several international Arctic expeditions (M. V. Slipenchuk, 2013)[190].

In the last decade the Arctic has become important again. Many old Soviet programs were revived and this is especially true for the current Arctic uses. However, today in comparison to the past, more emphasis is put on economic development rather than on development models and ideology what defines a more pragmatic approach. This is reflected in the strategical importance of resource extraction industry, especially oil and gas, with the development of the liquefaction facilities to export the *Yamal* natural gas. In addition, Russia is currently building three new *Arktika* class nuclear icebreakers which would allow to strengthen the use of the NSR. In the security and military sphere, there is an ongoing modernization of the submarine nuclear fleet and a reopening of about ten Arctic military bases. Russia has also recently established two Arctic brigades. Moscow is also actively involved in research on the continental shelf in order to gather data for the UNCLOS border delimitation process.

In conclusion, Russian Arctic traditions date back many centuries. In the Tsarist Russia, Arctic exploration and conquer was not dissimilar to what other nations were doing. With Peter the Great, Arctic exploration received a lot of attention in the decades when the Great Northern Expedition took place. Things dramatically

189 D. Rudnenko, 2015 URL: file:///C:/Users/Sandi/Downloads/275-557-1-SM.pdf

190 Slipenchuk book

changed after the October revolution when the Arctic became one of the targets in the Soviet agenda of rapid industrialization and cultural change. Going through the Russian Arctic history is very useful to understand some recent developments and to understand the Arctic position in current Russian affairs. For Russia the Arctic is important because it has many strategic elements like crucial national industries, the open access to the sea with along with the Northern Sea Route and not at least the largest part of the maritime nuclear deterrence potential located in the Northern Fleet. It has also a great symbolical meaning in showing that the Russian people can master it and that they have one of the most advanced technologies in the region in various sectors. It is undoubtedly also a place of the great projects, like the giant extraction industry endeavors or the nuclear technology employed on submarines, some military surface vessels, floating power stations and icebreakers. According to Permilovskaya, it is one of the most important cultural and symbolic centers of the country, cultural meanings, which are of basic importance for the national and world culture, which is represented by traditional culture and unique folk wooden architecture (A. B. Permilovskaya, 1997)[191]. It has one of the most prominent places on the Russian cultural map. The Arctic is part of the Russian identity throughout the history.

[191] URL: http://scjournal.ru/articles/issn_1997-292X_2011_3-3_31.pdf

Chapter 9. The Russian discourses on the Arctic

9.1. Introduction

This chapter aims to understand and analyse the Russian Arctic vision. It focuses on how the main National Government's discourses on the Russian Arctic are built, and on their possible importance in affecting the way the Arctic, and its main problems/opportunities for future development are contextualized from the economic and political point of view.

As argued in Part I, to analyse how the Russian Arctic is represented, through various "texts", help to understand how this space is contextualized politically and culturally within the wider national debate about Russia's national identity, and its role in the international arena. These "texts", as already discussed in Part I, play a key role in defining the conceptual framework in which the very issue of the Arctic governance, in terms of approaches and goals to be pursued, find its legitimacy, in terms of meaning and power relations. To focus on the main Russia's national discourses on the Arctic, what they exclude as well as what are the main ideas and knowledge that are considered significant for its future evolution and therefore governance, can contribute to understand what is the economic and political conceptual framework in which the debate on the Russian Arctic's future is embedded.

To get this aim, this chapter takes into consideration two types of "texts": first, the most important, and recent national documents on the Russian Arctic policy; as I will demonstrate, they confirm how the Russian Arctic represent for Russia's Government mainly, and almost exclusively a space to be governed according to the national security and the economic growth perspectives, while very few attention is placed to the issue of sustainability and climate change. Second, a set of articles in the national press that have recently paid attention to issues related with the Russian Arctic have been considered, with the goal of assessing the set of words, concepts and objects which are utilized more frequently to address Arctic issues.

With respect to the latter sources, it is necessary to consider briefly the issue of the situation of the media environment in Russia. In Russia, there are dozens of newspapers, online resources and the media environment has a long historical tradition. However, at the same time it has also a long tradition of repressions of the freedom of speech. In this regard, it would be enough to remember the *Decabrists* at the beginning of the 19th century or the numerous Russian intellectuals later whose works and freedom of speech have been censored by the authorities while many of them were deported to the *katorga*, the Tsarist Russian gulag described by some authors, among them *Dostoyevsky*.

In the 1990s, after the collapse of the Soviet Union, the Russians have experienced a sort of rejuvenation in the forms and freedom of expression, and many new independent newspapers have been founded which, after many decades, were relatively unhidden criticizing the government and doing the much needed opposition work. However, even in those years, tens of journalists were killed and the Soviet legacy were not deposed.

In 2006 in Moscow, on Putin's birthday, the journalist Anna Politkovskaya was killed. This event, along with the murder of the opposition politician Boris Nemtsov in 2015, marked the Russian society and showed to the Russians that writing independently on uncomfortable topics or doing opposition work could be extremely dangerous even for their life. At the end of her book *Putin's Russia* Polytkovskaya writes:

> "We could no longer tolerate decades of political glaciation. I really would have liked to leave them behind. I would like that our sons could be free... The West could not help us, because they don't care about Putin anti-terrorism policy, they instead show to love caviar, gas, oil, the bears and certain type of people. The exotic Russian market is active and reactive and Europe and the world are not asking nothing more to the seventh part of the globe.[192]"

[192] A. Politkovskaya, Putin's Russia: Life in a Failing Democracy, New York, Henry Holt and Company, 2009.

In the decade since Politkovskaya's death, the space for independent journalism in Russia has narrowed further[193]. These words were told more than ten years ago and today Putin has just reconfirmed his presidency for another 6 years after being already 18 years in power.

In addition, there is an ongoing and strengthening confrontation between Russia and the Western countries, which could further strengthen those tendencies in Russia in the media environment.

Even though to go deeper with the above elements is out from my purpose, they have to be reminded when it comes to consider the central role that national government's discourses play in everyday Russian political life. In fact, they help to understand the Russian media and political environment and, at the same time to lower the expectations regarding a higher degree of diversity and positions in the articles which have been analyzed.

Most of the current Russian newspapers are state controlled and after the annexation of Crimea many editorial boards have been reshuffled in order to have more pro-government positions. Among them is also *Lenta.ru* which is analyzed in this chapter and whose former editorial director criticized the move as a clear act of censure[194], as it will be clarified later.

In the Russia's media system, a higher degree of freedom of speech is left on the internet to individual bloggers and private online TV channels; however, many of those journalist do not live in Russia anymore and also they are often subjected to political pressure. Of course their audience is much smaller compared to the state newspapers and especially the main TV channels.

In the 2017, World Press Freedom Index Russia is ranked 148th out of the 180 countries considered. The report states:

> "What with draconian laws and website blocking, the pressure on independent media has grown steadily since Vladimir Putin's return to the Kremlin in 2012. Leading independent news outlets have either been brought under control or throttled out of existence. As TV channels continue to inundate viewers with propaganda, the climate

193 URL: https://www.theguardian.com/world/2016/oct/05/ten-years-putin-press-kremlin-grip-russia-media-tightens

194 URL: https://lenta.ru/articles/2014/03/13/lenta/

has become increasingly oppressive for those who try to maintain quality journalism or question the new patriotic and neo-conservative. More and more bloggers are receiving prisons sentences for their activity on online social networks and on the web"[195].

9.2. Russian Strategic Arctic documents

In this paragraph, four strategic Russian Arctic documents will be considered and analyzed. There are other important documents dealing with Arctic issues like for instance the National Security Strategy and Foreign Policy documents; however, in this paragraph only the main documents focused on the Arctic would be considered.

In the first part the three Arctic strategies from 2001 to 2013 will be discussed: "*The Fundamentals of State Policy of the Russian Federation in the Arctic*[196], "The *Basis of State Policy of the Russian Federation in the Arctic for the Period up to 2020 and Beyond*[197]" and "*The Strategy for the Development of the Arctic Zone of the Russian Federation and for Ensuring National Security until 2020*[198]". In conclusion some parts of "*The State Program of the Russian Federation "Socio-economic development of the Arctic zone of the Russian Federation*[199]" will be considered. Special focus is put on the linguistic analysis and on the climate change and sustainability issue in order to understand how are they considered and how their importance evolved in the last decade.

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195 URL: https://rsf.org/en/russia

196 Основы государственной политики Российской Федерации в Арктике (Одобрены на заседании
Правительства Российской Федерации (протокол от 14 июня 2001 г. № 24, раздел III, п.1) URL: http://www.sci.aha.ru/econ/A111c.htm

197 Основы государственной политики Российской Федерации в Арктике на период до 2020 года и дальнейшую перспективу URL: http://government.ru/info/18359/

198 Стратегия развития Арктической Зоны Российской Федерации и обеспечения национальной безопасности на период до 2020 года URL: https://minec.gov-murman.ru/upload/iblock/b36/strategy_azrf.pdf

199 Постановление Правительства РФ от 21 апреля 2014 г. N 366
"Об утверждении государственной программы Российской Федерации "Социально-экономическое развитие Арктической зоны Российской Федерации""Государственная программа Российской Федерации"Социально-экономическое развитие Арктической зоны Российской" URL: http://government.ru/programs/236/events/

The first document of 2001 "*The Fundamentals of State Policy of the Russian Federation in the Arctic"* is mostly "security oriented" and all activities in the Arctic according to it should be linked to the interests of the security and defense domain. It stresses the importance of the strategic dimension and the nuclear systems which should deter any aggression against Russia. The document states: "it is providing the system of principles on the long run with the goal of ensuring the national security of the Russian Federation and the sustainable socioeconomic development of the Arctic regions". According to it special attention should be put on: economics, ecology, defense, science and geopolitics. The geopolitics sphere is mentioned only in this document.

It stresses the importance of the extraction sector for the Russian Arctic and in the continuation especially the military strategic importance is pointed out: "here are based the Northern Fleet forces and their operational zone along with the concentration of many military industries... In the Arctic all kind of activities are in the greatest degree linked to the interests of the Country military security"[200].

It states that Russia is interested in: having a peaceful and cooperation environment in the region; that Arctic states have the biggest rights in terms of environmental protection and that Russian leading positions in the research, development and other spheres of Arctic activities are maintained and strengthened.

The main directions of the state policy in the Arctic include the following sectors: economy, ecology, science, military security and international cooperation. The document in the continuation develops those five policy points independently. In the science and research section, climate change is mentioned: "Assessment of the role of the Arctic in global climate processes and natural and climatic changes occurring in different environments under the influence of both natural and anthropogenic factors"; "Assessment of the role of the Arctic in global climate

[200] «Арктика имеет исключительно важное военно-стратегическое значение для решенния задач обороны страны. Здесь базируются силы Северного флота и находится их операционная зона, сосредоточен ряд важнейших предприятий оборонной промышленности... В Арктике все виды деятельности в наибольшей степени связаны с интересами военной безопасности страны».

processes and natural and climatic changes occurring in different environments under the influence of both natural and anthropogenic factors[201]"

The second document of 2008 "The *Basis of State Policy of the Russian Federation in the Arctic for the Period up to 2020 and Beyond"* has less focus on the hard security compared to the previous document (Zysk, 2013). The document in the beginning states: "these Fundamentals determine the main goals, main tasks, strategic priorities and mechanisms for implementing the state policy of the Russian Federation in the Arctic, as well as a system of strategic planning measures for the social and economic development of the Arctic zone of the Russian Federation and ensuring Russia's national security"[202].

National security has become one of the issues and it is not the dominant subject anymore. According to the document, the main Russian interests in the Arctic are: the use of the Russian Arctic zone as a strategic resource base; keeping the Arctic a zone of peace and cooperation, protection of the unique Arctic ecological systems and the use of the Northern Sea Route as a national unified transport communication of the Russian Federation in the Arctic. It is clear that Arctic natural resources in this document are more important and also the development of the NSR.

The main goals of the Russian state policy in the Arctic are:

a) in the sphere of social and economic development - expansion of the resource base of the Arctic zone of the Russian Federation, which can largely meet Russia's needs for hydrocarbon resources, aquatic biological resources and other types of strategic raw materials;

b) in the sphere of military security, protection and protection of the state border of the Russian Federation, which lies in the Arctic zone of the Russian Federation, - to ensure a favorable operational regime in the Arctic zone of the Russian Federation, including the maintenance of the necessary combat capability of groups of forces of the General Armed Forces of the Russian Federation, other troops, military formations and bodies in this region;

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201 «оценка роли Арктики в лобальных климатических процессах и природно-климатических изменениях, происходящих в различных средах под влиянием как естественных, так и антропогенных факторов

202 Настоящими Основами определяются главные цели, основные задачи, стратегические приоритеты и механизмы реализации государственной политики Российской Федерации в Арктике, а также система мер стратегического планирования социально-экономического развития Арктической зоны Российской Федерации и обеспечения национальной безопасности России.

c) in the sphere of environmental safety - preservation and protection of the natural environment of the Arctic, liquidation of environmental consequences of economic activity in the conditions of increasing economic activity and global climate change;

d) in the field of information technology and communications - the formation of a single information space of the Russian Federation in its Arctic zone, taking into account natural features;

e) in the field of science and technology - ensuring a sufficient level of fundamental and applied scientific research on the accumulation of knowledge and the creation of modern scientific and geoinformation bases for the management of Arctic territories,

f) in the sphere of international cooperation - ensuring the regime of mutually beneficial bilateral and multilateral cooperation of the Russian Federation with the Arctic states on the basis of international treaties and agreements to which the Russian Federation is a party

Also this second strategic document mentions climate change in the science and technology section: "forecast and assessment of the consequences of global climate change occurring in the Arctic zone of the Russian Federation under the influence of natural and anthropogenic factors in the medium and long term, including increasing the sustainability of infrastructure facilities."[203]

Climate change is also addressed in another paragraph dealing with ecological security/safety: "in the sphere of ecological safety is necessary: to ensure the conservation of the biological diversity of the Arctic flora and fauna, including by expanding the network of specially protected natural areas and water areas, taking into account the national interests of the Russian Federation, the need to preserve the natural environment in the context of expanding economic activity and global climate change;[204]"

In addition to the climate change issue, the document mentions also the media and their coverage of Russian Arctic issues as a mechanism to implement the state policy: "media coverage of issues related to the national interests of the Russian Federation in the Arctic, including the organization of exhibitions, conferences, roundtables on the history of Arctic development by Russian researchers, with a

[203] Прогноз и оценка последствий глобальных климатических изменений, происходящих в Арктической зоне Российской Федерации под влиянием естественных и антропогенных факторов, в среднесрочной и долгосрочной перспективе, включая повышение устойчивости объектов инфраструктуры;

[204] В сфере экологической безопасности необходимо: обеспечить сохранение биологического разнообразия арктической флоры и фауны, в том числе путем расширения сети особо охраняемых природных территорий и акваторий, с учетом национальных интересов Российской Федерации, необходимости сохранения окружающей природной среды в условиях расширения экономической деятельности и глобальных изменений климата;

view to creating a positive image of Russia". This point is important for the media analysis done in this chapter. It shows that that a positive image of Russia is of strategic interest for the Russian state.

In the concluding part the document proposes three stages for the implementation of the document:

- in the first period (2008-2010): geological and geophysical, cartographic and other work should be done to justify the external borders of the Arctic zone of the RF and increasing the possibilities of international cooperation, in order to develop the natural resources;
- at the second stage (2011-2015): the international legal registration of the external boundary of the Arctic zone of the Russian Federation and the implementation on this basis of Russia's competitive advantages in the extraction and transportation of energy resources; solving the problems of economic restructuring in the Arctic zone of the Russian Federation on the basis of development of the mineral and raw materials base and water biological resources of the region; creation and development of the infrastructure and communication management system of the Northern Sea Route to solve the tasks of ensuring Eurasian transit; completion of the creation of a unified information space for the Arctic zone of the Russian Federation;
- at the third stage (2016-2020), the transformation of the Arctic zone of the Russian Federation into the leading strategic resource base of the Russian Federation should be ensured.

The third Russian Arctic strategic document from 2013 "*The Strategy for the Development of the Arctic Zone of the Russian Federation and for Ensuring National Security until 2020"* was developed in order to implement the "The *Basis of State Policy of the Russian Federation in the Arctic for the Period up to 2020 and Beyond".* It defines the basic mechanisms, ways and means of achieving strategic goals and priorities for sustainable development of the Arctic zone of the Russian Federation and ensuring national security.

At point five the strategy points out the main risks and threats for the socioeconomic development of the Russian Arctic zone.

In the social sphere they are: the negative demographic processes, the poor state of the residential infrastructure and social services, the absence of a efficient system for the personnel training and the low quality of living of the indigenous people.

In the economic sphere the risks and threats are linked to: the absence of modern Russian technologies and technical equipment to search and develop the fossil fuel deposits in the Arctic, the deterioration of the infrastructures (transportation, industrial and energetic), the underdevelopment of the transportation infrastructure, high energy intensity and low efficiency of extraction of natural resources, costs in the absence of effective compensation mechanisms, low labor productivity; imbalance in economic development between individual near-Arctic territories and regions, a significant gap between the leading and depressed areas by level of development; inadequate development of navigation-hydrographic and hydro-meteorological provision of navigation; lack of means for the permanent comprehensive space monitoring of the Arctic territories and water areas, dependence on foreign funds and sources of information for all activities and the absence of a modern telecommunication infrastructure.

According to the strategy the priority directions of development of the Arctic zone of the Russian Federation and ensuring national security are:

a) comprehensive social and economic development of the Arctic zone of the Russian Federation

Federation;

b) development of science and technology;

c) creation of a modern information and telecommunications infrastructure;

d) ensuring environmental safety;

e) international cooperation in the Arctic;

f) ensuring military security, protection and protection of the state border

The Russian Federation in the Arctic.

The climate change issue is mentioned in four parts of the strategy:

1) forecast and assessment of the consequences of global climate change occurring in the Arctic zone of the Russian Federation under the influence of natural and

anthropogenic factors in the medium and long term, including increasing the sustainability of infrastructure facilities;

2) conservation of the biological diversity of Arctic flora and fauna in the economic expansion and global climate change, including improvement of the system of state environmental monitoring in Arctic zone of the Russian Federation, based on the use of objective and measured indicators of environmental assessment, the formation of a system monitoring of the state and pollution of the environment using modern ground, air and space based surveillance facilities integrated with existing and established international environmental monitoring systems and providing detection and forecast of dangerous and extreme natural phenomena in Arctic zone of the Russian Federation, including negative climate changes, and also timely detection and prediction of emergency situations of natural and technogenic character;

3) regular exchange of information on the state of the environment, and also data on the climate of the Arctic and its dynamics, the development of international cooperation in improvement of hydrometeorological observing systems for the Arctic climate, including from space;

4) organization of complex international scientific-research expeditions for studies of the environment (ice situation, pollution level of marine waters, marine ecosystems) and the impact of observed and predicted climate changes on it.

Analysis and discussion of the three documents

WORDS	Basis 2001	Basis 2008	Strategy 2013	TOTAL
Russia, RF, Russian - (Россия, российский, РФ)	73	118	176	369
Economy - (экономика, экономический)	29	19	37	85
Security - (безопасность)	16	16	33	65
Military, army, navy - (военные, войска, флот)	27	13	20	60
Ecology - (экология)	23	10	22	55
Extraction, oil, gas, resurces - (добыча, нефть, газ, ресурсы)	23	10	21	54
Strategic - (стратегический)	4	7	30	41

National interests (национальные интересы)	10	13	15	38
Environment (окружающая среда)	14	5	16	35
Cooperation - (сотрудничество)	12	7	10	29
Northern Sea Route - (Севморпуть)	6	5	11	22
Sustainable development (устойчивое развитие)	4		9	13
Icebreaker (ледокол)		1	7	8
Climate change (изменение климата)	0 (1)	3	4	7
Atomic/nuclear (Атомный, ядерный)	3	1	3	7
Canada (Канада)	2			2
Putin, president - (Путин, президент)			2	2
NATO - (НАТО)	1			1
Geopolitics - (геополитика)	1			1
Arctic warming - (потепление)				0
US, American (США, американский)				0

Table 6: documents worlds analysis

From the linguistic analysis done in the table above some important facts could be pointed out. The 2013 document gives more attention to the economy what is also confirmed by the words' count, to sustainable development and to the Northern Sea Route. The military subject is the most present in the first document.

Security: There are different concepts of security. In the first document it refers to national security 6 times, ecological security 4 times and military security 6 times. In the second document it refers to national security 4 times, military security 6 times, ecological security 3 times and chemical security 1 time. In the third document it refers to national security 12 times, ecological security 6 times, military security 5 times, complex security 3 times, transportation security 2 times, energy security 1 time and international security 1 time.

The term in Russian means both security and safety so a more complex analysis should be done in order to understand its meaning and to draw better conclusions. It could be concluded, however, that the security domain matters in all documents.

The words, NATO and geopolitics are only mentioned in the first document, although only once. The word strategic is very present in the last document, however, it refers mainly to the word strategy in the name of the document. The

words, natural resource extraction, ecology, environment and cooperation are present in all documents and do not give significant results in this analysis.

Another document which would be briefly considered is the "*The State Program of the Russian Federation "Socio-economic development of the Arctic zone of the Russian Federation*". This document is important and interesting, because it shows how the Russian Arctic strategy is implemented and its implementation and development measured.

The goal of the program is to increase the level of social and economic development of the Arctic zone of the Russian Federation.

Its tasks are as follows:

- improving the quality of life and protection of the population in the Arctic zone of the Russian Federation;

- creation of conditions for the development of the Northern Sea Route as the national transport highway of the Russian Federation in the Arctic and the development of a system of hydrometeorological support for navigation in its waters;

- the development of science, technology, and increasing the efficiency of the use of the resource base of the Arctic zone of the Russian Federation and the continental shelf of the Russian Federation in the Arctic;

- increase of efficiency of state management of social and economic development of the Arctic zone of the Russian Federation

The target indicators and the indicators of the Program are:

- the share of the gross regional product produced in the Arctic zone of the Russian Federation in the total gross regional product of the constituent entities of the Russian Federation;

- the share of Russian-made radio electronic equipment used in the Arctic in the total volume of radio electronic equipment used in the Arctic;

- specific weight of science-intensive innovative goods, works (services) of organizations in the total volume of shipped goods, works performed (services) in the Arctic zone of the Russian Federation;

- level of coverage of the water areas of the Arctic seas by hydrometeorological observations;

- level of awareness of citizens of the Russian Federation on the activities of the state in the Arctic;

- the share of imported products (technology and equipment) in the total volume of products (technology and equipment) purchased by companies for the development of mineral deposits in the Arctic zone of the Russian Federation.

In the first part along with the socioeconomic, science and technology development, more emphasis is put on the development of the NSR. In the second part dealing with the indicators along with the GDP indicator the share of the Russian-made electronic equipment and imported products is also mentioned. This is especially important in the context of the western sanctions and in the current Russian push for import replacement and increasing isolationism of the Russian economy.

The program is divided in three subprograms. The Subprogram 1 "Formation of support zones of development and ensuring their functioning, creating conditions for accelerated socio-economic development of the Arctic zone of the Russian Federation"; the Subprogram 2, "Development of the Northern Sea Route and ensuring navigation in the Arctic"; and the Subprogram 3 "Creation of equipment and technologies for oil and gas and industrial engineering necessary for the development of mineral resources in the Arctic zone of the Russian Federation".

The second subprogram is clearly focused on the NSR while the third is focused on the development of Russian made equipment for Arctic resource extraction especially oil and gas.

Another important aspect to point out is the presence of the Arctic in the Russian media. The subprogram 1 provides specific goals and indicators for this:
- increase in the national information space of the share of positive information on the problems of development and development of the Arctic zone of the Russian Federation;
The indicators include:
- number of socially significant events, including international ones, devoted to the development of the Arctic;

- number of information messages on various topics related to the development of the Arctic zone of the Russian Federation.

9.3. The analysis of Russian Press: Methodology

The analysis has considered two Russian online news websites, both in Russian language. The choice was to analyze one of the major Russian online resources *lenta.ru* which has 1,5mln daily visitors, (6,5mln weakly and 19.8 monthly[205]) and *pravda.ru* which is the second most important Russian English language information website (about 200 thousands daily visitors). The analysis has considered four aspects:

Pictures and images

In the 330 articles which have been considered all the images and pictures have been categorized. Visual communication is extremely important in modern journalism. All the pictures have been included in seven categories: animals, icebreakers, military, landscape/environment, oil/gas infrastructure, people and for *lenta.ru* also science has been added.

The categories are of course limited and some subjects are not properly represented as for instance, native people, fishing, tourism and other topics. However, for the purposes of this work, the categorization appears to be very representative. The seven topics undoubtedly cover the most important aspects of Russian Arctic involvement and discourses, which are also in line with the uses' analysis in part two of the thesis. Two more general and broader categories are "people" and "landscape/environment". In some rare cases an image has been counted for two times and included in two topics. This is the case when it has not been possible to determine the dominating subject. In general, the dominant presence of an icebreaker has been sufficient to put this image in the "icebreaker" category, even if there was a person on the background. The same is true for

[205] URL: https://lenta.ru/mediakit/lenta-mediakit-web.pdf

"animals" and "oil/gas infrastructure". In the "military" category have been included all the images dealing with military issues, like for instance soldiers, navy vessels, and military hardware. The "landscape/environment" category includes pictures of the Arctic nature and also pictures with Arctic villages, pollution and Arctic sea ice. People who are not scientists or military personnel have been all included in the "people" category as for instance travelers, native people, experts and politicians.

An important difference has been noted between the two news websites. For *pravda.ru* articles, there are fewer images and the same are used and repeating themselves in dozens of articles. In addition, there are more high-impact pictures like for instance in the military topics. In *lenta.ru* the images are more professionally selected and they are rarely used in two different articles and there appears to be also more restraint in using high-impact pictures related to certain topics.

Shares and comments

In addition to pictures and images, also the number of comments and shares have been considered. They could be a good indicator of the public's preferences. The dynamics in the two online newspapers are very different. In *pravda.ru*, the articles have a higher percentage of shares while the comments are rare. The opposite is true for *lenta.ru* where the number of comments is higher than the number of shares.

Articles' main topics

For every article the main topics have been determined. This is very important in order to understand what Arctic topics are covered mostly in the Russian online press. For this purpose ten main topics have been considered: Economic development, natural resource extraction, ecology/environment, climate change/Arctic warming, military/security, transportation, science/exploration, peace/cooperation, border issue, art/travel/culture/history. Some articles had different topics which could not be exactly included in any of these categories. In this case, the last more general category was used. The observed dynamics in the two media resources regarding the main topics appear quite similar.

Key words

In this linguistic analysis section every article has been analyzed regarding the number of times that a single word is used. The analysis has been done manually without using a specific software so that more control on the choices was possible. At the beginning twenty articles have been chosen randomly in order to determine the most used words what has allowed to put them in a table. In addition, other words have been added in order to specifically analyze their usage. Among them there are: climate change, global warming, sustainability, environment, ecology, Putin, cooperation, sanctions, NATO and China. In total, 24 words and synonyms have been considered. It is important to underline the fact that the analysis is not perfectly exact and that maybe some words have been missed and not been counted. This is especially true because often synonyms are used. However, despite this the analysis has given very good results, which are in line also with the topic analysis discussed above. In the continuation some words are discussed.

Russia/Russian

The word Russia/Russian in different declination and conjugations is the most wide-spread. Sometimes also other synonyms have been counted like for instance Moscow which often denotes the same subject, государство — state, RF(Russian Federation), русский/российский etc. Since there are many possibilities to define the Russian state or something that is Russian this word count is important to give the idea of how much the state and nationality matters in Arctic affairs.

Icebreaker

In this case the search was easier. In addition, to the word icebreaker also the words icebreaker fleet have been included and sometimes also vessel (судно) when referring to an icebreaker. In this case sometimes the icebreaker is called by its name for instance *Fifty years of victory*, *Arktika* etc. These cases have not been counted and considered.

America/American

The count of this word is similar to the case of the word Russia. However, here only three cases have been considered (Америка, американский, США(US)). Washington and other possible synonyms have been rarely considered.

Military/army

The analysis of this word was also a difficult task. There are incredibly many possibilities to name something that attains to the military in Russian. In addition many times the military hardware and subjects have specific names like for instance, for the navy (frigate, submarine), or rocket and the specific names of the missile systems etc. The analysis has mainly considered three words: военный — military, войска – troops and флот – navy (when referring to the military navy or the Northern Fleet most of the times). The words, rockets, submarines, artillery systems, cruisers, missiles have been mostly excluded.

Strategic, Canada, national interests

The word strategic has been counted in different contexts (strategic document, strategic decision, strategic interest, strategy etc). The word Canada has been also only singularly counted. In the case of the word national interest it has been also expanded to national priority and national security so that it has a wider meaning.

Putin

It was interesting to see how much the president's figure is involved in Russian Arctic discourses. One reason is undoubtedly history and the heavy use of Arctic propaganda in Soviet times related to Soviet leaders. In 2001 Putin used the Arctic in order to show his presence on the biggest world's nuclear submarine of project 941. He wanted to show that the military and the Russian nuclear arsenal matter again and that they are a priority for him. This was followed by a decade long and still ongoing modernization of the Russian nuclear forces. The count has been

focused on the word Putin and president. In addition, sometimes, also the words head of state and commander in chief have been considered.

Sanctions, NATO, security, geopolitics, cooperation

All these words have been analyzed singularly without considering other synonyms and expanded meanings like in some other cases. The choice of those words is justified by the military and security analysis done in this thesis and also by the pictures and topics analysis. They are very useful in order to understand who Russia perceives to be the actors in Arctic security discourses and who are the main threats.

Atomic/nuclear

This word has been analyzed through two Russian words атомный and ядерный. In both media resources they have an important position in Russian Arctic discourses and vision and they are very important.

Extraction/oil/gas

These words were helpful in order to understand the importance of the extraction industry in the Russian media. The analysis has considered the words нефть, газ and добыча. There were some problems because thщse words are also used in Russian companies names like Rosneft or Gazprom and also because there are many synonyms i order to define this sector and activity like for instance resources, fossil fuels, black gold etc (Ресурсы, ископаемые, чёрное золото...). However, the analysis has given strong and solid results also in accordance with the articles' main topics.

Climate change, Arctic warming, ecology/pollution, environment, sustainability

These words have been considered in order to understand how much importance is given to the fragile Arctic environment, to the climate change issue in the Russian press and to the sustainability issue. The melting sea ice and the rising temperatures are covered, however, other topics are more important for those two online newspapers. In addition most of the articles are focused on Arctic and global

warming and few threat the climate change issue more in complexity. In some articles on *lenta.ru* the journal nature climate change is also cited. However, no mention is done at all to the IPCC, which is completely ignored, contrary to the western press (K. Flottum, 2017) where it is very often cited. The words have been analyzed independently (изменение климата, потепление, экология/загрязнение, окружающая среда and устойчивое развитие).

Northern Sea Route

This is one of the most important Russian Arctic uses what is also confirmed by the articles. In order to count it the word north север was the starting point, because in Russian there are many different ways to call this route like for instance: Северный морской путь, Севморпуть, севенрная магистральб северный коридор and others.

Economy

In this category have been put all the words containing this econ with the exception of some cases like School of economics an dissimilar. The word finance has not been considered and sometimes the words included are not directly linked to Arctic economic development. However, also in this case the results are solid and are confirmed by the topics and pictures analysis.

9.4. Russian press analysis

9.4.1 News website pravda.ru analysis

The first media resource analyzed in this section is the internet news website *pravda.ru*. This internet media is followed daily by more than 200000 people. It is not among the most wide-spread Russian newspapers, however, its English edition is the second most read news website in English in Russia. It has also editions in French and Portuguese. It is one of the two successors of the Soviet Pravda which was the main newspaper of the Communist Party of the USSR. In the Russian 2018

presidential elections, the communist presidential candidate Pavel Grudinin achieved the second place receiving 11,77% of votes[206]. The first issue of Pravda was published in 1912 in Saint Petersburg and later it became an important organ of the Bolsheviks in which Vladimir Lenin exercised broad editorial control[207]. The other second modern successor of the Soviet Pravda is still the Russian Communist official newspaper, however, it has a smaller audience compared to *pravda.ru*. In 2013, the news website *pravda.ru* was chosen by the American senator John McCain in order to publish his article with the title "the Russians deserve better than Putin" which was the senator's answer to Vladimir Putin[208].

In the analysis 130 articles have been considered, 47 for the year 2015, 24 for the year 2016 and 59 for the period 2017-18.

SUBJECTS	TOTAL
animals	5
icebreakers/transportation	11
military	26
landscape/environment	55
oil/gas infrastructure	13
people	23
comments	43
shares	10276

Table 7: pravda.ru images, comments and shares

The dominating images in the articles are the Arctic landscape and environment 55 pictures, military hardware 26 images, different people 23 images, oil and gas infrastructure 13 pictures, icebreakers and transportation 11 pictures and Arctic animals 5 pictures. It is important to point out that the number and subjects of the images of the articles are in accordance with the uses analyzed in this thesis and confirm the goodness of their choice.

206 URL: http://tass.ru/politika/5084132

207 URL: https://www.britannica.com/topic/Pravda

208 URL: https://www.pravda.ru/news/world/northamerica/usacanada/16-09-2013/1174414-pravda-0/

Comments and shares

The 130 articles have 43 comments in total and were shared 10276 times. There are 11 articles with comments the majority of which are concentrated on few of them focused on security and military issues. The sharing of the articles confirms the same trend where security issues attract the most readers' attention in terms of sharing. The ten most shared articles are the following:

Title	Shares	topic
Russia will not build the Northern Sea Route without the US?	3579	Transportation (NSR) US-Russia relations
Russia deployed the S-300 in the Arctic	989	Security/defense
The West panics from Russia's plans in the Arctic: "Syria and Ukraine are just a rehearsal"	855	Security/defense
A traveler from Britain will get to the North Pole by sea	376	Travel
Russia launched the world's most powerful nuclear powered icebreaker	293	Transportation
Russia submitted an updated application (to the UN) for the Arctic	258	Border issue
Ice and fire: with what Russia goes into battle for the Arctic - Rustam TANKAEV	225	Economic development Transportation
Alaska wanted to become Russia?	206	US-Russia relations
NATO encroaches on the Arctic and the Northern Sea Route	191	Security/defense
NATO Secretary General forbids Russia to control the Arctic and the Mediterranean Sea	175	Security/defense

Table 8: pravda.ru most shared articles

Articles' topics

main topics of the articles	***Arguments 2015 (47 articles)***	***Arguments 2016 (24 articles)***	***Arguments 2017-18 (59 articles)***	***TOTAL (130 articles)***	***Share in %***
economic development	20	7	17	44	34%

national security/military	11	5	27	43	33%
natural resource extraction	14	6	12	32	25%
science/exploration	8	7	11	26	20%
transportation	6	6	12	24	18%
ecology/environment	5	4	8	17	13%
Climate change/Arctic warming	5	2	7	14	11%
border issues	3	5	4	12	9%
art, travel, culture, tourism	5	4	3	12	9%
peace/cooperation	1	3	7	11	8%

Table 9: pravda.ru articles arguments 2015-2018

As can be seen from the table above, some topics are more present than others. The most discussed topic is economic development present in 44 articles, however, military and security is close with 43 articles. Following is natural resource extraction discussed in 32 articles, science and exploration in 26 and transportation in 24, ecology and environment in 17 articles and finally climate change and Arctic warming in 14 articles. Again, the most discussed topics, economic development, oil and gas extraction, security and military, transportation have been discussed in part 2 of the thesis.

From the analysis of the three years period some facts and dynamics could be understood. In the last year the most discussed topic is undoubtedly security and militarization with 26 articles dedicated to this subject. This is a maximum value for any topic in the three years time interval considered. This could be linked to the opening of the Arctic bases and the deployment of new and modernized military hardware into the Arctic which was extensively covered by the press also because of the recent Russian presidential elections[209]. Natural resource extraction and economic development topics do not have big fluctuations in the three years period while on the other hand, there is an increase in topics on Arctic transportation and environment and Arctic warming.

[209] In this regard the latest Putin annual state of the nation speech could be also reminded where he has displayed several new missile systems followed by an ovation in the public. The military and missile are a popular topic in Russia to gather approval and support.

Text and words analysis

WORDS	***data 2015***	***data 2016***	***Data 2017/18***	***TOTAL***
Russia, RF, Russian - (Россия, российский, РФ)	312	145	347	804
Extraction, oil, gas - (добыча, нефть, газ)	199	45	86	330
US, America, American - (США, американский)	61	67	185	313
Military, army, navy - (военные, войска, флот)	48	36	213	297
Icebreaker - (ледокол)	26	24	98	148
Economy - (экономика, экономический)	83	20	31	134
Atomic - (атомный, ядерный)	15	26	69	110
Northern Sea Route - (Севморпуть)	51	13	37	101
Putin, president - (Путин, президент)	15	14	64	93
Strategic - (стратегический)	35	12	38	85
Climate change - (изменение климата)	25	11	14	50
China - (Китай)	5	29	15	49
Cooperation - (сотрудничество)	15	13	19	47
Ecology - (экология)	26	12	8	46
Security - (безопасность)	15	3	24	42
NATO - (НАТО)	12	14	9	35
Sanctions - (санкции)	1	7	22	30
National interests - (националные интересы)	10	9	10	29
Arctic warming - (потепление)	8	4	12	24
Canada - (Канада)	7	0	14	21
Geopolitics - (геополитика)	8	3	7	18
Sustainable development - (устойчивое развитие)	5	0	4	9
Environment - (окружающая среда)	2	2	2	6

Table 10: pravda.ru words analysis

The table above shows the number of times that a single word is used in an article.

Russia/Russian – This word, which is by far the most present, it was found at least 804 times in the articles, support the state centered approach and that nationality is important for the Russian Arctic vision. In the majority of cases it is used in the context of the Russian state as the subject of the sentence or in formulations like Russian Arctic, Russian Arctic interests, Russia is going to protect

etc. This is also reflected in the articles' titles where the word is also the dominant one.

Extraction, oil, gas – The words related to the extraction of oil and gas are present 330 times. However regarding these words one important methodological thing should be pointed out. In 2015, one article was considered which had 7 pages where these words have appeared 80 times. This changed the statistics for the year as can be clearly seen from the table. Without this article, the oil and gas words would be still important with 240 presences on 4th place in the table. The analysis further confirms the importance of the Arctic resources for the Russian Arctic vision.

US, America, American – The US is undoubtedly one of the most important subjects in Russian Arctic articles on *pravda.ru*. It has been mentioned at least 313 times. Most of the times this happens in the context of security concerns and US-Russia relations. Partially this seems to be a continuation of the Soviet and Cold War tradition when the two superpowers monopolized the discourses. The articles that mention the US are also very popular between *pravda.ru* readers. Finally it could also denote that the US actions in the Arctic are of greatest concern to Russia. In addition, there was an increase

Military, army, navy – with almost 300 mentions the military and security sphere is undoubtedly one of the most discussed topics in *pravda.ru* Arctic articles. The dynamics are similar to those of the previous word “America”. In fact most of the times the military issues are framed in the context of Russia-US relations and recent tensions. As has been already mentioned in the topics analysis most of the words are used in the last year due to recent Russian Arctic military activity and deployments.

Icebreaker – Surprisingly or not, the icebreaker is one of the main protagonists in *pravda.ru* Arctic discourses. This is mainly linked to two developments. First, is the ongoing construction of three new nuclear icebreakers of

Project 22220. The press covers their development closely. The second reason is the growing development of the NSR and transportation in the Arctic.

Economy – Although economic development is the most discussed topic, the word economy and related terms is present "only" 134 times. This is not a small number considering that many times there is no need to mention the economy when dealing with Arctic economic development issues. However, in 2017-18 compared to the military and security issues, economy seems to be in a secondary position.

Atomic – Atomic energy is one of the main technologies in the Arctic. For decades the Arctic was a place of a strong atomic imaginary linked to the huge Northern Fleet arsenal. Today there is an ongoing modernization of Russian nuclear submarines, icebreakers and a floating nuclear power station has been also built. This confirms the view that the Arctic is still dominated by state centered and undemocratic technologies as P. Josephson has noted. Russia is still one of the world leaders in this sector and this technology also fits the Arctic operational environment. For navigation for instance in ice on long distances a nuclear reactor gives continuous and long lasting energy out put it is also very powerful to deploy on larger icebreakers. For these reasons the nuclear is linked both to the military strategic dimension both to the transportation sector.

Northern Sea Route – The NSR is one of the priorities in the Russian northern development. It was mentioned 101 times in the articles, and it is also one of the most common topics. Icebreakers and the Northern Sea Route all they together show the importance of the Arctic transportation sector.

Putin – The Russian president is mentioned 93 times in the articles. However, his mentioning is mostly related to few events: the Arkhangelsk conference in March 2017 "the Arctic territory of dialogue", the launch of the *Yamal LNG* liquefaction facility and the arrival of the first LNG tanker and his visit of the Franz

Joseph territory. He does not seem to be the main protagonist in *pravda.ru* discourse on the Arctic with the exception of some articles.

Strategic – This word is mentioned 85 times. This would clearly denote that the Arctic strategic dimension is very important for Russia. The word is used in reference to the strategic role of the Arctic and also to the Russian strategies and strategic documents for the region, where the word is often used.

Climate change/Arctic warming – These words together have been used 74 times. More on this issue will be written at the end of this paragraph where climate change will be discussed more in detail.

The other relatively important words result to be: Nato, China, cooperation, sanctions, security, ecology.

China is mentioned 49 times while Canada, an important Arctic country, only 21 times. The word sanctions appears 30 times. Unfortunately, sustainable development does not seem to be of particular interest since it appears only six times.

Climate change and Arctic warming issue

The climate change and Arctic warming issue does not appear to be one of the top priorities in *pravda.ru* Arctic articles. The table below shows more in detail how climate change is represented in the 14 articles mentioning or dedicated to the issue.

Title	**The Arctic is warming?**	**Antropog. forces mentioned?**	**Skeptikals position mentioned?**	**CC mentioned?**
The Arctic already in 2040 will be free of ice in the summer months	YES	NO	YES	NO
Scientists: anomaly hot weather will lead to global flood by 2045	YES	NO	NO	YES
In the Arctic, "smells" the	NO	NO	YES	YES

geopolitics of climate				
Ice cover in the Arctic has reached the minimum since the beginning of observations	YES	NO	NO	NO
Warming will turn the ocean into a nutritious broth	YES	NO	NO	YES
The Arctic goes to a record: high temperatures affected the ice thickness in an unexpectable way	YES	NO	NO	YES
The Arctic ice will not survive already in this year-forecast	YES	NO	NO	YES
Methane "hillocks" on the bottom of the Arctic can explode at any time	YES	NO	NO	NO
In the Arctic has been predicted a climate catastrophe	YES	NO	NO	YES
Record ice melting in the Arctic	YES	NO	YES	YES
Putin in Arkhangelsk. Your move, Mr. trump!	YES	YES	YES	YES
A traveller from Britain will reach the North pole by sea	YES	NO	NO	YES
Does in the Arctic ocean all the ice melt?	YES	NO	NO	YES
Climatologists indicated the culprit to the melting of Arctic ice	YES	NO	NO	YES

Table 11: pravda.ru climate change issue

The Arctic climate change issue in the Arctic context in *pravda.ru* is represented in very unscientific and misleading way. Already the fact that only 14 articles out of 130 mention the issue in the last three years points to the fact that the issue is a low priority one. However, also the articles dedicated to the issue of sea ice melting are based on wrong assumptions and are highly misleading. Not a single article mentions the greenhouse gases emissions as the cause of climate change with one exception in Putin's speech in Arkhangelsk. He depicted the anthropogenic (or better technogenic) causes as secondary and highlighted the climate change benefits for Russia instead. One article is even rejecting the idea that the Arctic is warming and is predicting sea ice increases in the future. Many articles report skeptical positions and indicate different causes for the retreating sea ice as sun activity for instance and climate cycles. Some articles do not mention climate

change at all, although they report about low ice extents in the Arctic. In conclusion, the issue is almost ignored and the reader does not get an idea of the threats that human caused climate change is posing to the Arctic environment and ecological systems. These 14 articles create confusion and many of them are contradicted by solid scientific research and international reports on the Arctic region.

9.4.2. News website lenta.ru analysis

The second online media resource analyzed in this section is the news website *lenta.ru*. The online news website is one of the most popular Russian online news resources and according to the Rambler statistics it has a monthly audience of about 39mln individual visitors with about 360mln pages visited[210]. The publication was established in 1999 and during time it has established itself as one of the leading and most cited online news resources in Russia. According to a Harvard study of 2010, *Lenta.ru* was the most cited news website in the Russian blogosphere[211]. In March 2014, following the annexation of Crimea and the war in Ukraine, the editorial chief of the publication resigned after a notification by the Russian regulator *Roskomnadzor* for an interview with a member of a Ukrainian party "Pravij sektor" the right organization which has been later forbidden in Russia and inserted in the terrorist list among the extremist and terrorist organizations like Al Qaeda and Isis[212]. The move was criticized as a deliberate attack on the freedom of press. In sign of protest for the editorial board changes 39 among journalists, photoreporters and two administrative employees of *lenta.ru* resigned[213].

In the *lenta.ru* analysis 200 articles have been considered: 38 for the year 2015, 82 for the year 2016 and 80 for the period 2017-18.

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210 URL: https://top100.rambler.ru/navi/?theme=1126&range=month

211 URL: https://cyber.harvard.edu/publications/2010/Public_Discourse_Russian_Blogosphere

212 URL: http://www.fsb.ru/fsb/npd/terror.htm

213 URL: http://www.asfera.info/news/society/2014/03/13/pochti_40_zhurnalistov_lenti_ru_napisali_zayavlenie_ob_uv_86708.html

SUBJECTS	*TOTAL*
animals	25
icebreakers/transportation	39
military	56
landscape/environment	63
oil/gas infrastructure	6
people	86
science	19
comments	2270
shared	1838

Table 12: lenta.ru images, comments and shares

The dominating images in the articles of *Lenta.ru* are people in general 86 images (they could be Arctic indigenous people, Arctic tourists, journalists, travelers, experts, portraits of people being interviewed with the exception of scientists and military personnel who are included in the respective categories) the Arctic landscape and environment 63 pictures, military hardware/soldiers 56 images, icebreakers/transportation 39 images, animals 25 images, science 19 images and oil and gas infrastructure with 6 images. It is important to point out that *the number and subjects of the images of the articles are in accordance with the uses analyzed in this thesis with the exception for oil and gas infrastructure.*

Comments and shares

In contrast to the *pravda.ru* articles, *lenta.ru* materials have much more comments, although they seem to be shared less frequently compared to *pravda.ru*. The 200 articles have 2270 comments and were shared 1838 times. The most commented articles are those dealing with security and military issues. While the sharing data show that in addition to the military and security topic the audience is interested also in other topics like for instance in the environmental issues and to the 2017 president visit to the Arctic and *Novaya Zemlya*. In the table below are listed the seven most shared and the seven most commented articles:

Title	Shares	topic
There was a Fritz in the Arctic: a secret Nazi base was found The pianist performed on an ice floe in the Arctic Ocean	179	Military/history
The pianist performed on an ice floe in the Arctic Ocean	127	Culture/art
Cleaned up to shine Putin inspected the cleaning of the Arctic	124	Environment
The most powerful nuclear icebreaker in the world launched in St. Petersburg	84	Transportation
Russia invests five trillion rubles in the Arctic	74	Economy
The Arctic will be free of ice for the first time in a hundred thousand years	58	Arctic warming
In the Arctic, 10 airfields for the military will be built and reconstructed	51	Security/defense

Title	Comments	Topic
The tests of new Russian military equipment were launched in the Arctic	365	Security/defense
Russia was ordered to pay a 5,4 million euro compensation for the detention of the Greenpeace ship	267	International relations/security
Putin held a meeting on Franz Joseph Land	190	Security/defense
Something that is hidden on the secret sub-ice base of the USA	143	Security/defense/history
The US Coast Guard expressed concern over Russia's military presence in the Arctic	107	Security/defense
The Expedition of the Ministry of Defense was carried through from the mainland to the Arctic island	96	Security/defense
The turbine plant explained the	83	Transportation

postponement of the delivery of the "Arctic"	

Table 13: lenta.ru most shared articles

Articles' topics

main topics of the articles	***Arguments 2015 (38 articles)***	***Arguments 2016 (82 articles)***	***Arguments 2017-18 (80 articles)***	***TOTAL (200 articles)***	***Share in %***
National security/military	19	17	15	51	26%
Art/travel/culture/ history	4	20	15	39	20%
Economic development	5	11	16	32	16%
Ecology/environment	3	11	14	28	14%
Science/exploration	4	11	12	27	14%
Natural resource extraction	6	12	5	23	12%
Peace/cooperation	3	5	13	21	11%
Transportation	4	7	9	20	10%
Climϕte change/Arctic warming	1	6	4	11	6%
Border issues	0	3	1	4	2%

Table 14: lenta.ru articles arguments 2015-2018

As can be seen from the table above, also in *lenta.ru* articles, some topics are more present than others, however, there appears to be more balance between them. In fact, at least eight topics are present more than 20 times in comparison to *pravda.ru* where there is more gap between the most discussed and the less discussed arguments. The average percentage value for the topics is 18% for *pravda.r*u and 13% for *lenta.ru*. *Pravda.ru* articles are more concentrated on the security, economic development and natural resource extraction topics compared to *lenta.ru* what makes the publication's average value higher. It should be also noted that the total number is not meaningful in absolute terms since in *lenta.ru* 70 more articles have been considered. The most discussed topic in *lenta.ru* is military and security present in 51 articles, followed by more general topics related to

culture, art, travel and history with 39 articles. Following is economic development discussed in 32 articles, ecology and environment in 28, science and exploration in 27, natural resource extraction in 23, peace and cooperation in 21, transportation in 20 and finally climate change in only 11 articles.

From the analysis of the three years period and from the comparison with *pravda.ru* analysis some facts and dynamics could be understood. The dominating topic is security and militarization present in 51 articles what is about 25% of times. In *pravda.ru* the percentage was even higher 33%. *Lenta.ru* have a more broad coverage of Arctic topics compared to *pravda.ru* what is being confirmed by the 39 articles for Art/culture/travel and history 20% compared to 9% in *pravda.ru*. The economic development topic, which is the most discussed issue in *pravda.ru* with a 34% share has a 16% share in *lenta.ru*. Ecology and environment have almost the same share in both news resources: 14% in *lenta.ru* and 13% in *pravda.ru*. Natural resource extraction has a 25% share in *pravda.ru* while in *lenta.ru* the percentage is much lower 12%. The transportation issue has a 18% share in *pravda.ru* and a 10% share in *lenta.ru.* The peace and cooperation topic does not differ much between the two online resources 11% for *lenta.ru* and 8% for *pravda.ru*. In the last year *lenta.ru* pays more attention to economic development and to peace and cooperation arguments compared to the previous years.

The climate change issue has been already scarcely considered in *pravda.ru* with a 11% share, however, in *lenta.ru* the percentage is even smaller 6%. Only 11 article out of 200 discuss the issue.

Text and words analysis

WORDS	***DATA 2015***	***DATA 2016***	***DATA 2017-18***	***TOTAL***
Russia, RF, Russian - (Россия, российский, РФ)	190	269	307	766
Military, army, navy - (военные, войска, флот)	138	141	107	386
Extraction, oil, gas - (добыча, нефть, газ)	67	99	78	244
Icebreaker - (ледокол)	19	97	99	215

US, America, American - (США, американский)	45	57	38	140
ecology - (экология)	16	54	64	134
Atomic/nuclear - (атомный, ядерный)	5	56	61	122
Economy - (экономика, экономический)	33	39	46	118
Putin, president - (Путин, президент)	10	6	64	80
China - (Китай)	44	17	17	78
National interests - (национальные интересы)	30	21	20	71
Northern Sea Route - (Севморпуть)	22	26	17	65
Strategic - (стратегический)	18	23	12	53
Cooperation - (сотрудничество)	14	14	20	48
Security - (безопасность)	9	18	7	34
Arctic warming - (потепление)	4	21	7	32
temperature/degrees (температура, градусы)	4	18	7	29
climate change - (изменение климата)	4	18	6	28
Sanctions - (санкции)	11	6	4	21
Canada - (Канада)	5	5	6	16
NATO - (НАТО)	4	3	7	14
Environment - (окружающая среда)	1	5	5	11
Geopolitics - (геополитика)	2	2	1	5
Sustainable development - (устойчивое развитие)	0	1	2	3

Table 15: lenta.ru words analysis

The table above shows the number of times that a single word is used in an article.

Russia/Russian – This word, which is also in *lenta.ru* by far the most present, it was found at least 766 times in the articles. As in *pravda.ru* it supports the state-centered approach and confirms that nationality is important for the Russian Arctic vision. In percentage, however, and even in absolute terms *pravda.ru* articles use these words approximately two times more frequently.

Military, army, navy – with 386 mentions the military and security sphere is surprisingly one of the most discussed topics in *lenta.ru* Arctic articles, although the words related to the military and security sphere are decreasing in the last year. In addition, some articles are also dedicated to Canadian military exercises and issues. This world count strongly confirms the analysis of the security and military use done in Chapter 6 of the thesis. It coincides also with the recent Russian Arctic military deployments and the construction of Arctic class weapons and transportation

systems by the Russian defense military complex. The same issue is very present also in *pravda.ru*.

Extraction, oil, gas – The words related to the extraction of oil and gas are present 244 times. This is far less than in *pravda.ru* which gives more importance to the Arctic natural resources. The topic is present in all years and also this word count confirms the choice to analyze the Arctic energy sector.

Icebreaker – The icebreaker is probably the biggest surprise with the 215 words counted in this analysis, a dynamic which confirms the *pravda.ru* observations. Interestingly in both online resources the year 2015 is characterized by a low count for this word. In *lenta.ru* it increases exponentially in 2016 and 2017-18. In *pravda.ru* the increase is more concentrated on the last year. This increase should be put in context. As has been already explained in the *pravda.ru* analysis Russia is heavily investing in the construction of a new class of nuclear icebreakers and the strategic document for the Arctic is increasingly focused on the development of the NSR. In addition, it seems that the topic is important also from the ideological and political perspective. Russia is currently building the biggest nuclear icebreakers in the world and the press coverage of the development is part of the strategy to reinforce the public awareness of Arctic activities and to gather support for Arctic development.

US, America, American – The US is still an important subject in *lenta.ru* articles on the Arctic. However, compared to *pravda.ru*, this presence is much smaller. *Lenta.ru* does not frame Arctic international relations only in US-Russia terms as pravda.ru is frequently doing. This is especially true in the last year when *pravda.ru* seems to be obsessed with the US while in *lenta.ru* this word usage is declining. I would argue that this is an editorial choice in *pravda.ru* since the articles with Russian-US topics are very popular among the *pravda.ru* readers. It creates a “sensation” atmosphere and it is still probably one of the favorite Russian topics.

Ecology – The word ecology confirms its importance also in *lenta.ru* word count

where this topic is being increasingly covered. With 134 counts it is in the top of the word count. The words are distributed in at least 28 articles. This could confirm the fact that ecology is becoming more important in Russia, However, an important consideration should be done in this regard. In the last couple of years Russia is engaged in the cleaning of some Arctic regions from Soviet pollution, especially disposed and abandoned oil barrels. This process would take at least ten more years and much press coverage has been given to this issue. This does not mean that other aspects of the Arctic environment are becoming more important and it could be seen also as a good PR action by the Russian government. This view is partially confirmed by the marginality of the climate change issue and of Arctic warming which are internationally recognized as one of the greatest threats for the Arctic and its ecosystems.

Atomic – Atomic energy, as in *pravda.ru*, is also one of the main topics in *lenta.ru* with 122 presences. This technology has been one of the Arctic dominant sectors for decades as have been already discussed in the introduction of part III and in *pravda.ru* discussion. In the last two years there is a step increase in the word count with the same dynamics observed for the icebreakers. This is due to the fact that the new icebreakers are nuclear powered. The world nuclear/atomic is less frequently referred to the nuclear missiles and military systems rather that to the propulsion systems of the civil and military surface and submarine vessels.

Economy – Although economic development is one of the top priorities for Russian Arctic development the word economy has been counted only 118 times. This is about two times less in percentage compared to *pravda.ru*. As has been already mentioned however, this is not a small number considering that many times there is no need to mention the economy when dealing with Arctic economic development issues. This issue presents a stable dynamic in the word count.

Putin – The Russian president is mentioned 80 times in the articles about two times less compared to *pravda.ru.* However, his mentioning as in *pravda.ru* is mostly related to few events: the Arkhangelsk conference in March 2017 “the Arctic

territory of dialogue", the launch of the *Yamal* LNG liquefaction facility and the arrival of the first LNG tanker and his visit of the Franz Joseph territory. Of course, the president gets a lot of attention at the big Arctic events, however, compared to the early Soviet period, the propaganda appears to be more restrained. However, despite this there are still imaginaries of the president in front of an icebreaker, with a white bear or having a discourse in front of a rebuild military base.

China/Canada - Although, Canada is one of the most important Arctic countries, China is four times more cited in *lenta.ru* articles. China is present in different topics, dealing with scientific research, economic development and tourism. Canada is only mentioned due to its military activities and exercises. This is strange, since Russian and Canada have a decades old history of Arctic cooperation and shave the biggest territories in the Arctic. The same dynamic is observed in *pravda.ru* although the gap is smaller.

National interests – This word is equally present throughout the three years period, It is often referred to national interests, however sometimes also other usages of the word national have been counted, like for instance national security. In both contexts it confirms the importance of the national approach and of the state as the main actor in the case of the Russian Arctic .

Northern Sea Route – The NSR is less discussed in *lenta.ru* compared to. This has been already seen in the topics analysis where the issue has a 10% share *pravda.ru* compared to the 18% share in *pravda.ru*. There has been an additional decline in the period 2017-18. In *pravda.ru* the Northern Sea route was mentioned 101 times in the 130 articles compared to 65 times in the *lenta.ru* 200 articles.

Strategic – This word is mentioned 53 times. Also here about a two fold decline is observed in comparison to *pravda.ru*. However, the word is still important. The word is used in reference to the strategic role of the Arctic and also to the Russian strategies and strategic documents for the region, where the word is often used.

Climate change/Arctic warming – These words together have been used 60 times in *lenta.ru* More on this issue will be written at the end of this paragraph where climate change will be discussed more in detail.

The other relatively important words result to be: cooperation, security, sanctions, Nato, environment, geopolitics and sustainable development. Cooperation is mentioned 48 and security 34 times. Sanctions are counted 21 times and NATO 14 times. Geopolitics is mentioned only 5 times in four articles. Important words like environment and sustainable development are almost absent. *Environment is mentioned 11 times, while sustainable development only 3 times.*

Climate change and Arctic warming issue

The climate change and Arctic warming issue does not appear to be almost of any importance in *lenta.ru* Arctic articles. The table below shows more in detail how climate change is represented in the 11 articles mentioning or dedicated to the issue.

Title	**The Arctic is warming?**	**Antropog. forces mentioned?**	**Skepticals position mentioned?**	**CC mentioned?**
NASA reported a record low winter ice extent in the Arctic	YES	NO	NO	YES
The Arctic will be free of ice for the first time in a hundred thousands of years time	YES	NO	NO	NO
The Arctic has lost a record volume of ice	YES	YES	NO	YES
The Arctic has changed the color due to global warming	YES	NO	NO	YES
Scientists warned about	YES	YES	NO	YES

accelerated rates of melting of ice in the Arctic				
It will melt; as Global Warming Affects the Arctic	YES	YES	NO	YES
“It is not just about money” Norilsk head Oleg Kurilov about the development of the Arctic	YES	NO	NO	YES
They are well-moved »Polar explorer on an unprecedented expedition to the North Pole	NO	YES	YES	YES
The probability of flooding of the Arctic is estimated	YES	YES	NO	YES
The slippery question of how soon melted glaciers will flood the Earth	YES	NO	NO	YES
And that everything would be in white: at the Arctic Forum concerns were risen about the ecology of the North on a global scale	YES	NO	NO	YES

Table 16: lenta.ru climate change issue

9.5. Discussion

In “The State Program of the Russian Federation "Social and Economic Development of the Arctic Zone of the Russian Federation" clear objectives are stated regarding the desired level of coverage of Arctic topics and public awareness of what Russia is doing in its Arctic zone. It would be important to remind here just two indicators: the “Level of awareness of citizens of the Russian Federation on the

activities of the state in the Arctic" and “Number of information messages on various topics related to the development of the Arctic zone of the Russian Federation "[214]. These policy objectives confirm the importance of the press in Russian Arctic affairs, what makes the above analysis very important. It is namely through the infromation messages that the Russian public get informed on the Russian Arctic activities what allows also the government to gather the needed public support.

The Arctic strategic documents deline clearly the last developments in the Russian Arctic policy. From a military perspective, which is still important, the focus has shifted to economic development which include most importantly natural resource extraction and the development of the NSR. In the maritime doctrine mentioned in the chapter on security in part two of the thesis, the NSR is even called the Russian Northern Route what implies that it is under Russian control and not in international waters. The document was approved in 2015 so it was probably influenced by the recent international tensions. Russia is clearly worried to lose control and jurisdiction of the Northern Sea Route. The most important element in the 2008 strategic document is undoubtedly the goal to transform the Russian Arctic zone in a strategic resource base for the Russian economy until 2020. It could be already affirmed that this has not happened yet. It would be very interesting to see what the next strategic Arctic document will say about this topic. The 2008 document is in fact already 10 years old and a lot has happened and change since than.

The two media resources analyzed in chapter 9 have a different audience and even political orientation. Although the last point is difficult to assess, based on Arctic topics only, it is recognizable that *pravda.ru* exhibits a more aggressive journalism, positions and approaches. The national component is also stronger in it compared to *lenta.ru* articles which are more moderated and sometimes also more elaborated on some topics. *Pravda.ru* attracts its audience also through cold war reminiscent titles and articles and it portraits the Arctic as a place of current and

[214] Regarding the first program the objectives from 2018 to 2025 are to increase the public awareness on Arctic topics from 8% in 2018 to 45% in 2025. For the other program the plan is to increase the information messages related to the development of the Russian Arctic zone from 1200 in 2018 to 3500 in 2025.

future Russia-Us tensions. In *lenta.ru* such approach is almost absent. However, surprisingly the articles in both media resources do not differ much in terms of arguments. The main difference is that *lenta.ru* gives more space to other themes like art and culture, while in *pravda.ru* the articles are very focused on economic development, military and security and natural resource extraction. In general the articles support the Russian strategic documents goals and not a single article is critical about Russian Arctic policy and decisions. An important issue to point out is that in the publications word count the military sphere appeared to be very popular. It is on the second place in *lenta.ru* and on the fourth place in *pravda.ru*. This is largely linked to the recent Russian Arctic military deployments and the reopening and building of some military bases in addition to the popularity of this them among the Russians. It is one sector where Russia still feels itself to be a superpower. In numbers, Russia is just establishing two Arctic brigades and deploying some air defence systems to the Arctic. The deployments are limited and do not justify such degree of press attention.

One of the most important goals of the analysis was undoubtedly to understand more the issues of climate change and sustainable development and how Russia sees and represents them related to the Arctic. It is possible that the arguments get a different coverage in non-Arctic related issues, however, the Arctic is and would be probably the most impacted region. Therefore, analyzing the Arctic climate change and sustainability issue in the Russian documents and press is important.

The first strategic document from 2001 mentioned the issue only once in the context of understanding the role of the Arctic in global climate processes and natural and climatic changes. They are under the influence of both natural and anthropogenic factors. This position does not negate climate change and the anthropogenic forces, however, it assumes that more knowledge is needed. This was in 2001.

The second strategic document from 2008 mentions the issue twice. It clearly evolves form the first document and mentions the consequences of climate change and the need to forecast and assess them. It recognizes the natural and anthropogenic factors and also the need to increase the sustainability of

infrastructure facilities. In a second time it recognizes the need to conserve the Arctic biological diversity, taking into account the national interests of the Russian Federation and the need to preserve the natural environment in the context of expanding economic activity and global climate change. Climate change is seen as a context under which natural environment should be preserved and national interests perceived.

In the third document from 2013 the issue of climate change is mentioned three times. The same assumptions made in the second document are repeated. In addition, it recognizes the need to monitor the situation and to provide detection and forecast of dangerous and extreme natural phenomena in Arctic zone of the Russian Federation, including negative climate changes. It also recognizes the need to increase international cooperation and information exchange on the state of the environment and data on its climate and improve the observing systems of the Arctic climate. This should be done also by organizing complex international scientific-research expeditions for studies of the Arctic environment and impact of observed and predicted climate changes on it.

The three documents, especially the last two, clearly recognize the climate change issue. They do not, however, mention resilience, adaptation and mitigation efforts. In addition, the policy implementation document does not have a dedicated subprogram or other mechanisms to more systematically approach the issue or to have a Russian action plan fro Arctic climate change.

The analysis of the two online news resources do not give an encouraging picture. In *pravda.ru* only 14 articles mention the issue from 2015 to 2018 a 11% share, while in *lenta.ru* they are only 11 or 6% of the 200 articles. In *pravda.ru* the issue is exclusively linked to the melting sea ice and even one negationist article is present. The anthropogenic factor and the greenhouse gases emissions are never mentioned. Many times even the skeptical position is considered, which defines the ongoing temperature rise and especially the sea ice retreat as cyclical or due to the sun activity a position, which has been discarded in the scientific community. Sometimes, the articles dedicated to the sea ice conditions do not mention climate change at all. In addition, global warming and climate change are used as synonyms

although the last definition would be preferred. The word count confirms this assumptions.

In *lenta.ru* the issue has even less attention. Only 11 articles mention climate change. However, sometimes the anthropogenic factor is mentioned and even the need to reduce the greenhouse emissions although not directly. They speak abut the necessity of states to act. But they do not write exactly about mitigation. However, 11 articles in three and more years are clearly an undereporting of the issue especially if we compare it to the military and security issue for instance, which get five times more press coverage. Also the word count confirms this assumption.

The sustainablity issue however, is almost completely ignored in those two media resources. The word count mentions sustainability 9 times in *pravda.ru* and only 3 times in the 200 *lenta.ru* articles. The word environment is present 6 times in *pravda.ru* and 11 times in *lenta.ru*. The issue of Arctic sustainable development is cleary completely ignored in this Russian press. The word ecology, however, is mentioned 46 times in *pravda.ru* and 134 times in *lenta.ru*. But this is linked mostly to the cleaning of some abandoned Soviets sites in the Arctic.

In conclusion, the analysis of the Russian Arctic strategic documents and of the two online media resource seem to confirm the importance of the uses analyzed in part two of the thesis. They strengthen the state-cenetered approach to Arctic affairs while underestimating some global challenges like for instance climate change. The Russia state is the protagonist of the state-entered rhetoric in the media and other voices and stakeholders are rarely heard. The fragility of the Arctic and the need to protect it are recognized, however, no concrete actions or plans are proposed. In addition, Arctic resources exploitation and economic development seem to be a priority and in this sense indirectly climate change is often seen and represented as an opportunity for this rather unsustainable path of development.

CONCLUSIONS

The Russian Arctic is in the middle of a rapid antrophogenic and natural caused transformation process with the disappearing sea ice and increased accessibility as the main tangible results of this ongoing process. The analysis done in this thesis of the three main Russian Arctic uses and of the Russian discourses on the Arctic, are very helpful in order to understand the current economic and political situation of the region and the future development perspective and critical issues that will impact it. It allows also to draw some conclusions regarding the role of climate change in the Russian Arctic policy and vision, the role of the central state, the global world, geopolitics, sustainability and Russian history in the Russian Arctic future. How Russia sees and interprets its Arctic spaces is, and will be, very important for future of the whole region.

From the methodological and theoretical point of view this work, particularly in Parts I and II, has considered a critical perspective. It has allowed to investigate and show how the Russian Arctic in terms of problems and opportunities is contextualized in a reflection about the Russian identity and the Russian position and role in the international arena. This means that this work is a place of a series of discourses and strategies which read the problems and opportunities in the Russian Arctic from the perspective of the Russian government objectives and goals. In the last two decades, especially after the collapse of the Soviet Union, or already starting from the Gorbachev speech in Murmansk in 1987, the Arctic has been involved in a major and important debate about the new and multilateral approaches to governance: major attention is being put on cooperation, on the environment, on sustainability and on the local indigenous people and their rights and political representation. From this perspective, the Arctic is seen and interpreted as a laboratory for multi-actor and multilevel forms of governance involving some of the major world states and stakeholders. However, especially in

the Russian Arctic case, there is still a predominant state-centered approach to Arctic themes and affairs.

In the international literature as Devyatik points out[215], there are two opposing discourses and narratives regarding the Russian posture in the Arctic. Some argue that Russia is an expansionist and belligerent power acting unilaterally and ready also to deploy military force to achieve its goals. Their realistic perspective is increasingly challenged by the views discussed in this thesis and supported by many authors like Heininen, Keil and others who see instead a non-aggressive and pragmatic nature of Russia's Arctic strategy and the Russian readiness to cooperate and achieve its goals within the established institutional framework.

Another important factor at the basis of the reflection developed in this work is the fact that we are already facing a global Arctic. The Arctic energy sector, for instance to give just an example, has all the main global actors involved with non Arctic states like China who are increasing their activity in the region through some major investments in the natural resources extraction sector. This, from the international relations perspective, is also increasing the relevance of the region in its geopolitical and strategic dimension. Climate change, would probably further expose the region, what would bring new uses and increase the economic opportunities, as could be in the case of maritime transportation with the creation of integrated global and regional transportation systems. In addition, climate change impacts on the Arctic are relevant for the whole world. The Arctic is known to regulate the world climate, moreover changes in its permafrost and the Greenland ice sheet are considered to be one of the most dangerous and serious tipping points on the planet. This means that what happens in the Arctic is more and more subjected to the global dimension and to the choices of global non Arctic operators and subjects on different scales.

[215] URL: https://www.thearcticinstitute.org/russias-arctic-strategy-aimed-conflict-cooperation-part-one/

The Russian Arctic that comes out from this analysis, is a globally linked interconnected system subjected to the dynamics of the international markets and international political relations and tensions. The region is already very well integrated in the international global political and economic system, although the Russian state gives it a national protective and defining umbrella. This state umbrella has positive and negative consequences. On one hand, it allows the state to have more control on some development issues and decisions, on the other hand it slows and impede a series of good practices to be adopted in its territory, especially in the field of climate change, sustainable development and indigenous people rights and voices. However, in a world which is facing increasing global problems, the Russia state umbrella appears to be weak and inadequate to address these problems. As the analysis of the uses has shown, in the same sectors where the Russian state would like to be the monopolist and the main protagonist and decision maker like for instance, natural resource extraction, the development of the Northern Sea Route and security, the global world and dimension is overwhelmingly present and important. The majority of the outcomes in these spheres do not depend on the Russian state only or are not decided in the Arctic region at all.

The three uses analysed in part two of the thesis are all very related to the international and global dimension and confirm the above mentioned aspects.

The energy sector analysis has shown that demand for Arctic energy resources originates mainly from outside the Arctic and the same is true for the competing supply which would largely determine the future prices of oil and gas in the near and medium future. This would influence the amount of the extracted Arctic oil and gas. However, on a longer horizon, the global world will probably again determine the rate and the extent of extraction since the climate change issue is urging countries to reduce their carbon footprint and stay on the climate sustainable development path determined by the carbon budget. In this context, even natural gas, the safer and often depicted as the transitional fuel, appears to be clearly under pressure on the longer period. The world is rapidly moving towards new

energy generating technologies which are becoming more and more cost competitive with the traditional fossil fuel industry.

The Russian strategic document for the Arctic from 2008 defines the region as the strategic resource base for the future. Its implementation, in particular after the western sanctions, requires the development of costly and Russian made extraction technology in order to extract Arctic onshore and offshore fossil fuels. The climate change issue is still seen in terms of a problem to be monitored while the Arctic should be studied in order to understand its impact on the Arctic region. Although climate change is recognized as a major threat to the Russian Arctic environment and to Moscow national interests and economic development, a major strategy or plan to address this issue is still missing. However, Russia would like to cooperate with the international scientific community and other states to study and understand the effects of climate change on the Arctic region. There is of course, as in many other Arctic states, a large degree of incoherence in this approach. On one side the Arctic is seen as a strategic fossil fuel resource base which should be extracted by all possible means, on the other hand, there is a desire to understand and possibly address the climate change issue which is exacerbated by the same fossil fuels that would like to be extracted. This so called "Arctic paradox" is ignored in the Russian documents and press. In addition, the climate change issue is also seen and portrayed as an opportunity to develop the region. The chapter on energy clearly questions the economic feasibility of such plans on a longer development horizon. Currently, the Russian Arctic zone, onshore, is providing most of the Russian gas while offshore one liquefaction project the Yamal LNG is being finished and another one is being planned. The offshore activities are still limited and the recent western sanctions, combined with lower oil prices, have slowed its development. In conclusion, some of the global dynamics which will influence the development of Arctic fossil fuels are: the competing availability of resources in other regions, low price levels, energy transition, carbon budget and the bargaining power of major oil companies. There are also internal purely Russian factors, however, they have not been analysed in this thesis.

In the last two decades, especially due to undefined borders and the huge amount of resources present in the Arctic, the region has been often interpreted to be in danger to face conflicts and increasing tensions. This would lead, according to this view, to an increased militarization of the region. However, the region is currently experiencing unprecedented levels of cooperation and peace, which have been only slightly shaken by the Syrian and Ukrainian crises. The facts on the ground and the analysis done in this thesis show that the Arctic is considered to be a precious cooperation asset and a privileged communication and diplomatic channel in times of tensions.

The observed increase of regional Russian military activities could be explained from different perspectives: nuclear deterrence, border protection and a modernization of the military forces after the Soviet collapse.

In the military and security sphere, the global dynamics are being transferred to the Arctic in two different ways. One global factor, which is still the dominant one in terms of military investments, is undoubtedly strategic deterrence. The Russian Arctic has a strategic nuclear submarine division, which is very important in the Russian triad of nuclear systems. In addition, many attack submarines are also suitable to carry tactical nuclear weapons. The strategic nuclear missiles are subjected to the Start agreements with the US which limit the number of missiles and nuclear warheads. Another global influence on the Arctic are also international tensions in other world's theatres like Syria and Ukraine. Although the negative spill-overs to the Arctic are limited so far the situation could change in the future. With the exception of those two global factors, which are mainly outside the Arctic decision domain, the Arctic region is characterized by a stable international environment and good regional cooperation. The Russian Arctic is not in the middle of a militarization rush and the recent Russian military deployments in the region appear to be limited and defensive. In order to avoid possible incidents or unjustified escalations in the region, especially as spill-over effects from conflicts in other regions, the confidence building measures, like for instance joint military exercises, and the creation of no-go zones are of crucial importance,

A key sector which could benefit from sea ice reduction is maritime transportation. However, currently the development of trans-Arctic shipping is still uncertain duo to the many variables which are involved. The Russian Arctic transportation sector and the NSR development is also strongly dependent on the international developments. The NSR is being currently developed mainly for destination transport and for the export of Russian natural resources to the world markets. The liquefied gas from Yamal, for instance, in summer months will be transported to Asia through the NSR. This implies demand in Asia for the Russian natural gas and other Arctic natural resources at competitive prices. The same is true for the mineral extraction industry. In this case, the Russian Arctic is a resource base for the Russian economy and especially for the world markets. Destination transport follows these dynamics and the investments required are too high in order to be justified by the development or supply of the scarcely populated Russian Arctic villages and small cities. The trans-Arctic shipping is currently still not developed and just a few ships transit the NSR in summer months. The Russian plan envisions the development of the NSR for destination transport first and then gradually to extend its use to transit shipping too based on the improved infrastructure.

The three uses show how external dynamics are significantly impacting the Russian Arctic. Although the Russian government has its plans for the region, their realization depend also on factors which are beyond its control. The third part of the thesis is focused on the Russian Arctic discourses and the Russian Arctic vision. They confirm the importance of the three uses analysed in part two and they are also coherent with the Russian Arctic strategy outlined in the strategic documents. They also show the insufficient coverage in the Russian press of important issues like climate change and sustainable development what is certainly not good for the future of the Arctic. Russia would like to foster its good image in the Arctic, and ignoring such important issues in the press which contribute to inform and shape the public opinion could be counterproductive since good Arctic management practices and a positive image is increasingly linked to issues of sustainability and climate change.

The Russian Federation is the most important Arctic country and it will remain so in the future. This implies that the Russian Arctic vision – how will it change, its priorities and how the Arctic is represented would play a key role for the future of the region and for its governance. What is the role of climate change in this context? Unfortunately it is very small. The analysis of the strategic documents and of some Russian online news resources confirm that central remain two fundamental perspectives: national security and economic development. Less attention is put on the sustainable development issue, on indigenous people and to the effects and anthropogenic causes of climate change. These conclusions do not allow to be optimists regarding the fact that climate change is going to gain more space in the Arctic governance.

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The Aircraft carrier Admiral Kuznetsov has lost the second jet in one month (Авианосец «Адмирал Кузнецов» потерял второй за месяц истребитель),
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URL: http://static.kremlin.ru/media/events/files/ru/uAFi5nvux2twaqjftS5yrIZUVTJan77L.pdf (06/07/2017)

Russian Arctic Strategy Until 2020,
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https://assets.aspeninstitute.org/content/uploads/files/content/upload/29%20Russian%20Arctic%20Strategy%20Until%202020%20BW.pdf (06/07/2017)

APPENDICES

Pravda.ru articles

Year 2015:

1) Арктика была колыбелью человечества?
(The Arctic was the cradle of humanity?)
2) Арктика - русская. Крест – свидетель
(The Arctic is Russian. Cross – witness)
3) Арктика: Великое переселение насекомых
(Arctic: Great migration of insects)
4) Арктике предшествовал континент Арктида – геологи (The Arctic was preceded by the continent Arktida – geologists)
5) Арктика начинается с Ямала
(The Arctic begins with Yamal)
6) В Арктике скрывается не одна Троя
(In the Arctic is hidden not only one Troia)
7) Арктика уже в 2040 году будет освобождаться ото льда в летние месяцы
(The Arctic will be free of ice already in 2040 in summer months)
8) Освоение Арктики: планы и реальность
(Arctic development plans and reality)
9) Ямальский порт Сабетта - главные ворота Арктики
(The Yamal port of Sabetta – the main Arcitc doors)
10) Арктика на страже России: на мысе Отто Шмидта восстановят военный аэродром
(The Arctic on the guard of Russia: on Otto Schmidt will renovate the military airport)
11) Безразличие к Арктике обойдется дороже
(Indifference in the Arctic will be paid costly)
12) Ямал: Сельское хозяйство в Арктике
(Yamal: Agriculture in the Arctic)
13) Мурманская область - в авангарде освоения Арктики
(The Murmansk region: the avangard of Arctic development)
14) НАТО посягает на Арктику и Севморпуть
(NATO is extending on the Norhtern Sea Route)
15) Россия присоединяет хребты Ломоносова и Менделеева
(Russia is annexing the Lomonosov and Mendeleev ridges)
16) Мурманская деловая неделя прошла успешно и результативно
(The Murmansk business week was sucesfull and effective)
17) Ученые: Аномальная жара приведет ко всемирному потопу к 2045 году
(Scientists: Abnormal heat will lead to a worldwide flood by 2045)
18) Минобороны России отчиталось о взятии Арктики под контроль
(The Ministry of Defense of Russia reported on taking the Arctic under control)
19) Ямал открыл Европе премиальную нефть
(Yamal opened to Europe the premium oil)

20) США опасаются действий российских военных в Арктике
(The US fears the actions of Russian military in the Arctic)
21) США признают свой безнадежный проигрыш в Арктике
(The US recognizes its hopeless loss in the Arctic)
22) В Арктике "запахло" геополитическим климатом
(In the Arctic, the "smell" of the geopolitical climate)
24) Россия развернула в Арктике С-300
(Russia has deployed the S-300 in the Arctic)
23) Россия выделяет 205 млн рублей на возобновление исследований Арктики
(Russia is allocating 205 million rubles for the resumption of Arctic research)
25) Минобороны России перебросит в Арктику истребители
(The Ministry of Defense of Russia will transfer fighter jets to the Arctic)
26) Совет Федерации намерен закрепить статус Арктики
(The Federation Council intends to consolidate the status of the Arctic)
27) Ледовый покров в Арктике достиг минимума с начала наблюдений (Ice cover in the Arctic has reached a minimum since the beginning of observations)
28) Россия создаст современную арктическую базу
(Russia will create a modern Arctic base)
29) WPC: Россия заберет половину нефти и газа Арктики (WPC: Russia to Take Half of Arctic Oil and Gas)
30) В России разработали арктические радары с солнечным названием (In Russia radars have been developed with a solar name)
31) Дмитрий Рогозин возглавил комиссию по Арктике
(Dmitry Rogozin headed the commission on the Arctic)
32) США проигрывают России Арктику
(The US is loosing the Arctic to Russia)
33) В Воркуте "сломалось" лето: пошел снег и возобновили отопительный сезон
(In Vorkuta, "broke" the summer: it began to snow and resumed the heating season)
34) Вашингтон обеспокоен отставанием от России в освоении Арктики
(Washington is concerned about the backlog of Russia in the development of the Arctic)
35) России достанутся богатства Арктики
(Russia will get the riches of the Arctic)
36) Россия защищает Крым и Арктику
(Russia defends the Crimea and the Arctic)
37) Угрозы безопасности России "куют" даже в Арктике
(Russia's security threats are "thrown" even in the Arctic)
38) Добыча нефти убьёт Арктику?
(Oil production will kill the Arctic?)
39) Shell получила разрешение на бурение в Арктике
(Shell obtained permission to drill in the Arctic)
40) Потепление превратит океан в питательный бульон
(Warming will turn the ocean into a nutrient broth)
41) Минприроды предложило расширить границы российского шельфа
(The Ministry of Natural Resources proposed to expand the borders of the Russian shelf)

42) В Санкт-Петербурге обсудили транспортную инфраструктуру Арктики
(In St. Petersburg, the transport infrastructure of the Arctic has been discussed)
43) В Санкт-Петербурге обсуждают правовые аспекты развития Арктики
(In St. Petersburg, discuss the legal aspects of the development of the Arctic)
44) Арктический флаг от мусульманина-полярника
(Arctic flag from a Muslim polar explorer)
45) Арктика – суровая, но ранимая. Секреты освоения
(The Arctic is harsh, but vulnerable. Secrets of development)
46) Ямал: Арктику осваивают семьей народов
(Yamal: the Arctic is being developed by the family of peoples)