The Arctic region is going through unprecedented changes in its physical, social, geo-economic and geopolitical realities. These rapid changes are having a considerable impact on Arctic security. The various security challenges in the Arctic are often examined in silos, assessing one problem at a time, but the complexity of the risks can best be understood when these challenges are looked at in connection with each other.

This paper aims to examine the complexity of Arctic security and explore the interconnectedness between various aspects of security in the Arctic. It also investigates the challenges in the Arctic that arise from changing geopolitical realities. The analysis is based on the discussions at the ‘Geopolitics of a Changing Arctic’ workshop organized by SIPRI, and on select scientific, academic and media materials that complement the workshop discussions.

I. Introduction

The Arctic region (see figure 1) is going through unprecedented changes in its physical, social, geo-economic and geopolitical realities. These rapid changes are having a considerable impact on Arctic security. The three decades of peace and stability in the Arctic that followed the end of the cold war made it possible to go beyond state-centric and military-oriented definitions of security to focus on security with people and communities centre stage. These broader security issues have been the centre of attention in regional organizations such as the Arctic Council and the Barents Euro Arctic Council (BEAC).

However, in the face of growing geopolitical tensions between Russia and its Arctic neighbours, as well as increased attention on the Arctic from outside the region, there is a risk that tensions will eventually spill over. The question therefore arises whether Arctic cooperation can survive external shocks to continue to address the broad spectrum of current and new security challenges.

This paper examines the complexity of Arctic security in its broader interpretation, which includes state and military security as well as societal and human security. The paper also explores the challenges in the Arctic that arise from changing geopolitical realities. The analysis is based on the discussions at the ‘Geopolitics of a Changing Arctic’ workshop, and on select scientific, academic and media materials that complement the workshop discussions.

1 On the various approaches to defining security in the Arctic see e.g. Heininen, L., Exner-Pirot, H. and Barnes, J. (eds), Redefining Arctic Security: Arctic Yearbook, 2019 (Arctic Portal: Akureyri, Iceland, 2019); and Hoogensen, G. et al., Environmental and Human Security in the Arctic (Routledge: London, 2013).

2 On 9 May 2019 SIPRI organized a workshop on the ‘Geopolitics of the Changing Arctic’. The workshop was held under the Chatham House rule. It was supported by funding from the Swedish Foundation for Strategic Environmental Research, and its Mistra Geopolitics programme. The workshop gathered representatives from a number of research institutes engaged in research on the Arctic, government agencies (the Finnish Ministry for Foreign Affairs, the Swedish Armed Forces, the Swedish Civil Contingencies Agency, the Swedish Ministry of the Environment and the Swedish Ministry for Foreign Affairs) and a representative of an indigenous organization. The participants were researchers and practitioners with different areas of expertise based in Finland, Norway, Sweden and the United States. The participants in the workshop were asked to present their views on the most pressing security challenges in the region, identify and explore the interlinkages between various security challenges and make recommendations on the ways forward. This paper reflects (but is not an exact recollection of) the security issues raised and the policy recommendations made during the workshop discussions. The workshop discussions have
Figure 1. The Arctic region

Notes: There are various ways to define the Arctic region. The most common definition is the area within the Arctic Circle, which can be defined as the southernmost latitude in the Northern Hemisphere at which the centre of the sun can remain continuously above or below the horizon for 24 hours; this imaginary line circles the globe at approximately 66° 34’ N. According to the political definition, the Arctic includes the northernmost territories of the 8 Arctic states, the members of the Arctic Council: Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden and the United States. On the various definitions of the Arctic see e.g. Swedish Ministry for Foreign Affairs, Department for Eastern Europe and Central Asia, Arctic Secretariat, Sweden’s Strategy for the Arctic Region (Swedish Government: Stockholm, 2011), p. 11; Barents Watch, ‘What is the Arctic?’, Updated 21 Jan. 2016; and National Snow and Data Center, ‘What is the Arctic?’, [n.d.].

Credit: Hugo Ahlenius, Norpil.
II. The complexity of Arctic security

The multiple changes taking place in the Arctic put huge pressure on the region and the capacity of Arctic states, communities and peoples to cope with additional and existing security challenges, from the environmental to the cultural, and to food- and health-related and economic challenges, among others. The various security challenges in the Arctic are often examined in silos, assessing one problem at a time, but the complexity of the risks can best be understood when these challenges are looked at in connection with each other. This section explores the interconnectedness between various aspects of security in the Arctic. It is not intended to present a full list of security concerns, but rather to break down the silos and examine how various challenges are intensified and aggravated when faced together.

Climate change as a catalyst for changing security in the Arctic

Climate change is one of the factors most severely affecting the physical environment and the livelihoods of people living in the region, as well as Arctic geopolitics. Many of the negative consequences of climate change have already had significant effects on the environment, economic activity and communities there. Climate change often amplifies already complex security challenges and intertwines with social, political and economic processes in the region.

Global temperatures are rising and the Arctic is warming faster than any other region in the world. For instance, the spring and summer months of 2019 all ranked within the three warmest in the Arctic since 1979, and average temperatures from June to August were 3–4 degrees Celsius above average. Rising temperatures transform the Arctic by affecting sea ice, permafrost, glaciers and snow cover. Between 1979 and 2019, ‘the linear rate of sea ice decline is 82 400 square kilometers ... per year, or 12.9 per cent per decade relative to the 1981 to 2010 average’ (see figure 2). Scientists do not exclude the possibility of an ice-free Arctic in the summer in the future. Atmospheric warming results in declining terrestrial spring snow cover and a reduction in autumn snow cover extent and duration. Permafrost temperatures have been increasing steadily across the Arctic region and the summer melting of the Greenland Ice Sheet has increased since the 1990s. These changes have caused significant alterations in the biodiversity of marine and

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3 National Aeronautics and Space Administration (NASA), ‘2018 fourth warmest year in continued warming trend, according to NASA, NOAA’, NASA Global Climate Change, 6 Feb. 2019.
6 National Snow and Ice Data Center (note 4).
terrestrial ecosystems, which in turn significantly affect communities living in the Arctic. Below are just a few of the many examples of climate change-related effects on the various security challenges in the region.\textsuperscript{9}

The remoteness of, and difficulty accessing, the communities of the circumpolar regions, and the high market price of food and transport have

\textsuperscript{9} For more details on the effects of climate change in the region see Meredith et al. (note 8).
considerable impacts on food security in the Arctic region.\textsuperscript{10} Climate and environmental changes have exacerbated these problems by, among other things, limiting access to traditional and local food sources.\textsuperscript{11}

Climate change has also influenced the issue of water security in the Arctic. Access to clean water has not been an issue for Arctic communities for centuries, but rising temperatures and changes in precipitation patterns, as well as melting permafrost, have affected the balance, movement and pattern of surface water and groundwater in the Arctic, which in turn affect the population's access to fresh or clean water.\textsuperscript{12}

Climate change has also had an impact on health security in the region. The risks of food-related and waterborne diseases have increased due, among other things, to rising temperatures, warming sea temperatures and loss of ice.\textsuperscript{13} Health security in the North is also often compromised as a result of levels of food and water security, which are now being affected by climate change.\textsuperscript{14}

Climate change also makes the Arctic more vulnerable to forest fires.\textsuperscript{15} The forest fires in the north of Sweden in the summer of 2018 are just one example of how climate change leads to extreme weather conditions and subsequent challenges related to disaster management and response.\textsuperscript{16}

Arctic search and rescue preparations have always previously assumed conditions of extreme cold, but the 2018 summer fires have provided a different view, including consideration of disaster management in areas affected by heatwaves and high temperatures over a long period.\textsuperscript{17}

The opening up of what used to be ice-covered territories, shipping lanes and resources has sparked debates over questions of sovereignty and international law. It has also activated the process of submitting territorial claims on the extent of the continental shelf, under the United Nations Commission on the Limits of the Continental Shelf (UNCLOS), with regard to the delimitation of maritime borders in the Arctic and the settlement of disputes.


\textsuperscript{13} Meredith et al. (note 8).


\textsuperscript{16} See e.g. Watts, J., ‘Wildfires rage in the Arctic as Sweden calls for help’, \textit{The Guardian}, 18 July 2018.

\textsuperscript{17} Participant at the workshop (note 2).
related to these issues. Some disputes, such as the maritime border dispute between Russia and Norway in the Barents Sea, have been successfully settled. Many others remain unresolved.

**Borders, connectivity and human security**

Although the protection of a state border is often seen as a guarantee of safety for those people living in its territory, the Arctic region demonstrates that some aspects of security can be affected negatively by the enforcement of borders.

Indigenous lands are divided by borders that cut through societies, pasture and traditional hunting grounds. This causes land fragmentation, which is closely linked to food insecurity, health insecurity, and search and rescue needs. Borders and land fragmentation have an impact on the possibility of securing traditional food sources and sources of clean water as well as accessing the nearest health centres in case of emergencies.

Although some borders are more affected and restricted than others, notably the Russian border, the issue is important in all indigenous lands and territories across the Arctic. While indigenous people’s organizations such as the Sami Council work to limit the impact of borders, it is possible to identify the opposite tendency among states, from reinforcing border control to building new border guard stations.

The indigenous populations have historically been excluded from border-making processes such as the drawing of maps and the naming of places, among other things. Besides their importance in terms of recognition and allowing indigenous populations to influence politics, the resulting discrepancies in the spelling of place names of indigenous lands can become an important communication issue. These discrepancies in spelling, and the renaming and rewriting of indigenous place names on maps make it very difficult for communities to communicate their location, especially in emergency situations.

Issues around connectivity are also among the major challenges to human and community security in the region. Levels of connectivity and the provision of infrastructure differ markedly between various parts of the Arctic, as

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20 Denmark (2014), Russia (2015) and Canada (2019) have submitted their applications to the Commission on the Limits of the Continental Shelf. A decision is pending. See e.g. UN Commission on the Limits of the Continental Shelf, ‘Progress of work in the Commission on the Limits of the Continental Shelf: Statement by the Chair’, CLCS/97, 21 Sep. 2016; and Canadian Government, ‘Canada’s Arctic Ocean continental shelf submission’, 23 May 2019.
21 Participant at the workshop (note 2).
22 See e.g. MacGwin, K., ‘Swedish Sámi sue to overturn Norwegian limits on cross-border herding’, *Arctic Today*, 7 Nov. 2019.
well as across and within the Arctic states. Only some parts of the Arctic have cell phone coverage, for example, while many areas only have satellite phone coverage. In addition, broadband coverage is poor and unstable in most of the communities of the High North. Enhanced connectivity in the Arctic is key to improved security, education and health care, and is also extremely important in cases of emergency and disaster response.\textsuperscript{25}

**Economic and environmental security**

The melting of the Arctic ice has prompted discussions on the opening up of new economic opportunities, primarily related to the extraction of natural resources and to shipping. This in turn has raised a number of security challenges, for instance, regarding marine environmental safety measures, the lack of adequate infrastructure along the shipping lanes and the absence of widespread search and rescue capabilities in the Arctic region.\textsuperscript{26} Oil and gas development on the Arctic shelf increases the risk of pollution from oil spills, with potential for effects on ecosystems, wildlife and the livelihoods of local communities.\textsuperscript{27} Mining and large infrastructure projects are also often seen as a risk to the traditional livelihoods of the Arctic communities.\textsuperscript{28} At the same time, however, extractive industries are also seen as the basis for providing economic and job security in the Arctic.\textsuperscript{29} It is argued that economic activities related to extracting resources as well as shipping in the region provide greater economic opportunities for businesses and local populations.\textsuperscript{30}

Many states in the Arctic region are currently dependent on fossil fuels but have committed to move away from them in order to mitigate climate change. If the Arctic states aim to remain in line with the commitments they made in the 2016 Paris Agreement, they will need to move away from fossil fuels, and this will affect economic security in the region—at least for some and from a short-term perspective.\textsuperscript{31} A failure to meet the emissions targets in the Paris Agreement would substantially alter the future of the Arctic region and beyond.

\textsuperscript{25} Arctic Council Task Force on Improved Connectivity in the Arctic, ‘Improving connectivity in the Arctic’, Arctic Council Secretariat, 2019.


\textsuperscript{27} Wilson Center, *Opportunities and Challenges for Arctic Oil and Gas Development*, Eurasia Group Report for the Wilson Center (Wilson Center: Washington, DC, [n.d.]).


\textsuperscript{31} Participant at the workshop (note 2).
Military presence in the Arctic and broader security issues

Human and non-traditional aspects of security are affected by the increasing military presence in the region. Historically, some of the indigenous lands have been used as testing ranges and for other military purposes. The growing number and scale of military exercises continues to have an adverse impact on indigenous lands. Although many believe that the large-scale military exercises and military drills take place in remote areas or a wilderness, indigenous peoples take a different view as most of the exercises take place on their historic lands and affect their livelihoods.

The increased military presence poses threats to environmental security as well. For instance, the Russian military has been polluting the Russian Arctic islands for many decades, and the large-scale ‘spring cleaning’ announced in 2010 only partially reduced the effects of long-term negligent policies. The increasing military presence in the Arctic, and the Russian Arctic in particular, could lead to further environmental risk and pollution, including large-scale incidents. The incident on the Nyonoksa test range in Arkangelsk oblast in the summer of 2019 is just one example of the potential risks.

III. Increasing tensions in the Arctic region?

The strategic significance of the Arctic is increasing in the face of the changing climate and environment. The melting of the sea ice has opened up new economic opportunities in the region related to new transportation routes and the extractive industries, including oil and gas extraction. Although the economic potential is still being debated, interest in the region has been steadily growing for the past two decades. Along with the discussions on the economic potential of the Arctic, there are concerns regarding the possibility of conflict in the region, and even of military confrontation due to the competing interests and territorial claims of the Arctic coastal states. Despite alarmist predictions of a ‘scramble for the Arctic’, however, the region has remained a zone of ‘low tension’, due mostly to commitments made by the Arctic states to keep the Arctic a zone of peace and lasting engagement based on mutual interests and agreements.

Russia’s growing military capabilities in the Arctic

For the past five years, however, there has been growing evidence of emerging tensions in the region. One major concern is emerging militarization. Although most of the Arctic states have been upgrading their military capabilities in the region, it is Russia’s military build-up that is of primary

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33 See e.g. Vidal, J., ‘Sami reindeer herders battle conservationists and miners to cling on to Arctic culture’, The Guardian, 21 Feb. 2016.
36 See e.g. the Ilulissat Declaration, 28 May 2008.
Russia has been increasing its military capabilities in the region for the past decade. Since 2011, Russia has reopened a number of its military bases and restored airfields and radar stations. It has also initiated a modernization of its sea-based nuclear forces and the large surface ships based with the Northern Fleet on the Kola peninsula. In December 2014 Russia established Joint Strategic Command North (JSC North) to consolidate the various military arms and branches under a single command. The increasing military presence in the Russian Arctic and the establishment of JSC North indicate a re-emergence of the Northern Strategic Bastion Defence concept pertaining to the defence of Russia’s nuclear-powered ballistic missile submarines (SSBNs) based with the Northern Fleet, and ensuring their access to the North Atlantic.

According to Russia’s strategic military and naval documents, the reasons for the increasing military capabilities are twofold. First, Russia is responding to the changing environment in the Arctic and emerging security challenges related to the growth in shipping along the Northern Sea Route and the need to protect its longest coastline, which has been opening up due to melting sea ice. At the same time, the increase is related to the issue of seeking to maintain strategic parity with the United States and the North Atlantic Treaty Organization (NATO). Russia’s Military and Maritime Doctrines and its National Security Strategy highlight US and NATO global activities as the primary security concern for Russia, and emphasize the importance of its military forces in the Arctic, primarily the Northern Fleet, as Russia’s key capabilities for withstanding the security pressure posed by the USA and NATO.

Although the level of Russia’s military capabilities in the region is still significantly lower than at the time of the cold war, the pace and the scale of the increase raise concerns among Russia’s Arctic neighbours, particularly Finland, Norway and Sweden, as a large military presence is concentrated along their northern borders. Russia’s submarine activity in the region is a major concern for its Arctic neighbours. Its military capabilities in the Arctic create opportunities for power projection into other regions, primarily the North Atlantic. There are also concerns that Russia’s growing military presence will be used to deny access and to enforce different interpretations of the right to free passage along the Northern Sea Route.

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China’s economic interests in the Arctic

China’s interests in the region also raise concerns among the Arctic states. On 26 January 2018 China’s State Council Information Office published a white paper clarifying China’s vision of the Arctic and its intentions, goals and objectives there. China’s Arctic Policy Paper indicates respect for sovereignty rights and the Arctic states’ stewardship of the Arctic, but it also emphasizes China’s rights to ‘scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines in the high seas and other relevant sea areas in the Arctic Ocean, and rights to resource exploration and exploitation in the area’. Through its investments in Arctic mining in Greenland, the development of liquefied natural gas, the growth in shipping along the Ice Silk Road, and scientific research and diplomacy, among other things, China is demonstrating its intention to be an active Arctic stakeholder and to have a say on the questions of Arctic shipping, resource development and governance. There are also suggestions of an increasing security focus in China’s Arctic policy.

Although it is unlikely that China’s policies in the Arctic will take on any military dimension in the near future, there are reservations regarding the growing influence of China on smaller states and entities in the Arctic, increasing dependence on trade and investment from China and increased exposure to fluctuations in the Chinese economy.

US–Russian–Chinese strategic competition

In relation to the above, strategic competition between Russia, China and the USA is another factor that is indicative of the rising tensions in the region. The USA has published a number of strategic documents highlighting its concerns regarding Russia’s and China’s policies. It could be just a matter of time before these strategic rivalries spill over into tensions in the Arctic.

The 2019 US Department of Defense Arctic Strategy highlights the increasing presence of China and Russia in the Arctic as a threat to US interests in the region. The document calls for increased US naval and icebreaking capabilities in the Arctic and North Atlantic in response to these concerns. Similar fears have been expressed by senior US officials. US Secretary of State Mike Pompeo has claimed that ‘patterns of aggressive behavior’ in other regions of the world are indicative of the risks of similar behaviour.

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46 The Economist, ‘Chinese investment may help Greenland become independent from Denmark’, 3 May 2018.
47 See e.g. Havnes, H. and Seland, J. M., ‘The increasing security focus in China’s Arctic policy’, Arctic Institute, 16 July 2019.
48 See e.g. Koivurova, T. et al., China in the Arctic and the Opportunities and Challenges for Chinese-Finnish Arctic Co-operation, Finnish Government’s Analysis, Assessment and Research Activities 8/2019 (Finnish Prime Minister’s Office: Helsinki, Feb. 2019).
in the Arctic in the future.\textsuperscript{51} The US Navy, Air Force and Army are now more closely focused on the Arctic region.\textsuperscript{52} The re-establishment of the US Navy Second Fleet, although primarily focused on countering Russian naval forces in the North Atlantic, is also seen as a possible response to increased Russian pressure in the Arctic.\textsuperscript{53} After many years of budget negotiations, the US Coast Guard is getting a new fleet of icebreakers.\textsuperscript{54}

IV. Arctic cooperation in a changing geopolitical climate

It has often been argued that Arctic cooperation is immune to geopolitical turmoil. Despite speculation regarding conflict in the region as well as the tensions arising from outside the Arctic, cooperation has increased and achieved notable results over the past decade. The success of cooperation in the Arctic has even sparked a debate about ‘Arctic exceptionalism’.\textsuperscript{55} However, in the past year there have been indications that tensions might be spilling over into the Arctic.

\textbf{Arctic Council: an end of exceptionalism?}

For two decades, the Arctic Council, the high-level intergovernmental forum of the Arctic, has succeeded in maintaining cooperation on a number of crucial issues through the work of its six working groups and a number of task forces and expert groups. Within the framework of the Arctic Council, the Arctic states have signed three legally binding agreements on addressing common challenges and promoting cooperation, in particular on search and rescue, oil spill prevention and scientific cooperation.\textsuperscript{56} Through the work of the council, two new platforms for cooperation have been established: the Arctic Coast Guard Forum, which is not formally affiliated to the Arctic Council, and the Arctic Economic Council.

It is argued that a key component of this success has been the exclusion of military security issues from the Arctic Council’s mandate.\textsuperscript{57} However, the speech by Pompeo on 6 May 2019 ahead of the Arctic Council Ministerial meeting in Rovaniemi brought hard security discussions into the council, albeit indirectly. His highlighting of the ‘new threats’ in the Arctic and to


\textsuperscript{56} Arctic Council, Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, 12 May 2011; Arctic Council, Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, 15 May 2013; and Arctic Council, Agreement on Enhancing International Arctic Scientific Cooperation, 11 May 2017.

\textsuperscript{57} See e.g. Groenning, R., ‘Why military security should be kept out of the Arctic Council’, Arctic Institute, 2 June 2016.
‘all of our interests in that region’, and the specific naming of Russia, another Arctic Council member, and China, an observer, changed the political dynamics of the meeting. Although their commitment to ‘maintain peace, stability and constructive cooperation in the Arctic’ was reaffirmed by the Arctic states in the Joint Ministerial Statement, using the Arctic Council structure to raise other issues from around the globe has raised concerns that the changing geopolitical climate might disrupt Arctic cooperation.

The Ministerial meeting in Rovaniemi also caused concern among the representatives of the indigenous organizations that are permanent participants at the Arctic Council. In the absence of wider tensions in the Arctic, the indigenous peoples have been able to make their voices heard and raise issues of concern to their communities. The increasing tensions in the region, however, could reverse the positive dynamic of recent decades and push these questions into the background. Given that indigenous peoples are excluded from military security discussions within their states, the risk of their exclusion from similar discussions in intergovernmental forums is very high.

The Barents Euro Arctic Council: cooperation continues with some difficulties

Geopolitical tensions have affected other platforms for cooperation in the Arctic, particularly the BEAC, a forum for intergovernmental cooperation on issues concerning the Barents region. The BEAC covers a smaller geographical area than the Arctic Council. It also differs from the Arctic Council through its more practical and project-oriented work, as well as the inclusion of the Barents region at the local level. Work within the BEAC on emergency rescue is one example of successful and pragmatic cooperation to meet joint challenges in the Barents region, increasing the possibilities of joint cross-border assistance and response to emergencies, accidents and natural disasters. The Barents rescue exercise, which is held biennially, is an important trust- and confidence-building mechanism.

However, other areas of cooperation in the BEAC have become more difficult in recent years. For example, it is becoming increasingly difficult to promote projects on biodiversity. Cooperation on the issue of environmental hot spots has also become more challenging because of a lack of participation, especially by Russia, which leads to less interest in participation from the Nordic states. A significant part of the BEAC’s work is based on cross-border cooperation and well-functioning people-to-people contacts. Increased tensions could put the trust built over many years at risk.

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58 Pompeo (note 51).
59 Arctic Council, Ministerial Statements, Ministerial Meeting in Rovaniemi, Finland, 6–7 May 2019.
60 Participant at the workshop (note 2).
62 Participant at the workshop (note 2).
V. The way forward

Cooperation in the Arctic is crucial at a time of multiple changes. The various security challenges are increasingly interconnected and cross-border. Addressing current and emerging security challenges in the region will require joint working. This section outlines a number of areas for further engagement from a policy and research perspective in order to advance knowledge of Arctic security and maintain peace and cooperation in the region.

A platform to discuss military security in the region

To address increasing tensions in the Arctic region and prevent existing Arctic institutions from suffering geopolitical deadlock, it will be necessary to establish a platform to discuss military security issues in the Arctic. The meetings of the Chiefs of the Defence Staff of the Arctic states initiated by Canada in 2012 were seen as a successful attempt to establish such a platform. However, these were suspended following the conflict in Ukraine and the ending of military-to-military cooperation with Russia. The Arctic Security Forces Roundtable, an initiative by the US European Command to gather together the military experts and defence establishments of the eight Arctic states plus France, Germany, the Netherlands and the United Kingdom, is another possible forum. However, Russia has been disinvited from participating in this initiative. Cutting the lines of communication on hard security, however, is not a route to resolving tensions in the region. On the contrary, the absence of Russia from the table when discussing Arctic security creates more risks and uncertainties. The Arctic states should explore the possibility of re-establishing platforms for military-to-military contacts on the Arctic, to start discussions on issues of concern.

Cooperation on safety and other issues of common interest

Natural disasters recognize no borders. The resources needed to respond to emergency situations in the Arctic are limited and often scattered across long distances and state borders. Cooperation on safety issues in the Arctic, such as search and rescue, and disaster management and response, has proved to be a successful example of cross-border cooperation and effective trust- and confidence-building mechanisms.

It is therefore essential to continue the Arctic states’ efforts on such lines of cooperation in the Arctic Council and the BEAC. The development of cooperation in the Arctic Coast Guard Forum could potentially be expanded into cooperation on law enforcement and maritime policing. Expanding joint search and rescue exercises to include new actors, such as the International Committee of the Red Cross, is also an option.

Another successful example is the improvement of meteorological cooperation in the Arctic facilitated within the Arctic Council. Improving meteorological cooperation has been beneficial to people living in the Arctic, to maritime safety and security, and to the provision of climate oceanographic
information, among other things. There are still unexplored issues that can be taken on and moved forward for further cooperation.

**Indigenous voices in discussions on security**

Security issues should be self-articulated and identified by the communities living in the Arctic. Even though the Arctic states have made significant progress in building a dialogue with indigenous communities and including them in regional platforms for discussing indigenous issues, indigenous voices are rarely heard when the states discuss security. For historical reasons, issues of sovereignty and borders are highly sensitive for indigenous peoples and it is important to include representatives of indigenous peoples in the discussions on these issues. The indigenous peoples have unique knowledge of the Arctic. They are willing to contribute to the discussions on their security and to be part of the solution.

**People-to-people contacts and education**

People-to-people contact has always been an important element of Arctic cooperation. In times of increasing tensions in the world and in the Arctic region in particular, it is important to enhance this type of cross-border regional engagement. Continued cooperation and enhancement of people-to-people contact are crucial to building trust between societies, communities and states. Further support and expansion of this cooperation, for example to encourage more youth involvement, educational exchanges and cooperation, would enhance knowledge of different societies and cultures. It is important to continue support for initiatives such as the Barents Youth Council and Arctic Frontiers Emerging Leaders.

**Research on current and new challenges in the region**

Multidisciplinary research is needed to break down the silos in the study of Arctic security. Involving new actors, such as industry, humanitarian organizations and insurance companies, will expand understanding of the security challenges faced by the region. Further research is required on the effects of increased human and economic activity in the Arctic on food, water and health security. One current knowledge gap is the lack of research on emerging challenges and opportunities related to the use of technologies in the Arctic.

It will be important to continue to explore the potential implications of geopolitical tensions for Arctic cooperation. It will be crucial not only to analyse Russia’s military activities in the Arctic, but also to balance this research with analyses of Western and NATO activities, including the risks that these activities might bring to the region. Analyses of existing and potential platforms for hard security discussions will be necessary to understand the potential advantages and disadvantages of establishing a hard security forum for the Arctic. Scenario-based research on the repercussions of great power competition in the Arctic would be one way to advance knowledge and develop risk mitigation strategies.
Currently, legislation in some Arctic countries prevents researchers and scholars from accessing data on the indigenous populations. In the absence of data, it is difficult to advance knowledge about the issues facing indigenous people. It is also essential to create more opportunities and support for indigenous-led research initiatives and projects. These will provide more and better perspectives on indigenous peoples by indigenous peoples.

THE GEOPOLITICS OF A CHANGING ARCTIC

EKATERINA KLINEMKO

CONTENTS

I. Introduction 1

II. The complexity of Arctic security 3
   Climate change as a catalyst for changing security in the Arctic 3
   Borders, connectivity and human security 6
   Economic and environmental security 7
   Military presence in the Arctic and broader security issues 8

III. Increasing tensions in the Arctic region? 8
   Russia’s growing military capabilities in the Arctic 8
   China’s economic interests in the Arctic 10
   US–Russian–Chinese strategic competition 10

IV. Arctic cooperation in a changing geopolitical climate 11
   Arctic Council: an end of exceptionalism? 11
   The Barents Euro Arctic Council: cooperation continues with some difficulties 12

V. The way forward 13
   A platform to discuss military security in the region 13
   Cooperation on safety and other issues of common interest 13
   Indigenous voices in discussions on security 14
   People-to-people contacts and education 14
   Research on current and new challenges in the region 14

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