

SECURITY INSIGHTS



Risks and Opportunities in the Arctic: Strategic Recommendations from ESS-N 20-06

By Rachael Gosnell, Andreas Hildenbrand, Michelle Miller, Isabella Stürzer

The George C. Marshall European Center for Security Studies' European Security Seminar-North provided an opportunity for practitioners and senior policymakers to discuss Arctic security challenges and opportunities. As with the previous two seminars, this seminar promoted extensive exchanges of ideas and perspectives while the participants developed strategic recommendations. This third installment of ESS-North was the first to examine case studies as a focal point for discussions. In three working groups, seminar speakers and participants discussed and presented in a result-oriented, outcome-driven environment to assess risks and opportunities and provide strategic recommendations for economic, environmental, and hard security challenges in Greenland, Yamal, the Svalbard Archipelago and along the Northern Sea Route that are also applicable to the greater Arctic theater.

Arctic Security Environment

The Arctic has reemerged as a strategic space and domain of great power competition after a period of relative inactivity and demilitarization, thus monitoring Arctic issues and preparing for increased involvement in the region¹ is to be highly recommended. The United States reinstated its Second Fleet, which also includes Canadian partners in the Command Structure, in 2018, after a seven-year period of deactivation.² Further, the U.S. has updated strategic guidance for the Arctic,³ with the 2018 release of the updated DoD Arctic Strategy, U.S. Navy Strategic Outlook for the Arctic, and U.S. Coast Guard Arctic Strategic Outlook offering new guidance for the evolving region.⁴ In 2018, the People's Republic of China

¹ Luke Coffey, Daniel Kochis and James Di Pane, "Arctic Security Is Not about Preparing for War, But about Preparing for the Future," The Heritage Foundation, January 22, 2020,

<https://www.heritage.org/defense/report/arctic-security-not-about-preparing-war-about-preparing-the-future>.

² "U.S. 2nd Fleet Mission Statement," U.S. 2nd Fleet,

<https://www.c2f.navy.mil/Portals/24/Documents/U.S.%202ND%20FLEET%20AT%20A%20GLANCE%2028%20JAN.pdf?ver=2019-04-22-144707-180>.

³ Siemon T. Wezeman, "Military Capabilities in the Arctic: A New Cold War in the High North?" *Stockholm International Peace Research Institute*, October 2016, p. 17, <https://www.sipri.org/sites/default/files/Military-capabilities-in-the-Arctic.pdf>.

⁴ "Department of Defense Arctic Strategy," *Office of the Under Secretary of Defense for Policy*, June 2019, <https://media.defense.gov/2019/Jun/06/2002141657/-1/-1/1/2019-DOD-ARCTIC-STRATEGY.PDF>; "Report on Arctic Policy," International Security Advisory Board of the U.S. Department of State, September 21, 2016, <https://2009-2017.state.gov/documents/organization/262585.pdf>.

published its first official policy paper⁵ outlining the ambitions of the newly self-conceptualized “near-Arctic state,”⁶ a definition that is not reflected in legal documents nor holds merit in the Arctic Council. The Russian Federation has taken a robust approach to the region that reflects their significant interests there, having reiterated seabed claims in 2007 by placing a titanium flag under the North Pole in international Arctic waters⁷ and the re-opening of military bases along the Northern Sea Route. Reflecting growing interest and potential threats in the region, the Kingdom of Denmark prioritized Greenland in its most recent 2018-2023 Defence Agreement.⁸ Further, the European Union has now also outlined an Arctic policy⁹ as have most EU member states, including the Federal Republic of Germany.¹⁰

Strategic (mis-)communication has been a key topic in the discussion of all three case studies. In particular, a gap between scientific discourse on climate change, its perception in the public, and the political debate as well as its real impact on local communities was an important topic as was the challenge to balance economic development and sustainability. The Arctic’s harsh conditions and its sheer vastness require major investments in infrastructure, production sites, and workforce in order to be able to develop business opportunities, especially in the field of resource development. Consequently, Arctic economic strategies can only be profitable in the long run and thus need to be sustainable. Therefore, seminar participants encouraged diversification of Arctic economies, the promotion of quality over quantity in the tourism sector and the development of resources (such as rare earth elements, water and ice, and oil and gas) in accordance with applicable standards necessary to protect the local environment and infrastructure. Melting ice and thawing permafrost are the key environmental concerns in the Arctic, as they not only contribute to global warming and sea level rise, but also threaten the integrity of the local infrastructure and operations at production sites.

Another topic was the signaling effects of military exercises and the (dis-)continuation of hard security dialogue between Arctic states. Overall, it was established that the Arctic region has potential for conflict, yet currently stakeholders value cooperation over confrontation, especially in search and rescue (SAR) operations and in research. Working groups agreed that improvement was required both in terms of dialogue and increased domain awareness in order to benefit from opportunities and to mitigate risks. Participants emphasized that it was advisable for Arctic nations to share best practices and for partners to enhance knowledge of their Arctic partners both militarily¹¹ and scientifically to foster mutual understanding.

Finally, participants discussed “the Arctic’s enduring resource,” its people, with a look to intrastate challenges beyond power competition in the Arctic that include the views of local

⁵ “China’s Arctic Policy,” The State Council of the People’s Republic of China, January 26, 2018, http://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm.

⁶ Eva Dou, “A New Cold War? China Declares Itself a ‘Near-Arctic State,’” *Wall Street Journal*, January 26, 2018, <https://www.wsj.com/articles/a-new-cold-war-china-declares-itself-a-near-arctic-state-1516965315>.

⁷ Tom Parfitt, “Russia plants flag on North Pole seabed,” *The Guardian*, August 2, 2007, <https://www.theguardian.com/world/2007/aug/02/russia.arctic>.

⁸ “Agreement for Danish Defence 2018-2023,” *Danish Ministry of Defence*, February 1, 2019, <https://www.fmn.dk/temaer/forsvarsforlig/Documents/danish-defence-agreement-2018-2023-pdf.pdf>.

⁹ “EU Arctic Policy,” *European Union External Action*, April 27, 2016, https://eeas.europa.eu/arctic-policy/eu-arctic-policy_en.

¹⁰ “Germany’s Arctic Policy Guidelines,” *Ministry of Foreign Affairs*, August 2019, <https://www.auswaertiges-amt.de/blob/2240002/eb0b681be9415118ca87bc8e215c0cf4/arktisleitlinien-data.pdf>.

¹¹ “Press briefing on Exercise Trident Juncture 2018,” *NATO*, June 11, 2018, https://www.nato.int/cps/en/natohq/photos_155885.htm.

stakeholders and indigenous communities. Arctic communities at large are confronted with negative demographic trends as decreasing fertility rates in combination with brain drain limit the development potential of historically small communities. The lack of skilled professionals and experts has a direct effect on local healthcare infrastructure, educational opportunities, and international representation, as the representation of causes abroad lies with a small group of experts. This is also visible at international conferences and fora, where representatives of Arctic and indigenous communities can only be present in limited numbers given the many demands on their time. Investment in education and human security is vital to address these challenges.

Case Studies: Greenland, Yamal Peninsula/ Northern Sea Route, and Svalbard Archipelago

The case studies included information on the political and economic landscape of the three areas, with a special focus on the role of indigenous communities, foreign investments, and environmental concerns. Furthermore, participants evaluated the three regions for their geopolitical and geostrategic significance, including an assessment of securitization trends. Greenland offered a unique case study to understand challenges and opportunities resulting from climate change, which enables gradual economic independence and supports political aspirations; Yamal allowed for insights on state-owned corporations and challenged regional governing mechanisms; and Svalbard presented a case study in which the international community seeks to maintain—and secure—the status quo.

Greenland

Greenland and the West, Greenland in the West?

The Greenland case study put forth two key questions that were also fundamental to ESS-N: Are economic development and environmental protection necessarily competing demands? And is there a considerable threat from militarization and securitization in the Arctic strategic environment?

Greenland is currently incorporated, along with the Faroe Islands and Denmark, in the Kingdom of Denmark, and also relies on Denmark financially. As Greenland has long sought to become fully independent, the melting Arctic now offers the opportunity for economic independence, thus enabling an important step on the road to political independence. The melting of Greenland's ice sheet offers new potential for resource development. At the same time, the Arctic has also become an interesting destination for tourists. Both industries could become highly profitable, but their development could also result in severe negative consequences for the environment and the local population. Participants extensively debated this challenge and presented recommendations for balancing economic development and ecological concerns sustainably. Heightened foreign interest in Greenland, however, is not only a result of economic potential, but also because of its location in the Arctic as a strategic area. The group undertook discussion of the potential role of Greenland, especially due to its geography, in the belief that such an analysis provided an excellent opportunity to evaluate the likelihood of different strategic scenarios and to develop recommendations balancing national security interests while maintaining the cooperative spirit of the Arctic. For Greenland, the working group offered the following thoughts and strategic recommendations.

Integrate a Sovereign Greenland into the Western Alliance

In accordance with the Home Rule Act of 1979 and Act on Self-Government of 2009, Greenland created a constitutional commission that shall present its proposal in 2021. With respect to and in support of the Greenlanders' striving for independence, a key recommendation was to ensure that Greenlanders have the final decision about their future.

Greenland has had legislative and executive power for fishing and trade since 1979; special status as an Overseas Territory (OCT) within the EU since 1985; as well as jurisdiction over mineral resources and the ability to manage economic resources independently since 2009.¹² However, Copenhagen maintains authority over Greenland's security and foreign affairs. Both the 1979 and 1985 acts are the result of the Greenlanders' aim to control fisheries independently from EU (EC) fishery regulations, as fishing traditionally accounts for more than 90% of Greenland's exports¹³ and more than a third of the GDP.¹⁴

As Greenland moves down the path to independence, the group emphasized how important it is to (further) integrate Greenland into NATO or the family of western nations. International interest in Greenland results from its geographic location¹⁵ and mineral resources, which could amount to 10% of undeveloped resources around the globe. Along with its geostrategic location, Greenland has a long-standing U.S. presence with Thule Air Base, which includes a ballistic missile early warning system and space surveillance.¹⁶ While Greenland itself so far has strongly benefitted from the close relationship with its partners in the Kingdom of Denmark and the European Union, one question—with whom will closer alliances be forged, especially economic ones?—is intensely debated.

Greenland has expressed interest in investments from the Russian Federation and especially from the People's Republic of China. As the example of leaving the EC in 1979 due to fishery regulation shows, Greenland could choose to pursue a closer relationship with one of those powers and develop its economy using the help of their foreign direct investment (FDI) once the constitutional gap with Denmark is severed. This risk places the debate on Greenland within the discourse on the relevance of (contested) western values and cooperation as arguably "The West against the rest" has made way for a notion of "Westlessness."¹⁷ Given these developments, a deeper integration of Greenland—specifically through close economic partnerships and educational exchanges—into the western community was recommended, which should include a clear and united western message strategically communicated to (potential) allies and competitors alike. To achieve integration, the group recommended drawing on the close and mutually beneficial cooperation with Denmark by working through the Kingdom of Denmark's well-established existing decision-making structures in addition to supporting existing international law and regional bodies.

¹² Cécile Pelaudeix, "EU-Greenland relations and sustainable development in the Arctic," in: *Global Challenges in the Arctic Region: Sovereignty, Environment and Geopolitical Balance*, edited by Elena Conde and Sara Iglesias Sanchez, (Routledge: New York, 2017), 306f.

¹³ Cécile Pelaudeix, "Governance of offshore hydrocarbon activities in the Arctic and energy policies: a comparative approach between Norway, Canada, Greenland/Denmark," in: *Governance of Arctic Offshore Oil and Gas*, edited by Cécile Pelaudeix and Ellen Basse, (Routledge: London, 2018), p. 118.

¹⁴ "Greenland in Figures 2019," *Statistics Greenland*, pp. 23 and 35,

<http://www.stat.gl/publ/en/GF/2019/pdf/Greenland%20in%20Figures%202019.pdf>.

¹⁵ Jon Rahbek-Clemmensen, "Let's (Not) Make a Deal: Geopolitics and Greenland," *War on the Rocks*, August 28, 2019, <https://warontherocks.com/2019/08/lets-not-make-a-deal-geopolitics-and-greenland/>.

¹⁶ Sarah Cammarata and Daniel Lippman, "Trump's budget gives Greenland another try," *Politico*, February 19, 2020, <https://www.politico.com/news/2020/02/19/trump-budget-greenland-115961>.

¹⁷ "Munich Security Report 2020: Westlessness," *Munich Security Conference*, February 2020, <https://securityconference.org/en/publications/munich-security-report-2020/>.

Use Western Tools to Create Economic and Societal Opportunities

While Denmark currently remains the most important trade partner for Greenland, new actors have also surfaced: for instance, there is an active dialogue with the Chinese Ministry of Land and Resources and the Chinese Development Bank (CDB).¹⁸ Greenland has proactively sought to expand its global partnerships and is looking to establish additional representative offices abroad. New consulates are also opening in Greenland, to include a U.S. Consulate, the first diplomatic U.S. base there since the 1950s,¹⁹ reflecting growing international interest. Chinese companies are already involved in multiple projects as license-holders, contractors, and investors. Before Greenland announced in December 2019 that it awarded a contract for cooperating with Tele Greenland Group and Swedish company Ericsson instead of China's Huawei to improve telecommunication and the overall connectivity infrastructure, the decision was discussed both in the context of concerns voiced by the U.S. regarding Huawei's involvement in sensitive infrastructure and of Arctic societies' wish for connectivity.²⁰ This example demonstrates the urgency to fully integrate Greenland into the western alliance through business partnerships by proposing attractive and feasible alternatives to Chinese investors, which as of now are not broadly offered by the U.S. and Denmark (aside from an annual block grant to the Greenlandic Self-government),²¹ in addition to emphasizing shared history and values.

Close the Constitutional Gap with Denmark

A complex contracting process for recent Greenlandic infrastructure projects spotlights how important it is to close Greenland's constitutional gap with Denmark, as decision-making authority fell into a gray zone between Greenlandic self-determination concerning infrastructure development and Danish authority over foreign policy and security. In 2017, Chinese private company General Nice was denied the opportunity to purchase an abandoned naval base near Gronnedal, which had been for sale by Greenland. Copenhagen cited security concerns, its close partnership with the U.S., and the 1951 defense agreement for Greenland with the U.S.²² Instead of selling it, the Danish government announced its intention to reopen the base as a storage and training facility.²³ In 2017 and 2018, Greenland was interested in involving Chinese investors and the Chinese ExIm Bank in the expansion of Greenland's airports. This could have resulted in significant debt with a Chinese policy bank and thus held potential for a debt trap overtake, as witnessed as consequence of predominantly Chinese FDI in infrastructure projects in the Republic of India or various nations on the African

¹⁸ Yang Jiang, "China in Greenland: Companies, Governments, and Hidden Intentions?" *Danish Institute for International Studies*, October 26, 2018, <https://www.diis.dk/en/research/china-in-greenland>.

¹⁹ Robinson Meyer, "The Next 'South China Sea' Is Covered in Ice: The State Department will soon have a permanent presence in Greenland for the first time since the 1950s," *The Atlantic*, May 15, 2019, <https://www.theatlantic.com/science/archive/2019/05/us-opening-diplomatic-base-greenland/589444/>.

²⁰ Jacob Gronholt-Pedersen, "Greenland chooses Ericsson over Huawei for 5G rollout," *Reuters*, December 19, 2019, <https://www.reuters.com/article/us-greenland-telecoms-ericsson-huawei-te/greenland-chooses-ericsson-over-huawei-for-5g-rollout-idUSKBN1YN0XA>.

²¹ John Simpson, "How Greenland could become China's Arctic Base," *BBC World Affairs*, December 18, 2018, <https://www.bbc.com/news/world-europe-46386867>.

²² Drew Hinshaw and Jeremy Page, "How the Pentagon Countered China's Designs on Greenland; Washington urged Denmark to finance airports that Chinese aimed to build on North America's doorstep," *Wall Street Journal*, February 10, 2019, <https://www.wsj.com/articles/how-the-pentagon-countered-chinas-designs-on-greenland-11549812296>.

²³ Erik Matzen, "Denmark spurned Chinese offer for Greenland base over security: Sources," *Reuters*, April 6, 2020, <https://uk.reuters.com/article/uk-denmark-china-greenland-base-idUKKBN1782E2>.

continent.²⁴ The expansion of the airports aims to transition from travelling by small propeller-driven planes to large passenger jets²⁵ with new landing strips long enough to serve a dual-use function and allow military aircraft to land. Because of security concerns regarding such potentially Chinese co-owned landing strips, Chinese involvement in these projects was halted and Denmark agreed to reopen the debate on airport funding,²⁶ eventually offering to contribute to financing and then co-owning the airports in Nuuk, Ilulissat, and Qaqortoq.²⁷ As of now, Thule Air Base in Northwestern Greenland does not have any capabilities for aerial defense.²⁸ Thus a new airport built by Chinese investments and/or a Chinese workforce could pose a security threat,²⁹ as could be new Russian missile capabilities placing the air base within reach.³⁰ Hence, a key recommendation was to close the constitutional gap between the Kingdom of Denmark and Greenland by defining clear authority and responsibilities while the Greenlandic Constitutional Commission prepares a proposal to be presented to the Self-government on June 21, 2021.³¹

Competing Demands? Economy and the Environment

Denmark currently provides more than half of Greenland's budget in the form of an annual block grant of 3.8bn kroner (\$610m), amounting to 20% of the GDP,³² with further significant funding based on its status as an Overseas Territory of the EU. Thus, realistically, for Greenland to achieve the self-sufficiency necessary to cover social expenses and state services, it would require realization of mining projects or a real "Arctic scramble" to bring new foreign investments. Another option is for Greenland to lease or sell land to foreign countries for military bases or research outposts. The economy is currently export-driven; fishing accounts for more than 90% of exports, mostly shipped to Denmark.³³ Greenland seeks to transform its current single-resource economy into a more diversified one, drawing on its resources in rare earth elements (REEs), water and ice for consumption, and the potential for tourism. Climate change opens up new business opportunities for Greenland: As the ice sheet that covers three-quarters of Greenland, melts, mineral reserves become accessible and water runs off. For instance, the ice sheet is holding 10% of global fresh water

²⁴ Cécile Pelaudeix, "Along the Road: China in the Arctic," *European Union Institute for Security Studies*, December 2018, p. 2, <https://www.iss.europa.eu/content/along-road-%E2%80%93-china-arctic>.

²⁵ Simpson, "How Greenland Could Become China's Arctic Base."

²⁶ Jiang, "China in Greenland."

²⁷ Hans Lucht, "Strictly Business? Chinese Investments in Greenland Rise U.S. Concerns," *Danish Institute for International Studies*, November 2018, <https://www.diis.dk/publikationer/chinese-investments-in-greenland-raise-us-concerns>.

²⁸ Valerie Insinna, "Watch the skies: How a US base in Greenland tracks ballistic missiles," *DefenseNews*, August 4, 2019, <https://www.defensenews.com/smr/a-modern-nato/2019/08/05/watch-the-skies-how-a-us-base-in-greenland-tracks-ballistic-missiles/>.

²⁹ Aaron Metha, "How a potential Chinese-built airport in Greenland could be risky for a vital US Air Force base," *DefenseNews*, September 7, 2018, <https://www.defensenews.com/global/europe/2018/09/07/how-a-potential-chinese-built-airport-in-greenland-could-be-risky-for-a-vital-us-air-force-base/>.

³⁰ Martin Breum, "Russia's hypersonic missiles could be why Donald Trump wants to buy Greenland," *Arctic Today*, December 3, 2019, <https://www.arctictoday.com/russias-hypersonic-missiles-could-be-why-donald-trump-wants-to-buy-greenland/>.

³¹ "New Constitutional Commission Mandate Ready in Greenland," *High North News*, March 26, 2019, <https://www.highnorthnews.com/en/new-constitutional-commission-mandate-ready-greenland>.

³² "Greenland in Figures 2019," *Statistics Greenland*, pp. 23 and 35, <http://www.stat.gl/publ/en/GF/2019/pdf/Greenland%20in%20Figures%202019.pdf>.

³³ Laurence Peter, "Danes see Greenland security risk amid Arctic tensions," *BBC News*, November 29, 2019, <https://www.bbc.com/news/world-europe-50598898>.

reserves,³⁴ a valuable and marketable resource becoming accessible, as Greenland's strategy for the export of ice and water shows.³⁵ Reflecting on the "healthy tension" between economic development and environmental protection, the working group recommended the following approaches.

Encourage Responsible Economic Diversification

In the case of Greenland, a "healthy tension" between economic development and environmental concerns is becoming evident. Permafrost thawing and melting glaciers offer new opportunities for establishing businesses and attracting investors to Greenland while negatively affecting Greenland's infrastructure and threatening the indigenous way of life. Glacier runoff has resulted in an annual ice mass loss since 1998, with the rate increasing six times since the 1980s, and a raised sea level of 13.7 mm.³⁶ Greenland's widest glacier, "Sermersuaq" or "Humboldt,"³⁷ has suffered an increased loss from 4.8 ± 1.1 gigatons per year in 1972 to annual 6.4 ± 1 gt in 2018.³⁸ These unprecedented transformations will also have a global effect, including global warming and long-term sea level rise. Consequently, a balanced strategy incorporating the mission of sustainability was recommended: Economic advancement and environmental protection could be reconciled by building and promoting a multifaceted Greenland brand based on Greenland's unique culture and geography. The diversification of the economic sector—to include the mining industry, tourism, and energy production—can embrace such an approach with a decidedly green economic strategy by encouraging educational and adventure-based, ecologically-responsible tourism, as opposed to low-budget offers and short visits by cruise ships. Further, a strong focus should be placed on renewable energies: For instance, hydropower already contributes 70% to Greenland's energy mix;³⁹ Greenland could export its related expertise. For the mining industry, it should be carefully advanced while adhering to international regulations for resource development to ensure protection of the environment and indigenous communities.

Lessons Learned from Other Arctic Communities

Regarding the advancement of the hospitality industry, strategic recommendations encouraged high-value activities and cautioned against following the Icelandic model. Following the financial crisis of 2007/08, Iceland successfully increased tourism flows, yet saw disproportionately little contribution to Iceland's GDP (as compared to non-Icelandic

³⁴ "Greenland in Figures 2019," *Statistics Greenland*, p. 37,

<http://www.stat.gl/publ/en/GF/2019/pdf/Greenland%20in%20Figures%202019.pdf>.

³⁵ "Greenlandic Ice Cap Water Heading for the World Market: Comprehensive Strategy to Strengthen the Export of Greenland's Unique Ice and Water Products," *Naalakkersuisut. The Government of Greenland*, 2018, p. 7,

<https://naalakkersuisut.gl/~media/Nanoq/Files/Publications/Erhverv/Is%20og%20Vand%20strategi%20og%20markedsfoering/Pjece%20om%20eksport%20af%20is%20og%20vand%20UK.pdf>.

³⁶ Jérémie Mouginot, Eric Rignot, Anders A. Bjørk, Michiel van den Broeke, Romain Millan, Mathieu Morlighem, Brice Noël, Bernd Scheuchl, and Michael Wood, "Forty-six years of Greenland Ice Sheet mass balance from 1972 to 2018," *Proceedings of the National Academy of Sciences of the United States of America*, 116.19, p. 9239, <https://doi.org/10.1073/pnas.1904242116>.

³⁷ Rebecca Lindsey, "Sermersuaq (Humboldt) Glacier, Greenland," *NASA Earth Observatory*, August 30, 2008, <https://earthobservatory.nasa.gov/images/36173/sermersuaq-humboldt-glacier-greenland>.

³⁸ Mouginot et al., "Forty-six years of Greenland Ice Sheet mass balance from 1972 to 2018," p. 9241.

³⁹ "Hydropower creates clean energy and jobs in Greenland," *Nordic Investment Bank*, December 2010, http://www.nib.int/news_publications/cases_and_feature_stories/223/hydropower_creates_clean_energy_and_jobs_in_greenland.

travel agencies) due to the prevalence of low-budget tourism. The country is now confronted with the phenomenon of too much tourism and its impact on the environment. These are important lessons learned from a similar Arctic community that are recommended for consideration when advancing the Greenland's tourism industry.⁴⁰

High Standards of Environmental Protection and Law Enforcement

The impacts of mining and global warming on the environment are already visible and predicted to accelerate in the near future. However, what clearly distinguishes Greenland from many other developing economies—such as on the African continent—is a history of adherence to rather strict guidelines for environmental protection and management required within the Kingdom of Denmark. Significantly, environmental issues are part of the portfolio of the Premier's office. Greenland's government mandates high environmental standards based on international best practices, conducting environmental and social impact assessments for mining projects such as the Kvanefjeld Project.⁴¹ Furthermore, the public has protested deregulation of environmental protection such as the 2014 legalization of uranium mining⁴² in order to allow for REE mining projects that have uranium as a by-product, which will most likely be stored on Greenland's soil, as this by-product could contaminate ground and water. The group strongly recommended that the high standards of environmental protection and law enforcement continue to be required. This also pertains to the management of historic toxic waste left by the U.S. (thirty sites)⁴³ and Denmark after the end of the Cold War, for which working group participants recommended the respective parties continue to assume responsibility.⁴⁴

No Advancement of Projects that Neglect Environmental Standards

Greenland's environment is predicted to change considerably in the near future (ten to fifteen years), especially as marine traffic is anticipated to increase due to new business opportunities and shipping routes becoming available as sea ice melts. New industries with likely negative environmental impacts are expected to be established (such as mining, oil and gas, and heavy industry), all of which will contribute to a rise in plastic and noise pollution. Due to melting glaciers, permafrost thawing, and global warming, fish stocks will likely migrate, and marine and land animal behavior may change, which can also pose human security risks. Greenland is home to musk and long-bearded oxen, Greenlandic reindeer, and polar bears,⁴⁵ who are strong enough to harm or kill humans should they attack. Additionally, the traditional lifestyle of Greenlanders might be threatened. In 2019, a third of families acquired at least fifty percent of their diet from wild foods they collected, hunted, or fished.⁴⁶

⁴⁰ Paul Sullivan, "The truth about Iceland's overtourism crisis," *The Telegraph*, July 1, 2019, <https://www.telegraph.co.uk/travel/destinations/europe/iceland/articles/iceland-overtourism/>.

⁴¹ "Greenland Minerals Limited and Greenland Minerals & Energy A/S Kvanefjeld Project Social Impact Assessment," *Naalakkersuisut. The Government of Greenland*, 2018, <https://naalakkersuisut.gl/~media/Nanoq/Files/Publications/Raastof/ENG/English%20version%20of%20the%20SIA%20statement%20of%20June%2011%202019.pdf>.

⁴² Lucht, "Strictly Business?"

⁴³ Alister Doyle, "Greenland calls for clean-up of toxic U.S. Cold War bases," *Reuters*, October 12, 2016, <https://www.reuters.com/article/us-greenland-pollution-idUSKBN12H220>.

⁴⁴ "Defence Agreement 2018-2023," *Danish Ministry of Defence*, p. 10, <https://www.fmn.dk/temaer/forsvarsforlig/Documents/danish-defence-agreement-2018-2023-pdf.pdf>.

⁴⁵ "Animals of Greenland," *Visit Greenland*, <https://visitgreenland.com/about-greenland/animals-of-greenland/>.

⁴⁶ K. Minor et al., "Greenlandic Perspectives on Climate Change 2018-2019: Results from a National Survey," University of Greenland, 2019.

A further human security risk is potentially deadly bacteria and viruses currently contained in permafrost but likely to be released after the permafrost melts. Given this fragility, it was recommended not to advance any projects that do not meet high environmental standards.

Human Capital Development and Research Exchanges

A further challenge for the development of Greenland's economy is the lack of human capital. Greenland is home to 56,672 people according to 2019 estimates. With its expansive land mass, Greenland has the smallest population density in the world. Almost a third of the population lives in its capital Nuuk; 49,000 Greenlanders live in towns ranging from several thousand to only about 300 inhabitants. More than 7,000 Greenlanders live outside towns. Additionally, human security challenges arise, especially in healthcare, including mental healthcare, and education infrastructure. Greenland is facing negative demographic trends due to a fertility rate of around 2.0⁴⁷ and emigration, especially to Denmark and other Nordic countries.⁴⁸ It relies on foreign experts, mainly from Denmark, to support education and healthcare. The group's strategic recommendations included rejecting the idea of primarily focusing on foreign brain gain, suggesting instead that Greenland promote a national identity based on a shared long history and traditional culture that would establish national expertise. This would fall in line with Greenlandic Premier Kim Kielsen's 2019 statement, "We are open for business, not for sale,"⁴⁹ highlighting the clear aspiration of Greenlanders to become a fully sovereign and independent nation exercising their right to self-determination both politically and economically.

Improve Educational Opportunities

One of the key instruments for developing Greenlandic expertise is the University of Greenland/Ilisimatusarfik, which was established in 1984 in Nuuk, and has since produced more than 700 graduates and currently oversees the education of more than 200 students and thirty Ph.D. candidates.⁵⁰ The university is part of the University of the Arctic (UArctic), an international cooperative network based in the Circumpolar Arctic region,⁵¹ and has already formed research partnerships and exchange opportunities, including an opportunity to stay in Greenland through the student exchange program of the European Union, "Erasmus plus."⁵² The group strongly recommended improving educational opportunities with international partners, for example by building on a model that already exists in cooperation with a Danish university where one program requires studying abroad in Greenland.

Expertise-Building through an International Research Hub

By virtue of its location, geography, and ecology, Greenland is an important research location for monitoring climate change and its impacts. Thus, strategic recommendations offered for Greenland included increasing expertise through an international research hub; the first steps toward such an endeavor have already been taken. As of May 2019, the University of

⁴⁷ "Greenland in Figures 2019," *Statistics Greenland*, p. 7, <http://www.stat.gl/publ/en/GF/2019/pdf/Greenland%20in%20Figures%202019.pdf>.

⁴⁸ Mortensen et al., "Chinese Investment in Greenland," p. 192.

⁴⁹ "Greenland: Trump warned that island cannot be bought from Denmark," *BBC News*, August 16, 2019, <https://www.bbc.com/news/world-us-canada-49367792>.

⁵⁰ "In Numbers," The University of Greenland, <https://uk.uni.gl/about-us/in-numbers.aspx>.

⁵¹ "Ilisimatusarfik / University of Greenland," University of the Arctic, <https://education.uarctic.org/universities/greenland/8475/ilisimatusarfik-university-of-greenland>.

⁵² "International Cooperation Agreements," The University of Greenland, <https://uk.uni.gl/international/cooperation-agreements.aspx>.

Greenland, the Greenland Institute of Natural Resources,⁵³ the Geological Survey of Denmark and Greenland, and other public and research institutions in Greenland have agreed to start a research hub together.⁵⁴

Environmental and Military Security in Greenland

In October 2012, the Kingdom of Denmark established the “Arctic Command,” a joint military command with approximately eighty-five personnel, headquartered in Greenland’s capital Nuuk and consisting of the previously separate Greenland and Faroe Island commands.⁵⁵ Currently, the waters around Greenland are secured with a small fleet of inspection ships and patrol vessels and very limited aerial capabilities. Daily, three or four Danish inspection ships of the Thetis class (with a crew of forty-nine)⁵⁶ and three Knud Rasmussen-class patrol vessels (crew of nineteen) are patrolling the waters around Greenland and the Faroe Islands. The ships are part of the Joint Arctic Command and are tasked with environmental monitoring, pollution control, asserting Danish sovereignty, conducting fisheries inspections, carrying out search and rescue operations, and exercising law enforcement authority at sea.⁵⁷ For an average of ten days a month, the Air Group West hosts one of the Air Force’s CL-604 Challenger aircraft that has been transferred to the Arctic Command near Kangerlussuaq. Tasks include sovereignty enforcement, surveillance, fisheries inspection, transport, and search and rescue missions.⁵⁸ In addition, the Sirius Dog Sled Patrol is tasked with conducting surveillance and sovereignty enforcement in the uninhabited Northeast of Greenland; soldiers also act as police authority and oversee expeditions and ensure conservation provisions in the Northeast Greenland National Park, the biggest national park in the world. The patrol is headquartered at Daneborg station, located on the east coast of Greenland, and consists of twelve men deployed to Greenland for two years at a time.⁵⁹ Biannually, SAR joint exercises between the Arctic Command and the Greenlandic police are conducted.⁶⁰ The following strategic recommendations address the future development of Greenland’s security and safety.

Develop Greenland’s Security Sector

While the Danish are staunch supporters of NATO, Greenlanders have historically taken a more neutral stance. Yet, Premier Kielsen stated in January 2020 that Greenland sees itself as a partner in the NATO domain now and in the future, and that Greenlanders do not seek withdrawal of forces but rather participation.⁶¹ Currently, authority over security and foreign affairs still lies with Denmark, thus the working group recommended to close the constitutional gap within the Kingdom of Denmark and clearly give Greenland authority to conduct its own homeland defense. Greenlandic participation in homeland defense should then be increased and partners should assist in developing the capacity of the Greenlandic

⁵³ Marc Jacobsen, “Following years of talk about establishing a research hub in Greenland, the idea now appears to make some material progress,” *High North News*, May 25, 2018,

<https://www.highnorthnews.com/en/curious-case-greenlands-research-hub>.

⁵⁴ “Strategy & Research Hub,” *Greenland Research Council*, <https://www.nis.gl/en/5018-2/>.

⁵⁵ Wezeman, “Military Capabilities in the Arctic,” p. 7.

⁵⁶ “Inspection ship of the Thetis class,” *Danish Ministry of Defence*, <http://www.fmi.dk/materiel/forsvarets-materiel/maritim/Pages/inspektionsskib-af-thetis-klassen.aspx>.

⁵⁷ “Arktisk Kommando,” *Danish Ministry of Defence*, <https://www2.forsvaret.dk/Pages/forside.aspx>.

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ “News: SAR Cooperation tested in Greenland,” *Danish Ministry of Defence*, October 18, 2019, <https://www.translatetheweb.com/?from=da&to=en&ref=trb&dl=en&rr=HE&a=https%3a%2f%2fwww2.forsvaret.dk%2fomos%2forganisation%2farktisk%2fforside.aspx>.

⁶¹ Martin Breum, “Greenland’s Premier: ‘We must work towards independence,’” *High North News*, January 20, 2020, <https://www.highnorthnews.com/en/greenlands-premier-we-must-work-towards-independence>.

security sector. The idea of creating a “Greenlandic Guard,” civilian auxiliary coast guards or police forces with strictly limited authority, was debated (citing Canadian and Icelandic examples) in order to address a shortage in personnel and to provide for a potential community-strengthening effort and heightened domain awareness. Greenlandic participation in SAR and military exercises was also proposed, as was an investment in enhanced domain awareness both by Greenland and its partners, especially Denmark.

Study and Monitor Consequences of Climate Change

Studying and monitoring biodiversity changes and human activity was further recommended, as was sharing insights with local communities, thus achieving scientific advancement while ensuring human security. It is important to highlight that this exchange of knowledge and best practices is understood to be a mutual one, also aiming to bridge the gap between western science and traditional indigenous narratives. Furthermore, such an exchange can put individual perceptions and safety concerns in context by communicating consequences of climate change comprehensively and accessibly, thus also dispersing suspicions about potential dual use of research and monitoring stations for intelligence and military purposes.

Strategic Communication in and about Greenland

Circling back to the integration in the western family, it was recommended that western military presence should be tailored to Greenland’s conditions and be mindful of Greenland’s strategic position in the Arctic in order to avoid a security dilemma. Strategic communication in and about Greenland has been recommended as it is crucial in avoiding tensions, for instance by announcing exercises as well as clearly defining the scientific scope of research projects. The expressed Greenlandic aim to be more actively involved in Greenland’s defense also offers an opportunity to further anchor Greenland in the western alliance.

Conclusion: Need for Increased Domain Awareness

Greenland has potential for development, but also for conflict, both in the soft and hard security realm. Given a strong national consensus and an excellent relationship with Denmark, Greenland has the opportunity to achieve independence and develop its economy by drawing on well-established international channels and national expertise in ecological management. Moving on the path to independence, Greenland will also be required to develop its security sector holistically. This has to include different domains, e.g. capacities for addressing social and health security, from training local law enforcement and first responders to establishing a coast guard or auxiliary coast guard. Such an increase in overall domain awareness⁶² for Greenland in the Arctic will also be necessary for the West should it wish to anchor Greenland in the western alliance. Investments in the partnership are advisable to be made via FDI, and Greenland should be treated as an equal partner in the military security dialogue and a full member in international (Arctic) organizations.

Yamal Peninsula and Northern Sea Route

The second case study on the Yamal peninsula and the Northern Sea Route (NSR) offered the opportunity to examine the sometimes conflicting interests of diverse actors such as indigenous communities, corporations, and nations representing manifold Arctic identities and allowing for an intra-state lens as well as a wider outlook to the Arctic theater.

⁶² *The DOD Dictionary of Military and Associated Terms* defines “domain awareness” as “effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment of a nation,” United States Department of Defense, January 2020, p. 136, <https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/dictionary.pdf>.

Understanding National and International Strategic Aims for the Yamal Peninsula and Northern Sea Route

The current strategic environment of this Arctic region was assessed to show a slow but noticeable decline of the U.S. and the American allies' influence in the Arctic region. This change in balance of power in the region is characterized by a resurgence of Russia and the emergence of China as a major actor. Strategic dynamics between the U.S. and Russia have seen an element of unpredictability since 2014 and 2017, yet even though tensions have increased, the overall Arctic strategic environment is still characterized as low-tension. The working group anticipated that the low-tension environment, especially in the hard security domain, would remain stable at least for the next five years at least. The case study focused on the Yamal-Nenets autonomous district or Okrug (YNAO), a part of Ural Federal District of the Russian Federation with a population of about 536,000 (2015) and encompassing 769,250 square kilometers, which is roughly twice the size of Norway. The district, which became autonomous in 1930,⁶³ is considered the Far North, with more than half of its territory located within the Arctic Circle.⁶⁴

Energy Production as Russia's Key Economic Sector and Diplomatic Tool

Reindeer herding and fishing were the only occupations in Yamal until the early 1970s, when exploitation of natural-gas deposits began. The oil and natural gas fields in the district are some of the world's largest.⁶⁵ The natural gas reserves in Yamal-Nenets account for one-fifth of Russia's total reserves and is equal to the reserves in the United States.⁶⁶ Yamal-Nenets is essential to Russian energy and economic security as the region supplies approximately 90% of Russian domestic gas.⁶⁷ In addition, gas and oil represent thirty percent of Russia's GDP and fifty percent of the state's budget as of 2018.⁶⁸ Russia's economy is dependent on hydrocarbon production and GDP growth or decline is affected by prices on the world market, thus state stability is also linked to natural resources.⁶⁹

The oil and LNG market in Russia is controlled by state oil companies.⁷⁰ Three companies (Rosneft, Novatek, Gazprom) have a protected monopoly supported by legal requirements for companies to have at least five years of experience operating in the Arctic. Foreign firms are invited to invest in projects and can enter into partnerships with the Russian corporations, but holdings cannot exceed fifty percent, as stated in the 2008 Foreign Investment on Strategic Sectors Legislation.⁷¹ There are thirty-two oil and gas fields in the Yamal Peninsula holding an estimated 26.5 trillion cubic meters of gas, 1.6 billion tons of gas condensate, and 300 million tons of oil.

⁶³ *Encyclopedia Britannica*, "Yamalo-Nenets District, Russia," May 4, 2015, <https://www.britannica.com/place/Yamalo-Nenets>.

⁶⁴ *The Northern Forum*, "Yamalo-Nenets Autonomous Okrug, Russia," <https://www.northernforum.org/en/members/10-articles/343-yamalo-nenets-autonomous-okrug-russia>.

⁶⁵ *Encyclopedia Britannica*, "Yamalo-Nenets District, Russia."

⁶⁶ Charlotte Graham, "Russia: A way of life under threat for Nenets as oil drilling and ice melt take their toll," *Minority Rights Group International*, <https://minorityrights.org/russia-a-way-of-life-under-threat/>.

⁶⁷ Dag Harald Claes, Moe, Arild, and Rottem, Svein Vigeland, "Arctic Hydrocarbon Developments: State Interests and Policies," in, (I.B. Tauris: London, 2018), p. 26.

⁶⁸ Marion Candau, "Russia's Economy: Still Dependent on Oil," *EURACTIV*, March 22, 2018, <https://www.euractiv.com/section/energy-environment/news/russias-economy-still-dependent-on-oil/>.

⁶⁹ Tom Kool, "Russia Needs Higher Oil Prices, But Won't Surrender," *Oilprice*, March 18, 2020, <https://oilprice.com/Energy/General/Russia-Needs-Higher-Prices-But-Wont-Give-An-Inch.html>.

⁷⁰ Pavel Devyatkin, "Russia's Arctic Strategy: Energy Extraction," *The Arctic Institute: Center for Circumpolar Security Studies*, February 20, 2018, <https://www.thearcticinstitute.org/russias-arctic-strategy-energy-extraction-part-three/>.

⁷¹ Devyatkin, "Russia's Arctic Strategy: Energy Extraction."

Gazprom states that its 2018 total gas production from Yamal was 87.4 billion cubic meters.⁷² Current production is part of an ambitious state plan for developing and exporting new hydrocarbon resources. President Vladimir Putin expects all the liquefied natural gas (LNG) plants to produce a combined 60 million tons each year by 2030.⁷³ The projects involve substantial infrastructure on land and offshore to support the plants. Additional pipelines also transport gas to Europe from Yamal LNG; land-based pipelines include Nord Stream and now Nord Stream 2, which can supply Europe directly from Yamal. The NSR is the preferred route for exports supplying Asian clients in the summer and western clients throughout the year. After examining the described economic landscape and diplomatic tools, the working group made the following recommendations.

Continue Dialogue and Utilize Existing Communication Platforms

Following the illegal 2014 annexation of Crimea, an economic sanctions regime imposed by the United States and the European Union⁷⁴ has limited opportunities for foreign investment in Russian energy and drilling technology transfer.⁷⁵ The effect of these economic sanctions is serious, as investments in technology from the West cannot be replaced by Chinese or other Asian investments due to the lack of the necessary experience and competencies for remote, deep-water drilling. Hence, it involves a high risk that these companies are not willing to take.⁷⁶ Investment in infrastructure is crucial in order to meet ever-increasing Asian energy demands. The People's Republic of China was predicted to emerge as a key source of FDI, which raised concerns over sustainable energy development and compliance with corporate social responsibility in Yamal. Given the current sanction regime and Russia's new strategic partnership with China, the continuation of dialogue and utilization of international organizations as communication channels were highly encouraged by working group participants.

Relevance of Foreign Direct Investment

Not only should international dialogue be continued (or resumed), economic cooperation on the Yamal Peninsula should also be reconsidered more seriously by western partners. Currently, the People's Republic of China is increasing its economic presence within the framework of its China-Russia comprehensive strategic partnership after China and Russia agreed on expanding their cooperation—especially economic cooperation—in 2014.⁷⁷ For instance, the China National Petroleum Corporation holds twenty percent and the Silk Road Fund 9.9% of shares in Yamal LNG, with 50.1% held by Novatek and twenty percent by French oil and gas company Total.⁷⁸ Such cooperation is vital for both

⁷² Gazprom, "Projects," official company website, <https://www.gazprom.com/projects/yamal/>.

⁷³ Joel K. Bourne Jr., "See Russia's massive new gas plant on the Arctic coast," *National Geographic*, March 22, 2019, <https://www.nationalgeographic.com/environment/2019/03/sabetta-yamal-largest-gas-field/>.

⁷⁴ "Council Regulation No 833/2014 of 31 July 2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine" *European Council*, <http://data.europa.eu/eli/reg/2014/833/oj>.

⁷⁵ Roman Sidortsov, "The Russian offshore oil and gas regime: When tight control means less order," in: *Governance of Arctic Offshore Oil and Gas*, (Routledge: London, 2018), p. 132.

⁷⁶ Claes, Moe and Rottem, 31.

⁷⁷ Jeronim Perović and Benno Zogg, "Russia and China: The Potential of Their Partnership," *CSS Analyses for Security Policy*, No. 250 (October 2019), Center for Security Studies/ETH Zurich, p. 1, <https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/pdfs/CSSAnalyse250-EN.pdf>.

⁷⁸ "YamalLNG: The Gas That Came from the Cold," *Total*, <https://www.total.com/energy-expertise/projects/oil-gas/lng/yamal-lng-cold-environment-gas>.

the Russian Federation and its partners, as local involvement not only allows for an insight into and participation in an area as well as a market of geostrategic importance, but also brings foreign investment and research expertise to Yamal.

Research and development play a major role in the further growth of the Yamal gas fields, yet extremely low temperatures in Yamal prove to be a challenge for construction companies. Novatek is building a terminal (Sabetta port) in the east to liquefy gas and export it via tanker on the NSR; this project has the potential to become a major logistics hub along the NSR given the new state plans and incentives. The project involves a 355-mile railroad to transport workers, a community for workers, a deep-water port, an airport, and a power plant. In December 2018, Total announced the early completion of a third train from Bovenenkovo to export LNG.⁷⁹ However, the fourth train, which was originally planned to be completed by December 2019, fell behind schedule whereas the last two trains were operationalized ahead of schedule. The reason for this delay is that the servicing pipelines for the fourth plant cannot sustain the low temperatures;⁸⁰ this plant is an exclusively Russian endeavor whereas the other three plants use foreign technology delivery.⁸¹ This example highlights the issues faced by nationalized R&D efforts in Yamal and affirms the importance of international cooperation in R&D.

Ecological and Social Fragility on the Yamal Peninsula

The Arctic experiences warming at more than twice the rate of global average temperatures, and the average annual land surface air temperature north of 60° N for October 2018-August 2019 was the second warmest since 1900.⁸² In the Yamal-Nenets District, air temperatures warmed between 1 and 2 degrees Celsius from 1980 to 2019.⁸³ Arctic infrastructure is unstable because of melting permafrost. The melting causes gas release, such as methane eruptions, as well as holes that open up unexpectedly, threatening the hydrocarbon plants built on pilings over permafrost.⁸⁴ Pipelines and ice roads that currently support thousand-ton oil rigs are also all at risk as permafrost melts and the ground becomes unstable.⁸⁵

Furthermore, permafrost melting also leads to the release of disease agents such as anthrax, which could infect the population either directly or through the food chain. Released disease agents also threaten animal populations.⁸⁶ Another transformation is the terrain: The foliage

⁷⁹ Bourne, "See Russia's massive new gas plant on the Arctic coast."

⁸⁰ Atle Staalesen, "Troublesome start for first Arctic LNG plant manufactured by Russia," *The Barents Observer*, January 23, 2020, <https://thebarentsobserver.com/en/industry-and-energy/2020/01/troublesome-start-first-arctic-lng-plant-made-russia>.

⁸¹ Ibid.

⁸² J. Richter-Menge, M. L. Druckenmiller, and M. Jeffries (Eds.), "Arctic Report Card 2019," National Oceanic and Atmospheric Administration, <https://arctic.noaa.gov/Report-Card/Report-Card-2019>.

⁸³ Bruce C. Forbes, Florian Stammler, Timo Kumpula, Nina Meschtyb, Anu Pajunen, Elina Kaarlejärvi, "High resilience in the Yamal-Nenets social-ecological system, West Siberian Arctic, Russia," *Proceedings of the National Academy of Sciences*, Dec 2009, 106 (52) 22041-22048; DOI: [10.1073/pnas.0908286106](https://doi.org/10.1073/pnas.0908286106); *National Aeronautics and Space Administration/Goddard Institute for Space Studies*, "Surface Temperature Analysis," accessed May 14, 2020, <http://data.giss.nasa.gov/gistemp/maps>.

⁸⁴ Atle Staalesen, "More and bigger sinkholes on Yamal tundra," *The Barents Observer*, August 31, 2018, <https://thebarentsobserver.com/en/arctic/2018/08/more-and-bigger-sinkholes-yamal-tundra>.

⁸⁵ Joel K. Bourne Jr., "The Cold Rush," *National Geographic*, 2016.

⁸⁶ Thomas Nilsen, "Scientist: Yamal anthrax outbreak could just be the beginning," *The Barents Observer*, August 7, 2016, <https://thebarentsobserver.com/en/arctic/2016/08/scientist-yamal-anthrax-outbreak-could-just-be-beginning>.

ground cover has changed from shrub to a graminoid (tall grasses) majority.⁸⁷ Another effect of climate change is the increase of wildfires, with ecological consequences that also put the local population at risk.⁸⁸

The ethnic composition of the population according to the 2010 census is a Russian majority (61.7%), followed by Ukrainian (9.7%), indigenous Nenets (5.9%), Tatar (5.6%), and Khanty (1.9%).⁸⁹ The indigenous population is estimated to be around 11,000 people, of whom 6,000 are nomadic.⁹⁰ There is a substantial influx of industrial shift workers into the region, representing over ten times the nomadic indigenous population.⁹¹ Industrial development in Yamal-Nenets disrupts traditional reindeer herding migratory routes. Nomadic Nenets reindeer herders have been directly and indirectly affected by the development of the Bovanenkovo gas field since the 1980s,⁹² while new projects continue to be built on the peninsula, perpetuating the problem. Reindeer herding is organized into large enterprises termed brigades, with herders migrating with their families all year around. According to official statistics from 2010, the Yamal peninsula has approximately 270,000 reindeer and about 1,000 fully nomadic households, comprising of about 5,000 people.⁹³ Strategic recommendations to sustainably manage these risks included the following.

Encourage Sustainable Economic Development and Responsible Investments

According to local environmental groups, Russian companies spilled more than three and a half million barrels of oil on the tundra.⁹⁴ Environmental conservation NGOs are encouraging Russia's shift to natural gas production over oil because natural gas spills result in less environmental damage. Arctic conditions may make oil spills more likely. A U.S. Department of the Interior report predicted a seventy-five percent chance for a major oil spill, which was a deterrent to drilling in Alaska. Spills in this region are also more difficult and expensive to clean up. For instance, only seven percent of the oil spilled after the Exxon Valdez oil spill in the Prince William Sound off Alaska's coast in 1989 was recovered due to the remote locations, difficulty in mobilizing spill response teams, and harsh weather conditions.⁹⁵ Hence, a key recommendation was to promote economic development that observes high environmental protection standards. Such responsible and sustainable economic development could be facilitated by the Arctic Economic Council and its Arctic Investment Protocol.

Abide by International Law

In addition to Russian environmental regulations and Yamal-Nenets Autonomous Okrug (YNAO) regional legislation, Russia agreed to abide by several international conventions and regulations. However, even though the legal framework is in place to mitigate environmental damage in accordance with international protocols, formal institutions for implementation are

⁸⁷ Forbes et al.

⁸⁸ Rachael Kennedy, "'Low chance' Siberia wildfires will be brought under control: Greenpeace fire expert," *euronews*, August 11, 2019, <https://www.euronews.com/2019/08/06/siberian-wildfires-engulf-area-almost-the-size-belgium-as-states-of-emergency-are-declared>.

⁸⁹ *The Northern Forum*, "Yamalo-Nenets Autonomous Okrug, Russia."

⁹⁰ *JSC Yamal LNG*, "Social Responsibility," 2015, <http://yamallng.ru/en/progress/social-responsibility-new/>.

⁹¹ Forbes et al.

⁹² Degteva, Anna and Christian Nellemann, "Nenets migration in the landscape: impacts of industrial development in Yamal peninsula, Russia," *Pastoralism: Research, Policy and Practice*, 2013, 3.15, p. 1.

⁹³ Degteva and Nellemann, p. 2.

⁹⁴ Bourne, 2019.

⁹⁵ *Greenpeace*, "Arctic Oil Drilling," <https://www.greenpeace.org/usa/arctic/issues/oil-drilling/>.

weak due to the minimal enforcement of existing laws.⁹⁶ The working group stated that Yamal economic development and environmental protection cannot be mutually exclusive; instead they should go hand-in-hand. Therefore, effective regulations should be created, as should efforts to enforce existing legislation.

Benefit-Sharing with Indigenous Communities as part of the Social Justice Security Dimension

Since in the seemingly flat landscape of the Yamal peninsula even slight differences in terrain can greatly influence drainage, vegetation, and snow in winter, both herders and industrial developers look for dryer, slightly raised land. Well-drained ground is suitable for construction purposes and is also important to herders as a travel route and for the availability of dry campsites.⁹⁷ The primary problem for herders that comes from the hydrocarbon plants in Yamal is the loss of territory necessary for grazing and camping, which also results in reindeer overgrazing in the tundra. Additional concerns are the decrease of the fish population from dredging, as the Nenets rely on fish for food in the summer months; the increase in feral dogs left behind by migrant workers (which attack reindeer); and pollution from petrochemicals and discarded trash from industrial sites.⁹⁸ Constructing the Yamal LNG plant resulted in removing seventy million tons of ground for dredging a channel to Sabetta port between 2014 and 2017, which had a negative impact on marine wildlife.⁹⁹ The loss of fish populations is also due to plant construction that has either blocked fish migration or pollution that degraded freshwater sources.¹⁰⁰ Experts brought by Gazprom to a hearing with the local population informed them that the damage occurs when the water is disturbed at the onset of underwater construction. The fish stocks would eventually replenish; nevertheless, locals fear they will lose their income and food source for a season. Indigenous leaders considered their objections ignored and appealed to the UN, with a written address to UN Secretary-General Antonio Guterres.¹⁰¹ In consideration of these tensions, the group recommended that the interests of indigenous communities and the recognition of threats to their lifestyle should be better reflected in a future (social) security strategy for Yamal.

Focus on Security Dimensions of Gender and Youth

The indigenous population is facing demographic challenges such as the “female flight” which sees women leaving their nomadic communities for educational opportunities or parental responsibilities (such as settling close to a boarding school). This female flight has been accelerated by a Soviet-era legacy image of an independent mother and the social phenomenon of “marrying up.” As a result, the tundra and its traditional activities have a male imbalance, and could eventually disappear in their traditional form.¹⁰² With the female flight also occurs a problematic brain drain, as the female population tends to seek higher education more frequently. YNAO already relies on a foreign workforce for temporarily available work as opposed to offering long-term and thus, sustainable training to local

⁹⁶ Forbes et al.

⁹⁷ Degteva and Nellemann, p. 6.

⁹⁸ Forbes et al.

⁹⁹ Staalesen, Atle. “Russia’s grand LNG project takes its toll on Arctic environment.” *The Barents Observer*. January 8, 2018, <https://thebarentsobserver.com/en/ecology/2018/01/russias-grand-lng-project-takes-its-toll-local-environment>.

¹⁰⁰ Forbes et al.

¹⁰¹ *International Work Group for Indigenous Affairs*, “Russia,” <https://www.iwgia.org/en/russia>.

¹⁰² Marya Rozanova, “Indigenous Urbanization in Russia’s Arctic: The Case of Nenets Autonomous Region,” *Sibirica* 18.3, 2019, pp. 54-91.

experts. Within the concept of holistic security, the group recommended that Russia pursue sustainable development, which takes into account the needs of indigenous peoples and their well-being.

Mutual Understanding of National Foreign Policy Concerns

There is a narrative that predicts Russia will exacerbate political tensions by using energy as leverage, given it has historically used natural gas policies to influence its neighbors and the close ties between the Kremlin and the Russian energy sector.¹⁰³ The disruption of gas to Ukraine during times of political tension provides some evidence for the claims that Russia uses its energy exports for political leverage. The new Nord Stream 2 pipeline to supply the EU is another source of controversy. Although the EU is diversifying its energy supply, Russian gas is still a necessity as domestic production is decreasing. As Nord Stream 2 could further politicize energy and have a greater impact on Western Europe, there is political opposition from Poland, the Baltic States, and the European Commission.¹⁰⁴ Russia is the strongest Arctic state (by way of capabilities), with the most at stake in the region economically. There are theories that Russia's domestic focus on the Arctic is to resurrect its image and posture as a great power. In Yamal, Russia has the world's largest gas reserve, and while it is a finite resource, Russia continues economic development plans using hydrocarbons by also exploiting unconventional methods and tapping into offshore reserves. Russian economic ventures in Yamal and the region offer an opportunity for Asian partners, China primarily, to increase their presence and expand business opportunities for energy and eventually international shipping. Working group participants extensively discussed the interests and approaches of great power actors in the Arctic and developed strategic recommendations based on the need for both continued dialogue and improved mutual understanding.

Broaden Focus and Enhance Mutual Understanding

Because of the strategic importance of Yamal, Russia is building security infrastructure for SAR and crisis response in order to support its growing activities in the region. Russia is also enhancing its defense posture and military capabilities, which some perceive to be counter to their otherwise peaceful and cooperative approach in the Arctic. Further, especially with a look to the Northern Sea Route, Russia is a crucial partner in SAR cooperation. The potential for conflict there is low, given high Russian capabilities and the dangerous conditions navigating Arctic waters. Russia is the key actor for Arctic maritime security. As long as icebreakers are still needed to operate in Arctic waters,¹⁰⁵ Russia can utilize its icebreaker fleet, which is the largest in the world¹⁰⁶ and includes the world's most powerful icebreakers.¹⁰⁷ In 2019, the icebreaker fleet made a total of 231 voyages or movements.¹⁰⁸ Reflecting on this, it was highlighted throughout ESS-N that it is important to improve

¹⁰³ Devyatkin, 2018.

¹⁰⁴ David Koranyi, "The Trojan Horse of Russian Gas," *Foreign Policy*, 2018, <https://foreignpolicy.com/2018/02/15/the-trojan-horse-of-russian-gas/>.

¹⁰⁵ Mia Bennett, "The Arctic Shipping Route No One's Talking About," *The Maritime Executive*, August 5, 2018, <https://maritime-executive.com/editorials/the-arctic-shipping-route-no-one-s-talking-about>.

¹⁰⁶ USCG Office for Waterways and Ocean Policy, "Major Icebreakers of the World," May 1, 2017, <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/Office%20of%20Waterways%20and%20Ocean%20Policy/20170501%20major%20icebreaker%20chart.pdf?ver=2017-06-08-091723-907>.

¹⁰⁷ Atle Staalesen, "Government approves new date for launch of world's most powerful icebreaker," *The Barents Observer*, April 1, 2017, <https://thebarentsobserver.com/en/arctic/2017/04/government-approves-new-date-launch-worlds-most-powerful-icebreaker>.

¹⁰⁸ High North Logistics Office, "NSR Shipping Traffic – Icebreaker support in 2019," <https://arctic-lia.com/nsr-shipping-traffic-icebreaker-support-in-2019/>.

mutual understanding and awareness of interests and activities of different actors involved. Furthermore, as the economic activities in the Arctic continue to increase it is important to understand the logic determining Russian foreign policy as well as the complex nature of Russian-Sino relations¹⁰⁹ in order to minimize tensions in the Arctic.

Uphold the Rules-Based Order in the Arctic

ESS-N participants highlighted how the harsh climate, long distances, and high costs constrain military operations and presence in the Arctic. Russian military activity in the Arctic was emphasized to be understood as an indicator for global strategic aims rather than for immediate regional readiness. The rules-based order in the Arctic should be upheld. A broadened focus of western partners should include international organizations important to Chinese and Russian stakeholders such as the Eurasian Union, the Belt and Road Initiative, or the Shanghai Cooperation Organization in addition to traditional (western) mechanisms for soft security and safety dialogue (e.g., the Arctic Council, the Arctic Circle, the Arctic Coast Guard Forum, or the Arctic Frontiers Conference) .

(Limited) Potential of the Northern Sea Route

The Russian Federation's new development plans for the NSR span fifteen years and were approved in December 2019. The plans are a response to President Putin's decree in May 2018 to increase annual shipments along the NSR to eighty million metric tons by 2024. The government estimates that the proposed tax preferences will bring in up to fifteen trillion rubles (€16 billion) of new investments in the Russian Arctic over the next fifteen years.¹¹⁰ It is expected to be challenging for international corporations to develop the potential of the NSR as insurance, if offered at all, comes at very high rates.¹¹¹ In 2019, the number of calls to the port of Sabetta amounted to fifty-five percent of the total shipping traffic on the NSR, of which the majority was for gas plant construction (1485 voyages out of 2694).¹¹² In 2018, twenty-seven vessels used the NSR for transit.¹¹³ Between 2009 and 2018, twenty-six ships were lost in the region of the Russian Arctic and Bering Sea.¹¹⁴ For the future of the NSR, the following strategic recommendations were presented.

Ensure Freedom of Navigation

For the Northern Sea Route, Russia favors keeping closed governance structures, protecting the sovereignty rights of Arctic states, and preferring the "Arctic 5" as a cooperation body. Russia claims the NSR goes from Novaya Zemlya to the Bering Strait and asserts that straits within the NSR are historic inland waterways and therefore under Russian exclusive

¹⁰⁹ Holly Ellyatt, "Are Russia and China the best of friends now? It's complicated, analysts say," *CNBC World Politics*, September 27, 2019, <https://www.cnbc.com/2019/09/27/russia-and-chinas-relationship-how-deep-does-it-go.html>.

¹¹⁰ Atle Staalesen, "Putin's new Arctic law paves way for biggest ever industrialization in icy north," *The Barents Observer*, December 19, 2019, <https://thebarentsobserver.com/en/industry-and-energy/2019/12/putins-new-arctic-law-paves-way-biggest-ever-industrialization-worlds>.

¹¹¹ Po-Hsing Tseng and Nick Pilcher, "Assessing the shipping in the Northern Sea Route," *Maritime Business Review* 2.4 (2017), p. 394, DOI: <http://dx.doi.org/10.1108/MABR-06-2017-0013>.

¹¹² High North Logistics Office, "NSR Shipping Traffic – Activities in Sabetta in 2019," <https://arctic-lio.com/nsr-shipping-traffic-activities-in-sabetta-in-2019/>.

¹¹³ High North Logistics Office, "Transit Statistics 2018," https://arctic-lio.com/wp-content/uploads/2019/02/Transits_2018.pdf:

¹¹⁴ Allianz Global Corporate and Specialty, "Safety Shipping Review 2019," p. 8, <https://www.agcs.allianz.com/content/dam/onemarketing/agcs/agcs/reports/AGCS-Safety-Shipping-Review-2019.pdf>.

jurisdiction. However, to be legally classified as historic waters by the United Nations Convention on the Law of the Sea (UNCLOS), other states must acknowledge its sovereignty. Consequently, sovereignty rights in the Arctic are one of the main interests at play for all Arctic states. Currently, Russia enforces national laws on vessels passing through the NSR. The rules of navigation on the water area of the Northern Sea Route published in 2013 require a Russian ice pilot for navigation. In February 2018, a law requiring all oil and gas shipments to be carried on vessels under the Russian flag entered into force by amendment to the Russian federal shipping code following President Putin's announcement that all shipments of oil and natural gas along the NSR would be nationalized,¹¹⁵ thus discouraging international interest.¹¹⁶ In light of these developments, recommendations addressing the NSR emphasized the importance of ensuring freedom of navigation according to UNCLOS.

Relevance of Scientific Diplomacy

The new development plan for the NSR covers eleven areas and includes plans for safety and communications network development. The aim is to create continuous satellite communication by launching four geostationary satellites by 2024. There are presently limited search and rescue and communications platforms along the NSR, a significant problem given the increased activity on the route. Rescue infrastructure and communications are limited by insufficient hydrographic mapping and navigational aids, limited NSR infrastructure, a lack of modern communications, and the inability to observe the Arctic from space. To address this, the launch of six space modules by 2024 will secure a high-speed automatic identification system (AIS) on the NSR. The density of meteorological stations is expected to increase to provide more precise weather forecasting, and by 2025 the hydrometeorological data would be available via GEO satellites.¹¹⁷ The construction of described infrastructure and eventual data yield could be used as an opportunity for continued dialogue in the scientific realm.

Conclusion: Yamal as a Learning Case for Sustainable Development

Yamal can be seen as an example of many Arctics: the Arctic of international power competition and of international cooperation in Arctic waters, the Arctic of economic potential and environmental disasters, and the Arctic of many national and local communities. Low tension is an essential precondition to sustainable development. In order to be profitable, economic investments in the Arctic need to be high. Hence, there is a mutual interest in pursuing sustainability and cooperating on Arctic issues. Building on recommendations made for balancing the interests of indigenous peoples and corporations as well as for promoting mutual understanding to maintain stability, the working group eventually suggested that Yamal could serve as a learning case for future development and a demonstration for managing risks and opportunities in the Arctic.

¹¹⁵ Atle Staalesen, "Russian legislators ban foreign shipments of oil, natural gas and coal along Northern Sea Route," *The Barents Observer*, December 26, 2017, <https://thebarentsobserver.com/en/arctic/2017/12/russian-legislators-ban-foreign-shipments-oil-natural-gas-and-coal-along-northern-sea>.

¹¹⁶ Arild Moe, "Arctic Shipping: Images and Realities," in: *Arctic Governance; Energy, Living Marine Resources and Shipping*, edited by Svein Vigeland Rottem and Ida Folkestad Soltvedt, (I.B. Tauris: London, 2018), 183-202, p. 198.

¹¹⁷ Alexandra Middleton, "Northern Sea Route: From Speculations to Reality by 2035," *High North News*, January 7, 2020, <https://www.highnorthnews.com/en/northern-sea-route-speculations-reality-2035>.

Svalbard Case Study

Geopolitical Anomaly with Legal Ambiguity

The case study on the Svalbard Archipelago drew attention to a geopolitical anomaly in the Arctic facing both regional and local challenges. Challenges cover the spectrum of adapting local enterprises, political and legal contestation, climate change, and growing regional securitization. What is similar to the other case studies and the region at large are pressures felt from rapidly warming force adaptation as well as new activity and economic opportunity. What differs is the ambiguous legal situation that has political, economic, and potentially security consequences. The Svalbard case study working group examined these issue areas in depth and prepared recommendations that can be applied by all stakeholders. The diversity of professions, expertise, and nationalities present in the working group created a balanced presentation of perspectives that informed the recommendations discussed here. This synopsis will cover major themes discussed, but with an emphasis on seminar results and the future outlook for Svalbard.

To start with, what makes the Svalbard Archipelago so unique, the Spitsbergen Treaty, commonly referred to as the Svalbard Treaty, has now reached its one-hundredth anniversary. The treaty remains open with forty-six signatory parties currently.¹¹⁸ Citizens of any signatory state have equal access to the islands and their resources, yet must respect Norway's sovereignty. The maritime delimitations established in the treaty are no longer consistent with international maritime law such as the UNCLOS. As modern application of maritime law changes, Norway's interpretation of the treaty is increasingly contested by multiple treaty parties. Norway considers the continental shelf surrounding Svalbard to be a sovereign part of the Kingdom of Norway and exempt from the equal access provisions of the treaty. Likewise, the Fisheries Protection Zone (FPZ), 200 nautical miles around the islands, is contested by Russia, many European signatory states, and the EU's fishing management organization, *Europêche*.¹¹⁹ The disputes are becoming increasingly relevant as new fish populations move to the region and hydrocarbons are discovered on the continental shelf. Ongoing disputes over fishing rights resulted in cases of European vessels arrested by Norwegian authorities, as well as disagreement over continental shelf exploration rights. Additionally, Russia complains of NATO presence in meetings on Svalbard, the Svalbard Satellite Station, Norwegian taxes, and restrictions to its use of helicopters.¹²⁰ The disagreements surrounding the application of the Svalbard Treaty was a key topic of discussion because of its future implications if tensions rise.

Maintaining the Status Quo

Interestingly, the Svalbard working group assessed that a renegotiation or modern adaptation of the Svalbard Treaty was not in the interest of the primary stakeholders. The recommendation concerning legal mechanisms was to maintain the status quo, as Norway, Russia, and European signatory states all benefit from continuing with their own interpretation of the Svalbard Treaty. They all agree that Norway is sovereign. The

¹¹⁸ Fride Eeg-Henriksen and Erik Sjømæling, "This is Svalbard 2016: What the figures say," *Statistics Norway*, December 2016, 10, <https://www.ssb.no/en/befolkning/artikler-og-publikasjoner/attachment/294354?ts=15a12de02c0>.

¹¹⁹ Marta Sobrido, "Treaty of Paris," *Global Challenges in the Arctic Region: Sovereignty, environment and geopolitical balance*, eds. Elena Conde, Sara Iglesias Sánchez, London: Routledge, 2016; Ragnhild Groenning, "The Norwegian Svalbard Policy – Respected or Contested?" *The Arctic Institute*, November 22, 2017, <https://www.thearcticinstitute.org/norwegian-svalbard-policy-respected-contested/?cn-reloaded=1>.

¹²⁰ Yevgeniy Vasilyev, "Norway's Spitsbergen Takeover," *Rossiyskaya Gazeta*, reported February 5, 2020, published February 20, 2020; Koivurova and Holiencin, "Demilitarisation and Neutralisation of Svalbard," 136.

disagreement is with specific Norwegian laws they determine to be in conflict with treaty provisions, such as those that limit their operations, or those that grant Norway special access to the continental shelf. Yet, all states concerned continue to assert their rights and views on how the Svalbard Treaty should be applied. This occasionally results in Norway arresting or fining fishing vessels, neither of which is provocative enough for states to raise the issue to an international court. Furthermore, the working group surmised that Russian and Norwegian relations are not actually worsening over Svalbard. There are several reasons for the official complaints made publicly over how Svalbard is managed. Primarily, these complaints target and aim to influence the domestic audiences that follow Svalbard issues. Secondly, all parties involved see the importance in keeping a consistent position. No state wants to lose access that could limit future economic opportunities, so it is in their interest to continue to defend their interpretation of the treaty for access rights to resources. A renegotiation of the treaty would be problematic for several reasons. The forty-six signatory states that would have to be involved, making any amendments practically very difficult.

Additionally, all primary stakeholders risk losing what they currently have. If maritime delimitations favor Norway, European states and Russia could no longer defend the activities that Norway considers illegal. If the continental shelf becomes open to all signatory states to exploit, then Norway loses substantial Arctic resources and would have to manage far more international economic activity offshore. The status quo allows all actors to pursue activities aligned with their historic claims risking occasional friction, which has more political than security consequences.

Climate Change Risks and Economic Opportunities

Effects from the Greatest Air Temperature Rise

The Svalbard Archipelago is rapidly warming, causing physical transformations. Currently, Svalbard is experiencing the greatest air temperature increase of any populated area in the world at an average increase of four degrees Celsius (7.2 degrees Fahrenheit) which is five times the global average.¹²¹ The physical effects of climate change are manifest in rapid ice melt triggering avalanches and floods, permafrost melt, migration of indigenous animals and wildlife adaptation.¹²² The Norwegian government and local government have closely followed the situation, and have plans in place to mitigate risks to the population of Svalbard, and protect the environment to the greatest extent possible. To that effect, the Council Chief of the largest city of Longyearbyen, Arild Olsen, aims to make the city carbon neutral within ten years. He plans to achieve this with solar power during summer months and a hydrogen power plant.¹²³ Additionally, the Norwegian government closed their coal mine, expanded environmental protections, and is promoting green economic development initiatives. Most economic initiatives center around sustainable tourism.

An Example of Green Economy in the Arctic

The wider global challenge of balancing economic development with environmental conservation is less of a compromise in Svalbard because Norway is proactive in setting and enforcing environmental protections, while encouraging green economy growth. Although Russia continues to operate a coal mine in Barentsburg, it is a minor operation. Russian

¹²¹ The Norwegian Centre for Climate Services, *Climate in Svalbard 2100 – a knowledge base for climate adaptation*, January 2019, <https://www.miljodirektoratet.no/globalassets/publikasjoner/M1242/M1242.pdf>.

¹²² Jonathan Watts, “Welcome to the fastest heating place on Earth,” *The Guardian*, July 1, 2019, <https://www.theguardian.com/environment/ng-interactive/2019/jul/01/its-getting-warmer-wetter-wilder-the-arctic-town-heating-faster-than-anywhere>.

¹²³ Watts.

economic plans for Svalbard are to promote tourism to historic Russian settlements, build a fish processing plant, and increase scientific research.¹²⁴ In the FPZ, fish populations are kept at healthy levels, and so far, all party actors are compliant with protections in place. Two potential future challenges that were discussed stem from increased tourism and industrial activity that increase pressures for Norway to improve both its ability to provide search and rescue and also to monitor adherence to national regulations for conservation. Another future economic issue will arise if Norway chooses to drill for oil or natural gas on Svalbard's continental shelf because signatory parties will want the same opportunity and right. A recommendation for mitigation is to use existing bilateral and multilateral fora to resolve disagreements over resource usage.

The Security Dilemma

The case study working group considered Svalbard low risk for military conflict. However, the possibility for a conflict spillover to have an impact on Svalbard cannot be excluded. The buildup of military assets in the Arctic, the increasing frequency and scope of military exercises in the High North, and growing international activity around Svalbard all mean that it could become a hotspot for a future incident. Multiple factors weaken the security situation. Both Russia and Norway encourage media campaigns that popularize legal and political disputes in Svalbard. In February 2020, Russia published its most recent official complaints against Norway's management of Svalbard and restrictions on Russian companies.¹²⁵ The political rhetoric repeated by Norwegian and Russian authorities does not lead to real conflict, yet it could fan the flames given a spillover scenario. The working group revealed that bilateral relations between Russia and Norway concerning Svalbard are productive. It is mostly for domestic audiences that both states maintain their positions and assert their grievances against one another. The reason cited for peaceful relations in Svalbard, is that both Norway and Russia do not consider Svalbard worth the consequences of direct conflict.

A Regional Risk

The security dilemma aspect is more of a regional than a localized phenomenon. As larger, more complex military exercises occur in the High North by NATO (such as Exercise Trident Juncture 2018) Russia responds with GPS jamming and larger exercises of its own. During and particularly after exercises, there was a sharp increase in incidents of the Norwegian Air Force intercepting Russian planes flying towards Norwegian Airspace.¹²⁶ As Russia, Norway, the US, and other Arctic states build up military capabilities, old Cold War terms like the GIUK (Greenland, Iceland, United Kingdom) gap are again discussed as strategic waterways. The narrative of great power competition is gaining ground in the Arctic with Arctic states. The increase in military activity, specifically exercises in the region, elicits a response from the party who feels threatened, creating an escalation and a classic security dilemma. Additionally, decreased communications with Russia over security matters only increases misperception and distrust. The working group recommended that signatory states should counter misinformation through greater transparency and with open communication on shared security concerns.

¹²⁴ Yevgeniy Vasilyev, "Norway's Spitsbergen Takeover."

¹²⁵ Vasilyev.

¹²⁶ Tore Nyhama, "Three Future Scenarios for Nordic Military Operations," *Norwegian Defence Research Establishment*, May 2019, 17.

NATO Article 5 and Svalbard Treaty Article 9

The Svalbard Treaty also addresses militarization. Article 9 forbids military bases and warlike activity, yet Norway states NATO Article 5 can be invoked to defend Svalbard.¹²⁷ From seminar group discussions, it is not in Norway's interest to raise the NATO alarm if an incident can be handled at the national level. Norway's regular military patrols are to normalize the presence of Norwegian armed forces and to exercise sovereignty in the Archipelago. Russia regularly contests Norway's interpretation of Article 9 of the Svalbard Treaty. One possible impact is an escalation of tensions related to opposing interpretations of the Svalbard Treaty, which could be manipulated to drive a wedge between Norway and its European and NATO allies. Manipulation would be in the form of information campaigns to influence public opinion in an effort to create political pressure through strategic miscommunication. Existing disputes over fishing or drilling rights could be exacerbated, although it is not currently very likely. Another risk is the exploitation of domestic politics in Norway, where perceptions of Russia differ between residents of the northern county of Finnmark and Oslo.

The working group explored possible scenarios involving media campaigns and hybrid threats and determined that the best countermeasure is greater transparency by governments and media outlets. The same outcome applies to questions over the use of scientific research on Svalbard. Enforced transparency agreements will prevent dual use for military purposes and other suspicions. The group consensus was that human security remains at greatest risk on Svalbard. Arctic conditions combined with heightened commercial activity and tourism will challenge Norway's search and rescue capabilities.

Conclusions on Svalbard

The results of this case study were informed by Arctic experts and practitioners from various Arctic states, several with experience in Svalbard. The small group setting allowed for productive discussions covering economic, environmental, human, and hybrid security risks. Svalbard differs from the other two case studies in that there are no indigenous communities, only historic communities. Nonetheless, populations on Svalbard face similar risks that other Arctic communities face with rapid permafrost melt, endangered wildlife, flooding, and other environmental risks. However, Norway and the governor of Svalbard are investing to mitigate risks while promoting ecotourism and green economy initiatives. Russia also plans to increase tourism. Green economic initiatives should also be explored by investors from other signatory states represented on Svalbard. For more environmental protection, the group advises signatory states to respect Norway's national regulation concerning black carbon emissions.

Other actors are drawn to Svalbard because of easier access to ports, healthy fish populations, and scientific research opportunities. International research is being encouraged and greater transparency will address doubts about purpose. As interest and activity rise, ongoing disputes over fishing rights and continental shelf access will continue. Since the most involved parties do not want to seek a legal compromise nor revisit the treaty, the solution proposed was to settle disputes as they arise through bilateral or multilateral agreements, citing the 2010 Maritime Delimitation Zone Agreement between Russia and Norway as a successful example. Misinformation campaigns should be approached with direct communication and transparency in order to limit hybrid security risks and spillover

¹²⁷ Norwegian Ministry of Justice and Public Security, *Svalbard*, 21.

concerns. Hard security risks in Svalbard are still considered minimal, whereas human security is a greater concern currently. A final note is that Svalbard is an interesting case study to continue following as its unique status, strategic location, and changing regional setting make new developments likely.

Summary and Strategic Recommendations

In conclusion, ESS-N 2020 marked a turning point in how Arctic security was analyzed from previous seminars. As global powers show increased interest in Arctic affairs, there is growing competition over regional presence and economic opportunity. Competition has supplanted conflict in a paradigm where cooperation is increasingly challenged. However, the risk of a regional conflict cannot be completely disregarded. A consequence of hindered dialogue and strategic miscommunication is the potential to escalate if tension between competing powers rises to cause a spillover effect. Arctic states and non-Arctic global players make claims and investment plans in the Arctic as melting ice unveils opportunities. Arctic warming enables new economic opportunities, especially in shipping and resource development. Yet, the risks and costs of operating in the Arctic are still high. The harsh weather conditions threaten search and rescue efforts, seafarers, workers, and local communities. Although competition is growing, it is unlikely to be a cause of conflict currently. Low tension is an essential precondition for sustainable development and to be profitable. Thus, in order to be able to develop the manifold economic opportunities a mutual interest in pursuing sustainability and cooperating on Arctic issues is shared.

Another challenge that goes hand-in-hand with economic opportunity is the danger of climate change to the fragile ecosystem. The worldwide implications of climate change make the stability of the region a key concern not only for Arctic States, but also for the global community. Rising temperatures cause unprecedented melting in the Arctic and is a motor of global climate change. The assessment of the three case studies has proven that there are either many different issues to consider in the Arctic or that there are many different Arctics from different perspectives. As climate change and economic development are the key drivers of change worldwide, the different interests in the Arctic as shown in the three case studies should be balanced to avoid confrontation and allow for measured competition that does not hinder cooperation between all Arctic players.

Governance

Arctic governance lies with sovereign Arctic states, which interact and communicate through a system of well-established existing decision-making structures that should be supported, as should existing international law and regional bodies. It is key for all partners to respect international protocols and declarations and abide by treaties and international law, including the North Atlantic Treaty, the Svalbard Treaty, the UNCLOS, the United Nations Declaration on the Rights of Indigenous Peoples, and the Arctic Investment Protocol. Further, national and regional legislation on labor law, environmental protection, safety standards, and the rights of indigenous peoples should be enforced through the appropriate mechanisms.

The Greenland case study working group highlighted the importance of inclusion of the Greenlandic government and people in all decisions impacting Greenland. The Yamal case study group discussed pressures from the hydrocarbon industry on the local Nenets population and the environment. The economic importance of Yamal means that those developments will continue, but should include a greater focus on human development and

not just inclusion, but social justice as well. For Svalbard, conflicting interpretations of the Svalbard Treaty create friction concerning fishing and shelf resource rights. However, the resulting interstate disputes are preferred to a renegotiation where all parties risk losing a claim.

Governance of the treaty is managed by Norway. It is not in Norway's interest to provoke signatory states to the point that they take the matter to an international court. Norway enforces national regulations and protects its interests consistently, while assuring equal treatment of signatory state populations on Svalbard. Signatory states contest Norway's management, but ultimately accept the status quo because the ambiguity allows them to keep acting according to their interpretation of the treaty. No signatory party would threaten armed conflict over Svalbard, so the legal dispute will likely continue unresolved. Regionally, there are many platforms for exchange on Arctic governance issues and channels to communicate concerns. It is highly recommendable to use these existing bilateral and multilateral fora to resolve disagreements over issues such as resource usage and thus mitigate the risk of conflict. Arctic governance should pursue a multi-layer approach considerate of balancing the interests of all stakeholders involved.

Dialogue and Countering Misinformation

The regrettable lack of dialogue in the military domain since 2014 could create an Arctic security dilemma, which should be avoided by re-establishing regional dialogue within the Arctic in all aspects. A dialogue resulting in the cooperation of the major players in the region would minimize or even eradicate any risks from a spillover effect. Further, misinformation campaigns should be approached with direct communication and transparency, to limit hybrid security threats and spillover concerns. NATO members and the western alliance should be present in the Arctic with SAR capacities, demonstrate military readiness, and provide long-term investments in developing economic opportunities. The increase in military activity, and specifically exercises in the region, elicits a response from the party who feels threatened, creates an escalation and a classic security dilemma. NATO should not intentionally provoke Russia with weapon system placement that threatens its security. Likewise, Russia should not respond by aggressively approaching Norway's borders following an exercise. Additionally, deterioration of communications with Russia over security matters only increases misperception and distrust. Thus, it is key for all stakeholders to understand both the geostrategic and domestic policy implications that the pursuit of Arctic interests has for regional partners and competitors.

In Svalbard, public statements of grievances and challenged claims appeal to domestic audiences. If tensions escalate due to a situation within or beyond the Arctic, domestic political messaging could turn to saber rattling. It is highly recommended to counter misinformation through greater transparency and with open communication on shared security concerns and security gaps for SAR. If an issue is too politically sensitive for open discussion, Track 1.5 and Track 2 dialogue could be the appropriate forum. A broadened focus of western partners in this regard should include international organizations important to Chinese and Russian stakeholders, such as the Eurasian Union, the Belt and Road Initiative, or the Shanghai Cooperation Organization in addition to traditional (western) mechanisms for soft security and safety dialogue (e.g., the Arctic Council, the Arctic Circle, the Arctic Coast Guard Forum, or the Arctic Frontiers Conference).

Holistic Development of the Security Sector in the Arctic

The narrative of great power competition is gaining ground in the Arctic, with both Arctic and non-Arctic states. Although there currently is only limited tension in the Arctic, the region has potential for conflict if changing conditions make it a greater priority economically or geostrategically. Currently, stakeholders value cooperation over confrontation, especially in SAR operations and in research. As economic involvement and commercial shipping activities increase, capacities to address security risks in these areas—including in SAR, human security, and environmental protection—will also need to grow. Thus, the group recommends that Arctic stakeholders develop their security capabilities holistically. This has to include different domains, e.g. capacities for developing social and health systems, training local law enforcement and first responders, and establishing a coast guard or auxiliary coast guard where such institutions do not yet exist, especially in Greenland.

Norway is actively addressing holistic security in Svalbard, with relocations in avalanche zones, security patrols, environmental monitoring, and protective zoning. Russia has reinforced its military and SAR infrastructure to increase navigability along the NSR and support investments. Still, an increase in overall domain awareness in the Arctic has to include preparation for future developments in the regional hard security realm. Furthermore, in order to firmly integrate Arctic communities such as those in Greenland into the western alliance, increased domain awareness for the Arctic as a strategic theater should be promoted. Finally, developments in and around the Svalbard Archipelago should continue to be closely monitored as its strategic location in a changing regional setting make new developments likely.

Sustainable Economic Development

The Arctic has significant economic potential in energy production and resource development. To be able to profit from these emerging business opportunities, however, investments in often remote production sites, infrastructure, and workforce will need to happen first. Therefore, cooperation between investors, corporations, governing authorities, and local communities is highly advisable in order to assess strategies that are profitable and sustainable for all parties. Infrastructure projects especially, provide an excellent opportunity for cooperation. Connectivity—or the lack thereof—is still a key concern of Arctic communities. Such a strategy of promoting economic partnerships to improve cooperation also offers another opportunity for dialogue and conflict prevention.

Another area of investment not to be neglected is the Arctic human capital potential, thus investment in educational opportunities as well as the establishment or expansion of cultural and educational exchanges is highly recommended. These challenges are approached differently in the three case studies. In Greenland, education is a national priority and finding emerging markets for human capital will be the next step. Balancing economic development with environmental protection protocols will continue to be a challenge as politicians push for economic independence. The working group assessed that Greenland values that balance, so international environmental agreements and protocols will be respected and incorporated into mining and infrastructure investment plans. Furthermore, the group advised diversification to include tourism, energy and hydropower, and water collection.

In Yamal, economic development is the priority. Gas corporations include environmental protocols in planning, yet environmental NGOs and indigenous populations in the area are wary of irregular enforcement. Industrial activity is increasing the effects of warming, destabilizing infrastructure, and temporarily reducing fish populations upon which locals rely. The working group recommends regular enforcement of environmental protections and to make operations more sustainable by incorporating feedback of local stakeholders. Svalbard is already developing sustainable tourism and a green economy with stringent environmental protections in an effort to preserve wildlife and maritime zones. Russia continues its coal mining operations, yet plans to increase tourism initiatives. Overall, economic opportunities will only increase. Arctic states, through the Arctic Council, have a forum to discuss economic development while mitigating environmental impacts.

Scientific Diplomacy and Benefit-Sharing

In line with the benefit-sharing approach recommended for Arctic economic development and building on human capital development for R&D expertise, scientific diplomacy is a useful tool to mitigate risks both in economic and military domains. Studying and monitoring sea level rise, permafrost thaw, and glacier melt are important not only to understand climate change, but also for early risk detection. All Arctic states need mitigation measures given that environmental changes threaten the integrity of the local infrastructure and operations at production sites. Thus, information on ecological developments are vital to all stakeholders and should be shared. Best practices in mitigation should also be shared to prevent disasters. It is important to highlight that such an exchange of knowledge and best practices should be mutual between all stakeholders involved, Arctic states and Arctic communities alike.

Furthermore, such an exchange can put national perceptions and safety concerns in context by communicating research purposes clearly and openly, thus also lowering suspicions about potential dual use of research and monitoring stations for intelligence and military purposes. Both Greenland and Svalbard have international scientific centers that would benefit from greater transparency and information sharing. Currently, especially along the NSR, rescue infrastructure and communications are limited by insufficient hydrographic mapping and navigational aids, limited NSR infrastructure, a lack of modern communications, and the inability to observe the Arctic from space. Building on the long and successful international cooperation in Arctic SAR operations as well as on international cooperation in space research, the construction of infrastructure put forth in the new development plan for the NSR (including a safety and communications network, the launch of six space modules to secure a high-speed automatic identification system, more meteorological stations to provide more precise weather forecasting, and availability of hydrometeorological data via GEO satellites) and its eventual data yield could be used as an opportunity for continued dialogue in the scientific realm.

Way Ahead

The focus on case studies to discuss local, national, and regional issues in a specific context covering different locations allowed for deeper discussions and focused recommendations. The case studies also allowed for a comprehensive look at how social, economic, political, and security interests intertwine. The three case studies are rapidly evolving, meaning they can be returned to later to track developments that will have strategic implications. An encompassing theme discussed is the changing rhetoric in Arctic international relations. Now competition is the new lens, particularly concerning China and Russia, covering the spectrum of economic competition, military build-up, research, and resource claims. Fortunately, the

norm of adherence to international law to resolve competing claims is a source of stability. On the horizon, there will be more activity in the Arctic and likely increasing competition as a response to growing investments made by “rival” Arctic players. Military build-up is another recurring topic. The security dilemma, discussed as an observation of expanding NATO and Russian exercises in the Arctic, will likely continue until dialogue and trust building measures are established. The way ahead for ESS-N can build upon the case studies evaluated to make more specific policy recommendations for the key stakeholders involved. Including participants representing industry interests and civil society will enhance input for effective policy recommendations.

About the Authors

Rachael Gosnell is pursuing doctoral studies in International Security and Economic Policy at the University of Maryland, with a focus on maritime security in the Arctic. She holds a Master's degree in International Security Studies from Georgetown University, a Master's in Engineering Management from Old Dominion University, and a Bachelor of Science in Political Science from the U.S. Naval Academy.

Commander Andreas Hildenbrand is a military professor in the College of International and Security Studies at the George C. Marshall European Center for Security Studies. He has served as the deputy director of the Program in Applied Security Studies, the Center's largest and most comprehensive resident program, for several years. Since 2018, he has been the program director of the Center's resident program focusing on the Arctic region, the European Security Seminar North.

Michelle Miller is a Foreign Affairs Specialist with U.S. Africa Command. She is a recent graduate of the Institute of Political Studies in Grenoble (Sciences Po Grenoble), has a Master's Degree in Political Science with a focus on Transatlantic Relations, from the University of North Carolina at Chapel Hill, and a Bachelor of Science in Comparative Politics from the U.S. Military Academy.

Isabella Stürzer recently earned a Master's degree in American Studies from the University of Munich. Earlier this year, she completed a research internship with the George C. Marshall Center's College of International and Security Studies in preparation for a Ph.D. program in Security Studies. She is an alumna of the German Academic Scholarship Foundation and currently assists with strategic communications at the Max Planck Society.

The George C. Marshall European Center for Security Studies in Garmisch-Partenkirchen, Germany, a German-American partnership, is committed to creating and enhancing worldwide networks to address global and regional security challenges. The Marshall Center offers fifteen resident programs designed to promote peaceful, whole of government approaches to address today's most pressing security challenges. Since its creation in 1992, the Marshall Center's alumni network has grown to include over 13,715 professionals from 155 countries. More information on the Marshall Center can be found online at www.marshallcenter.org.

The articles in the *Security Insights* series reflect the views of the authors and are not necessarily the official policy of the United States, Germany, or any other governments

