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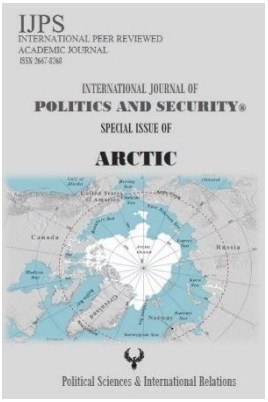

Climate Change and Hard-Soft Security Nexus: Future of Arctic Security Cooperation

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Climate Change and Hard-Soft Security Nexus: Future of Arctic Security Cooperation

Kamrul HOUSSAİN*

Abstract

Climate change is arguably one of the most serious global problems of our time. Its implications are widespread touching every corner of the globe at various levels and in varied contexts. The implications are in most cases environmentally devastating, resulting in enormous concerns posing multidimensional threats to humans and communities at large. On the one hand, environmental changes in the Arctic cause human security threats to its diverse communities. On the other hand, the consequences of climate change lead to new developments leading to geopolitical tensions as human activities are on the rise resulting in an increase in global presence in resource usage. Overall, the transformation of the Arctic debatably has implications of influencing global and regional security dynamics. As a result, both internal and external security dynamics in the Arctic conceive a hard-soft security nexus, engaging actors, both within and beyond the Arctic. Against this background, the following article explores the grounds of hard-soft security nexus in the Arctic. By examining some of the lessons from the recent past, the article investigates the future of regional security implications. Further, it analyses insights on the need for a multi-level regulatory, institutional, and participatory Arctic governance framework in response to hard-soft security nexus.

Keywords: *Climate change, Arctic, Security, Human Security, Geopolitics.*

İklim Değişikliği ve Sert-Yumuşak Güvenlik Bağı: Arktik Güvenlik İşbirliğinin Geleceği

Özet

İklim değişikliği tartışmasız zamanımızın en ciddi küresel sorunlarından biridir. İklim değişikliğinin etkileri, çeşitli düzeylerde ve çeşitli bağlamlarda dünyanın her köşesinde hissedilmektedir. İklim değişikliğinin sonuçları ise çoğu durumda çevresel olarak yıkıcıdır ve büyük ölçüde insanlar ve toplumlar için çok boyutlu tehditlerden kaynaklanan büyük endişelere yol açmaktadır.

Arktic'teki çevresel değişiklikler, bir yanda, çeşitli toplumlarda insan güvenliği bağlamında tehditlere neden olurken öte yanda, iklim değişikliğinin sonuçları, insan faaliyetlerinin artması ve kaynak kullanımı konusunda bölgede küresel varlığın artmasıyla ortaya çıkan jeopolitik gerilimlere yol açmaktadır. Genel olarak, Arktik'in dönüşümü tartışmalı bir şekilde küresel ve bölgesel güvenlik dinamiklerini etkileme potansiyeline sahiptir.

Sonuç olarak, Arktik'teki hem iç hem de dış güvenlik dinamikleri, iç ve dış aktörlerin katılımını sağlayan sert-yumuşak bir güvenlik bağını ortaya çıkartır. Bu bağlamda bu makalede Arktik'teki sert-yumuşak güvenlik bağının temelleri araştırmakta ve yakın geçmişten bazı dersler incelenerek, bölgesel güvenlik çıkarımlarının geleceği tartışılmaktadır. Ayrıca, sert-yumuşak güvenlik bağına yanıt olarak çok seviyeli

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düzenleyici, kurumsal ve katılımcı bir Arktik yönetişim çerçevesine duyulan ihtiyaç hakkındaki öngörüler analiz edilmektedir.

Anahtar Kavramlar: *Arktik, Güvenlik, İklim Değişikliği, İnsan Güvenliği, Jeopolitik*

1. Introduction

The Arctic has today become synonymous with climate change. While climate change is arguably one of the most serious global problems of our time, and its implications are widespread touching every corner of the globe at various levels and in varied contexts. In the Arctic, the implications are, however, more drastic.[1] The consequences of the change in most cases are environmentally devastating, resulting in huge concerns posing threats to humans and communities. A crucial effect of climate change is an increase in temperature, which is much faster in the Arctic compared to any other part of the globe.[2] The increased temperature results in the melting of both terrestrial and offshore ice sheets. While this brings environmental challenges, given that the life support system in the Arctic is dependent on the uniqueness of the Arctic's climatic conditions, it nevertheless brings new opportunities as a result of evolving easy access to the region. In particular, more open access to the Arctic waters optimizes more human activities, such as resource developments, increase in international trade, expansion of tourism, etc. However, these new forms of economic activities further accelerate climate change in the Arctic. Thus, the contradictory premise of the faster pace of climate change, and the acceleration of climate change due to the increase in human activities causes diverse tensions both from the viewpoint of geopolitics and from environmental and human security concerns. As a result, the Arctic remains to be assessed from the point of view of the present-day discourse of facts: whether the tensions over security concerns also lead to real threats in terms of regional political stability or they merely offer the consequences for human security perceived from regional transformation. While the former implies a hard-security context, the latter, however, suggests a soft-security

[1]See generally O. A. Anisimov et al., "Polar Regions (Arctic and Antarctic). Climate Change 2007: Impacts, Adaptation and Vulnerability," in *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds., M. L. Parry et al. (Cambridge: Cambridge University Press, 2007), 653–85.

[2] M. Meredith, et al., "Polar Regions," in *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate*, eds. H.-O. Pörtner et al. (2019), https://www.ipcc.ch/srocc/chapter/chapter-3-2/.

consideration. The concept – soft security – refers to the absence of multifaceted threats stemming from non-military dimensions affecting humans at large, such as environmental, economic, societal challenges, etc. Broadly, such security threats shape the so-called human security concept. Against this background, this paper formulates a general framework for security dynamics applicable to the Arctic. The paper also elaborates that despite the issue of high politics shaped by the climate change agenda in the Arctic, the region's security takes an approach of cooperation, using the instruments of existing applicable international and regional legal frameworks in combination with the rather intense institutionalized structure of governance existing there. Actors both within and beyond the Arctic heavily engage in dialogues to evaluate the future of the region, indicating the presence of high political debate integrated within the form of soft cooperation. The paper, therefore, elucidates the need for a multi-level and multi-actor structure in Arctic governance to lower the high politics via strengthening of soft, but participatory and effective, cooperation.

2. Climate Change and the Arctic Security Implications

The most notorious impact of climate change in the Arctic is that of rising temperature. Although the rapidity of rising temperature was once suggested to be twice as fast as the global average,[3] scientists today indicate it to be much higher.[4] They predict that by 2100, the temperature rise will be between 2 and 9ºC.[5] What do such high temperatures mean for the Arctic? The most important significance is faster melting of surface-level terrestrial and offshore ice sheets, in addition to a thawing of subsurface permafrost. A study by Parkinson suggests that since the 1980s, the extent of ice cover has decreased by a record level.[6] The loss of the Greenlandic ice sheet and the Arctic glaciers and ice caps at an accelerated rate have

[3] Arctic Monitoring and Assessment Programme (AMAP), *Impact of Warming Arctic*, (Cambridge, Cambridge University Press, 2004), http://www.amap.no/documents/doc/impacts-of-a-warming-arctic-2004/786 (01.09.2015).
[4] Cheryl Katz, "Warming at the Poles will soon be Felt Globally in Rising Seas," *National Geographic* (2019), https://www.nationalgeographic.com/science/2019/12/arctic/ (20.12.2020).
[5] IPCC, *Intergovernmental Panel on Climate Change 2013*, (Cambridge: Cambridge University Press, 2013), http://www.ipcc.ch/report/ar5/index.shtml (20.12.2020).
[6] Claire L. Parkinson, "A 40-Y Record Reveals Gradual Antarctic Sea Ice Increases Followed by Decreases at Rates Far Exceeding the Rates Seen in the Arctic," *PNAS* 116, no. 29, (2019): 14414–423, https://doi.org/10.1073/pnas.1906556116.

already resulted in massive changes in ice conditions. At the same time, the release of carbon in the form of methane and carbon dioxide, resulting from the thawing of both submarine and subsoil permafrost, contributes to the further acceleration of climate change.[7] While the melting ice sheets and thawing permafrost, according to scientists, cause major changes to the water balance, the biodiversity of the Arctic terrestrial areas and the marine ecosystems,[8] the massive reduction in the areas of ice sheets and permafrost result in the "strongest climate signal" not only for the Arctic but also for the world at large.[9]

The Arctic itself is expected to suffer from the loss of ecological balance resulting in multiple threats to humans, animals, and plants. These threats as such alter the prevailing regional political as well as physical infrastructure from the viewpoint of environmental, socio-cultural, and economic considerations. The effect however does not leave the other regions, far from the Arctic, free from climate security-related concerns. The worldwide implications of climate change result in the severity of droughts, acceleration of land degradation and desertification, intensifying of floods and tropical cyclones, resource scarcity, and an increase in the number of infectious diseases in vulnerable and fragile key areas of the earth.[10] The changes in climate occurring in the Arctic have been found to have caused extreme weather conditions elsewhere because of changes in wind patterns. For example, cold air spills out of the Arctic into more southern latitudes and causes severe winter storms.[11] Extreme weather conditions also lead to floods and drought in remote regions as far as China, resulting in, for example, food security threats,[12] among others. The melting of ice sheets also

[7] Jonathan Bamber, "Greenland's Ice Sheet Could Melt at a Rate Not Seen in the Last 130,000 Years," World Economic Forum, (2020), https://www.weforum.org/agenda/2020/11/greenland-melting-climate-change-worry-environment/ (20.12.2020).
[8] Pekka Niittynen and Miska Luoto, "Snow Cover is a Neglected Driver of Arctic Biodiversity Loss," *Nature Climate Change* 8, (2018): 997–1001.
[9] Nico Wunderling et al., "Global Warming due to Loss of Large Ice Masses and Arctic Summer Sea Ice. *Nature Communications* 11, no. 5177 (2020): 3, https://doi.org/10.1038/s41467-020-18934-3.
[10] International Federation of Red Cross and Red Crescent Societies, *World Disasters Report 2020* (Geneva, 2020), https://media.ifrc.org/ifrc/wp-content/uploads/2020/11/20201116_WorldDisasters_Full.pdf (20.12.2020).
[11] J. Liu et al. "Impact of Declining Arctic Sea Ice on Winter Snowfall," in the *Proceedings of the National Academy of Sciences*, USA 109 (2012), DOI: 10.1073/pnas.1114910109.
[12] N. Filimonova and S. Krivokhizh, "How Asian Countries are Making Their Way into the Arctic," *The Diplomat*, (2016), http://thediplomat.com/2016/10/how-asian-countries-are-makingtheir-way-into-the-arctic/ (09.08.2017).

contributes to sea-level rise,[13] which is estimated to rise 30 percent by 2100.[14] The low-lying island states, as well as territories located in the river deltas, are expected to cease to exist, threatening millions of people from environmental displacements both within and across borders. As such, climate change in the Arctic presents an existential threat for many nations and humans worldwide.[15] The security implications of climate change are multi-dimensional – they lead not only to environmental and human security threats but also to consequences for global security dynamics in inter-state relations. Given that the focus of this article lies in the security implications for the Arctic, I will limit myself in the following sections to the discussion of impacts only on the Arctic to evaluate the scope of the tensions.

a. Environmental and Human Security Concerns

The Arctic, surrounded by five coastal states and three other states located on and above the Arctic Circle, along with its fourteen million square kilometer Arctic Ocean marine area, is a unique region. The uniqueness of the region is connected to its distinct environmental conditions offering life support systems for humans and other species. Both humans and other species have traditionally been adaptive and resilient to the cold Arctic climatic conditions. As it relates to marine species, some of them are heavily ice-dependent, such as the polar bear.[16] The climatic and environmental conditions in the Arctic region and the habitats that have adapted to those conditions are the product of three million years.[17] Marine ecosystems in the Arctic are dependent on an ice-controlled food supply chain in the

[13] James Mc Karthy et al., *Climate Change 2001: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2001), 26; S. V. Rottem and A. Moe, *Climate Change in the North and the Oil Industry,* FNI Report 9/2007 (Lysaker: Fridtjof Nansen Institute, 2009) 2.

[14] Steve Connor, "Climate Change Melting Polar Regions Faster Than Ever Before," *Independent*, (09.11.2011), http://www.independent.co.uk/environment/climate-change/climate-change-melting-polar-regions-faster-than-ever-before-6259145.html (20.12.2020).

[15] United Nations Debate, "UN Security Council Debates Security Impacts of Climate Change," (20.07.2011), http://www.un.org/press/en/2015/sgsm16981.doc.htm (18.08.2015).

[16] Kamrul Hossain and K. Morris, "Protecting Arctic Ocean Marine Biodiversity in the Area Beyond National Jurisdiction: Plausible Legal Frameworks for Protecting High Arctic Waters" in *The Future Law of the Sea*, ed. G. Adreone (Cham, Switzerland: Springer, 2017).

[17] David C. Payer, Alf B. Josefson and Jon Fjeldså, "Species Diversity in the Arctic. Arctic Biodiversity Assessment Report, Chapter 2 (2013), 68.

deep ocean and the seafloor.[18] The sudden and unusual changes have drastic impacts on their sensitive habitat, making them unable to adapt to the rapid changes. Warmer temperature also introduces southerly species having the invasive character to the Arctic waters, exposing many of these species from the Arctic to the threat of extinction.[19] The effect of climate change on biodiversity and the course of ecosystem service, greatly threaten the entire ecological balance of the Arctic environment.

The persistent need for balance in the natural course of the Arctic environment is connected to the survival of humans inhabiting the region including the communities who have traditionally inhabited the region for thousands of years, such as the indigenous peoples. Over forty such groups representing 10 percent of the total Arctic population make the region distinct in terms of cultural diversity. The culture of indigenous peoples is connected to nature and nature-based traditional activities. Reindeer and caribou herding, hunting, fishing, and small-scale farming are the primary traditional means of livelihood for both local and indigenous people. However, it is mostly the indigenous peoples whose cultural and ethnic identities are rooted in these practices.[20] Many of these practices are being increasingly hampered, the crucial factor being regional transformation in climatic conditions. For example, the loss of land for pastureland has been observed over the years threatening reindeer herding practices of the Sámi indigenous people in Northern Fennoscandia.[21] Moreover, the increase in human activities in national and regional settings leading to mining, oil and gas developments, tourism, and construction of roads and power lines affects not only the traditional activities but also the natural environment.

[18] Ibid., 68.
[19] Kamrul Hossain, "Invasive Species in the Arctic: Concerns, Regulations, and Governance," in *Diplomacy on Ice: Energy and the Environment in the Arctic and Antarctic*, eds. R. Pincus, R. and H. A. Saleem, (New Haven: Yale University Press, 2015), 72–93.
[20] R. Hampton and M. Toombs, "Culture, Identity and Indigenous Australian People," in *Indigenous Australians and Health: The Wombat in the Room*, eds. R. Hampton M. Toombs (South Melbourne: Oxford University Press, 2013), 3–23.
[21] N. G. Maynard et al., "Impacts of Arctic Climate and Land Use Changes on Reindeer Pastoralism: Indigenous Knowledge and Remote Sensing," in *Eurasian Arctic Land Cover and Land Use in a Changing Climate*, eds. G. Gutman and A. Reissell (Dordrecht, Springer: Science+Business Media, 2011), 179–80.

Even though the climate-induced changes create new economic opportunities for the locals at times, they are sporadic and disproportionate and often do not provide adequate support for the locals in more remote regions. Detrimental effect on livelihoods; disproportionate consequences for the local economies; increase in pollution affecting the traditional food supply chain in a way that is detrimental to human health;[22] and impacts on community cohesion, sociocultural stability, and demographic balance are some of the greatest challenges facing the region. While the population of the region as a whole suffers from multiple threats to human security, the indigenous population is considered to be at serious risks[23] because of the disproportionate impacts on them, given their reliance on the Arctic's natural environment for their physical, cultural, spiritual and intellectual sustenance.[24] Many of the indigenous groups suffer from losing their distinct identity because of changes in socio-cultural and demographic structure resulting from the environmental change. It is therefore evident that the inter-connected nature of environmental and human security threats is most crucial from the perspective of the population inhabiting the region.

b. Resource Geopolitics Leading to Security Implications

Climate change often referred to as a "threat multiplier,"[25] also creates the grave risk of greater geopolitical instability in the Arctic, beyond human security threats. As sea ice melts, the Arctic Ocean, during summer months, is predicted to be "nearly ice-free,"[26] and "seasonally ice-free" by 2025.[27] The more open water allows easier access to the marine area, which leads to the expansion of human activities, such as marine resource extractions in the

[22] J. Ford, "Vulnerability of Inuit Food Systems to Food Insecurity as a Consequence of Climate Change: A Case Study from Igloolik, Nunavut," *Regional Environmental Change* 9, (2009): 83–100.
[23] IPCC, *Intergovernmental Panel on Climate Change 2013* (Cambridge: Cambridge University Press, 2013), http://www.ipcc.ch/report/ar5/index.shtml (20.12.2020).
[24] A. Parker et al., Climate Change and Pacific Rim Indigenous Nations, Northwest Indian Applied Research Institute (NIARI), (2006), The Evergreen State College, Olympia, Washington, USA, https://sites.evergreen.edu/indigenousclimate/ (20.12.2020).
[25] Patrick Huntjens and Katharina Nachbar, "Climate Change as a Threat Multiplier for Current and Future Conflict," *Working Paper 9* (2015), The Hague Institute for Global Justice, https://www.thehagueinstituteforglobaljustice.org/wp-content/uploads/2015/10/working-Paper-9-climate-change-threat-multiplier.pdf (20.12.2020).
[26] W. Maslowski et al., "The Future of Arctic Sea Ice," *Annu. Rev. Earth Planet. Sci*. 40, (2012): 625–54.
[27] Dirk Notz and Julienne Stroeve, "The Trajectory Towards a Seasonally Ice-Free Arctic Ocean," *Current Climate Change Reports* 4 (2018): 407–16.

offshore Arctic and maritime navigation via the newly emerging sea routes. Thus, threats induced by climate change coincide with possible opportunities for growth in the exploitation of resources and regional and inter-regional trade and investments. States and actors, both within the Arctic and beyond, are under an ongoing process of shaping various interests around these developments. Given that these developments are underway, the Arctic is today framed as one of the "new economic frontiers" in global geopolitical infrastructure.[28] Protecting and safeguarding the interests as they flow from the "new economic frontier" require establishing effective control and legitimate interests and rights. States, therefore, tend to enhance their military capability either to strengthen their sovereignty and sovereign rights or to set their legitimate interests in terms of both resource utilization and practicing maritime jurisdictions. Much of the contemporary discussions about Arctic security are structured around these new developments. I discuss these geopolitical interests further in the following section. However, suffice here to mention that the overall consequences resulting from climate change contribute to broader instability, putting significant concerns on Arctic security dynamics. The recent developments in this regard suggest the heightening of tensions amongst various actors, within and beyond the region, having a stake in Arctic geopolitics.

3. A Shift to High Politics?

The end of the cold war has brought the Arctic into the limelight of discussions amongst the Arctic nations – the starting point being the desire to promote the region as a "zone of peace."[29] Hence, cooperation on Arctic environmental protection is the central agenda around which the circumpolar nations established their cohesion in the region.[30] The cohesion has endorsed the climate change agenda as the common major threat for the sustenance of the region in its unique form, making the Arctic territory of environmental security. However, as a consequence of climate change, several events have taken place

[28] B. Kaiser, L. Fernandez, and N. Vestergaard, "The Future of the Marine Arctic: Environmental and Resource Economic Development Issues," *The Polar Journal* 6, no. 1 (2016).
[29] Kristian Åtland and Mikhail Gorbachev, The Murmansk Initiative, and the Desecuritization of Interstate: Relations in the Arctic," *Cooperation and Conflict* 43, no. 3 (2008): 289 –311.
[30]The Arctic Environmental Protection Strategy, 1991.
http://library.arcticportal.org/1542/1/artic_environment.pdf.

starting from the new millennium that has led to the suspicion of a shift in Arctic security dynamics. The first such event was Russia's submission of the outer continental shelf claims in the Arctic Ocean in 2001 to the Commission on the Limit of the Continental Shelf (CLCS). Russia was the first country to do so within the framework of the United Nations Convention on the Law of the Sea (UNCLOS), claiming almost half of the Arctic seabed as its extended continental shelf. The action had immediately attracted strong negative reactions from among the Arctic coastal states.[31]

The submission was sent back to Russia by the CLCS a year later asking it to provide more information. While there was a great deal of speculation at that point about Russia gathering and preparing further relevant data to resubmit its claims, six years later in August 2007, the Russian explorer Arthur Chilingarov, in an expedition, planted the country's flag underneath the North Pole, which further exacerbated the tensions both amongst the Arctic and non-Arctic states and actors.[32] A year after that, in 2008, the United States Geological Survey (USGS) released survey results on the estimation of oil and gas in the Arctic as one-fourth of the world's undiscovered oil and gas resources. The finding further fuelled tension suggesting that Russia's motive in the Arctic was not innocent. All in all, these events had been immediately captured by media making stories highlighting the "rush to resources" in the Arctic.[33] Some went even further explaining possible military conflict amongst the nations over resource competition.[34] The Arctic thus suddenly became an attraction also amongst the actors and nations beyond the region. The European Union (EU) institutions, for example, released a series of documents in the year 2008, in the form of resolutions and

[31] S. Silverburg, *International Law: Contemporary Issues and Future Developments*, (Hachette UK: Routledge, 2011). See also Kamrul Hossain, International Governance in the Arctic: The Law of the Sea Convention with a Special Focus on Offshore Oil and Gas, *The Yearbook of Polar Law*, (2010): 139-169, https://ssrn.com/abstract=2505488.

[32] T. Parfitt, "Russia Plants Flag on North Pole Seabed," *Guardian*, (02.08.2007), https://www.theguardian.com/world/2007/aug/02/russia.arctic (05.08.2017).

[33] T. Macalister, Rush for Arctic's Resources Provokes Territorial Tussles, *Guardian*, (06.07.2011), https://www.theguardian.com/world/2011/jul/06/arctic-resources-territorial-dispute (05.08.2017).

[34] See for example, Juha Käpylä and Harri Mikkola, Arctic Conflict Potential Towards an Extra-Arctic Perspective, *FIIA Briefing Paper* 138, (2013): 3, https://www.files.ethz.ch/isn/170344/bp138.pdf.

communications with environmental challenges and governance of the Arctic region.[35] Many of the non-Arctic Asian states, such as China and Japan (2009), officially submitted their application for becoming observers at the Arctic Council (AC) – the high-level intergovernmental forum of the eight Arctic states.[36] The trend continues, and these actors today occupy a robust place within the Arctic governance framework, including in the AC. Some of such involvement, for example, that of China, has caused an uneasy situation even within the AC framework between the members, particularly between the United States and Russia reflecting rivalry in great power politics.[37]

a. Arctic and Global Geopolitical Interests

The geopolitical interests in the Arctic lie in its resource potential and the gradual easy access to these resources as the Arctic Ocean melts. As mentioned above, the Arctic contains one-fourth of the world's undiscovered oil and gas resources. The estimation suggests that the reserve of oil is around 90 billion barrels representing 13% of the world's yet-to-be-extracted deposits and 30% of recoverable gas reserves. It has also been estimated that around 84% of these resources are concentrated within 500 meters of the Arctic Ocean.[38] Today, the Arctic shares of global oil and gas production represent 10.5 and 25.5%, respectively, meaning that the region produces 16.2% of global petroleum resources.[39] In addition to hydrocarbon resources, marine living resources such as fisheries are implicated by heat transfer and migrate further north on the Atlantic side of the Arctic Ocean,[40] necessitating fishing fleets to

[35] Kamrul Hossain, "EU Engagement in the Arctic: Do the Policy Responses from the Arctic States Recognise the EU as a Legitimate Stakeholder?" *Arctic Review on Law and Politics* 6, no. 2 (2015): 89–110.
[36]The Declaration On The Establishment Of The Arctic Council, https://oaarchive.arctic-council.org/bitstream/handle/11374/85/EDOCS-1752-v2-ACMMCA00_Ottawa_1996_Founding_Declaration.PDF?sequence=5&isAllowed=y (20.12.2020).
[37] Interview with Kamrul Hossain, "The Arctic Is a Complex Region Which Cannot Be Designated with a Single Status," Russian International Affairs Council, (Interviewer: Yana Ovsyannikova), https://russiancouncil.ru/en/analytics-and-comments/interview/the-arctic-is-a-complex-region-which-cannot-be-designated-with-a-single-status/ (20.12.2020).
[38] U.S. Department of the Interior, U.S. Geological Survey, *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle,* by Kenneth J. Bird et al. (USGS, 2008), https://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf (20.12.2020).
[39] Statistics Norway, Research Department, *The Role of the Arctic in Future Global Petroleum Supply*, by Lars Lindholt and Solveig Glomsrød (Discussion Papers No. 645, 2011), https://www.ssb.no/a/publikasjoner/pdf/DP/dp645.pdf (20.12.2020).
[40] Tore Haug et al., "Future Harvest of Living Resources in the Arctic Ocean North of the Nordic and Barents Seas:

move up north towards the Arctic Ocean. Additionally, the melting Arctic creates an opportunity to transport these resources to nations where there is demand. In recent years, the Arctic sea routes are more in use. The Northern Sea Route (NSR), for example, is open for navigation for at least three months during summertime.[41] An increase in investment in ice-class shipbuilding, infrastructural developments to connect land-sea interfaces, and offering port facilities are all expected to keep the routes in operation beyond the summer months. The opening of the sea routes, in particular the NSR, is also due to the shorter distance, savings of time and energy, etc.,[42] when compared with the traditional sea route through the Suez Canal. The more the routes are in operation, the more the strategic preferences for nations and actors involved in trade and investment. Today, these routes are often discussed in terms of gradually serving as potential alternatives to the traditional routes.[43] The longer they are open the more they attract maritime traffic, and at the same time, the more trade and investment are expected to grow through and along these sea routes. The more the growth in the number of nations engaged in trade and investments in the Arctic, the greater the speculation of tension amongst the countries and their allies, who are treated as political rivals. The dynamics of Arctic security politics are therefore influenced and determined around various interests connected to resources, investments, trade, and marine transportation, as stated above.

The Arctic region is increasingly being linked to global actors including the EU and other emerging nations beyond Europe such as China. This linkage promotes bilateral cooperation between states and actors both within and beyond the Arctic. The reliance on Arctic resources – in particular, the supply of oil and gas from the Russian and Norwegian

A Review of Possibilities and Constraints," *Fisheries Research* 188 (2017): 38–57.

[41] Yeong-Seok HA and Jung Soo SEO, "The Northern Sea Routes and Korea's Trade with Europe: Implications for Korea's Shipping Industry," *International Journal of e-Navigation and Maritime Economy* 1, (2014): 73–84.

[42] Masahiko Furuich and Natsuhiko Otsuka, "Cost Analysis of the Northern Sea Route (NSR) and the Conventional Route Shipping," (paper presented at the IAME 2013 Conference, Marseille, France, July 3–5, 2013), https://www.researchgate.net/publication/246545438_Cost_Analysis_of_the_Northern_Sea_Route_NSR_and_the_Conventional_Route_Shipping (20.12.2020).

[43] J. Pruyn, "Will the Northern Sea Route Ever Be a viable alternative?" *Maritime Policy & Management* 43, no. 6 (2016).

Arctic, expansion of trade and investment, development of new technologies both for resource extractions and maritime transportation, and polar class ship-building with ice-breaking capability navigable through the Arctic waters – govern this bilateral cooperation. The Arctic region of Russia, including its marine area, has been the focal point of discussions in recent years in terms of new economic potential for the global actors and stakeholders.

The emerging Asian nations including China, Japan, and South Korea have come into play in the new geopolitical dynamics, particularly in terms of building trade and investment relationships with Russia. China's rise as an economic power, in this scene, is remarkable. The country – often labeled as an energy-hungry nation[44] – was at the frontline of Arctic's resource development. As its economy is rapidly growing, it explores the diversification of its energy imports. The resources located in the Arctic countries – in particular, the Russian oil and gas resources – are the targets to meet China's growing demand. China has already invested widely in many countries in the Arctic apart from the Russian Arctic. The country bought, for example, a Canadian Oil and Gas Company called "Nexen" for $15 billion in 2013.[45] Expansion of Chinese investment in the Arctic can be seen concerning other mineral and mining resources such as rare earth elements in Greenland, for example.[46] With Russia, China participates in the promotion of infrastructure along the NSR as part of the jointly agreed vision of building the Polar Silk Road (PSR) as an expansion of its Belt and Road Initiative (BRI) – the massive infrastructural project connecting China with Eurasian countries and the rest of the world.[47] Hence, China's financial, technological, and operational supports have been increasingly being welcomed by Russia. China firmly intends to transport goods through the route, between its ports and Europe, by reducing the distances by up to

[44] Daniel H. Rosen and Trevor Houser, "China Energy A Guide for the Perplexed," *Peterson Institute for International Economics*, (2007), https://www.piie.com/publications/papers/rosen0507.pdf (20.12.2020).
[45] C. Dawson B. Spegele, "Chinese Count the Cost of Ill-Timed Nexen Purchase," *Wall Street Journal*, (24.07.2015),http://www.theaustralian.com.au/business/wall-street-journal/chinese-count-the-cost-of-illtimed-nexen-purchase/news-story/3cc187f335e157e7f03cda71ac8ddbc8 (12.08.2017).
[46] S. Yan, "China is About to Tighten Its Grip on Rare Earth Minerals," *CNN Money International*, (05.06.2015), http://money.cnn.com/2015/06/05/investing/molycorp-china-rare-earth-minerals/index.html (12.08.2017).
[47] Federico Pieraccini, "The Arctic Silk Road: A Huge Leap Forward for China and Russia," Strategic Culture, (13.11.2017),https://www.strategic-culture.org/news/2017/11/13/arctic-silk-road-huge-leap-forward-for-china-and-russia.html (17.01.2018).

20–30% and saving time, fuel, and human resources.[48] Once realized, the PSR will serve to diversify trade routes involving neighboring states, such as Japan and South Korea, in port projects.[49]

In addition to China, other influential nations in East Asia, such as Japan, South Korea, and Singapore, are also looking at the future potential of the Arctic for their own needs. For example, Japan – the largest importer of liquefied natural gas (LNG), the second-largest importer of coal, and the third-largest importer of oil – consider the Arctic as an alternative source for its increasing energy demand. The country has already had LNG shipments planned from Norway and Russia in 2018.[50] Moreover, Japan also explores the potential of NSR to transport these resources, which makes the country further invest in maritime capacity building by developing (or transferring to the region) new technology. South Korea too has similar interests in energy resources but it is also investing in building ice-strength cargo ships capable of operating in the Arctic routes.[51] Singapore is exploring the potential for using its long maritime experiences in terms of both knowledge contribution and shipping industry development, evincing great interest in offshore activities in the Arctic.[52] As the Arctic develops in an infrastructural sense, in particular, in the context of its maritime infrastructures, the other nations involved in, for example, shipping activities, will see the potential to expand their activities to the Arctic.

b. High Politics in the Arctic

High politics in the Arctic refers to possible security tensions in the traditional sense, often understood as "hard security" implications amongst the actors where their national security, measured by military and political consequence, lies at the core. The tensions are framed around geopolitical interests stemming from resource politics and growing interests

[48] Ibid.
[49] Kamrul Hossain, "China's BRI Expansion and Great Power Ambition: The Silk Road on the Ice Connecting the Arctic," *Cambridge Journal of Eurasian Studies* 3, (2019): 6-7, https://doi.org/10.22261/CJES.F3OSGP.
[50] Tekes, Arctic Review 2013-Logistics and Mining, Future Watch Report, (Tekes: Team Finland, 2013).
[51] O. Astakhova, "Russian Tanker Forges Path for Arctic Shipping Super-Highway", *Reuters*, (30.03.2017), http://www.reuters.com/article/us-novatek-lng-putin-idUSKBN1712K6 (12.08.2017).
[52] P. Solli, E. Rowe and W. Lindgren, "Coming into the Cold: Asia's Arctic Interests," *Polar Geography* 36, no. 4 (2013): 253–70.

over maritime usage and domination in trade and investment relations of actors involved. The "high politics" in the Arctic is said to be fuelled by the narratives arising out of all these developments; at least, that was how the Arctic had earlier been portrayed in media using such phrases as the race to resources, cold rush, conflict of ownership of territory containing the resources and then eventual instability leading to military conflict.[53] Regardless of whether or not these narratives are well-founded, the inter-state relationships in the Arctic generally appear around the above-mentioned developments, which led some scholars to believe that the region is being drawn into the global system of high politics,[54] given that the large-scale developments that have taken place in the Arctic do have the potential to re-order the Arctic agenda,[55] especially as new players are increasingly entering into the game. The region is at times presented as returning to situations that prevailed during the Cold War, putting the US and its NATO allies against Russia.[56]

There is indeed an interrelationship between geopolitical interests and regional security implications in the Arctic. The economic interests largely motivate the global actors towards bilateral cooperation with the Arctic states. However, the engagement is not driven by economic potential alone. Competition in great power politics also leads nations like China to engage in the Arctic's security dynamics.[57] China's increased engagement in the Arctic has caused fear amongst some nations. Given the emergence of its tightened relationship with Russia in the region on several grounds, including trade and investment and transportation of energy resources from the latter, the United States has implicated China's increased

[53] See for example, Terry Macalister, "Rush for Arctic's Resources Provokes Territorial Tussles," *Guardian*, (06.07.2011), https://www.theguardian.com/world/2011/jul/06/arctic-resources-territorial-dispute.
[54] Orang Young, "Arctic Politics in an Era of Global Change," *Brown Journal of World Affairs* 19, no. 1 (2012): 165–78.
[55] Ibid., 167–69.
[56] Helga Haftendorn, "NATO and the Arctic: Is the Atlantic Alliance a Cold War Relic in a Peaceful Region Now Faced With Non-Military Challenges?" *European Security* 20, no. 3 (2011): 337–61, DOI: 10.1080/09662839.2011.608352.
[57] Klimenko Ekaterina and Camilla T. N. Sørensen, "The Status of Chinese–Russian Energy cooperation in the Arctic," *Stockholm International Peace Research Institute (SIPRI)*, (2017), https://www.sipri.org/commentary/topical-backgrounder/2017/chinese-russian-energy-cooperation-arctic (29.05.2017).

engagement with its "China threat" theory[58] narrative. Such narrative has been invoked after Russia's relations with the West deteriorated in the aftermath of the former's invasion of Crimea in 2014. The sanctions and counter-sanctions imposed by the West on Russia and vice versa resulted in an improved relationship between China and Russia. The absence of Western investments in Russia's Arctic infrastructural development has brought yet another shift in the Arctic's geopolitics – a vacuum that has been filled by China. As Russia's relationship with the West was fractured, China's improved relation with Russia resulted in an expectation of doubling its oil import from Russia by 2020.[59]

As a result, the Arctic as a theatre of "high politics" can be explained from the viewpoint of possible power imbalance in a regional context in the competition over great power politics. In the Arctic, Russia has increased its military presence during the past years. Such increase is partly due to the implications of its deteriorated relations with the West after the Ukraine crisis in 2014 and partly due to its need to demonstrate its sovereignty over the resource-rich vast geographical areas in its Arctic region. That suggests that Russia's remilitarization of the region requires a shift in the Arctic security dynamics. The reason for this is as follows: Russia's military capability in the Arctic is heavily disproportionate. Its Northern fleet, supported by naval infantry, air force, coast guard, and patrol vessels; building of nuclear-powered ice-breakers; capability of the possible building of combat vessels to operate in ice-intensified waters; and Northernmost Arctic airfield (on the far northern Alexandra Island next to the largest military base complex in the Arctic) operational all-year-round and capable of handling all kinds of aircraft; make it a heavily militarily capable power in the Arctic.[60] Compared to Russia, other nations in the Arctic, such as Canada, Denmark, Norway, and the United States combined, are poorly equipped militarily.

[58] R. Dellios, "The Rise of China as a Global Power," *Culture Mandala* 6, no. 2 (2004–2005).
[59] Skalamera Morena, Booming Synergies in Sino-Russian Natural Gas Partnership: 2014 as the Propitious Year," Belfer Center for Science and International Affairs, Harvard Kennedy School, (2014), http://www.belfercenter.org/sites/default/files/legacy/files/RussoSinoGas2014%20web.pdf (29.05.2017).
[60] Marcus Matthias Keupp, "Arctic Security, Sovereignty, and Rights of Utilization: Implications for the Northern Sea Route," in *The Northern Sea Route,* ed. M. M. Keupp (Wiesbaden: Springer, 2015), 22–23. Also see, Atle Staalesen, Northernmost Arctic airfield now operational all-year, says Russian Military, The Barents Observer, (28.04.2020),

4. Governance Framework Addressing Hard-Soft Security Nexus

The Arctic governance framework, given the very nature of the region having territories within and beyond national jurisdictions, combines national, regional, and international approaches. The management of Arctic security, therefore, does have a national, regional, and international agenda capable of influencing security dynamics in the Arctic. While geopolitical interests shape national agenda influencing security implications, there are issues, such as environmental cooperation, common to nations and actors in the Arctic around which broader security should be built on. As referred to earlier in this article, Arctic security implies a hard-soft security nexus. The management of security, therefore, necessitates an approach of cooperation around both geopolitical tensions and other issues connected to environmental concerns common to nations and actors having stakes in the Arctic. On the one hand, cooperation takes the form of invoking regulatory and policy measures, while on the other hand, it relies on the promotion of cooperation through institutions, both at regional and international levels.

The Arctic, centrally being a marine area both within and beyond national jurisdictions, and surrounded by landmasses of eight circumpolar countries, is primarily governed by the law of the sea regulated within the framework of UNCLOS. Therefore, the issues concerning establishing jurisdictions over maritime areas are set by the law of the sea. The establishment of the extended continental shelf underneath the Arctic Ocean is a process regulated by the UNCLOS. Although not yet firmly decided, the legal developments concerning the demarcation of extended continental shelf suggest that there is an orderly development in the Arctic. The Arctic coastal states are consistently behaving following the set rules under the UNCLOS.[61] Among the Arctic states, the US is not a party to the UNCLOS and, therefore, may occupy a place to question some of the developments; in particular, concerning maritime boundary demarcation. However, as clarity may exist in terms

https://thebarentsobserver.com/en/security/2020/04/northernmost-arctic-airfield-now-operational-all-year-says-russian-military (20.12.2020).

[61] See generally, Michael Byers, "The Law and Politics of the Lomonosov Ridge," Challenges of the Changing Arctic Continental Shelf, Navigation, and Fisheries, eds. Myron H. Nordquist, John Norton Moore and Ronán Long, Series: Center for Oceans Law and Policy 19 (Brill: 2016).

of determining the extended continental shelf as the natural prolongation of the landmass of the coastal states' territories, and supported by relevant geomorphological data, there will be little, or no clear ground, for the US to go against the established norms set in this regard.

Additionally, the Arctic presents a few other issues, such as disputes over the maritime boundary around the Svalbard Islands or the questions related to the usage of the Northwest Passage as an international strait, etc. As for the former, the sovereignty over the islands is not itself questioned; however, given the UNCLOS has come into effect only in 1994, the maritime boundary around the islands is questioned based on the fact the Svalbard Treaty concluded in 1920, before the rules under the UNCLOS, has not discussed the maritime boundary beyond the territorial waters at which its signatories may exploit the waters of the Svalbard archipelago.[62] Concerning the latter, the Canadian claim of the waters of the Northwest Passage as part of its internal waters raises concerns on the use of the watercourse as an international strait for navigation. The US and the European nations challenge the Canadian approach in this regard.[63] However, the implication of inter-state security concerns to these issues is rather marginal because the regulatory mechanism available offers guidance as to how to cooperate, in particular within the framework of the law of the sea.

Nevertheless, the protection of the marine environment in the Arctic presents concerns as environmental pollution is poised to transform the regional settings posing environmental and human security threats. The UNCLOS provided a set of detailed rules under Part XII of the Convention concerning protection, preservation, and promotion of a marine environment that, as with all other marine areas, applies to the Arctic. Additionally, the UNCLOS Arctic 234 is a provision specific to the Arctic that applies to marine areas which are ice-covered during most of the year. The Arctic coastal states have special prerogatives, unlike other marine areas, to adopt and implement unorthodox and stricter measures concerning navigation in the exclusive economic zones – the maritime area where generally freedom of international

[62] Keupp, "Arctic Security," 28.
[63] Suzanne Lalonde and Frédéric Lasserre, "The Position of the United States on the Northwest Passage: Is the Fear of Creating a Precedent Warranted?" *Ocean Development & International Law* 44, no. 1 (2013): 29, DOI: 10.1080/00908320.2012.726832.

navigation applies. Yet the UNCLOS often provides framework-type rudimentary regulations suggesting the conclusion of bilateral, regional, and international arrangements to tackle the challenging issues in specific contexts. The role of the International Maritime Organization (IMO) is significant in this regard. The IMO offers guidance and is used as the venue for international treaty negotiations, to address specific issues about the protection of the marine environment and navigational safety. The adoption of the binding regulations – the Polar Code, which came into force on 1 January 2017 – is an example, which applies to the polar waters, particularly in the Arctic marine areas. The regulation covers the full range of issues in connection with design, construction, equipment, operational, training, search and rescue, and environmental protection matters relevant to ships operating in the Arctic waters.[64]

While the above suggests adaptive mechanisms in an increasingly accessible Arctic to conduct human activities, but the increase of the latter further accelerates the crucial problem the region is facing – climate change. Hence, participation in international climate governance processes, highlighting the uniqueness of the Arctic as a cryospheric region to serve the ecological balance of the earth's climatic system is an important endeavor to explore. The Arctic can provide credible evidence regarding the impacts of climate change on the rest of the world.[65] Hence, the international climate governance and the role of the Arctic are interrelated. Although the US has had a dissenting view regarding the international climate governance process, on 20 January 2021, it deposited its instrument of acceptance of the Paris Agreement. The other Arctic nations had long been standing on a common position concerning the impact of climate change, both in regional and global contexts. The Arctic Council plays a crucial role to promote the climate change agenda reflected in the United Nations Framework Convention on Climate change (UNFCCC), and its diverse effect within the Arctic itself and to the rest of the world. While the membership of the AC is restricted to the Arctic states only, its organizational structure includes indigenous peoples – the original

[64] International Code for Ships Operating in Polar Waters (Polar Code), https://www.imo.org/en/OurWork/Safety/Pages/polar-code.aspx (20.12.2020).
[65] Oran Young, "Is It Time for a Reset in Arctic Governance?" *Sustainability* 11, (2019): 8, doi:10.3390/su11164497, https://www.mdpi.com/2071-1050/11/16/4497/pdf (20.12.2020).

population of the region – who participate in the governance framework with the so-called "permanent participants" status. The indigenous peoples of the Arctic possess knowledge and experiences concerning the natural process and changes of the Arctic and offer valuable information to better understand the region. Today the AC has been expanded to include non-Arctic states as observers, who participate in projects undertaken by its working groups at various levels on various issues in connection with Arctic governance. As an inter-governmental forum created by the Ottawa Declaration, the AC does not offer any legally binding resolution for its members. However, by producing and promoting science-based knowledge and assessment reports, and by sharing them with the rest of the world, the AC plays an important role in global processes such as within international climate change law-making processes. These endeavors help reduce climate change-related concerns, or at least to take measures necessary to promote human security resulting from the effect of climate change. Furthermore, the AC's operation implements the global agenda of meeting the United Nations' sustainable development goals (SDG) to secure sustainable human development in the Arctic.

However, the founding document of the AC – the Ottawa Declaration – clearly denounces any matters related to military security.[66] Yet, as underlined, security tension in the Arctic arises out of local issues about a combination of threats emanating from environmental issues influencing both human security and geopolitical dynamics leading to inter-state tensions. The AC offers a role for the Arctic states to agree upon a common agenda with a broader goal to achieve the very aim of its creation – the Arctic as a zone of peace. Despite the recent disagreement between the United States and the other Arctic nations during the AC Rovaniemi Ministerial in 2019 on the use of "climate change" language to the potential joint Declaration, in principle, the AC serves as a venue for the promotion of

[66]The Declaration On The Establishment Of The Arctic Council, https://oaarchive.arctic-council.org/bitstream/handle/11374/85/EDOCS-1752-v2-ACMMCA00_Ottawa_1996_Founding_Declaration.PDF?sequence=5&isAllowed=y.

broader Arctic cooperation in all areas of concerns.[67] The Arctic coastal states – the so-called A-5 – have acknowledged AC's functions as a milestone for Arctic governance.[68]

The Arctic has earlier set an example of military cooperation by establishing Arctic Military Environmental Cooperation Program (AMEC) in 1996. The AMEC was a trilateral Declaration concluded among the three Arctic states – Norway, Russia, and the United States – to respond to ecological threats stemming from nuclear activities in the Arctic during the Cold War. The AMEC provided a cooperation framework by the chief environmental officers from defense ministries in these countries to increase Russia's capacity to manage radioactive wastes in an environmentally responsible manner. Although the AMEC's mandates include a broad range of environmental issues, the parties have primarily restricted their agenda to radioactive.[69] While it is a noteworthy example, the cooperation only offered efforts to address ecological security concerns, not the military-centric security issues.

Concerning military security in the Arctic, tensions intensify, in particular between the US and Russia, due to the increasingly tightened relationship of Russia and China in trade and investment. China's presence in the Arctic as well as in other parts of the world suggests its emergence as a player in great power politics. In the Arctic, the great power rivalries are also driven by other global developments; for example, Russia's invasion of Crimea in 2014. Additionally, Russia's increased militarization of the Arctic leaves the other Arctic nations with concerns about the former's ambition to remilitarize the Arctic. It is argued, however, that Russia has never demilitarized the Arctic, it only inactivated its military bases due to lack of funding at the end of the Cold War.[70] In recent years, revenue flow from hydrocarbon developments offers the opportunity to return to reactivation.[71] Whatever it is, reactivation or militarization, the installation of military and intelligence infrastructure in Russia's Arctic is

[67] Vladimir Vasiliev, The Arctic Council: A Tool for Regional Development & Policy-Shaping, Arctic Yearbook (2016), 290–91.
[68] The Ilulissat Declaration (2008), https://arcticportal.org/images/stories/pdf/Ilulissat-declaration.pdf.
[69] See generally, Steven G. Sawhill, "Cleaning-up the Arctic's Cold War Legacy: Nuclear Waste and Arctic Military Environmental Cooperation", *Cooperation and Conflict* 35, no. 1 (2000): 5-36.
[70] Keupp, "Arctic Security," 24.
[71] Ibid., 24.

arguably to protect the sovereignty of its poorly accessible vast geographical region. Extreme and hostile environmental conditions prevailing in the Arctic restrict operational capabilities unless aircraft, submarines, or vessels are configured for such an environment.[72] The increasing developments, such as investment in infrastructure development or the smooth functioning of the NSR, require highly disciplined and heavily equipped forces capable of providing a robust security infrastructure in the Arctic. It is therefore argued that Russia's military strategy in the Arctic is to protect its large geographical space to maximize the protection of its economic interests and to promote internal security and safety.[73] While this is understandable, there is a lack of trust mainly because there is no explicit body available in the Arctic to discuss military security issues. Five out of the eight Arctic states are NATO members who have their security infrastructure. Russia was part of a process for consultation, consensus-building, cooperation, joint decision, and joint action through the NATO-Russia Council established in 2002. However, following Russia's invasion of Crimea in 2014, NATO suspended all practical cooperation with Russia.[74] A revival or resumption of the cooperation is likely to build confidence in the Arctic security infrastructure. Additionally, as referred to above, a more comprehensive initiative similar to the AMEC may provide a possible structure to cooperate in issues of importance requiring a military presence in the Arctic.

5. Conclusion

The security discourse in the Arctic is portrayed as an effect caused by climate change and related developments that disproportionately alter the regional dynamics leading to both human security threats and tensions among nations and actors involved in the Arctic geopolitics. Therefore, concerning the understanding of security discourse, the Arctic apprehends a soft-hard security nexus. This is because the Arctic remains a relatively militarily "low tension" region so far. The profoundly regulated and institutionalized Arctic

[72] Ibid., 23.
[73] Ibid., 25.
[74] NATO-Russia Council, https://www.nato.int/cps/en/natohq/topics_50091.htm

does not see any likelihood of major conflicts amongst the nations within the region. However, resource geopolitics and/or the events of conflicts taking place elsewhere in the world with direct or indirect involvement of one or the other Arctic states would arguably influence the Arctic security cooperation. The most representative inter-governmental structure in the Arctic – the Arctic Council – does not have the mandate to discuss security issues within its ambit. However, the Arctic Council's efforts as supplemented by the existing regulatory framework to which the Arctic states offer their commitments suggest a confidence-building process. For example, strengthened cooperation on a comprehensive set of issues through the Arctic Council initiatives demonstrates a harmonious response mechanism to challenges facing the Arctic states. Such an effort makes it possible for the actors to enhance trust and confidence, which eventually contribute to softening the often-prevailing high politics. Additionally, the existing Arctic security infrastructures, such as the NATO-Russia Council cooperation, can play an essential role in easing any potential tension. Besides, cooperation efforts similar to the one undertaken in the AMEC can be a good platform to address hard-soft security nexus. In such efforts, the AC's supplementary role could contribute to promoting environmental and human security in the Arctic security cooperation.

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