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Research Article

NATO and Anthropogenic Strategic Security

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Abstract: By employing historical institutionalism, this article argues that anthropogenic risks (i.e., climate change and the COVID-19 pandemic) serve as a critical juncture for NATO in reorienting its sustainability strategies in response to climate fluctuations and potential insecurity arising from resource depletion. During the Cold War, NATO's main objective was to deter threats from states, mainly the Soviet Union. At the beginning of the twenty-first century, the Alliance turned to non-state actors (e.g., Al-Qaida, Somali pirates, and Russian hackers). Then, climate change and COVID-19 emerged as global security risks from natural, environmental phenomena. NATO had incrementally sought to address the threats from climate change, but COVID-19 served as an impetus to acknowledge insecurity caused by neither states nor non-state actors. The pandemic represented the Alliance's first significant mobilization of military assets on a regional (i.e., European level), for a sustained period, in response to a unique risk. Based on this experience, NATO needs a sustainable strategy to acknowledge anthropogenic risks and to prepare for future climate-related fluctuations and insecurity.

Keywords: climate change, non-traditional threats, threat multiplier, historical institutionalism, critical junctures.

Introduction

In the summer of 2021, Greece experienced the highest average temperature increase since the late 1980s. Over 125,000 hectares of forest and arable land were burnt, almost 4.5 times the average size of the area destroyed from 2009

to 2022.[1] Neighboring Turkey and Italy suffered as well from the 2021 Mediterranean wildfires. The same year, Turkey lost 1,700 square kilometers of forest, the worst wildfire season in the country's history.[2] Wildfires in Italy destroyed at least 50,000 acres.[3] Forest fires are a natural phenomenon key to regenerating national resources. Still, the intensity of these natural disasters due to climate change will destroy these environmental carbon sinks that will not be sustainably replenished if such summer disasters continue unabated.

Military forces played a crucial role in helping governments deal with these natural disasters linked to climate change. For example, during this Mediterranean-wide crisis, Turkey and Greece received air support from other North Atlantic Treaty Organization (NATO) allies, while the Italian government mobilized the army to aid firefighters in extinguishing wildfires in the southern region of Calabria.[4]

Climate change emerged as an anthropogenic threat caused by increased greenhouse gas (GHG) emissions. Pandemics are caused by increased human encroachment on natural habitats, exacerbated by unsustainable deforestation or exploitation of wildlife. Precedents like these raise the question of how anthropogenic risks are "securitized" conceptually, as well as in the implementation of policy.

This article will explore the role and readiness of NATO and its capacity to integrate anthropogenic risks (i.e., climate change and pandemics) into the Alliance's *modus operandi*. The central research question of this study is: Can NATO reinvent itself to adapt to anthropogenic risks as it did during critical junctures in the past (e.g., the end of the Cold War and the September 11 attacks)? The study will examine scientific literature of relevance with particular emphasis on Ulrich Beck's concept of "risk society" and historical institutionalism. The article will review the Alliance's experience dealing with anthropogenic risks affecting its member and non-member states. Moreover, the article will analyze NATO's adaptive mechanism by examining climate change-related internal organizational changes in the Alliance and external effects on its strategy.

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1 Statista, "Area Burned by Wildfires in Greece from 2009 to 2022," August 22, 2022, https://www.statista.com/statistics/1264709/area-burned-by-wildfire-in-greece/.

2 Mert Ozkan and Ezgi Erkoyun, "Turkish Wildfires Are Worst Ever, Erdogan Says, as Power Plant Breached," *Reuters*, August 4, 2021, https://www.reuters.com/world/middle-east/fire-near-turkish-power-plant-under-control-local-mayor-2021-08-04/.

3 Center for Disaster Philanthropy, "2021 International Wildfires," October 25, 2021, https://disasterphilanthropy.org/disasters/2021-international-wildfires/.

4 Angela Giuffrida, "'All That's Left Are Ashes': Italian Communities Count Cost of Wildfires," *The Guardian*, August 13, 2021, https://www.theguardian.com/world/2021/aug/13/all-thats-left-are-ashes-italian-communities-count-cost-of-wildfires.

Anthropogenic Risks: A Non-traditional Planetary-scale Threat Multipliers

While humans have influenced their environments since pre-modernity, this influence has grown exponentially with the onset of the Industrial Revolution. A rise in human population and economic activities has led to unsustainable resource depletion, particularly affecting planetary environmental systems via increased GHG emissions.[5] In addition, climate change can exacerbate pre-existing political tensions and vulnerable socio-economic structures, resulting in a lack of food and water and flooding coastal inhabitation, leading to conflict or migration.[6] In the case of fragile states, this can lead to a complete collapse of public order, the emergence of civil unrest, and riots.

The pandemic is also a risk with threat multiplier potential. The coronavirus pandemic (COVID-19) tested the limits of global cooperation, forcing societies to operate in the context of radical uncertainty. COVID-19 exposed multiple loopholes in the system of international solidarity by underpinning global partnerships and governance.[7]

The academic conceptual securitization of natural threats began in the last twenty years.[8] Beck's concept of a "risk society" can be seen as a starting point, which he defines as a "systematic way of dealing with hazards and insecurities induced and introduced by modernization itself."[9] Climate change is a direct consequence of modernity and the unsustainable exploitation of natural resources.[10] Climate change is a unique threat because it does not affect individual parts of the international system but rather a planetary system. Moreover, it is a cross-border issue caused by anthropogenic activity but is not human-controlled. Lastly, it undermines the current sense of security, such as the notion of

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5 Will Steffen et al., "The Trajectory of the Anthropocene: The Great Acceleration," *The Anthropocene Review* 2, no. 1 (2015): 81-98, https://doi.org/10.1177/2053019614564785; Will Steffen et al., "Trajectories of the Earth System in the Anthropocene," *Proceedings of the National Academy of Sciences of the United States of America* 115, no. 33 (August 2018): 8252-8259, https://doi.org/10.1073/pnas.1810141115.

6 John Podesta and Peter Ogden, "The Security Implications of Climate Change," *The Washington Quarterly* 31, no. 1 (Winter 2007-08): 115-138, http://muse.jhu.edu/article/224705.

7 Göran Tomson et al., "Solidarity and Universal Preparedness for Health after Covid-19," *BMJ* 372, 59 (2021), https://doi.org/10.1136/BMJ.N59.

8 Michael C. Williams, "The Continuing Evolution of Securitization Theory," in *Securitization Theory*: *How Security Problems Emerge and Dissolve*, ed. Thierry Balzacq (London: Routledge, 2010), 212-222, https://doi.org/10.4324/9780203868508.

9 Ulrich Beck, *Risk Society: Towards a New Modernity* (London: Sage Publishing, July 1992), 21.

10 Adam Burgess, Jamie Wardman, and Gabe Mythen, "Considering Risk: Placing the Work of Ulrich Beck in Context," *Journal of Risk Research* 21, no. 1 (2018): 1-5, https://doi.org/10.1080/13669877.2017.1383075; Beck, *Risk Society*.

a safe, confined, predictable space (i.e., national territory) that can be protected from outside influences.

Traditional realist or liberal-based security studies have had difficulties reconciling climate change with state-centric studies, precluding climate change from being addressed in the realm of national defense.[11] The body of literature that has examined climate change in the context of securitization has remained very broad, general, and anecdotal.[12]

Other works examine climate change as an independent variable that has a causal impact on international and national security. Homer-Dixon empirically tested the link between violent conflict and environmental degradation, arguing that environmental scarcity originating from the unsustainable depletion of renewable resources (e.g., water) increases the likelihood of conflict.[13] Joshua Busby examines how climate change has the potential to generate insecurity in countries that have poor governance and capacity to deliver services, exclusive political institutions that reward in groups, and where foreign assistance is blocked or ineffectively distributed.[14]

In Beck's interpretation, climate change is a societal risk, a threat on a planetary scale.[15] Climate change will not equally affect all countries. Developing countries near the equator will experience higher-than-average temperature increases and have fewer resources to mitigate the impact than developed countries of the global north. Nevertheless, climate change has already resulted in abnormal and unpredictable weather patterns. Across different countries, heat waves are forecast to increase in potency and duration, impacting diverse countries differently at different times.[16]

The impacts of pandemics were felt beyond the health sector. The global standstill caused by constant quarantines between 2020 and 2021 has pushed millions more into poverty, initiated a global recession, disrupted food supply chains, halted different types of travel, and caused an overall decline in sustainable human development worldwide.[17] Future pandemics are likely due to in-

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[11] Marc A. Levy, "Is the Environment a National Security Issue?," *International Security* 20, no. 2 (Fall 1995): 35-62, https://doi.org/10.2307/2539228.

[12] S.C. Lonergan, ed., *Environmental Change, Adaptation, and Security* (Amsterdam: Springer, 1999), https://doi.org/10.1007/978-94-011-4219-9.

[13] Thomas F. Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton, MA: Princeton University Press, 2001).

[14] Joshua W. Busby, *States and Nature: The Effects of Climate Change on Security* (Cambridge: Cambridge University Press, 2022).

[15] Burgess, Wardman, and Mythen, "Considering Risk."

[16] Cameron Harrington, "The Ends of the World: International Relations and the Anthropocene," *Millennium: Journal of International Studies* 44, no. 3 (2016): 478-498, https://doi.org/10.1177/0305829816638745.

[17] UN Statistics Division, "How COVID-19 Is Changing the World: A Statistical Perspective, Volume II" (New York: Committee for the Coordination of Statistical Activities, 2020), https://unstats.un.org/unsd/ccsa/documents/covid19-report-ccsa_vol2.pdf.

creased exposure to animal zoonotic pathogens, related to humanity's unsustainable desire to acquire more resources, such as hunting exotic animals and converting rainforests into farmland.[18] The pandemic is an outcome of modernity. It undermined ontological security, questioning whether global or national institutions could offer protection from threats emanating from natural phenomena.

The literature primarily studies NATO through international relations alliance theory.[19] Historical institutionalism and its temporal concepts of path dependency and critical junctures provide a framework to analyze NATO's response to anthropogenic security challenges, which threaten the international organization itself, as well as pose a threat to NATO's member states. Seth A. Johnston examines the Alliance's historical institutionalism and critical junctures, stating that "the critical juncture framework allows for two other possible outcomes in institutional analysis, namely continuity in NATO (i.e., the preponderance of stability over change) and the adoption of non-NATO alternatives for organizing cooperation among States."[20] Johnston also writes that "internal adaptation concerns changes to the bureaucratic or organizational structure of the institution, while external adaptation relates to changes in the institution's output and impact on its environment."[21] This article adapts Johnston's framework to analyze its potential to respond to climate change.

NATO and Historical Institutionalism in Practice

NATO has adapted on several occasions since its inception in 1949. The original purpose of the Alliance was to provide classical military deterrence against the Soviet army and, later, the Warsaw Pact. However, when that threat vanished with the collapse of the Soviet Union, NATO experienced several critical junctures that made the organization adapt and better respond to the challenges of the post-Cold War reality.

Twelve states signed the North Atlantic Treaty establishing NATO in 1949 in response to the Soviets successfully testing the atomic bomb that year. When the Warsaw Pact was dissolved in 1991 and Socialist Yugoslavia's bloody disintegration began, NATO announced its readiness to support peacekeeping activities in the region. NATO conducted its first major crisis-response operation in Bosnia

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[18] Edward C. Holmes, "COVID-19 – Lessons for Zoonotic Disease," *Science* 375, no. 6585 (March 2022): 1114–1115, http://doi.org/10.1126/science.abn2222.

[19] Anand Menon and Jennifer Welsh, "Understanding NATO's Sustainability: The Limits of Institutionalist Theory," *Global Governance* 17, no. 1 (2011): 81-94, https://doi.org/10.1163/19426720-01701006; Celeste A. Wallander, "Institutional Assets and Adaptability: NATO after the Cold War," *International Organization* 54, no. 4 (2000): 705-735, https://doi.org/10.1162/002081800551343.

[20] Seth A. Johnston, *How NATO Adapts: Strategy and Organization in the Atlantic Alliance since 1950* (Baltimore: Johns Hopkins University Press, February 2017), 3.

[21] Johnston, *How NATO Adapts*, 21.

and Herzegovina. The NATO-led Implementation Force was deployed in December 1995, followed by the NATO-led Stabilization Force, which ended in December 2004.[22] Several years later, NATO bombarded the Federal Republic of Yugoslavia (consisting of Serbia and Montenegro) to compel its withdrawal from Kosovo. It was the first time it had used military force against a sovereign state without the United Nations' approval.

The only time NATO invoked Article 5 was after the September 11 attacks on the United States.[23] Its International Security Assistance Force (ISAF) in Afghanistan constituted the first major operation outside Europe or the North Atlantic, combatting the Taliban and a transnational non-state actor, Al-Qaida.

After Hurricane Katrina struck the south of the United States in August 2005, causing many fatalities, widespread damage, and flooding, the American government requested food, medical and logistics supplies, and assistance moving these supplies to stricken areas. In September 2005, the North Atlantic Council approved a military plan to assist the United States, which consisted of coordinating the movement of urgently needed equipment and supporting humanitarian relief operations. This was the first-ever weather-related disaster relief operation conducted by NATO. In 2007, after Estonia suffered from a series of severe cyber-attacks conducted by Russian hackers, NATO created its first cyber defense policy and established the NATO Cooperative Cyber Defense Centre of Excellence (COE) in Tallinn.[24]

Operation *Ocean Shield* sought to deter piracy off the coast of Somalia, facing off against a maritime non-state actor, Somali pirates. The deployment sought to protect NATO's member states' economic interests on the open seas, as it collaborated with China, Japan, Russia, India, and South Korea.

During the Libyan war of 2011, the Alliance had its first official mission in the Middle East.[25] Under Operation *Unified Protector*, NATO initially implemented an arms embargo and a no-fly zone. It used all means necessary, short of foreign occupation, to protect Libyan civilians and civilian-populated areas from the armed forces of Muammar al-Gaddafi. For the first time, NATO deployed alongside Arab countries, including Jordan, United Arab Emirates, and Qatar.

Between 2014 and 2019, NATO joined the international coalition targeting the Islamic State. The coalition was committed to tackling the terrorist organization on all fronts using military resources. Still, it was also tasked with dismantling its networks in member states and countering its global ambitions.

The case of NATO's response to the COVID-19 pandemic demonstrates how the Alliance could reutilize an existing infrastructure for a natural emergency,

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[22] NATO, "Operations and Missions: Past and Present," June 14, 2022, www.nato.int/cps/en/natohq/topics_52060.htm.

[23] Stanley R. Sloan, *Defense of the West: NATO, the European Union and the Transatlantic Bargain* (Manchester: Manchester University Press, 2016).

[24] NATO, "Operations and Missions: Past and Present."

[25] "How NATO Is Shaping up at 70," *The Economist*, March 14, 2019, www.economist.com/special-report/2019/03/14/how-nato-is-shaping-up-at-70.

buttressing this article's argument that it could do the same in the face of climate emergencies. Responding to health emergencies was vital to NATO militaries before the COVID-19 pandemic. An integral part of all conflicts is transport and care for the wounded. During the engagement of ISAF in Afghanistan, NATO medical facilities were at the disposal not just of its staff but of the locals as well, a good number of whom unfortunately would have been wounded in NATO-Taliban clashes or by NATO forces inadvertently.

The Chiefs of Military Medical Services in NATO is the senior body for providing military-related medical advice within the Alliance and is responsible for developing and coordinating medical matters.[26] NATO has a Medical Medicine COE based in Hungary, providing member states with training and coordination support.[27] In 2019, the Alliance had not prepared for a pandemic on the scale of COVID-19 since health-related human security strategies were the individual responsibility of each member state rather than being articulated in a common Alliance strategy.[28]

By the time the World Health Organization officially declared COVID-19 a pandemic in early March 2020, NATO member states such as Italy and Spain had already endured the onslaught brought about by the virus.[29] The pandemic imposed new pressures on member states' public health systems and societies. In the case of Italy and Spain, their public health systems were entirely overwhelmed by the number of patients they received. The pressure had caused severe shortages of medical equipment. Therefore, Italy and Spain asked NATO for help. The Czech Republic delivered 10,000 protective suits and 90 respirators to Spain.[30] Turkey airlifted medical aid packages (consisting of personal protection equipment, disinfectants, and 450,000 masks) to Spain and Italy.[31] In the case of Luxembourg, the Alliance provided field hospital tents with 200 beds to treat COVID-19 patients and strengthen Luxembourg's capacity to respond to the pandemic.[32]

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[26] NATO, "Military Medical Support," June 2, 2022, https://www.nato.int/cps/en/natohq/topics_49168.htm.

[27] NATO, "Military Medical Support."

[28] Thierry Tardy, ed., "COVID-19: NATO in the Age of Pandemics," NDC Research Paper (Rome: NATO Defense College, 2020), https://www.ndc.nato.int/research/research.php?icode=11.

[29] Betsy McKay, Jennifer Calfas, and Talal Ansari, "Coronavirus Declared Pandemic by World Health Organization," *The Wall Street Journal*, March 11, 2020, www.wsj.com/articles/u-s-coronavirus-cases-top-1-000-11583917794.

[30] Martin Bentham, "Italy and Spain Trigger Emergency NATO Plan to Boost Medical Kit," *The Evening Standard*, March 30, 2020, https://www.standard.co.uk/news/health/italy-and-spain-trigger-emergency-nato-plan-to-boost-medical-kit-a4401591.html.

[31] NATO, "Coronavirus Response: Turkish Medical Aid Arrives in Spain and Italy," April 1, 2020, https://www.nato.int/cps/en/natohq/news_174826.htm.

[32] NATO, "Coronavirus Response: NATO Supports Luxembourg, Increasing Hospital Capacity," March 31, 2020, https://www.nato.int/cps/en/natohq/news_174783.htm.

NATO leveraged different cooperation channels to manage the pandemic. In Italy, NATO staff worked with a local 3D printing startup to convert snorkeling masks into emergency ventilator masks and help Italian hospitals reduce medical equipment deficits.[33] As a part of NATO's Strategic Airlift International Solution Programme, Ukrainian Antonov cargo planes delivered 48 tons of medical material to help Slovakia to combat COVID-19.[34] The Alliance provided ventilators donated by the NATO stockpile to hospitals in Albania, Montenegro, and North Macedonia.[35]

The scientific arm of NATO was very active from the early days of COVID-19. The Science for Peace and Security (SPS) Program collaborated with various scientists and research institutions to find innovative solutions (e.g., developing tools for rapid diagnosis) that would contain the spread of the virus.[36] The Alliance worked with its member states and partner countries to share knowledge and provide aid. For example, through project PROMEDEUS, the SPS Program helped Mauritanian Civil Protection improve pandemic management and coordination among various governmental and non-governmental actors addressing this issue.

Like climate change, a pandemic is a natural phenomenon exacerbated by modernity or anthropogenic causes.[37] The relationship between climate change and conflict is multidimensional and context-dependent. The pandemic only heightened climate-fragility risk, stressing states with strained socio-economic systems.[38] The COVID-19 pandemic can be observed as a test of governments' abilities to manage compound risks like climate hazards, which could be of the same magnitude as the COVID-19 pandemic. In sum, the Alliance evolved to conduct peacekeeping, execute humanitarian aid operations, fight cyber terrorists, and provide aid in response to natural disasters. In 2020, NATO added health security to this list. This evolution equipped NATO with the necessary ability to address security concerns arising from natural and environmental phenomena.

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[33] NATO, "Coronavirus Response: NATO Allies Cooperate with Private Sector and Academia, Making 3D Printing an Essential Contribution in the Fight against COVID 19 Pandemic," April 1, 2020, https://www.nato.int/cps/en/natohq/news_174797.htm.

[34] NATO, "Allied Plane with Medical Supplies to Fight Coronavirus Crisis Arrives in Slovakia," March 25, 2020, https://www.nato.int/cps/en/natohq/photos_174530.htm.

[35] NATO, "NATO and COVID-19," March 25, 2022, https://www.nato.int/cps/en/natohq/174592.htm.

[36] NATO, "NATO and COVID-19."

[37] Ibrahim Al-Marashi and Amar Causevic, "NATO and Collective Environmental Security in the MENA: From the Cold War to Covid-19," *Journal of Strategic Security* 13, no. 4 (2020): 28-44, https://doi.org/https://doi.org/10.5038/1944-0472.13.4.1804.

[38] Beatrice Mosello et al., "Spreading Disease, Spreading Conflict? – COVID-19, Climate Change and Security Risks" (Berlin: adelphi, 2020), https://www.adelphi.de/en/publication/spreading-disease-spreading-conflict.

Anthropogenic Risks as NATO's Next Critical Juncture

Except for Hurricane Katrina and COVID-19, the aforementioned critical junctures were human-induced threats. Hurricane Katrina in 2005 introduced environmental security on NATO's security radar. Between 2008 and 2009, Secretary Generals de Hoop Scheffer and Rasmussen heavily emphasized the importance of raising the prominence of climate change within NATO's *modus operandi*.

Climate change was first mentioned in the 2010 Strategic Concept for the Defense and Security document.[39] The Security Environment section of the report briefly states:

> Key environmental and resource constraints, including health risks, climate change, water scarcity, and increasing energy needs, will further shape the future security environment in areas of concern to NATO and have the potential to significantly affect NATO planning and operations.[40]

After 2010, addressing climate change was institutionalized within NATO's Emerging Security Challenges Division (ESCD).[41] Through the ESCD, NATO was able to build stronger partnerships with various international organizations, perform crucial strategic assessments of emerging security challenges, and develop new policies.

The consequences of the 2010 Strategic Concept for the Defense and Security document were visible in 2014 when the Alliance adopted the Green Defense framework. The framework provides a basis for integrating environmentally friendly solutions for defense. Smart Energy Teams advised NATO on lowering fuel and electricity consumption by proposing various energy-efficient solutions.[42] Additionally, Lithuania established the NATO Energy Security COE, tasked with conducting research on the Alliance's energy[43] transformation and reduction of fossil fuel use.[44] Based in Bulgaria, the Crisis Management and Disaster

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[39] Duncan Depledge and Tobias Feakin, "Climate Change and International Institutions: Implications for Security," *Climate Policy* 12, sup01 (2012): S73-S84, https://doi.org/10.1080/14693062.2012.728794.

[40] NATO, "Strategic Concept 2010" (Lisbon, November 2010), https://www.nato.int/cps/en/natohq/topics_82705.htm.

[41] Amar Causevic, "Facing an Unpredictable Threat: Is NATO Ideally Placed to Manage Climate Change as a Non-Traditional Threat Multiplier?" *Connections: The Quarterly Journal* 16, no. 2 (2017): 59-80, https://doi.org/10.11610/Connections.16.2.04.

[42] Amar Causevic, "Facing an Unpredictable Threat."

[43] For example, according to the research from Brown University, if it was treated as a country, the Pentagon would be ranked 55th on the list of the world's largest carbon dioxide emitters. More information available in Neta C. Crawford, "Pentagon Fuel Use, Climate Change, and the Costs of War" (Providence: Brown University, Watson Institute for International and Public Affairs, 2019), https://watson.brown.edu/costsofwar/papers/ClimateChangeandCostofWar.

[44] Julijus Grubliauskas, "NATO's Energy Security Agenda," *NATO Review*, May 9, 2014, https://www.nato.int/docu/review/articles/2014/05/09/natos-energy-security-agenda/index.html.

Response COE provides training and education related to security concerns arising from natural disasters.

In 2015, the NATO Parliamentary Assembly[45] adopted Resolution 427 on Climate Change and International Security, recognizing climate change as a non-traditional threat multiplier affecting security "in areas of concern to the Alliance [… with] the potential to significantly affect NATO planning and operations."[46]

According to historical institutionalism, the ESCD represents a change in NATO's bureaucratic and organizational structure.[47] By 2020, NATO took further steps to acknowledge climate change. In January 2021, Secretary General Stoltenberg acknowledged the security implications at the Sciences Po Youth and Leaders Summit, saying, "NATO's responsibility is to address the security consequences of climate change."[48] Climate change was also central to the 2020 Munich Security Conference agenda. Its Expert Group of the International Military Council on Climate and Security issued the "World Climate and Security Report 2020," articulating a role for national, regional, and international security institutions and militaries to adopt climate resilience strategies. The report emphasized that these security institutions must integrate climate knowledge and training within their institutions to prepare for future climate change threats.[49]

The Alliance approved an ambitious Climate Change and Security Action Plan to include climate change concerns in NATO's political and military agenda in 2021. In essence, the action plan advocates that NATO: 1) increases cross-institutional awareness about climate change; 2) includes climate change in its operations (e.g., civil preparedness, defense planning, capability delivery, training, and exercises); 3) contributes to the mitigation of climate change; and 4) strengthens climate change-related bilateral and multilateral cooperation.[50] In the summer of 2022, the Alliance published its first "Climate Change and Security Impact Assessment" report advocating for the structural adjustment to NATO's defense and security strategy.[51]

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[45] NATO's consultative inter-parliamentary organization consisting of 266 delegates from all member states.

[46] NATO Parliamentary Assembly, "Resolution 427 on Climate Change and International Security" (Brussels: NATO Parliamentary Assembly, 2015), https://www.actu-environnement.com/media/pdf/news-25462-resolution-otan-2015.pdf.

[47] Johnston, *How NATO Adapts*.

[48] NATO News, "NATO Secretary General at Sciences Po Youth and Leaders Summit," *YouTube*, January 18, 2021, https://www.youtube.com/watch?v=Kcva85RoASk.

[49] International Military Council on Climate and Security, *The World Climate and Security Report 2020*, February 13, 2020, https://imccs.org/report2020/.

[50] NATO, "NATO Climate Change and Security Action Plan," June 14, 2021, https://www.nato.int/cps/en/natohq/official_texts_185174.htm.

[51] NATO, "NATO Releases Its Climate Change and Security Impact Assessment," June 28, 2022, https://www.nato.int/cps/en/natohq/news_197241.htm.

By the 2022 NATO Summit in Madrid, the Alliance issued a new Strategic Concept, declaring climate change as a threat.[52] Climate change was mentioned once in the 2010 document. More than a decade later, in the 2022 Strategic Concept, it was addressed 13 times. Furthermore, at the Madrid Summit, it was announced that Canada would host NATO's Climate Change and Security COE, which would serve as a platform for both military and civil sectors to develop, improve, and share knowledge on the security impacts of climate change.[53]

Pandemics were not mentioned in Strategic Concept 2022, even though COVID-19 was still a threat by the time of the Madrid Summit.[54] There is a broad reference that the Alliance will work on increasing capabilities to better respond to, among other issues, health emergencies. Furthermore, the 2022 Strategic Concept is vague regarding how climate change preparedness will be integrated into NATO's *modus operandi*. Climate change is seen as a potential threat that will destabilize international security without articulating how it will address the impact of climate change on both NATO member states and the regions surrounding the Alliance, such as the Middle East.

NATO member states have already suffered from climate change-induced impacts (e.g., the 2002 Dresden floods, the 2003 and 2018 European heatwaves, the 2005 Hurricane Katrina, and the 2021 Mediterranean wildfires). For the time being, anthropogenic risks have been acknowledged by international organizations like NATO. The Alliance can deal with anthropogenic risks. The future will tell if the NATO members have the continued political will to work with this military institution to adopt institutional-level strategies to deal with a challenge that is not material and does not involve conventional military threats.

Conclusion

Anthropogenic risks (i.e., climate change and pandemics) have already changed the global security landscape. Further rise in sea level and increase in temperature can generate natural disasters capable of severely damaging vital infrastructure and disrupting global commodities supply. Future pandemics could be deadlier than COVID-19, and which cause significant social and economic disruption on a scale sufficient to paralyze modern societies.

NATO, founded as a collective defense alliance in the Cold War's early years, has evolved into an organization capable of executing different non-traditional

[52] NATO, "NATO 2022 Strategic Concept," adopted by Heads of State and Government at the NATO Summit in Madrid, June 29, 2022 (Madrid, 2022), https://www.nato.int/nato_static_fl2014/assets/pdf/2022/6/pdf/290622-strategic-concept.pdf.

[53] Government of Canada, "NATO Climate Change and Security Centre of Excellence," June 30, 2022, https://www.international.gc.ca/world-monde/international_relations-relations_internationales/nato-otan/centre-excellence.aspx?lang=eng.

[54] NATO, "NATO 2022 Strategic Concept."

military tasks. It has the potential to do more, though, and serve as a tested institutional body that can divert assets from the world's largest militaries to implement preventive climate mitigation strategies.

With the 2022 Russian invasion of Ukraine, arms buildup will ensue among the belligerents. While NATO members will also increase their conventional military capabilities, it would be wise to consider a more sustainable strategy of allocating budgets and resources to prepare for the ensuing insecurity exacerbated by climate fluctuations.

Disclaimer

The views expressed are solely those of the authors and do not represent official views of the PfP Consortium of Defense Academies and Security Studies Institutes, participating organizations, or the Consortium's editors.

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