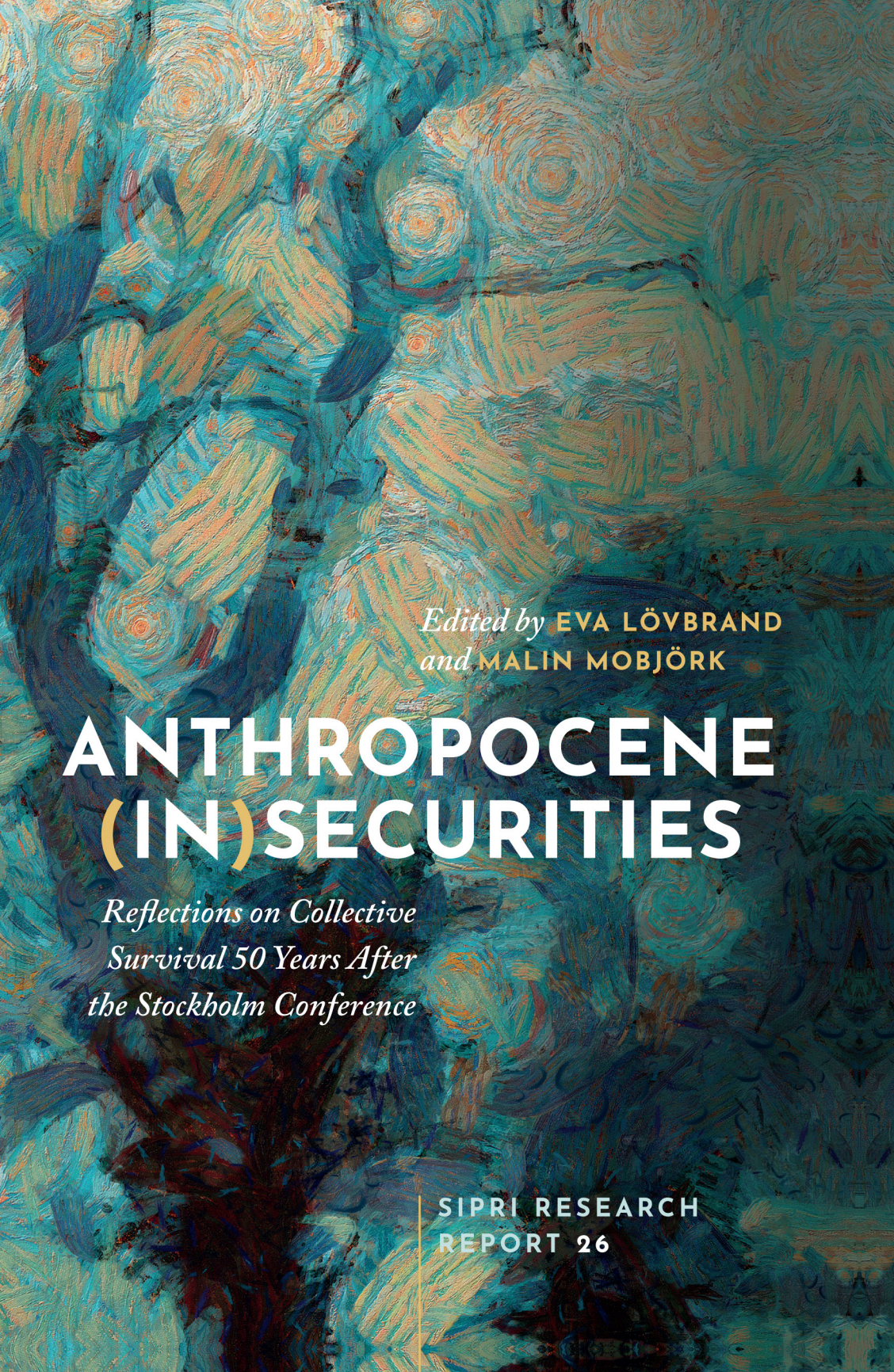
Edited by EVA LÖVBRAND and MALIN MOBJÖRK
ANTHROPOCENE (IN)SECURITIES
Reflections on Collective Survival 50 Years After the Stockholm Conference
SIPRI RESEARCH REPORT 26

Anthropocene (In)securities

Reflections on Collective Survival
50 Years After the Stockholm Conference

STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE

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Foreword

In the late 1960s the Swedish delegation to the United Nations, led by the permanent representative to the UN, Ambassador Sverker Åström, presented the idea of an international conference on the environment. Enthusiasm among member states was initially limited. It took a great deal of persuasion and commitment to get the necessary support for the idea within the UN family.

Through the resulting UN Conference on the Human Environment (Stockholm Conference) in Stockholm, Sweden, in June 1972, and the preparatory work that informed the conference agenda, Sweden brought environmental concerns to the international scene and raised awareness of global environmental change.

As a young Swedish diplomat working in Washington, DC, at the time, I was in regular contact with United States representatives ahead of the Stockholm Conference. The relations were strained due to the US use of Agent Orange, the chemical that destroyed large parts of the natural habitat in Viet Nam. This destruction later led to adjustments in international humanitarian law to call for protection of civilians in war and also for protection of the natural environment. The reason for this was simple, the natural environment is a condition for human life.

The world in 1972 was very different from today, not least in terms of knowledge and awareness of the environmental challenges discussed at the Stockholm Conference. In the 1970s we had barely heard about climate change, and there were no frameworks in place to guide the international community towards more sustainable futures. Despite scientific advancements, relatively little was known about how human activities affect ecological systems.

Today, human-induced environmental change is well known and undeniable. The transformations of the global biosphere are unprecedented and have prompted scientists to announce a new geological era dominated by humans: the Anthropocene. We have finally begun to realize that all species on earth—humans, animals and plants—are tightly interdependent and must coexist to secure healthy, safe and peaceful life on earth. The UN's *Human Development Report 2020* highlights that social and planetary imbalances are connected and reinforce each other. If we succeed in translating

awareness into political action, we can make a historical change for generations to come.

The 50-year anniversary of the Stockholm Conference serves as an important reminder of the progress made in global environmental governance, but also of the fundamental challenges that remain.

In retrospect, it is clear that the international community has failed to address environmental degradation urgently and forcefully enough. With global environmental change unfolding at unprecedented speed and scale, we now find ourselves in a situation that the Stockholm Conference hoped to avoid. The 50-year anniversary can serve as an opportunity for reflection on how the agenda and outcomes of the Stockholm Conference can be taken forward.

I am therefore extremely pleased to see this volume, which offers an introduction and a backdrop to the Anthropocene debate, in view of the Stockholm Conference and the advancement of global governance. The chapters explore what environmental interconnectedness means for security and offer different ideas and proposals on how to think and act on the challenges of a rapidly warming world. To put it simply, short-term self-interest has to be replaced with a greater solidarity and respect for life on earth, and all living beings. We have to acknowledge humanity's fundamental dependence on nature and our obligation to protect it. The planet will continue in its orbit, but the conditions for human life on earth are contingent on our own actions. By making peace with nature, we can chart a new—and better—path in human history.

It is easy to feel despair in the contemporary world. The increasing polarization within and between countries, lingering conflicts, environmental destruction and an accelerating climate crisis are deeply worrying. Nonetheless, I am hopeful. The youth of today are my biggest hope. All young women and men, girls and boys, devoted to transformative climate action, equality, justice and civil rights, should be an inspiration for us all. Their engagement can mobilize the change we need to achieve. Knowledge and innovation will also be crucial in the transformation towards a more sustainable world.

We saw the embryo of environmental mobilization in Stockholm in June 1972, when social movements and activist groups entered into conversation with governmental representatives. Today, collaborative efforts across governments, business, academia and civil society are inbuilt components of environmental diplomacy and

governance. None of our contemporary challenges can be solved without collaboration. Collaboration is essential to eliminate poverty, to end hunger and to decarbonize our economies. We need to put the financial system to work for the climate and we need to protect the most vulnerable. I hope the 50-year anniversary of the Stockholm Conference will be seen as a turning point towards these changes. Not only rhetorically, but also through bold actions.

Covid-19 has forcefully reminded us that our ways of life, and our relationships with nature, do matter. We are connected, not only to nature, but to each other. By acting together—and with solidarity, urgency and hope—we will be able to transform our world to a better place. 'Together' is possibly the most important word in today's world.

Jan Eliasson
Chair, SIPRI Governing Board
May 2021

Acknowledgements

The United Nations Conference on the Human Environment was held in Stockholm, Sweden, in June 1972. This event, also known as the Stockholm Conference, was the first of its kind, and reflected mounting concerns with the transboundary environmental problems caused by modern industrial society. Fifty years later, we find ourselves in a world marked by profound, accelerating and possibly irreversible environmental change. Today, there is simply no place on earth untouched by human influence. The Anthropocene is a concept that has been advanced to capture this novel environmental condition. It refers to an unpredictable and fragile phase in planetary history when humanity is dangerously disrupting the earth's biosphere and life-upholding systems.

In this volume we have brought together an interdisciplinary team of scholars and policy experts to jointly examine what security means in this strange new world of humanity's own making. Together we ask how global institutions can respond to the systemic production of environmental risks and insecurities, and what political innovations are needed to chart a more sustainable path for global development in the decades to come. In view of the challenges posed by the Anthropocene, we note that multiple understandings of security are taking form in parallel, and are pushing academic and policy discourse in different, sometimes conflicting, directions. Rather than searching for agreement or final solutions, this volume seeks to facilitate critical conversation across multiple scholarly and policy fields and hereby pluralize the stories told about collective survival on a human-dominated planet.

The 50-year anniversary of the Stockholm Conference has worked as a powerful backdrop to our conversations and as an important opportunity to imagine constructive ways ahead. The full author team therefore ends this volume with a jointly written statement. This Afterword draws out key findings from the chapters and presents a list of actions that we collectively think are required to safely navigate the global landscape of Anthropocene insecurities.

This volume would not have been possible without the engagement and collaborative spirit of the contributing authors. We owe our gratitude to all colleagues who have participated in the journey of

this book and provided intellectual stimulus, advice and critique along the way. Special thanks to Rickard Söder, who has offered excellent editorial assistance throughout the whole process. A large number of research institutions, foundations and think tanks have supported the research of this volume. We would particularly like to acknowledge the generous support of the Swedish Foundation for Strategic Environmental Research (Mistra) through the research programme Mistra Geopolitics: Sustainable Development in a Changing Geopolitical Era. We also want to extend our thanks to colleagues within the Mistra Geopolitics consortium, SIPRI and the Department of Thematic Studies: Environmental Change at Linköping University, for their support and good advice throughout the preparation of this volume. Last, but not least, we would like to express our gratitude to the SIPRI editorial team—particularly Joey M. Fox, Caren Brown and Frank Esparraga—which has guided the manuscript through the final stages of the editorial process with great professionalism and engagement.

Eva Lövbrand and Malin Mobjörk

Abbreviations

CSM	Climate Security Mechanism
DFID	Department for International Development
ENVSEC	Environment and Security Initiative
G7	Group of 7
G77	Group of 77
IPCC	Intergovernmental Panel on Climate Change
MERS	Middle East respiratory syndrome
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NDC	Nationally determined contribution
SARS	Severe acute respiratory syndrome
SDGs	Sustainable Development Goals
Stockholm Conference	UN Conference on the Human Environment
Stockholm Declaration	Declaration of the UN Conference on the Human Environment
UNDP	UN Development Programme
UNDPPA	UN Department of Political and Peacebuilding Affairs
UNEP	UN Environment Programme
UNFCCC	UN Framework Convention on Climate Change

1. One earth, multiple worlds: Securing collective survival on a human-dominated planet

EVA LÖVBRAND, MALIN MOBJÖRK AND RICKARD SÖDER

In June 1972 the United Nations Conference on the Human Environment (UNCHE) was held in Stockholm, Sweden.[1] The conference was the first high-level summit to focus on the environment as a matter of international concern and brought together representatives of 114 UN member states and special agencies. 'Only One Earth' was the slogan and powerful symbol of this diplomatic event. Following the title of Barbara Ward's and René Dubos' report commissioned to set the stage for the interstate negotiations, the conference slogan sought to replace pictures of world division and conflict with a sense of 'planetary togetherness'.[2] Speaking to broader visions of globality and world unity that gained ground in the decades following World War II, the image of the earth as one shifted the perception of environmental risks from purely local or national concerns to matters of collective survival.[3]

The UNCHE, also known as the Stockholm Conference, is a landmark event in the history of global environmental governance. As documented by Lynton Caldwell no UN conference had thus far 'dramatized more powerfully the unity and fragility of the biosphere' and the necessity of international environmental cooperation.[4] Through the adoption of the 1972 Declaration of the UN

[1] UN, Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

[2] Jasanoff, S., 'Image and imagination: The formation of global environmental consciousness', eds Miller, C. and Edwards, P., *Changing the Atmosphere: Expert Knowledge and Environmental Governance* (MIT Press: Cambridge, MA, 2001), p. 334; and Ward, B. and Dubos, R. J., *Only One Earth: The Care and Maintenance of a Small Planet* (Deutsch: London, 1972).

[3] Munster, R. van and Sylvest, C. (eds), *The Politics of Globality Since 1945: Assembling the Planet* (Routledge: London, 2016).

[4] Caldwell, L. K., 'A world policy for the environment', *UNESCO Courier: A Window Open on the World*, vol. XXVI (1973), p. 5.

Conference on the Human Environment (Stockholm Declaration) and its 26 normative principles, the UNCHE laid the foundations for a global environmental agenda that would guide international action for decades to come.[5] As outlined in the preamble of the Stockholm Declaration it is the duty of all governments to prevent irreversible harm to the human environment on which the life and well-being of present and future generations depend. While the 'human environment' as a shared and endangered place formed the impetus for collective action, this idea was not uncritically embraced by all conference participants. Marked by histories of colonial exploitation, many developing countries questioned the universalist intentions of the conference organizers and worried that the 'one earth' framing would turn into yet another form of Western domination over the millions of people still deprived of adequate food and clothing, shelter and education, health and sanitation. As effectively summarized by India's Prime Minister Indira Gandhi during the Stockholm Conference: 'How can we speak to those who live in villages and slums about keeping the oceans, rivers and the air clean when their own lives are contaminated at the source?'[6]

Fifty years after the Stockholm Conference many of the tensions that came to the fore remain at the centre of global environmental debates: environmental protection versus the right to development, the pollution of the affluent versus the degradation of poverty. However, the material contexts within which these debates play out are now markedly different. Following five decades of economic globalization and fossil-fuelled expansion of international markets, the world is today more interconnected than ever before. While the intensified movement of goods, services and people experienced since the 1970s has allowed an extraordinary exchange of wealth and ideas across societies, it has also resulted in accelerating problems of environmental degradation, displacement and disconnection. Over the past 50 years the externalization of environmental costs

[5] Bernstein, S. F., *The Compromise of Liberal Environmentalism* (Columbia University Press: New York, 2001); Speth, J. G. and Haas, P., *Global Environmental Governance* (Island Press: 1 Jan. 2006); and UN, 'Declaration of the United Nations Conference on the Human Environment', Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

[6] Gandhi, I., 'The unfinished revolution', address of I. S. Gandhi, Prime Minister of India, at the UNCHE, *Bulletin of the Atomic Scientists*, vol. 28, no. 7 (1972), pp. 35–38.

across time and space has become so routine that those with power, education and money seldom have to take responsibility for the social and ecological consequences of their actions.[7] Despite several decades of international environmental collaboration, institution building and governance, the spread of high-consumption lifestyles has cast long shadows over distant lands and resulted in melting glaciers, acidified oceans, unprecedented loss of natural habitats and mass species extinction.[8]

The 'Anthropocene' is a term coined at the turn of the millennium to describe these profound environmental transformations.[9] It is a concept that refers to a new and dangerous era in planetary history, when the social and economic activities of humankind are undermining and fundamentally altering the planetary life-support systems upon which we all depend.[10] In contrast to the hopeful language of environmental stewardship found in the Stockholm Declaration, the Anthropocene formulation is uncomfortable and troubling. It confronts us with the dangers of a destabilized biosphere and the apparent failure of global governance systems to halt the irreversible damage done to vulnerable people and ecosystems.[11] Rather than offering a blueprint for action, the Anthropocene invites us to mourn what has been lost and to grapple with the unpredictable and fragile

[7] Christoff, P. and Eckersley, R., *Globalization and the Environment* (Rowman & Littlefield Publishers: Lanham, MD, 2013), p. 14; and Dauvergne, P., *The Shadows of Consumption: Consequences for the Global Environment* (MIT Press: Cambridge, MA, 2010).

[8] Intergovernmental Science-Policy Platform on Biodiversity (IPBES), *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES secretariat: Bonn, 2018); and Intergovernmental Panel on Climate Change (IPCC), *Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty* (IPCC: Geneva, 2018).

[9] Crutzen, P. and Stoermer, E., 'The "Anthropocene"', *Global Change Newsletter*, vol. 41 (May 2000).

[10] Rockström, J. et al., 'A safe operating space for humanity', *Nature*, vol. 461, no. 7263 (Sep. 2009), pp. 472–75; Steffen, W. et al., 'Planetary boundaries: Guiding human development on a changing planet', *Science*, vol. 347, no. 6223 (Feb. 2015); and Hamilton, C., *Defiant Earth: The Fate of Humans in the Anthropocene* (Polity Press: Oxford, 2017).

[11] Christoff and Eckersley (note 7); and Dauvergne, P., 'Is the power of brand-focused activism rising? The case of tropical deforestation', *Journal of Environment & Development*, vol. 26, no. 2 (June 2017), pp. 135–55.

environments that fossil-fuelled modes of social and economic life are now making.[12]

In this volume we ask what security means in this strange new era when multiple and interlocking crises are creating novel and complex landscapes of environmental instability, inequality and danger. What is the role of traditional security concepts, agents and institutions in a world threatened by destabilized ice masses, thawing permafrost, rising sea levels, declining freshwater resources and deforested lands? How are safety and protection to be understood when seemingly harmless and mundane decisions in one geographical location (e.g. what to eat for breakfast, what to wear or how to get to work) can remake the conditions for life in another, and for centuries to come? How can global governance systems respond to the systematic production of environmental risks and the skewed distribution of costs across places, species and generations? Informed by questions of this kind, this volume ventures into unfamiliar terrain where binary concepts of inside and outside, us and them, and now and then are complicated and blurred.

By returning to the Stockholm Conference and the global politics that shaped its agenda and outcomes, we revisit the ideas and categories that have informed security thinking and practice in relation to the global environment over the last 50 years. While celebrating the significant diplomatic and institutional achievements made since the Stockholm Conference, this volume also draws attention to the mounting environmental insecurities and inequalities that now threaten to undo the human development gains made during the last half century.[13] The Anthropocene concept is helpful in this regard. Since first formulated in earth system science circles, it has stirred widespread academic debate and has been mobilized, challenged and reworked by an expanding scholarship.[14] While the concept has been widely criticized for its colonial heritage and universalist pretentions, it has also prompted novel ways

[12] See chapter 6 in this volume; and Tsing, A., *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton University Press: Princeton, NJ, 2017).

[13] UN Development Programme (UNDP), *Human Development Report 2020, The Next Frontier: Human Development and the Anthropocene* (UNDP: New York, 2020).

[14] Lövbrand, E., Mobjörk, M. and Söder, R., 'The Anthropocene and the geo-political imagination: Re-writing earth as political space', *Earth System Governance*, vol. 4 (June 2020).

of thinking about humanity's relationship to nature, ourselves and collective existence.[15] The Anthropocene has therefore turned into an important laboratory of ideas for scholars and policy practitioners searching for new conceptions of security.

In this volume we trace how the trouble stirred up by the Anthropocene formulation may redirect security thinking and practice in the years to come. Rather than searching for agreement or final solutions, our aim is to facilitate critical conversation across multiple scholarly and policy fields and hereby pluralize the stories told about collective survival on a human-dominated planet. While the environmental dangers described by the Anthropocene accentuate the interconnected and entangled character of global life, the language used to make sense of this new era remains emergent, ambiguous and risky.[16] Anthropocene discourse lacks the stability and reassurance offered by more familiar narratives such as sustainable development. Instead, it invites careful reconsideration of some of the core assumptions upon which the study and practice of global environmental politics rest.[17]

I. The Stockholm Conference

The idea to hold a UN environmental conference in Stockholm was proposed during the UN General Assembly's 22nd session in 1968. In a formalized letter to the UN secretary-general, the permanent representative of Sweden noted that human-induced environmental change had become a pressing problem for many states, and that these

[15] Davis, H. and Todd, Z., 'On the importance of a date, or decolonizing the Anthropocene', *ACME Journal*, vol. 16, no. 4 (2017), pp. 761–80; Lepori, M., 'There is no Anthropocene: Climate change, species-talk, and political economy', *Telos*, vol. 172 (2015), pp. 103–24; Chaturvedi, S. and Doyle, T., *Climate Terror: A Critical Geopolitics of Climate Change* (Palgrave Macmillan: 2015); Todd, Z., 'Indigenizing the Anthropocene', eds Davis, H. and Turpin, E., *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies* (Open Humanities Press: 2015), pp. 241–54; Lövbrand, Mobjörk and Söder (note 14); Harrington, C. and Shearing, C., *Security in the Anthropocene: Reflection on Safety and Care* (transcript Verlag: Bielefeld, 28 Apr. 2017); and Burke, A. et al., 'Planet politics: A manifesto from the end of IR', *Millennium: Journal of International Studies*, vol. 44, no. 3 (June 2016), pp. 499–523.

[16] Biermann, F. and Lövbrand, E., *Anthropocene Encounters: New Directions in Green Political Thinking* (Cambridge University Press: Cambridge, 2019).

[17] Harrington and Shearing (note 15); and Burke et al. (note 15).

problems must be addressed through international cooperation.[18] Although environmental concerns such as pollution, waste, land degradation and resource scarcity informed the conference planning and agenda, the initiative was also a response to geopolitical rivalry at the time. The years before the conference were marked by major divisions within the UN. In the late 1960s the UN had become a stage for cold war rivalry and post-colonial power struggles. By proposing a conference on the human environment—a rather uncontroversial matter at the time—Sweden and other member states hoped to reduce political tensions on the global scene and foster international cooperation.[19]

The UNCHE took place from 5 to 16 June 1972. During the conference the participating government delegates agreed upon an action plan for international cooperation on the environment, and a declaration that included a preamble and 26 principles.[20] Additionally, as a result of the conference the UN Environment Programme (UNEP) was established as the first global institution devoted to the environment.[21] While focused on interstate cooperation and diplomacy, the Stockholm Conference is also remembered for its widespread mobilization of non-governmental organizations and citizen groups. Outside the official conference venue, thousands of activists arranged parallel meetings to debate questions relating to population growth, economic development, distribution of wealth and access to natural resources.[22] By insisting on having a voice in matters of collective survival, the non-governmental organizations present in Stockholm paved the way for a participatory form of multilateralism that would shape environmental diplomacy in the decades to come.[23]

[18] 'Declaration of the United Nations Conference on the Human Environment, 1972', Extracts from Yearbook of the United Nations, 1972, vol. 26, pp. 319–21 and 330–31, *Indian Journal of Public Administration*, vol. 35, no. 3 (July 1989), pp. 680–84.

[19] See chapter 2 in this volume.

[20] Sullivan, E. T., 'The Stockholm Conference: A step toward global environmental cooperation and involvement', *Indiana Law Reviews*, vol. 6, no. 2 (1972), p. 267; and 'Declaration of the United Nations Conference on the Human Environment, 1972' (note 18).

[21] Koester, V., 'From Stockholm to Brundtland', *Environmental Policy and Law*, vol. 20, no. 1/2 (1990), p. 14; UN (note 1); and Borowy, I., 'Before UNEP: Who was in charge of the global environment? The struggle for institutional responsibility 1968–72', *Journal of Global History*, vol. 14 (Mar. 2019), p. 87.

[22] Emmelin, L, 'The Stockholm Conferences', *Ambio*, vol. 1, no. 4 (1972), pp. 135–40.

[23] Willetts, P., 'From Stockholm to Rio and beyond: The impact of the environmental movement on the United Nations consultative arrangements for NGOs', *Review of*

The UN General Assembly unanimously adopted the Stockholm Declaration in December 1972, six months after the conference. Even the Soviet Union and its allies, who boycotted the conference over a dispute about East Germany's membership status in the UN, accepted this central conference output. While written in non-legally binding language, the declaration has been crucial to the development of international environmental law and governance.[24] By linking the state of the global biosphere to questions of human safety and well-being, the declaration also gave rise to nascent debates on 'environmental security'. It hereby opened up a novel field of research and policy.[25]

II. The environment–security nexus

The environmental security concept belongs to the broadened security agenda that took shape at the end of the cold war.[26] The term was initially informed by the detrimental effects of environmental disasters like the gas tragedy in Bhobal, India, in 1984 and the Chernobyl nuclear reactor accident in the Soviet Union in 1986. It was also tied to growing concerns that environmental change and resource scarcity would instigate violent conflicts.[27] In its original

International Studies, vol. 22, no. 1 (1996), pp. 57–80; Betsill, M. M. and Corell, E., *NGO Diplomacy: The Influence of Nongovernmental Organizations in International Environmental Negotiations* (MIT Press: Cambridge, MA, 2008); and Bäckstrand, K., 'Democratizing global environmental governance? Stakeholder democracy after the World Summit on Sustainable Development', *European Journal of International Relations*, vol. 12, no. 4 (2006), pp. 467–98.

[24] See chapter 7 in this volume; Koester (note 21), p. 15; and Handl, G., 'Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), 1972 and the Rio Declaration on Environment and Development, 1992', UN, 2012.

[25] Hardt, J. N., *Environmental Security in the Anthropocene: Assessing Theory and Practice* (Routledge: Abingdon, 1 Jan. 2017).

[26] Spring, Ú. O., Brauch, H. G. and Dalby, S., 'Linking Anthropocene, HUGE and HESP: Fourth phase of environmental security research', eds Brauch, H. G. et al., *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Springer: Berlin, 2009), pp. 1277–94; and Floyd, R., 'The environmental security debate and its significance for climate change', *International Spectator*, vol. 45, no. 3 (2008), 51–65.

[27] Homer-Dixon, T. F., 'Environmental scarcities and violent conflict: Evidence from cases', *International Security*, vol. 19, no. 1 (January 1994), p. 5; and Dalby, S., Brauch, H. G. and Spring, Ú. O., 'Environmental security concepts revisited during the first three phases (1983-2006)', eds Brauch, H. G. et al., *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Springer: Berlin, 2009), pp. 781–90.

formulation, the environmental security concept essentially added environmental degradation to the palette of threats that states have to consider. This territorial formulation was criticized early on for placing environmental concerns within the threat/defence, enemy/friend logic and hereby undermining the cooperative efforts envisioned by the Stockholm Declaration.[28] Rather than drawing attention to the social and economic drivers of environmental degradation, the security terminology depicted nature as an external threat that states—paradoxically—both seek protection from and seek to protect.[29]

When the human security concept gained ground in the mid 1990s, it shifted the environmental security debate away from states to people. Through publication of the 1994 UN *Human Development Report*, the meaning of security was extended beyond the protection of territory from external aggression to include safety from chronic threats such as hunger, disease and environmental degradation.[30] Concerned with human life and dignity, the human security discourse directed attention to the rights, needs and coping capacity of people most exposed and vulnerable to environmental stress.[31] This deliberate effort to pluralize the meaning and practice of security was facilitated by the constructivist research agenda advanced by the Copenhagen School of security studies. Rather than approaching security as an objectively agreed upon condition, work in this field invited security scholars to critically interrogate the formulation of emergency situations that require a security response, and to ask *who* and *what* are deemed endangered in such situations.[32] Although Copenhagen scholars such as Barry Buzan and Ole Wæver were concerned with the extraordinary and undemocratic measures that states undertake in the name of security, their critical interrogation of securitization processes opened up new ways of thinking about

[28] Deudney, D., 'The case against linking environmental degradation and national security', *Millennium: Journal of International Studies*, vol. 19, no. 3 (Dec. 1990), pp. 461–76.

[29] Dalby, S., *Security and Environmental Change* (Polity: Cambridge, 2009), p. 54; and Hamilton, S., 'Securing ourselves from ourselves? The paradox of "entanglement" in the Anthropocene', *Crime, Law, and Social Change*, vol. 68, no. 5 (2017), pp. 579–95.

[30] UNDP, *Human Development Report 1994* (Oxford University Press: New York, 1994).

[31] Barnett, J. and Campbell, J., *Climate Change and Small Island States: Power, Knowledge and the South Pacific* (Earthscan: London, 2010); and Matthew, R. A. et al. (eds), *Global Environmental Change and Human Security* (MIT Press: Cambridge, MA, 2009).

[32] Buzan, B., Wæver, O. and de Wilde, J., *Security: A New Framework for Analysis* (Lynne Rienner: Boulder, CO, 1998).

the environment and security nexus.[33] By approaching securitization as a discursive process that constitutes threats and referent objects, their constructivist framework made it possible to consider a matrix of problems that required securing against, and a number of objects to be secured.[34]

When climate change moved to the top of the global environmental agenda in the mid 2000s, the environmental security debate was given new spatial and temporal horizons. Faced with the mounting risk that global warming will not be kept at safe levels, scientists and policymakers began to think through the catastrophic consequences of a 4–7°C warming world.[35] Informed by projections of rising sea levels and intensified floods, droughts and wildfires, many policy actors and analysts in the Global North adopted a risk-oriented approach to security. Central to this approach is the monitoring, prediction and management of climate risks that are often diffuse, long term and uncertain in their nature.[36] Although the climate security debate has drawn attention to interconnections and possible trade-offs across issue areas such as disaster risk reduction, climate change adaptation and peacebuilding efforts, it has predominately taken place within separate policy spheres in the Global North.[37] The policy responses are manifold, and range

[33] Wæver, O., 'Securitization and desecuritization', ed. Lipschutz, R. D., *On Security* (Columbia University Press: New York, 1995), pp. 46–86.

[34] Diez, T., von Lucke, F. and Wellmann, Z., *The Securitisation of Climate Change: Actors, Processes and Consequences* (Routledge: London, 2016); McDonald, M., 'Discourses of climate security', *Political Geography*, vol. 33, no. 1 (2013), pp. 42–51; Corry, O., 'Securitisation and "riskification": Second-order security and the politics of climate change', *Millennium: Journal of International Studies*, vol. 40, no. 2 (2012), pp. 235–58; and Matthew et al. (note 31), p. 10.

[35] IPCC, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds Parry, M. L. et al. (Cambridge University Press: Cambridge, 2007); World Bank, *Turn Down the Heat: Why a 4°C Warmer World Must be Avoided* (World Bank: Washington, DC, 2012); and Oels, A., 'Rendering climate change governable by risk: From probability to contingency', *Geoforum*, vol. 45 (2013), pp. 17–29.

[36] Mabey, N. et al., *Degrees of Risk: Defining a Risk Management Framework for Climate Security* (Third Generation Environmentalism Ltd: London, 2011); and chapter 4 in this volume.

[37] Barnett, J., 'Security and climate change', *Global Environmental Change*, vol. 13, no. 1 (2003), pp. 7–17; Dellmuth, L. M. et al., 'Intergovernmental organizations and climate security: Advancing the research agenda', *Wiley Interdisciplinary Reviews: Climate Change*, vol. 9, no. 1 (2018); Mobjörk, M. et al., *Climate-related Security Risks: Towards an Integrated Approach* (SIPRI and Stockholm University: Stockholm, 2016); and Adger, W. N. et al., 'Human security', eds Field, C. B. et al., *Climate Change 2014: Impacts, Adaptation, and*

from military responsibility-to-protect measures focused on climate change hotspots in 'weak' or 'failing' states, to the climate adaptation programmes of international organizations aiming to enhance the resilience and adaptive capacity of vulnerable communities.[38] Thus far, this 'climatization' of security and development policy has not triggered any drastic mitigation responses.[39] Instead, the climate security agenda has primarily been about enhancing preparedness for the dangers of a rapidly warming world and developing strategies for coping with the consequences.

III. Anthropocene (in)securities

Over the past decade the Anthropocene concept has opened up a more speculative lens for studies of the environment–security nexus. In earth system sciences where the concept was invented, the Anthropocene encapsulates the unprecedented and accelerating human imprint on the earth's biosphere following the past 50 years of economic activity, consumption and resource use. As outlined by Will Steffen and colleagues, the Anthropocene entails 'an unintended experiment of humankind on its own life support system'.[40] By changing the composition of the atmosphere, degrading lands, polluting waters and driving species to extinction, humanity has dangerously disrupted the structure and functioning of the earth's biological fabric as a whole. Hence, we have entered a new phase in planetary history when nature no longer functions as a stable backdrop to human development and well-being.[41]

The proposition that we now live on a radically transformed and damaged planet is uncomfortable and troubling. It suggests a dangerous rupture in the earth's trajectory that calls for new ways of thinking about safety, protection and collective survival.[42] For many

Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge University Press: Cambridge, 2014), pp. 37, 91.

[38] Ferguson, P., 'Discourses of resilience in the climate security debate', *Global Environmental Politics*, vol. 19, no. 2 (May 2019), pp. 104–26.

[39] Oels (note 35); and chapter 3 in this volume.

[40] Steffen, W., Crutzen, P. and McNeill, J. R., 'The Anthropocene: Are humans now overwhelming the great forces of nature?', *Ambio*, vol. 36, no. 8 (2007), pp. 614–21.

[41] Steffen, W. et al., 'The Anthropocene: From global change to planetary stewardship', *Ambio*, vol. 40, no. 7 (2011), pp. 739–61.

[42] Hamilton (note 10).

the Anthropocene marks an existential moment for modern civilization that radically unsettles the nature/culture divide that underpins much of Western philosophy, science and politics. Faced with the devastating effects of melting Arctic ice sheets, loss of critical habitats and mass species extinction, the idea that we can secure humanity against external threats is precisely the problem that needs to be overcome.[43] In a time when our global modes of economy, trade and consumption are disrupting the planet's life-upholding systems, dualistic understandings of an active and morally countable human subject and a passive and external nature no longer seem to make analytical or moral sense.[44] The distinction between humans and their surrounding environment, so central to the environmental policy and security paradigm, is replaced with a more fragile and entangled universe that binds human and non-human worlds together in complex and unpredictable ways.[45]

Although the transformed and risky world described by the Anthropocene has produced discomfort, disillusionment and a looming sense of fatality, it has also inspired a wealth of new security concepts and ideas.[46] In the vibrant and expanding literature on Anthropocene (in)security, scholars are asking critical questions about what it means to be human on a damaged planet and how security can be achieved in interconnection with the many non-human beings upon which our collective survival depend.[47] Ecological security is one of many concepts that has emerged from these efforts. It is a formulation that reorients security practices towards the maintenance of ecosystem's life-sustaining functions in the context of perturbation and change.[48] Recognizing the dynamic

[43] Chandler, D., *Ontopolitics in the Anthropocene: An Introduction to Mapping, Sensing and Hacking* (Routledge: London, 2018).

[44] Fagan, M., 'Security in the Anthropocene: Environment, ecology, escape', *European Journal of International Relations*, vol. 23, no. 2 (2017), pp. 292–314.

[45] Biermann, F., 'The future of "environmental" policy in the Anthropocene: Time for a paradigm shift', *Environmental Politics*, vol. 30, no. 1–2 (2021).

[46] Rose, D. B., 'Anthropocene noir', Proceedings from *The People and the Planet 2013 Conference: Transforming the Future* (RMIT University: Melbourne, 2–4 July 2013); and Scranton, R., *Learning to Die in the Anthropocene: Reflections on the End of a Civilization* (City Lights Books: San Francisco, 2015).

[47] Burke et al. (note 15).

[48] McDonald, M., 'Ecological security', eds Eroukhmanoff, C. and Harker, M., *Reflections on the Posthuman in International Relations: The Anthropocene, Security and Ecology* (E-International Relations: Bristol, 2017), p. 67; and McDonald, M., 'Climate change and security: Towards ecological security?', *International Theory*, vol. 10, no. 2 (2018), pp. 153–80.

interrelations between human and non-human worlds, ecological security belongs to a new security language that challenges the anthropocentric belief that only humans can and should be the subjects of security. Sensitive to the complex and lively relationships across people, animals, plants, rivers and rocks, this new vocabulary seeks to foster 'worldly' accounts of security oriented towards coexistence, solidarity and care.[49]

Ontological security is another concept that has developed in response to the existential questions posed by the Anthropocene. This is an account of security that asks what it means to secure a continuous sense of self in the midst of radical uncertainty and change.[50] While the environmental security debate has highlighted the dangerous effects of sea-level rise on, for instance, low-lying islands states, it typically frames climate change as a threat to the physical survival of island communities. However, losing land to the sea can also threaten traditional ways of life and peoples' sense of meaning and place in the world.[51] The Anthropocene extends this ontological insecurity across new temporal and spatial scales and transforms the very essence of how humans can think and be in the world. Rather than protecting ourselves from the great forces of nature, we as humans now subsume those forces and hereby become the object and subject of security. Faced with catastrophic projections of runaway climate change and mass species extinction, the task of humanity in the Anthropocene is therefore to 'secure itself in the future *from* itself in the present'.[52]

[49] See chapter 7 in this volume; Harrington and Shearing (note 15); Mitchell, A., 'Only human? A worldly approach to security', *Security Dialogue*, vol. 45, no. 1 (2014), pp. 5–21; and Cudworth, E. and Hobden, S., 'Complexity, ecologism, and posthuman politics', *Review of International Studies*, vol. 39, no. 3 (2013), pp. 643–64.

[50] Hamilton (note 29).

[51] See chapter 8 in this volume.

[52] Hamilton (note 29), p. 580.

IV. One earth, multiple worlds

> I cannot help wondering whether we may not be present at one of those turning points in man's affairs when the human race begins to see itself and its concerns from a new angle of vision and, as a result, finds new openings for action, for courage and for hope.[53]

These were the words chosen by Ward in reflection upon the outcomes of the Stockholm Conference. Interconnection and interdependence were the essence of the conference for her. Speaking to a generation that, for the first time in history, was facing the possibility of making the planet unfit for life, Ward offered a message of humility and restraint to safeguard 'continuing common life on our single, shared planetary system'.[54]

Half a century later this message is more important and urgent than ever before. In the new era that we are coming to know as the Anthropocene, we are living through the 'massive and irreversible harm to the earthly environment' that the Stockholm Declaration sought to prevent.[55] Today, the traces of resource-intensive and fossil-fuelled ways of life are found in the atmosphere, the soil, the oceans, the rivers and the geological strata of the earth. Although the magnitude and reach of the environmental damage done now bind people, places and species together in unprecedented ways, the impacts are not evenly shared across life worlds and often reinforce colonial patterns of injustice and suffering.[56] How to get on together in view of this apparent crisis and secure collective survival on a human-dominated planet is a central challenge for the chapters of this volume.

The concepts and ideas mobilized in this volume are deliberately multiple and diverse. To encourage and foster conversation across different scholarly and policy fields, we invited contributions that span state-centric, human-centric and earth-centric security formulations and imaginations. In view of the challenges posed by the Anthropocene, multiple understandings of security are taking

[53] Ward, B., 'Only one earth', *UNESCO Courier: A Window Open on the World*, vol. XXVI, no. 1 (1973), p. 8.
[54] Ward (note 53), p. 10.
[55] UN (note 5).
[56] Davis and Todd (note 15).

form in parallel, and pushing academic and policy discourse in different, sometimes conflicting, directions. While this volume presents different stories of Anthropocene endangerment, it is animated by the search for a new security language that brings the transformed global environment to the forefront of global affairs. As illustrated by the contributions to this volume, the security practices resulting from these efforts are still open and unfinished. The Anthropocene is not a problem that can be fixed or solved, but a condition that we will have to learn to live with. Getting on together means exploring common fate in the face of unpredictability and cultivating connections amid mounting socioecological disparity. This challenge will require large portions of humility, solidarity and care in the years to come. It is also an invitation to expand our political imagination beyond established policy paradigms and search for new ways of seeing, knowing and acting upon our *one earth*. Herein lies the critical and creative potential of the Anthropocene.

V. Structure of this volume

This volume is divided into two parts. Part I, 'Governing the environment and security nexus—looking back, thinking ahead', examines how the geopolitical context of the Anthropocene has evolved over the past 50 years. Since the Stockholm Conference international efforts to find cooperative and peaceful responses to global environmental problems have developed in parallel to state rivalry and attempts to dominate places near and far through means of economic development. During this period known to earth system scientists as 'the great acceleration', efforts to connect states into the global economy have altered spatial assumptions about the world order and fostered new ways of thinking about security.[57]

In chapter 2 Björn-Ola Linnér and Henrik Selin revisit the preparatory work for the Stockholm Conference in view of the geopolitical context at the time. Drawing upon original conference documents and correspondence within the Swedish delegation to the UN, they detail how the conference helped to reduce prevailing tensions between the Eastern and Western blocs during the cold war. They also illustrate how the conference exposed mounting economic

[57] Steffen, Crutzen and McNeill (note 40).

and political asymmetries across the Global North and Global South that persist until the present day.

In chapter 3 Lucile Maertens and Judith Hardt explore the rise of climate security discourse in two UN bodies: the UNEP and the UN Security Council. The chapter traces how the securitization of climate change within the UNEP and the UN Security Council since the 2000s has been coupled with a gradual climatization of UN security practice. By defining climate change as a matter of security, the UN has invited climate-oriented experts, activists and victims to its security discussions and hereby paved the way for a new set of responses based on science, preventive risk management and institutional adaptation. Maertens and Hardt conclude by critically asking whether these parallel securitization and climatization moves hold the political potential to confront and respond to the structural causes of Anthropocene instability and endangerment.

In chapter 4 Marcus King, Caitlin Werrell and Francesco Femia propose a global governance agenda for climate security that will help states to prepare for the consequences of a rapidly warming world. They argue that national and international security actors have unprecedented foresight capabilities and therefore the responsibility to protect against climate-induced harms. By delivering and translating complex climate change data to decision makers, committed and well-resourced security agencies can assume a new mandate and contribute to a global 'responsibility to prepare and prevent' framework that allows states to manage the global security risks of a changing climate.

In chapter 5 Dan Smith reflects on contemporary security challenges and frameworks in view of the Anthropocene. He contends that neither state nor human security approaches can adequately capture and respond to the increasingly complex security landscape produced by the intersecting problems of state rivalry, violent conflicts, cyberwarfare, climate change and pandemics such as Covid-19. By combining state and human security approaches into a common framework, Smith sets out to define and delineate a new operating sphere for security policy that could inspire cooperative, peaceful and sustainable responses to the Anthropocene.

Part II of this volume, 'Reimagining security in an entangled world', draws upon the Anthropocene to rethink the ideas and assumptions that have informed security practice over the past 50

years. In chapter 6 Simon Dalby draws attention to the contradiction between conventional modes of economic security and the mounting insecurities in a climate-disrupted world. He argues that the fossil-fuelled systems of economic development, which have offered material comfort and well-being over the past five decades, are now eroding the ecological basis for continued life on earth. Since the international norms and institutions that took shape during the Stockholm Conference have failed to govern the economic processes that drive ecological disruption, global security in the Anthropocene must be reconsidered. Rather than focusing on pollution control and conventional conservation strategies, major investments must now be directed to a rapid decarbonization of the global economy and a peaceful transition to a world without fossil fuels.

In chapter 7 Anthony Burke and Stefanie Fishel advance an ecological or earth-centred approach to security that decouples the protection of nature from its use value to humans. While recognizing the significant achievements of the Stockholm Conference, Burke and Fishel question the anthropocentric orientation of this diplomatic event and the international environmental law that it inspired. They insist our legal and institutional frameworks must be expanded to include other species, other worlds and quite possibly the planet, to meet the complex and entangled insecurities of the Anthropocene.

In chapter 8 Beatriz Rodrigues Bessa Mattos and Sebastián Granda Henao propose an ontological approach to security in the Anthropocene. Drawing upon experiences from the Marshall Islands, they examine how climate change reinforces and extends historical patterns of insecurity and hardship produced by Western modes of resource exploitation and land appropriation. Facing forced evacuation and the disappearance of their ancestral atolls, Marshallese people have now been made insecure by the same nature that was once conceived as being part of themselves. In critical response Mattos and Henao search for a security language that extends beyond territorial protection and is oriented towards the preservation of identities, stable environments of action and relations to ourselves, to nature and to other living beings.

The volume ends with an Afterword by the full author team. This statement draws out key findings from the chapters and presents a list of actions that we collectively think are required to safely navigate the global landscape of Anthropocene insecurities.

Part I. Governing the environment and security nexus: Looking back, thinking ahead

2. Geopolitics and the United Nations Conference on the Human Environment

BJÖRN-OLA LINNÉR AND HENRIK SELIN

In June 1972 participants from all over the world gathered in Stockholm, Sweden, for the United Nations Conference on the Human Environment—the world's first global political conference on environmental issues.[1] Commonly known as the Stockholm Conference, this meeting was heavily shaped by geopolitical interests. Sweden and other supporters within the UN system hoped to use the preparations for the Stockholm Conference to help build bridges within a deeply fractured UN. Geopolitical clashes between the Soviet Union and the United States on a host of politically contentious issues were widening East–West rifts. In addition, a growing number of newly independent developing countries voiced political and economic interests different from those of industrialized countries, thus shaping North–South politics. These East–West and North–South divisions influenced the proposal to organize the Stockholm Conference, and also shaped the preparatory work as well as the debates and outcomes of the conference.

This chapter analyses the Stockholm Conference process from a geopolitical perspective. We argue that the organizing and holding of the Stockholm Conference helped alleviate some cold war East–West tensions, as environmental pollution became an area of emerging collaboration, while the conference also served to heighten divisions between the Global North and the Global South. In particular, the Stockholm Conference was part of an important shift in North–South relations within the UN and other multilateral forums. The next section outlines the geopolitical backdrop to the Stockholm Conference. This is followed by examinations of how

[1] UN, Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973; and Linnér, B.-O. and Selin, H., 'The road to Rio: Early efforts on environment and development', eds Churie Kallhauge, A., Sjöstedt, G. and Corell, E., *Global Challenges: Furthering the Multilateral Process for Sustainable Development* (Greenleaf Publishing: London, 2005), pp. 58–73.

geopolitical dimensions in the form of East–West cold war relations and North–South dynamics affected the preparations of the Stockholm Conference and the holding of the meeting. The chapter ends with concluding thoughts on the historical importance and continuing relevance of the Stockholm Conference 50 years later.

I. The geopolitical backdrop to the Stockholm Conference

Geopolitical analysis focuses on the politics of the earth's space and resources. Such analysis explores dynamic interactions between geographical factors and political processes around issues of territory as well as who gets to decide how the world's natural resources are governed and allocated.[2] A geopolitical perspective on cooperation and competition among countries draws attention to the importance of national sovereignty and rivalries over the control of place-based resources and trade routes, the international rules and practices through which resources are distributed across the world, and transboundary effects of production and consumption patterns.[3] Geopolitics has an inherent focus on the present and the future in all of these respects.[4]

Geopolitical developments and interests formed an important background to the political process that resulted in the Stockholm Conference. Events such as the launch of the Sputnik satellite in 1957, the erection of the Berlin Wall in 1961 and the Cuban missile crisis in 1962 escalated competition between the Soviet Union and the USA. The 1950–53 Korean War and the 1955–75 Viet Nam War heightened Soviet Union–US tensions and rivalry in South East Asia, and also involved an increasing struggle between the two superpowers over their influence in the Middle East and sub-Saharan Africa.[5] The political rivalry between China and the Soviet Union also escalated in the late 1950s, as ideological differences

[2] Agnew, J., *Geopolitics: Re-Visioning World Politics* (Routledge: New York, 1998); and Cohen, S. B., *Geopolitics of the World System* (Rowman & Littlefield Publishers: Lanham, MD, 2003).

[3] Dalby, S., *Anthropocene Geopolitics: Globalization, Security, Sustainability* (University of Ottawa Press: Ottawa, 2020).

[4] Dodds, K., *Geopolitics: A Very Short Introduction*, 3rd edition (Oxford University Press: Oxford, 2019).

[5] Parker, G., *Geopolitics: Past, Present and Future* (Pinter: London, 1998).

widened between Nikita Khrushchev's more pragmatic stance and China's Great Leap Forward under Mao Zedong. Marxist interests gathered some strength within liberation movements in developing countries, but Soviet efforts to gain strategically important footholds in other countries were successful only in a few countries in South East Asia and sub-Saharan Africa.

At the 1955 Bandung Conference in Java, Indonesia, 29 African and Asian countries, including China and India, declared themselves a third force alongside the Eastern and Western blocs. This initiative paved the way for the creation of a broader Non-Aligned Movement in 1961, with its members pushing international organizations to prioritize economic growth in developing countries.[6] The UN General Assembly therefore declared a UN development decade in 1961, highlighting the importance of international trade of resources and goods for economic development. The Group of 77 (G77) was formed at the 1964 UN Conference on Trade and Development by a self-defined group of developing countries opposing neocolonialism, whether by countries that were members of the Eastern or the Western blocs. The G77 aimed to enhance the negotiating capacity of developing countries and promote their economic interests.[7] The G77 had grown to include 98 members by the time of the Stockholm Conference in 1972.

In December 1968 the UN General Assembly approved Sweden's initial proposal a year earlier to hold a global environmental conference. In December 1969 the General Assembly decided the meeting would take place in Stockholm. Proponents of the Stockholm Conference—in line with its official slogan 'Only One Earth'—hoped it would promote global cooperation, thus emphasizing an image of planet earth as a unified sphere rather than patches of territorial land and resources.[8] This was an attempt to reconcile different national political and economic interests by manifesting a

[6] Dinkel, J., *The Non-Aligned Movement: Genesis, Organization and Politics (1927–1992)* (Brill: Leiden, 2018).

[7] Borros, J., *The United Nations: Past, Present, Future* (The Free Press: New York, 1972); and South Centre, *Thirty Years of the Group of 77: 1964-1994: United for a Global Partnership for Development and Peace* (South Centre Publications: Geneva, 1994).

[8] Selin, H. and Linnér, B.-O., 'The quest for global sustainability: International efforts on linking environment and development', CID Graduate and Postdoctoral Fellow Working Paper No. 5, Science, Environment and Development Group, Center for International Development, Harvard University, Jan. 2005.

shared human development problem.[9] Despite these hopes, political divides shaped the preparatory work. Maurice Strong, the Canadian diplomat leading the small secretariat in Geneva, Switzerland, that was tasked with organizing the Stockholm Conference, later noted 'preparations for the conference were marred and almost derailed by East-West and North-South conflicts'.[10] However, East–West and North–South divisions affected the preparatory work and the Stockholm Conference in different ways.

II. The cold war and the Stockholm Conference

The cold war directly shaped the Swedish proposal to organize the Stockholm Conference. In November 1967 the UN Scientific Committee on the Effects of Atomic Radiation proposed a fourth conference on the peaceful utilization of nuclear energy.[11] The Swedish UN delegation in New York—together with Inga Thorsson, Director of the Social Development Division in the UN, and Alva Myrdal, Sweden's delegate to the UN Conference on Disarmament from 1962 to 1973—believed such a conference would be costly, mainly serve the interests of the nuclear industry and nuclear weapon states, and further deepen East–West divides.[12] However, the committee report also noted that 'man's concern with the environment' was an appropriate topic for UN-sponsored conferences.[13] Sweden, viewing the cold war from a position of political neutrality, believed the environment was a more appealing conference topic that could help boost the global importance of the UN.[14]

Cold war issues shaped the planning of the Stockholm Conference, although the Soviet Union and the USA supported the proposal for a global environmental conference during discussions in the UN General Assembly. The Geneva-based secretariat preparing the

[9] Jameson, F., *The Political Unconscious: Narrative as a Socially Symbolic Act* (Cornell University Press: Ithaca, NY, 1981); and Geertz, C., *The Interpretation of Cultures: Selected Essays* (Basic Books: New York, 1973).

[10] Strong, M., *Where on Earth are we Going?* (Texere Publishing: London, 2001), p. 121.

[11] UN, General Assembly, Note by the Secretary-General, A/6886, 2 Nov. 1967.

[12] Åström, S., Ögonblick (Bonnier Alba: Stockholm, 1992); and Engfeldt, L.-G., *From Stockholm to Johannesburg and Beyond: The Evolution of the International System for Sustainable Development Governance and its Implications* (Government Offices of Sweden: Stockholm, 2009).

[13] UN (note 11), Annex, p. 1.

[14] Åström (note 12).

meeting often had to strike a delicate East–West balance during the preparatory work on organizational and substantive matters.[15] However, the Eastern and Western blocs regarded transboundary issues around environmental pollution as a potential area of cooperation, as the Soviet Union and the USA participated actively in the Stockholm Conference preparations. Emerging East–West cooperation around environmental issues also resulted in the Soviet Union and the USA signing a bilateral Cooperation in Environmental Protection agreement in Moscow, Soviet Union, in May 1972—just a few weeks before the opening of the Stockholm Conference.

The cooperative spirit of the Soviet Union and the USA during the conference preparations helped bring on board some countries that, despite having supported the UN General Assembly proposal, remained unconvinced of the need for a global environmental conference. For example, the Swedish UN delegation, as stated in an internal memorandum, believed Soviet Union and US agreement influenced the British shift in 1971 from being sceptical of the conference to a more open, albeit still not overtly positive, position.[16] In 1969 the North Atlantic Treaty Organization (NATO) also expanded its focus to the environment. A Committee on the Challenges of Modern Society was formed to assist and stimulate NATO members to create 'a better environment for their society'.[17] However, this action was not without its critics. Lord Kennet, the British minister for environmental issues, described it as an attempt by US President Richard Nixon to make NATO 'more trendy and appealing. . . . The whole exercise is blatantly cosmetic in purpose, and wastes the time of the not infinite number of people who have the skill to serve mankind in this field.'[18]

East–West disagreement around the participation of East Germany and West Germany—neither country a UN member state

[15] Swedish Permanent Representation at the UN, Andra mötet med förberedande kommittén för miljövårdskonferensen [Second meeting of the Preparatory Committee for the Environment Conference], 24 Mar. 1971.

[16] Swedish Permanent Representation at the UN (note 15).

[17] Liotta P. H. et al., *Environmental Change and Human Security: Recognizing and Acting on Hazard Impacts* (Springer: Dordrecht, 2008); and Swedish Ministry for Foreign Affairs, Nato och miljövårdsfrågorna [NATO and environmental issues], No. 434 A, 13 Nov. 1969, p. 1.

[18] Royal Institute of International Affairs, 'Prospects for the U.N. Conference on the Human Environment: Lord Kennet', Attachment to report from the Swedish Embassy in London to the Swedish Ministry for Foreign Affairs, 16 Nov. 1971, p. 5.

at the time—cast a shadow over the Stockholm Conference. A UN General Assembly decision in December 1971 requested the UN secretary-general to invite 'States Members of the United Nations or members of the specialized agencies or of the International Atomic Energy Agency' to participate in the Stockholm Conference.[19] West Germany was a member of some specialized agencies, but East Germany was not. However, Swedish diplomats commented that they believed the Soviet Union could push for East German participation at the Stockholm Conference on the grounds that the topic of the global environment would make it difficult to argue for a country's exclusion.[20] The Western bloc was open to allowing East Germany to attend the Stockholm Conference, but as an observer state only, without voting rights, which would be afforded to West Germany. The Soviet Union rejected this second-class status for East Germany.

The Soviet Union, together with other members of the Eastern bloc (most notably Bulgaria, Cuba, Czechoslovakia, Hungary and Poland) decided to boycott the Stockholm Conference because East Germany was not allowed to attend on equal terms with West Germany. Of the core Eastern bloc countries, only Romania sent a delegation to the Stockholm Conference. That so many countries from the Eastern bloc did not attend the Stockholm Conference threatened its legitimacy, but the Swedish hosts and the UN secretariat in Geneva that led the preparations for the meeting worked to mitigate this problem.[21] Strong was in regular contact with the Soviet ambassador to Sweden during the Stockholm Conference. This helped to reduce the political problems of the Eastern bloc boycotting the Stockholm Conference, and also facilitated its support when the UN General Assembly officially approved the 1972 Declaration of the UN Conference on the Human Environment (Stockholm Declaration) and the 1972 Action Plan for the Human Environment.[22]

[19] UN, General Assembly, Resolution A/RES/2850 (XXVI), 26th session, 2026th plenary meeting, 20 Dec. 1971.

[20] Swedish Permanent Representation at the UN (note 15).

[21] Strong (note 10).

[22] UN, 'Declaration of the United Nations Conference on the Human Environment', Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973; and UN, 'Action Plan for the Human Environment', Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

Cold war issues shaped debates at the Stockholm Conference in multiple ways, even if the Soviet Union and most other members of the Eastern bloc did not attend. Belarus and Poland tied environmental protection to disarmament, and the 1968 Treaty on the Proliferation of Nuclear Weapons. Japan wanted the conference declaration to explicitly mention nuclear weapon tests.[23] Liberia and Sweden wanted language in the declaration asserting that all weapons of mass destruction, including biological and chemical weapons used in the Viet Nam War, destroyed the environment. The French and US delegations both raised objections to the detailed formulations on the banning of nuclear weapon tests.[24] In the end concerns about nuclear weapons and proliferation were reflected in the Stockholm Declaration, as principle 26 reads: 'Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organs, on the elimination and complete destruction of such weapons.'[25]

III. Changing North–South relations and the Stockholm Conference

The relatively modest level of East–West conflict around the Stockholm Conference provided developing countries with an opportunity to ensure their geopolitical and economic interests were heard during the preparatory process and in Stockholm at the meeting.[26] During UN General Assembly debates in 1968 many developing countries expressed misgivings about the plans for a UN environmental conference, believing such a meeting would be dominated by interests of wealthier, industrialized countries.[27]

[23] Swedish Permanent Representation at the UN, Rapport från fjärde mötet med förberedande kommittén för miljövårdskonferensen [Report from the fourth meeting of the Preparatory Committee for the Environment Conference], No. 214, 7 Apr. 1972.

[24] Swedish Ministry for Foreign Affairs, Sammanträde med arbetsgruppen för miljödeklarationen [Meeting with the working group for the UN environmental declaration], No. 262/72, New York, 5–14 Jan. 1972; and Swedish Permanent Representation at the UN (note 23).

[25] UN, 'Declaration of the United Nations Conference on the Human Environment' (note 22).

[26] Strong (note 10).

[27] Engfeldt, L.-G., 'The United Nations and the human environment: Some experiences', *International Organization*, vol. 27, no. 3 (1973), pp. 393–412.

Developing countries argued that the world's environmental problems were largely caused by the industrialized countries of the Global North, and that related abatement costs should be borne by these countries. The developing countries of the Global South believed environmental concerns should not be used as an excuse to impose development restrictions on developing countries already in the periphery of the global economic system. Instead, developing countries stated the UN should focus on addressing poverty in developing countries.

The UN General Assembly resolution in 1968 calling for the holding of a global environmental conference specifically emphasized that the problems of the human environment were essential for sound economic and social development in developing and industrialized countries.[28] During the conference preparations in June 1970 India and Nigeria welcomed cooperation on environmental issues, but underscored that their economic development must not be hindered. Brazil went a step further to argue that some environmental degradation should be accepted in the build-up of developing country economies. Brazil, together with Chile and Yugoslavia, expressed scepticism towards environmental agreements they suspected would cement poverty in developing countries, and conditioned their support for the Stockholm Conference on industrialized country commitments of increased financial and technical assistance.[29]

As an aspiring political leader among the world's developing countries, Brazil took on a particularly confrontational approach during UN General Assembly debates in November 1970. Brazilian delegates stressed the responsibility of especially Western industrialized countries to lead in addressing their own and international environmental problems. Brazil also insisted that industrialized countries should not introduce trade restrictive measures in the name of the environment, such as environmental requirements that would render goods more expensive. Brazil would not accept any formulation that infringed on national sovereignty,

[28] UN, General Assembly Resolution 2398 (XXIII), 'Problems of the human environment', 1773rd plenary meeting, 3 Dec. 1968.

[29] Swedish Delegation in Geneva, FN:s konferens om den mänskliga miljön: Förberedelsearbete läge, Promemoria [Memorandum on the UN Conference on the Human Environment: Preparatory work situation], 10 June 1970.

when discussing the need to inform other countries of environmental disasters. Brazil also argued that the UN gave too much priority to new issues such as the environment, oceans and space, diverting attention away from the core UN role of maintaining peace and supporting economic development.[30]

When the UN General Assembly further discussed the preparations for the Stockholm Conference in December 1970, most of the Eastern bloc countries did not support the Brazilian position vis-à-vis Western industrialized countries, as articulated during the earlier preparatory work. However, during the preparatory process, Yugoslavia demanded a greater focus on economic development and financial support from industrialized countries to developing countries. Under President Josip Broz Tito, Yugoslavia took on a more independent role from the Soviet Union within the Eastern bloc, and also sought to assume a leadership role among the developing countries that were unaligned with the Eastern and Western blocs. Yugoslavia joined Brazil, together with Costa Rica, Egypt and Zambia, to issue a joint demand for economic support from industrial countries while making 'development' a top priority.[31]

Brazil continued to demonstrate a desire to take on a leadership position among the world's developing countries as the preparatory work progressed. This was, for example, reflected during the negotiations of the draft declaration for the Stockholm Conference when Brazil, which at the time was under a military dictatorship, successfully suggested the addition of two Mao quotes to text proposed by the USA (which in turn built on an earlier Swedish proposal).[32] The second paragraph of the Stockholm Declaration includes the line 'Man has constantly to sum up experience and go on discovering, inventing, creating and advancing', from *The Little Red Book*.[33] The fifth paragraph of the Stockholm Declaration includes the line 'What is needed is an enthusiastic but calm state of mind

[30] Swedish Permanent Representation at the UN, Läget i miljöärendet inför behandlingen i andra utskottet [State of environmental matters prior to consideration by the second committee], No. 12 770, 15 Nov. 1970.

[31] Swedish Permanent Representation at the UN, Miljöärendets behandling vid generalförsamlingens 25:e möte [Consideration of environmental matters at the 25th meeting of the General Assembly], 11 Dec. 1970.

[32] Swedish Ministry for Foreign Affairs (note 24).

[33] Tse-Tung, M., *Quotations from Chairman Mao Tse-Tung: 'The Little Red Book'* (Zem Books: 2019), p. 124.

and intense but orderly work', from 'Problems of strategy in China's revolutionary war'.[34]

The Soviet Union, like the USA, was courting potential geopolitical allies among countries in the developing world, but had a strained relationship with the political leaders of several developing countries. Some newly independent countries turned towards a Marxist ideology, but many followed more independent national political paths, often clashing with Soviet geopolitical interests.[35] The Soviet official position was that since the Eastern communist countries had not exploited other countries through colonialism, a more equitable distribution of the world's resources was not the Soviet Union's responsibility. The Soviet Union thus supported developing country demands for greater financial support as long as these demands were directed towards Western, capitalist countries and not industrialized countries in general.[36] It was therefore not surprising that the Soviet Union was reluctant to back many of the Brazilian and Yugoslavian positions during the conference preparations.

A preparatory meeting in Founex, Switzerland, in 1971 heavily influenced the scope and focus of the Stockholm Conference relating to North–South relations. For this meeting Strong called together a panel of 27 experts, including influential economists from developing countries and experts from industrialized countries, to help shape the conference agenda and produce a report. The Founex report on development and environment helped alleviate some of the political and economics fears that developing countries had expressed earlier during the conference preparations. It urged developing countries to be active: 'Attitudes of isolationism and indifference will hardly help in a world drawn increasingly closer; the developing countries must articulate their own interests and insist on international arrangements to protect these interests in the changing patterns of trade, aid, and technology.'[37]

[34] Tse-Tung, M., 'Problems of strategy in China's revolutionary war', *Selected Works of Mao Tse-Tung* (Pergamon Press: Oxford, 1964), p. 211; and UN, 'Declaration of the United Nations Conference on the Human Environment' (note 22).

[35] Katz, M. N., 'The Soviet Union and the third world', *Current History*, vol. 85, no. 513 (Oct. 1986), pp. 329–32.

[36] 'The Soviet Union and the third world', *Strategic Survey*, vol. 78, no. 1 (1977), pp. 64–68.

[37] 'Founex report on development and environment', *International Conciliation*, vol. 39, no. 586 (Jan. 1972), pp. 7–36.

Despite calls for unity, geopolitical tensions among the developing countries of the Global South influenced the political process leading to the Stockholm Conference, as the Non-Aligned Movement and the G77 struggled to find common positions. Many relationships among leading developing countries were also marked by political conflict, including the one between China and India. With the USA supplying Pakistan with arms and President Nixon unexpectedly visiting Beijing, China, in January 1972, India entered into a 20-year military agreement with the Soviet Union. This decision called into question India's non-aligned position.[38] At the same time the presence of the Indian prime minister Indira Gandhi at the Stockholm Conference, the only head of government other than the Swedish prime minister Olof Palme who attended the meeting, symbolized India's continuing ambition to speak on behalf of the world's developing countries.

The Stockholm Conference was one of the first global political conferences attended by representatives from mainland China after the communist government in Beijing took over the UN seat from Taiwan in 1971. A Chinese delegate gave a highly politicized speech at the Stockholm Conference, focusing more on cold war politics than the human environment. The speech branded any infringement on China's and other developing countries' sovereignty as a continuation of imperialist practices. The speech also criticized the presence of delegates from South Korea and South Viet Nam at the Stockholm Conference, decried capitalism and fiercely condemned the USA. However, China was not the only country criticizing actions by the USA. Prime Minister Palme also delivered a politically charged speech that was deeply critical of the Viet Nam War. This created high-level tensions between Sweden and the USA during the meeting, but the USA remained overall supportive of the Stockholm Conference.

Some developing countries, including India and Iran, attempted to find common ground between industrialized and developing country positions around issues of environment and development in the lead-up to the Stockholm Conference. India, alongside Argentina and Singapore, emphasized the importance of environmental problems for developing countries, and expressed hopes that the

[38] Pant, H. V. and Super, J. M., 'India's "non-alignment" conundrum: A twentieth-century policy in a changing world', *International Affairs*, vol. 91, no. 4 (July 2015), pp. 747–64.

Stockholm Conference would support them in managing environmental degradation.[39] In an influential speech at the Stockholm Conference, Prime Minister Gandhi made a clear distinction between the pollution of affluence in the Global North and the pollution of poverty in the Global South. This point related to ongoing debates about the relative contribution to global environmental degradation from population growth in developing countries (as often stressed by industrialized countries) and high consumption rates in wealthier countries (as raised by developing countries).[40]

IV. Beyond the Stockholm Conference

Just one year after the Stockholm Conference Tim Campbell wrote 'Stockholm should be remembered more for its catalytic effect on political alliances than for its environmental or scientific contributions to the world.'[41] Half a century later we agree with Campbell's early assessment insofar as the preparations for, and holding of, the Stockholm Conference helped promote East–West cooperation around transboundary pollution issues and moved developing countries to articulate a more common political agenda around environment and development issues. It is also evident that many important characteristics of national sovereignty, territorial competition and the international political economy remained largely unchanged in international politics and cooperation after all the conference delegates departed Stockholm.

The Soviet Union and the USA continued to use international environmental issues as a topic for expanded political cooperation and détente in the aftermath of the Stockholm Conference. Such cooperation, for example, helped pave the way for the adoption of the 1979 Convention on Long-Range Transboundary Air Pollution under the auspices of the UN Economic Commission for Europe. This convention has been an important instrument to address acid rain and other transboundary pollution issues in Eastern and

[39] Swedish Permanent Representation at the UN (note 23).

[40] Najam, A., 'A developing countries' perspective on population, environment, and development', *Population Research and Policy Review*, vol. 15, no. 1 (Feb. 1996), pp. 1–19.

[41] Campbell, T. E. J., 'The political meaning of Stockholm: Third world participation in the environment conference process', *Stanford Journal of International Studies*, vol. VIII (1973), pp. 138–54.

Western Europe.[42] However, the Stockholm Conference did little to change the basic geopolitical rivalry between the Soviet Union and the USA for the next two decades, including on issues of territorial dominance and continuing competition over economically valuable and important natural resources, particularly oil.[43]

Developing country concerns of being on the periphery of the global economy formed a basis for strengthening cooperation among these countries within the UN system. The Stockholm Conference became an important meeting for strengthening South–South cooperation through the G77 and the UN Conference on Trade and Development, despite considerable political tensions and conflicts among some major developing countries. The 1974 UN Symposium on Patterns of Resource Use, Environment and Development Strategies held in Cocoyoc, Mexico, revisited the environment and development themes in the Founex report. In the 1970s proponents of a New International Economic Order provided a fierce critique of the international system for trade and investment, which they believed favoured industrialized countries while serving to cement poverty and degrading the environment in developing countries.[44]

Many North–South divisions around environment and development issues have proven remarkably durable since the Stockholm Conference, continuing over the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, Brazil, the 2002 World Summit on Sustainable Development in Johannesburg, South Africa, and the 2012 UN Conference on Sustainable Development in Rio de Janeiro.[45] Such divisions have also been visible across many different areas of environmental treaty making, including climate change. The 2015 Paris Agreement attempted to dismantle the binary North–South division that was embedded in the 1992 UN Framework Convention on Climate Change and the 1997 Kyoto Protocol, to reflect changes in economic

[42] Selin, H. and VanDeveer, S. D., 'Institutional linkages and European air pollution politics', eds Lidskog, R. and Sundqvist, R., *Governing the Air: The Dynamics of Science, Policy and Citizen Interaction* (MIT Press: Cambridge, MA, 2011), pp. 61–92.

[43] Yergin, D., *The Prize: The Epic Quest for Oil, Money and Power* (Simon & Schuster: New York, 1992).

[44] Murphy, C., *The Emergence of the NIEO Ideology* (Westview Press: Boulder, CO, 1984).

[45] Linnér, B.-O. and Selin, H., 'The United Nations Conference on Sustainable Development: Forty years in the making', *Environment and Planning C: Government & Policy*, vol. 31, no. 6 (Dec. 2013), pp. 971–87.

wealth and greenhouse gas emissions among countries (including the growing importance of China as a major economy and as the country with the highest greenhouse gas emissions).[46] Nevertheless, a binary division between the Global North and the Global South remains central to the global politics of climate change, even as there is growing political and economic diversity among the group of industrialized countries and the group of developing countries.

A deep mistrust of the Global North and notions of common South–South interests among developing countries remain central to global environmental cooperation. In this respect, the nationally determined contributions (NDCs) under the Paris Agreement reflect the enduring shadow of North–South divisions that were brought to the fore at the Stockholm Conference. The measures outlined in the NDCs of industrialized countries primarily rely on state regulation and minor neoliberal market adjustments to reduce greenhouse gas emissions. Even if the calls for a New International Economic Order from the 1970s have faltered, a similar critique of the liberal economic world order favouring wealthier countries are in the NDCs submitted by countries like Cuba and Venezuela, and also in those submitted by China and India.[47] This continuing critique in these NDCs illustrates the longevity of many North–South divisions around issues of environment and development.

The Stockholm Conference motto of 'Only One Earth' encompassed a notion of all people being joint passengers on Spaceship Earth, but country-based delineations and the sovereignty principle remain strong. During the preparations for the conference, many countries insisted national sovereignty must not be compromised by monitoring and other data-gathering systems on the amount of carbon dioxide and other pollutants in the atmosphere, as well as toxic substances in the oceans.[48] Principle 21 of the Stockholm

[46] Maljean-Dubois, S., 'The Paris Agreement: A new step in the gradual evolution of differential treatment in the climate regime?', *Review of European, Comparative & International Environmental Law*, vol. 25, no. 2 (July 2016), pp. 151–60.

[47] Jernnäs, M. and Linnér, B.-O., 'A discursive cartography of nationally determined contributions to the Paris Climate Agreement', *Global Environmental Change*, vol. 55 (Mar. 2019), pp. 73–83.

[48] Swedish Ministry for Foreign Affairs, Möte med den förberedande kommittén för Förenta Nationernas konferens om den mänskliga miljön [Meeting of the preparatory committee for the United Nations Conference on the Human Environment], No. 58/70, 7 Apr. 1970.

Declaration establishes that states have 'the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction', but also reconfirms that states 'have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies'.[49]

The establishment of the UN Environment Programme (UNEP) by the UN General Assembly in December 1972 reflected the reigning supremacy of the sovereignty principle in international law and politics for issues of territory, natural resources and environmental policymaking. The creation of UNEP was a central organizational outcome of the Stockholm Conference.[50] However, many industrialized and developing countries agreed UNEP should be set up as a programme that was given a coordinating function only, rather than as a stronger UN specialized agency with more powers, so as to not infringe on state sovereignty. Some countries have expressed support for a World Environment Organization to replace UNEP.[51] However, the political interest in a more politically powerful and well-funded global organization for environmental issues continues to be low.

Since the early 1970s the world's countries have adopted a growing number of environmental treaties. However, when treaty-related issues of monitoring, decision making and enforcement have clashed with countries' concerns about their sovereignty over domestic resource use and domestic standard setting, the sovereignty principle has taken precedent. The Kyoto Protocol's enforcement mechanism proved ineffective. The Paris Agreement sets out the process of parties formulating voluntary national contributions through their NDCs, but transparency, monitoring and international verification of domestic actions are highly contested political issues in post-Paris Agreement negotiations.[52] Many developing countries

[49] UN, 'Declaration of the United Nations Conference on the Human Environment' (note 22).

[50] Ivanova, M., *The Untold Story of the World's Leading Environmental Institution: UNEP at Fifty* (MIT Press: Cambridge, MA, 2021).

[51] Biermann, F. and Bauer, S. (eds), *A World Environment Organization: Solution or Threat for Effective International Environmental Governance?* (Ashgate: Aldershot, 2005).

[52] Pereira J. C. and Viola, E., 'Climate multilateralism within the United Nations Framework Convention on Climate Change', *Oxford Research Encyclopedia of Climate*

also emphasize that industrialized countries have continuously failed to live up to their financing commitments under treaties on climate change and other environmental issues.[53]

With its broad focus on the human environment, the Stockholm Conference highlighted the effects of global environmental change and degradation on the security and livelihoods of all humans across generations. In this respect the conference was an important forerunner to subsequent debates around concepts of environmental security, human security and sustainable development. However, one geopolitical issue central to the debates at the conference—disarmament—has been given much less space in later debates and UN conferences on environmental issues and sustainability. While principle 26 of the Stockholm Declaration called for 'the elimination and complete destruction' of nuclear weapons, these issues are absent from the 2030 Agenda for Sustainable Development, although the number of countries with nuclear weapons has grown and world armaments have risen since the 1990s.[54]

The 50th anniversary of the Stockholm Conference marks half a century of global cooperation on environment and development. The conference was instrumental in putting intersecting environment and development issues on the global political agenda. This has resulted in important related developments in international law and discourse. Yet, many of the political divisions between industrialized and developing countries that surfaced at the conference have hampered much subsequent global environmental cooperation. In addition, wealthier and poorer countries all over the world maintain a strong focus on their territorial sovereignty related to domestic natural resources use and economic and environmental policymaking. This, coupled with political and economic competition among countries, including over access to natural resources, continue to shape geopolitics in the Anthropocene in the 21st century.

Science (Oxford University Press: Oxford, 2020).

[53] Najam, A., 'The view from the South: Developing countries in global environmental politics', eds Axelrod, R. and VanDeveer, S. D., *The Global Environment: Institutions, Law, and Policy*, 5th edition (CQ Press: Thousand Oaks, CA, 2020), pp. 245–67.

[54] SIPRI, *SIPRI Yearbook 2020: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2020); Tian, N. et al., 'Trends in world military expenditure, 2019', SIPRI Fact Sheet, Apr. 2020; and UN, 'Declaration of the United Nations Conference on the Human Environment' (note 22).

3. Climate change and security within the United Nations: Insights from the UN Environment Programme and the UN Security Council

LUCILE MAERTENS AND JUDITH NORA HARDT

The 1972 United Nations Conference on the Human Environment (Stockholm Conference) took place in Stockholm, Sweden, with the resulting 1972 Declaration of the UN Conference on the Human Environment (Stockholm Declaration).[1] The conference drew attention to the capacity of humankind to transform the global environment and to the key role of international organizations to coordinate international environmental cooperation. While advocating environmental protection and economic and social development, the Stockholm Declaration called for 'extensive cooperation' (preamble) 'through multilateral or bilateral arrangements' (principle 24) with international organizations playing 'a coordinated, efficient and dynamic role' (principle 25).[2] It therefore laid the foundations of the global agenda that has guided the international environmental governance system since then.[3]

This chapter explores how the UN has cultivated the mandate inherited from the Stockholm Conference, focusing on climate change and the mounting sense of planetary urgency tied to a rapidly warming world. As concerns over the adverse effects of climate change are growing, climate change is increasingly linked to questions of security, notably within UN arenas. International

[1] Conca, K., *An Unfinished Foundation: The United Nations and Global Environmental Governance*, 1st edition (Oxford University Press: Oxford, 2015); UN, Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973; and UN, 'Declaration of the United Nations Conference on the Human Environment', Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

[2] UN, 'Declaration of the United Nations Conference on the Human Environment' (note 1).

[3] Conca, K. and Dabelko, G., *Green Planet Blues: Environmental Politics from Stockholm to Johannesburg*, 3rd edition (Westview Press: Boulder, CO, 2004).

relations scholars have analysed the growing interest of international organizations in the interlinkages among the environment, climate change and security in two primary ways. Studies mostly grounded in the liberal institutionalist tradition have explored how climate and security concerns affect the design, mandates and legitimacy of institutional arrangements. A more constructivist scholarship has also formulated critical questions about how climate change is framed as a security issue, and to what effect.[4] This chapter takes stock of this literature and offers a double analytical lens by combining securitization and climatization theories. It draws on both concepts to analyse the integration of climate change into the UN security agenda on the one hand, and of security concerns into the UN environmental and climate mandate on the other hand. To do so, this chapter examines two UN bodies: the UN Environment Programme (UNEP) and the UN Security Council.

UNEP was established in 1972 as a result of the Stockholm Conference. It has been the main UN entity in charge of promoting global environmental governance since the mid 1970s. It has been described as the 'leading global environmental authority' that sets the global environmental agenda, facilitates the adoption of multilateral agreements and coordinates major environmental assessments to bridge the gap between science and policy.[5] While its mandate is mostly oriented towards norm setting instead of operational on-the-ground activities, UNEP has been increasingly involved at the field level since the late 1990s, especially in the context of its post-conflict environmental assessments. Since then the programme has looked into the interlinkages between the environment and conflict.[6] UNEP began to extensively explore the links between climate change and security in 2009 when it conducted a desk study on the Sahel region at the request of the UN secretary-general's special adviser on

[4] For a summary of both trends see e.g. Dellmuth, L. M. et al., 'Intergovernmental organizations and climate security: Advancing the research agenda', *Wiley Interdisciplinary Reviews: Climate Change*, vol. 9, no. 1 (2018); and Krampe, F. and Mobjörk, M., 'Responding to climate-related security risks: Reviewing regional organizations in Asia and Africa', *Current Climate Change Reports*, vol. 4, no. 4 (2018), pp. 330–37.

[5] UNEP, 'Why does UN Environment Programme matter', [n.d.].

[6] Maertens, L., 'Depoliticisation as a securitising move: The case of the United Nations Environment Programme', *European Journal of International Security*, vol. 3, no. 3 (2018), pp. 344–63; and UNEP, 'Climate change and security risks', [n.d.].

conflict.[7] UNEP is now also actively involved in the Climate Security Mechanism (CSM) that it established in 2018, together with the UN Development Programme (UNDP) and the UN Department of Political and Peacebuilding Affairs (UNDPPA).

The UN Security Council is the UN organ responsible for the maintenance of international peace and security. It has 15 member states, 5 of which have a permanent seat and veto power (China, France, Russia, the United Kingdom and the United States). It has broadened its agenda since the end of the cold war to include questions of human security and has expanded the range of actions of peacekeeping operations. In this context the Security Council has been increasingly debating the role of natural resources in specific conflict settings.[8] Climate change has also featured in Security Council deliberations since 2007.

Although the UN system cannot be reduced to these two entities, this chapter offers insights into member states' positions through analysis of the UN Security Council and into UN staff actions through the study of UNEP publications. The analysis covers the time period 2007–20, building on the literature and previous work on both institutions.[9] Empirically, the chapter proposes a qualitative content analysis of different types of documents investigating how climate change and security are associated with each other. For the Security Council, the official records of open debates and online information regarding informal discussions organized under the Security Council umbrella dedicated to climate change are analysed. These include the five official open debates and some Arria-formula

[7] Maertens, L., 'The United Nations Environment Programme', ed. Trombetta, M. J., *Handbook of Climate Change and International Security* (Edward Elgar Publishing: forthcoming).

[8] Aldinger, P., Bruch, C. and Yazykova, S., 'Revisiting securitization: An empirical analysis of environment and natural resource provisions in United Nations Security Council Resolutions, 1946–2016', eds Swain, A. and Öjendal, J., *Routledge Handbook of Environmental Conflict and Peacebuilding* (Routledge: New York, 2018).

[9] Conca, K., Thwaites, J. and Lee, G., 'Climate change and the UN Security Council: Bully pulpit or bull in a China shop?', *Global Environmental Politics*, vol. 17, no. 2 (2017), pp. 1–20; Hardt, J. and Viehoff, A., 'A climate for change in the UNSC? Member states' approaches to the climate-security nexus', Institute for Peace Research and Security Policy Research Report #005 (2020); Maertens, L., 'Climatizing the UN Security Council', *International Politics* (2021); Scott, S. V. and Ku, C. (eds), *Climate Change and the UN Security Council* (Edward Elgar Publishing: Cheltenham, 2018); Hardt, J. N., *Environmental Security in the Anthropocene: Assessing Theory and Practice* (Routledge: London, 2018); and Maertens (note 6).

meetings dedicated to the security implications of climate change.[10] For UNEP, publications such as policy reports, desk studies and online content that make reference to security and climate change are studied. These official documents are listed on the UNEP web page dedicated to its work on climate change and security risks.[11]

The analysis in this chapter shows a progressive securitization of climate change within UNEP publications and UN Security Council debates, and identifies dominant approaches to the understanding of security in relation to climate change. This chapter then presents the parallel process of climatization, through which climate politics expand and transform UN security practices. It concludes with some remarks and situates the findings in the context of the Anthropocene, as described by earth system sciences.[12]

I. The multiple meanings of security in the context of climate change

Security is a contested concept in international relations. Next to the traditional security concept, tied to states and military conflicts, security studies have offered diverse interpretations, conceptions and analytical tools. Connecting security to the environment and climate change has opened up important debates. A large interest has been to critically examine how and under what circumstances climate change may increase the risks for violent conflict.[13] In addition to analysing different forms of security challenges induced by climate change, scholars have also focused on the possible effects of framing and understanding security in relation to climate change.[14] These approaches share the assumption that security is socially

[10] Arria-formula meetings are informal gatherings where member states can debate controversial issues and explore new items for the Security Council's agenda.

[11] See UNEP (note 6).

[12] Lenton, T. M. et al., 'Climate tipping points—too risky to bet against', *Nature*, vol. 575, no. 28 (2019), pp. 592–95; and Steffen, W. et al., 'Trajectories of the earth system in the Anthropocene', *Proceedings of the Natural Academy of Sciences of the United States of America*, vol. 115, no. 33 (2018), pp. 8252–59.

[13] See e.g. Hardt (note 9); and Sharifi, A., Simangan, D. and Kaneko, S., 'Three decades of research on climate change and peace: A bibliometric analysis', *Sustainability Science* (2020).

[14] McDonald, M., 'Securitization and the construction of security', *European Journal of International Relations*, vol. 14, no. 4 (2008), pp. 563–87; and von Lucke, F., *The Securitization of Climate Change and the Governmentalisation of Security* (Palgrave MacMillan: 2020).

constructed and that security framings ultimately shape the world.[15] Referring to the traditional security concept focused on the state, several scholars have highlighted the risk of militarization and the possible adverse effects of applying a security logic dominated by violence, enemies and antagonism.[16] Other scholars have pushed for a positive understanding of security based on preventing threats to human security and/or to ecological security.[17] These multiple understandings of the links between climate change and security have grown into a rich and diverse body of literature.[18] Like this volume and this chapter, some of the recent concerns in the literature call for revisiting security in the context of the Anthropocene.[19]

To grasp the meanings of security in relation to climate change, we approach the concept as an analytical category, for which we draw in particular on the work of Barry Buzan, Ole Wæver and Jaap De Wilde.[20] They theorized the process of securitization and thereby offered an important basis for studying the transformations of policy problems into matters of security. In addition, their analytical framework helps detect the meanings of security by unpacking agency and political measures behind the security threats. This present chapter draws on their work and on additional approaches in critical security studies.[21] Building on existing literature on the security framing of the

[15] Aradau, C. et al., *Critical Security Methods: New Frameworks for Analysis* (Routledge: London, 2014); and Peoples, C. and Vaughan-Williams, N., *Critical Security: An Introduction*, 1st edition (Routledge: London, 2010).

[16] Floyd, R., 'The environmental security debate and its significance for climate change', *International Spectator*, vol. 43, no. 3 (2008), pp. 51–65; and Trombetta, M. J., 'Environmental security and climate change: Analysing the discourse', *Cambridge Review of International Affairs*, vol. 21, no. 4 (2008), pp. 585–602.

[17] Barnett, J. and Adger, N. W., 'Climate change, human security and violent conflict', *Political Geography*, vol. 26, no. 6 (2007), pp. 639–55; Dalby, S., 'Rethinking geopolitics: Climate security in the Anthropocene', *Global Policy*, vol. 5, no. 1 (2014), pp. 1–9; and McDonald, M., 'Climate change and security: Towards ecological security?', *International Theory*, vol. 10, no. 2 (2018), pp. 153–80.

[18] See e.g. Trombetta, M. J., *Handbook of Climate Change and International Security* (Edward Elgar Publishing: forthcoming).

[19] Harrington, C. and Shearing, C., *Security in the Anthropocene: Reflections on Safety and Care* (transcript Verlag: Bielefeld, 2017); Hardt (note 9); and Dalby, S., *Anthropocene Geopolitics: Globalization, Security, Sustainability* (University of Ottawa Press: Ottawa, 2020).

[20] Buzan, B., Wæver, O. and De Wilde, J., *Security: A New Framework for Analysis* (Lynne Rienner Publishers: Boulder, CO, 1998).

[21] We are aware of the limits and criticism addressed at the Copenhagen School. We more broadly draw on critical security studies and international political sociology: Booth, K., *Theory of World Security* (Cambridge University Press: Cambridge, 2007);

environment and of climate change, the chapter empirically assesses the meanings of security in UNEP publications and UN Security Council debates.[22] It first investigates the different logics of securitization of climate change by focusing on agenda-setting strategies and institutionalization attempts. In a second step it addresses the following questions in relation to the empirical material: (*a*) who/what needs to be secured?, (*b*) what are the major threats and related responses? and (*c*) to what extent, and how, is the Anthropocene referenced?

Climate change in the UN Environment Programme and the UN Security Council: Security for whom and how?

By applying an analytical lens building on critical security studies to the UN Security Council debates and UNEP publications, we observe different logics of securitization in both institutions. At the Security Council, several states have consistently pushed for the securitization of climate change by organizing open debates and informal Arria-formula meetings since 2007. Five open debates were organized by the UK (2007), Germany (2011 and 2020), Sweden (2018) and the Dominican Republic (2019). The increasing efforts to securitize climate change have cumulated into a joint initiative by a coalition of 10 member states claiming the necessity to address climate-related security risks within the Security Council.[23] Opponents to the securitization of climate change within the Security Council argue it could lead to further militarization, depoliticization, co-optation of climate politics to reinforce power dynamics, duplication of tasks within the UN, the potential to overrule sovereign decision making, and inadequate and simplified responses to the interlinked climate change–security threats. Another debate concerns the question of whether the Security Council should develop a proactive or reactive

McDonald (note 14), p. 568; and Bigo, D., 'International political sociology', ed. Williams, P., *Security Studies: An Introduction* (Routledge: London, 2010).

[22] McDonald (note 14); McDonald, M., 'Whose security? Ethics and the referent', eds Nyman, J. and Burke, A., *Ethical Security Studies: A New Research Agenda* (Routledge: New York, 2016), pp. 32–45; and von Lucke (note 14).

[23] Permanent Mission of the Federal Republic of Germany to the UN, 'Joint statement by 10 members of the UN Security Council (Belgium, Dominican Republic, Estonia, France, Germany, Niger, Tunisia, St. Vincent and the Grenadines, United Kingdom, Vietnam) on their joint initiative to address climate-related security risks, June 22, 2020', 22 June 2020.

agenda on climate-related security risks. That is how, despite the multiple securitizing moves, the only international institution in charge of maintaining international peace and security has not officially recognized climate change as a cross-cutting challenge permanently relevant to its agenda.

UNEP has been actively involved in the securitization of environmental issues since 2001, when it co-established the Environment and Security Initiative (ENVSEC).[24] On climate change more specifically, a 2011 UNEP report on the effects of climate change on livelihood, migration and conflict in the Sahel marked an important landmark in terms of agenda setting.[25] Since then UNEP has increasingly addressed the links between climate change and security. Together with other UN entities, UNEP successfully participated in the securitization process of climate change in the broader UN context, leading to the establishment, in 2018, of the first and only UN institutionalized arrangement fully dedicated to climate security: the CSM.

In terms of security meanings, UNEP and the UN Security Council have adopted similar ways to articulate climate change with security. Exploring the question of *who is secured*, we detect overlapping approaches related to national, international and human security in both institutions.[26] Aside from the determination of these entities as referent objects that are threatened and need protecting, a strong geographical bias on crisis-affected countries and communities and on small island developing states is palpable. This can be seen in 2018 and 2019 Security Council debates and the focus on Lake Chad, small island states and 'fragile countries', which are, according to the UN deputy secretary-general: 'in danger in becoming stuck in a cycle of conflict and climate disaster'.[27] UNEP shows a similar geographical focus with its report on the Sahel, a four-year planned project on

[24] See Hardt (note 9) for a detailed analysis of ENVSEC and UNEP involvement.

[25] UNEP, *Livelihood Security: Climate Change, Migration and Conflict in the Sahel* (UNEP: Geneva, 2011).

[26] Scott and Ku (note 9); and Droege, S., 'Addressing the risks of climate change. What role for the UN Security Council?', SWP Research Paper 6, German Institute for International and Security Affairs, June 2020.

[27] UN, Security Council, 8307th meeting, S/PV.8307, 11 July 2018.

Nepal and Sudan and activities in other countries and regions of the Global South.[28] The UNEP executive director stated that:

> Climate change is now impacting every corner of the globe. In many regions, severe droughts and rising temperatures are leading to food insecurity and loss of livelihoods—threatening to reverse hard-won development gains. In fragile and conflict-affected settings, limited governance, political instability and violence leave communities particularly ill-equipped to cope with a changing climate. This in turn can compound existing tensions and exacerbate the complex emergencies we are witnessing today in the Sahel, the Middle East and Central America.[29]

UNEP and the UN Security Council focus predominantly on the Global South, despite acknowledging the global nature of climate change risks.

This analysis also demonstrates that conflict is the consistent and dominant security threat associated with climate change in both institutions.[30] In the UN Security Council context, the presidential statement in 2011 noted 'possible security implications of climate change' can be 'drivers of conflict'.[31] The impacts of phenomena related to climate change on conflicts appear in several Security Council resolutions and field missions since 2017, although an official recognition of climate change as a threat to international peace and security remains overdue. In addition to conflict, we also find climate change is framed as a security threat via its detrimental effects on resilience, vulnerability and development, as well as in relation to migration. Statelessness as a threat resulting from climate change is described on several occasions. For example, during a 2020 Security Council debate, Coral Pasisi (director of the Sustainable Pacific Consultancy Niue) stated: 'There can be no greater security threat

[28] UNEP (note 25), p. 72; UNEP (note 6); UNEP, 'Climate change and security: Strengthening resilience to climate-fragility risks', [n.d.]; and UNEP, UN Women, UNDP and UNDPPA/UN Peacebuilding Support Office, *Gender, Climate & Security: Sustaining Inclusive Peace on the Frontlines of Climate Change* (UNEP, UN Women, UNDP and UNDPPA/UN Peacebuilding Support Office: 2020).

[29] UNEP, UN Women, UNDP and UNDPPA/Peacebuilding Support Office (note 28), p. 7.

[30] See Conca, K., 'Is there a role for the UN Security Council on climate change?', *Environment: Science and Policy for Sustainable Development*, vol. 61, no. 1 (2019), pp. 4–15; and Scott and Ku (note 9).

[31] UN, Security Council, Statement by the President of the Security Council, S/PRST/2011/15, 20 July 2011.

than the potential loss of one's entire nation and its jurisdictions established under international law.'[32]

While most solutions to climate-induced security threats are presented as climate policies (see section II), some actors also push for traditional military security responses. For instance, in a 2019 UN Security Council open debate, the representative of Indonesia suggested: 'One concrete step that we can take is to better equip our peacekeepers with the capacity to undertake military operations other than war—to carry out not only peacekeeping operations but also climate peace missions.'[33]

Focusing on references to the Anthropocene, we observe a multiplication of references to notions of complex interconnectedness within the use of, for example, 'climate-related security risks'.[34] However, the term 'Anthropocene' has been absent in UN debates on the climate and security nexus.[35] Both institutions do not consider the new meanings of (in)security threats described by earth system sciences in the context of the human–nature entangled dynamic world of the Anthropocene.[36]

II. Approaching security through climate framing

The social construction of environmental problems has been subject to ample research and has informed studies on climate politics and governance. The concept of climatization has been developed in this field, and describes the social processes through which a given issue or actor is drawn into the climate domain and made relevant to climate policies.[37] For Stefan Aykut, Jean Foyer and Édouard

[32] UN, Security Council, Statement by the director of the Sustainable Pacific Consultancy Niue, Coral Pasisi, Annex 3, S/2020/751, 30 July 2020.

[33] UN, Security Council, 8451st meeting, S/PV.8451, 25 Jan. 2019.

[34] UN, Security Council (note 27).

[35] The term 'Anthropocene' does not appear in UN Security Council documents and debates and is found on some occasions only on the UNEP website; see UNEP, 'Policy statement by Achim Steiner, UN under-secretary-general and UNEP executive director', 27 June 2014.

[36] Hardt (note 9), p. 164.

[37] Aykut, S. C., Foyer, J. and Morena, E. (eds), *Globalising the Climate: COP21 and the Climatisation of Global Debates* (Routledge: 2017); Aykut, S. C. and Maertens, L., 'The climatization of global politics', *International Politics* (forthcoming); Maertens, L. and Baillat, A., 'The partial climatisation of migrations, security and conflict', eds Aykut, S. C., Foyer, J. and Morena, E., *Globalising the Climate: COP21 and the Climatisation of Global Debates* (Routledge: 2017); Oels, A., 'From "securitization" of climate change

Morena climate change is increasingly becoming the dominant frame through which other issues and forms of global governance are mediated and hierarchized. Such a climatization process rests on the work of numerous actors, which translate issues and concerns using a climate lens.[38] Work on climatization remains rare in critical security studies, which have largely focused on the securitization of climate change. Maria Julia Trombetta approaches similar questions by illustrating how the securitization of environmental issues transforms security practices.[39] Security actors integrate new logics of action inspired by traditional environmental policies such as preventive actions and non-confrontational responses. These conclusions echo Angela Oels's definition of the climatization of security: '"Climatization" of the security field means that existing security practices are applied to the issue of climate change and that new practices from the field of climate policy are introduced into the security field.'[40]

This section builds on this emerging trend in the literature to analyse the way the UN approaches the interlinkages between climate change and security. Climatization is a definitional process that extends the realm of climate politics. Approaching UN action and discourse in terms of climatization means exploring three interrelated developments, which structure the analysis below: (*a*) the way security issues are understood as having climate origins and security actors as having responsibilities in the climate crisis, (*b*) how climate change actors—climate experts, climate activists and so-called climate victims, among others—extend their sphere of influence and jurisdiction and (*c*) how climate-oriented policies and practices are considered relevant to fix a security problem. The concept of climatization therefore sheds light on other mechanisms through which climate change and security can be linked, without implying domination of the security logic. It draws attention to how security issues are framed and understood, who acquires a legitimate voice to express their views on the interlinkages between climate

to "climatization" of the security field: Comparing three theoretical perspectives', eds Scheffran, J. et al., *Climate Change, Human Security and Violent Conflict*, Hexagon Series on Human and Environmental Security and Peace, vol. 8 (Springer: Berlin, 2012), pp. 185–205.

[38] Aykut, Foyer and Morena (note 37).

[39] Trombetta (note 16).

[40] Oels (note 37), p. 197.

change and security, and which answers are suggested to respond to the identified problems.

Climatizing moves at the UN Environment Programme and the UN Security Council

The analysis of UNEP publications and UN Security Council debates reveals an increasing climatization of security within the UN. UNEP has signalled the climate origins of security issues with a focus on the climate causes of human insecurity and of political destabilization in two ways since the late 2000s. First, it has contributed to milestone publications and debates advancing such a framework. For instance, UNEP provided 'technical inputs to the drafting' of the 2009 UN secretary-general's report entitled 'Climate change and its possible security implications', which defines climate change as a 'threat multiplier'.[41] UNEP also brought 'substantive contributions' to the report *A New Climate for Peace* commissioned by the Group of 7 (G7), which identifies fragility risks rooted in climate change.[42] Moreover, the executive director of UNEP spoke during the second Security Council open debate on climate change, which led to the adoption of a presidential statement recognizing that climate change impacts may drive conflicts.[43]

Second, UNEP has (co-)published reports and guidance notes in which the role of climate change as a source of insecurity is emphasized. For instance, in its first desk study on climate change and security, dedicated to the Sahel region, UNEP concludes:

> The impacts of changing climatic conditions on the availability of natural resources, coupled with factors such as population growth, weak governance and land tenure challenges, have led to increased competition over scarce natural resources—most notably fertile land and water—and resulted in tensions and conflicts between communities and livelihood groups.[44]

A two-page document presenting UNEP's four-year project supported by the European Union on climate change and security

[41] UNEP (note 6); and UN, General Assembly, 'Climate change and its possible security implications', Report of the Secretary-General, A/64/350, 11 Sep. 2009.
[42] UNEP (note 6); and Rüttinger, L. et al., *A New Climate for Peace* (Adelphi: Berlin, 2015).
[43] UNEP (note 6); and UN, Security Council (note 31).
[44] UNEP (note 25), p. 7.

(2017–21) asserts: 'Climate change worsens existing social, economic and environmental risks that can fuel unrest and potentially result in conflict.'[45] The CSM, co-sponsored by UNEP, proposes similar views, stressing 'the interaction of climate change with socio-economic, political or demographic factors'.[46] The emphasis on overlapping factors challenges deterministic understandings of the security implications of climate change, which have been heavily criticized.[47] Indeed, as seen in the chosen excerpts mentioned above, UNEP does not single out climate change as the sole source of conflicts but shows how insecurities are rooted in a number of socio-economic causes, including climate change, supporting 'policymakers to integrate a climate lens into peacebuilding/stabilization policies, and a peacebuilding lens into climate adaptation policies'.[48]

Many member states of the UN Security Council have expressed similar concerns on 'climate-related security risks'.[49] While insecurities are presented as having potential climate origins, states present the Security Council as having a responsibility to manage the climate crisis. Member states and other invited speakers have called on the Security Council to take responsibility in the global climate crisis since 2007. The UN under-secretary-general for political and peacebuilding affairs, who opened the 2019 official debate, stated: 'Given the critical role and responsibility of the Security Council, I am encouraged by today's debate. It signals our willingness to establish a shared understanding of the impact of climate-related security risks on international peace and security.' Following her statement, several member states also referred to the Security Council's responsibility and obligations.[50] UNEP discourse and UN Security Council debates show signs of a climatization process in which security issues are designated as having roots in the climate

[45] UNEP, 'Climate change and security: Strengthening resilience to climate-fragility risks' (note 28).

[46] UN, CSM, *Toolbox: Briefing Note* (UN: New York, 2020), p. 1.

[47] Ide, T., 'The dark side of environmental peacebuilding', *World Development*, vol. 127 (2020), pp. 3–4.

[48] UNEP, 'Climate change and security: Strengthening resilience to climate-fragility risks' (note 28). A CSM staff member emphasized their approach to climate risks as 'not a deterministic formula': UN System Staff College webinar, 'Climate security for sustaining peace (Part 1)', 24 Apr. 2020.

[49] UN, Security Council, 'Arria formula: "Preparing for security implications of rising temperatures"', 15 Dec. 2017, p. 2.

[50] UN, Security Council (note 33).

crisis and security actors as having responsibilities in mitigating the crisis beyond security implications.

The process of climatization also unfolds when the UN assigns an increasingly important role to climate-oriented experts, climate activists and (often self-designed) climate victims in discussions over security. Here again, the parallel analysis of UNEP and the UN Security Council shows complementary developments. Experts professing their knowledge on climate change and climate advocacy networks and non-governmental organizations are invited as guest briefers at the Security Council.[51] For example, UNEP and the World Meteorological Organization intervened at the Security Council for the first time in their histories, in 2011 (through its executive director) and in 2019 (through its chief scientist), respectively. In addition, the director of the Climate Action Network was invited to brief the 2013 Arria-formula session, the co-founder and president of the Center for Climate & Security presented during the 2017 Arria-formula meeting and the director of SIPRI intervened during the April 2020 Arria-formula meeting along with the president/chief executive officer of the non-governmental organization International Crisis Group.[52] Climate science, especially the reports of the Intergovernmental Panel on Climate Change, is also referred to in member states' interventions during the different debates.

Similarly, experts are active in support of the Group of Friends on climate and security.[53] 'Expertise' is of vital importance in the work of the CSM, an institutionalized recognition of the UN climate security agenda that 'provides the United Nations with a small but dedicated capacity to connect and leverage existing resources and expertise across the system in an attempt to address climate-related security risks more systematically'.[54] The CSM has the goal 'to strengthen the capacity of the UN to address the interlinkages between climate

[51] Extending Boswell's definition of expert knowledge, we approach expertise as the forms of codified knowledge produced by or involving specialists who are recognized to hold skills and experience; in other words, we focus on situated expertise that can be held by many actors professing their own knowledge on climate change and climate change security risks. Boswell, C., 'The role of expert knowledge in international organizations', ed. Littoz-Monnet, A., *The Politics of Expertise in International Organizations: How International Bureaucracies Produce and Mobilize Knowledge* (Routledge: New York, 2017), pp. 19–36.

[52] Permanent mission of France to the UN in New York, 'Event on climate and security risks', Meeting of the UN Security Council in Arria formula, 22 Apr. 2020.

[53] Hardt and Viehoff (note 9), p. 11.

[54] UN, CSM (note 46), footnote 1.

change, peace and security' and to provide a platform for dialogue and exchange on this topic within the UN system.[55] It works in close collaboration with a network of actors at the science–policy interface, consisting mostly of think tanks, research institutes and scientific associations.[56] In other words, the climatization of security attributes relevance to climate-oriented expertise and advocacy in the security field.

The climatization of the UN Security Council also provides a stage for so-called climate change victims, understood as states or communities with a perceived and claimed critical exposure to the adverse effects of climate change. During open debates, states with high vulnerability to climate change, such as Bangladesh or Pacific small island developing countries, requested to participate, sometimes through a spokesperson. For example, in 2018 the representative of the Maldives addressed the Security Council on behalf of the Alliance of Small Island States. The statements of such states emphasized the legitimacy of their voice as the first ones affected by the consequences of climate change: 'We are likely to become the victims of a phenomenon to which we have contributed very little and which we can do very little to halt' (representative of Papua New Guinea, on behalf of the Pacific Islands Forum Small Island Developing States).[57] Moreover, the closer involvement of those actors in the Security Council is expressed in their gaining access to non-permanent seats, as in the case of Saint Vincent and the Grenadines. The permanent mission of the Caribbean multi-island state defined its 'unique opinions on the issue of climate change' as the reason why it was elected.[58] Climatization is about giving a voice to actors specifically concerned with climate change.

Finally, climatization of security emerges from suggested responses consisting of a mix of managerial approaches to development, peacebuilding and climate politics. Indeed, the solutions put forward at the UN Security Council and by UNEP to address the security implications of climate change entail recourse to climate-oriented

[55] UNDP, 'Supporting climate security', [n.d.].

[56] For instance, CSM developed its 2020 briefing note in collaboration with Adelphi and SIPRI; see UN CSM (note 46).

[57] UN, Security Council, 5663rd meeting, S/PV.5663, 17 Apr. 2007.

[58] Permanent Mission of Saint Vincent and the Grenadines to the UN, Facebook profile, accessed 14 Oct. 2019.

policies based on science, preventive risk management, climate proofing and institutional adaptation. Security Council debates and CSM publications have emphasized the need to collect and exchange scientific data and information. During open debates states called for more 'comprehensive information from the field' (representative of Poland, 2018) and 'aggregating data' (representative of the USA, 2019), while advocating for 'further informative exchanges with representatives and experts, including the Intergovernmental Panel on Climate Change, on the security implications of climate change, as well as more integrated sharing of data and expertise' (representative of Viet Nam, 2019).[59] The 'latest data' on 'climate and security risks' was also the focus of the April 2020 Arria-formula meeting.[60]

These calls and recommendations reinforce the role of climate experts as relevant partners for the Security Council, and they also encourage the application of tools used in climate science such as 'Climate data collections, climate scenarios and early-warning systems' (representative of Switzerland) to address climate and security risks.[61] These tools suggest a risk-management approach that aims to enhance 'a preventive assessment strategy' and 'anticipate the consequences' (representative of France).[62] The CSM produced a toolbox including a briefing note, a conceptual approach, data sources and a conflict analysis checklist to make it 'climate-informed'.[63] Other recommendations focus on climate proofing, adapting security institutions and improving assessments of conflict dynamics in relation to climate hotspots. For example, the French permanent mission expressed the objective 'to ensure that the work of the UN in countries vulnerable to the effects of climate change is climate-proofed'.[64] To do so, member states recommended the appointment of a special representative on climate and security within the UN secretariat. States also encouraged the establishment of the CSM and the enhancement of 'climate-sensitive peacebuilding

[59] UN, Security Council (note 27); and UN, Security Council (note 33).
[60] Permanent mission of France to the UN in New York (note 52).
[61] UN, Security Council (note 33).
[62] The representative of France expressed this view during the meeting of the UN Security Council in Arria formula; see Permanent mission of France to the UN in New York (note 52).
[63] UN, CSM, *Toolbox: Checklist* (UN: New York, 2020), p. 1.
[64] Permanent mission of France to the UN in New York (note 52).

initiatives'.[65] In summary, climatization unfolds through the adoption of an adaptation strategy for UN peace and security institutions faced with the adverse effects of climate change.

Climate change currently dominates UN debates on the interlinkages between security and the environment. Further research should explore how climatization may overshadow the complex socioecological entanglements of the Anthropocene.

III. Concluding remarks

This chapter has investigated how the UN has approached the interlinkages between climate change and security since the late 2000s, based on analysis of UNEP publications and UN Security Council debates. First, it stressed that dominant approaches to security in relation to climate change carry a geographical bias and focus located mostly in the developing world within conflict regions. Security is also commonly understood in relation to conflicts and to a national and human security approach. Second it showed how, through the process of climatization, climate change is becoming a dominant framework that complements the security logic implied in securitization. Climatization helps climate actors to take a more assertive role in the security field and in the development of political responses following a climate-oriented approach based on science, preventive risk management, climate proofing and institutional adaptation. By drawing on critical security studies and work on climatization, the chapter has provided a broader understanding of the shared mechanisms through which the UNEP and UN Security Council approach and frame the interlinkages between climate change and security. Put differently, this chapter considers both the attraction of the security framing and the impact of the climate framing. While acknowledging the interdependence between the two processes, this chapter urges scholars to look at climatization as another way to analyse how the interlinkages between climate change and security are understood.

While the political effects of securitization and climatization can be assessed in their specific context only, persistent criticisms challenge securitizing and climatizing moves. Addressing

[65] UN, 'Addressing the impact of climate change on peace and security', [n.d.].

practitioners and scholars alike, we would like to briefly point to some shortcomings, to open up new avenues for reflection and research. On the one hand, member states have shown resistance to 'the quick fix of securitization of climate change' (representative of India), seeing climate change 'as a tool to drive discussions on specific country cases away from addressing evident and well-established causes of their instability' (representative of Russia).[66] On the other hand, criticism has emerged in relation to the risk of depoliticization: 'cleavages, power relations and socio-economic structures become invisible when environmental peacebuilding emphasises the low politics, neutral and positive sum character of shared environmental problems.'[67] In other words, the emphasis on climate causes of insecurities can act as an excuse for governments to conceal their role in conflict dynamics or insecurities.

Adding to these, we draw attention to the often-overlooked complex entanglements of threats and socioecological processes in the Anthropocene. Further academic and policy research should address the role of the Anthropocene as an alternative lens and as a living context through which contemporary (in)securities could be understood, thus challenging the current dominating discourse on climate change. The scientific findings urgently demand institutional, multilateral and scientifically informed changes in which questions such as 'security for whom, and how?' should remain central to further discussions in the context of the Anthropocene. Improving dialogue among different scientific communities and various stakeholders is a key prerequisite for addressing these shortcomings and new challenges. This volume is a much-welcomed step in that direction.

[66] UN, Security Council (note 33); the representative of Russia expressed this view during the 2020 Arria-formula meeting, see Permanent mission of the Russian Federation to the UN, 'Statement by Dmitry Chumakov, deputy permanent representative of Russia to the UN, at the Arria formula VTC of UNSC member-states on climate and security risks', 22 Apr. 2020.

[67] Ide (note 47), p. 3.

4. The responsibility to prepare and prevent: Closing the climate security governance gaps

MARCUS D. KING, CAITLIN WERRELL AND FRANCESCO FEMIA

State-centred security organizations in the Global North have unprecedented foresight capabilities that increase the chances of preventing the worst impacts of global climate change. The capacities resident in these organizations can be leveraged to address climate security risks humanely and systematically at the national, regional and international levels. This can be done in a way that decreases the probability of instability, conflict and human casualties while also strengthening national security. The complex, transnational and cross-sectorial nature of climate risks demands consideration of a comprehensive approach. Doing so will address an important gap in global climate security governance.

The international peace and security landscape is shifting. The organizations making up this order possess a growing capacity to reduce climate risk uncertainty—including an ability to foresee unprecedented changes with increased accuracy. This is a primary feature that differentiates the Anthropocene from past periods of disruption. As the impacts of climate change, and our understanding of them, have increased, a growing body of research demonstrates these impacts present a direct physical threat to national security and present a multitude of threats in the larger international security environment.[1] At the national level for example, military installations built at sea level must now contend with the rising ocean. Equipment, training, interoperability and infrastructure will all need recalibrating and adjusting in many cases.[2]

[1] Brock, S. et al., *The World Climate and Security Report 2020*, Femia, F. and Werrell, C. (eds) (Center for Climate & Security: Washington, DC, 2020); and National Intelligence Council, 'Implications for US national security of anticipated climate change', 21 Sep. 2016.

[2] Fetzek, S., Werrell, C. E. and Femia, F. (eds), *Military Expert Panel Report: Sea Level Rise and the U.S. Military's Mission* (Center for Climate & Security: Washington, DC, Sep. 2016).

The indirect implications of climate change on peace and security are far more challenging and difficult to understand due to their complex manifestations. The impacts of climate change are not monolithic and static. They are diffuse, exacerbating stresses to the critical resources that underpin national and global security, including water, food and energy systems. Climate change adds additional stress to a world already experiencing security challenges and shapes how nations will align strategy to geopolitical objectives.[3]

In this volume and elsewhere, peace and security scholars contend that in a highly interconnected and risky world, neither state-centric representations of global space nor traditional security thinking are analytically or politically sufficient. The traditional geopolitical categories of inside and outside, national and international, and friends and foe are deeply questioned, along with conceptions of state, security and sovereignty.[4]

However, we situate this chapter using the frame of liberal institutionalism, contending that existing international and multilateral organizations such as the United Nations still have the potential to increase aid and cooperation among states. Liberal internationalism survived despite the upheavals and destruction of world war, economic depression, and the rise and fall of fascism and totalitarianism. It may survive today's crises as well. But to do so, liberal internationalism will need to be rethought.[5] This rethink includes the creation of new frameworks that can enable national governments and state-centred security organizations to prepare for and increase the chances of preventing the worst impacts of climate change.

Climate change can now be modelled with a relatively high degree of certainty, especially when compared to other drivers of

[3] McElroy, M. and Baker, D. J., *Climate Extremes: Recent Trends with Implications for National Security* (Harvard University Center for the Environment: Cambridge, MA, Oct. 2012); Cronin, P. M. et al. (eds), *Cooperation from Strength: The United States, China and the South China Sea* (Center for New American Security: Washington, DC, 2012); and Rosenberg, E., Titley, D. and Wiker, A., *Arctic 2015 and Beyond: A Strategy for U.S. Leadership in the High North, Policy Brief* (Center for New American Security: Washington, DC, Dec. 2014).

[4] Lövbrand, E., Mobjörk, M. and Söder, R., 'The Anthropocene and the geo-political imagination: Re-writing earth as political space', *Earth System Governance*, vol. 4 (June 2020).

[5] Ikenberry, J. G., 'The end of liberal international order?', *International Affairs*, vol. 94, no. 1 (Jan. 2018), pp. 7–23.

international security like economic crises or territorial disputes, despite the unprecedented risks it presents. Climate models started to offer predictions of future impacts of rising global temperature a couple of years before the 1972 UN Conference on the Human Environment (Stockholm Conference).[6] The climate is changing essentially as the models predicted.[7] A political scientist in 1967 would have had a difficult time predicting the current international security landscape. The sophistication of climate models has since increased significantly, driven by advances in earth-observation technologies. In July 1972 the National Aeronautics and Space Administration (NASA) launched the first of several earth-observing satellites designed specifically to study earth.[8] According to a UN index approximately 380 out of 4300 earth-orbiting satellites were being used for earth observation in 2017, by both the private sector and the government. This data from satellites is vitally important to understanding the physical changes of the world.[9]

Existing projections from climate models and earth-observation satellites paint a picture of what the future holds for the global climate, although uncertainties in predicting local-scale climatic changes and ecological interactions remain. Such projections provide a basis for governments and societies to plan accordingly. The models have facilitated better planning for low-probability, high-impact events, such as massive releases of methane from thawing permafrost or changes in the Gulf Stream.[10] Low-probability events happen all the time. But now climate models can help project the implications of these low-probability events, which means there is the capacity to prepare for and prevent them with significant advance notice.

[6] UN, Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

[7] Siegel, E., 'The first climate model turns 50, and predicted global warming almost perfectly', *Forbes*, 15 Mar. 2017.

[8] Landsat Science, 'Landsat 1', NASA, [n.d.].

[9] O'Sullivan, S., 'Capturing climate and security risks through satellites and earth observing technologies', eds Werrell, C. E. and Femia, F., *Epicenters of Climate and Security: The New Geostrategic Landscape of the Anthropocene* (Center for Climate & Security: Washington, DC, 2017).

[10] Rahmstorf, S. et al., 'Exceptional twentieth-century slowdown in Atlantic Ocean overturning circulation', *Nature Climate Change*, vol. 5 (2015), pp. 475–80; Monroe, R., 'Climate model suggests collapse of Atlantic circulation is possible', Scripps Institution of Oceanography, 4 Jan. 2017; and Brescher Shea, S., 'Defrosting the world's freezer: Thawing permafrost', US Department of Energy, Office of Science, 13 June 2017.

Foresight technologies and methods developed at a peer-to-peer level, primarily but not exclusively by United States intelligence, defence and allied agencies, are also offering better projections of social, economic and political change. However, there is room for improvement and greater cooperation with other national and multilateral organizations, to enhance preparedness globally and avoid hoarding of potentially essential information for climate preparedness by state actors with the greatest power and resources.[11] Nonetheless, societal predictive capacities regarding environmental and social change are at their civilizational apex.

This combination of unprecedented risks and unprecedented foresight about the risks of climate change necessitates, in our view, an international civic responsibility to prepare and prevent. This principle builds on the moral foundation of the responsibility to protect principle on mass atrocity prevention and response. The philosophical grounding is simple: if nations can predict with a relatively high degree of certainty a potentially catastrophic security or humanitarian risk, and have the resources to do something about it, they have a responsibility to do so. However, although climate models as robust and predictive tools for social, political and economic change are improving, these tools do not, by themselves, enhance preparedness or prevention. Governments and intergovernmental organizations will continue to be underprepared for these risks without committed, well-resourced organizations regularly delivering, analysing and interpreting climate information for decision makers; without climate information being better integrated into the tools for predicting state fragility or conflict; and without entities dedicated to interpreting climate-related risks and issuing warnings to decision makers in a systematic and compelling way.[12]

I. Climate security global governance gaps

Climate change has emerged as a scientific and environmental problem stemming from the release of greenhouse gas emissions

[11] Fetzek, S. et al., 'Why and how to use foresight tools to manage climate security risks', Planetary Security Initiative and Center for Climate & Security, Apr. 2017.

[12] Moran, A. et al., 'Policy summary: The nexus of fragility and climate risks', US Agency for International Development, Mar. 2019.

into the atmosphere. It has therefore been primarily addressed by governmental and intergovernmental entities with environmental mandates in the USA and elsewhere. Governance structures for managing climate change risks are largely built around these entities. For example, in the USA the treatment of climate as a so-called 'low politics' environmental issue has, in the past, contributed to a lack of urgency or prioritization compared to other more traditional threats to security, such as nuclear proliferation and international terrorism. However, this is changing.[13]

At the level of global governance, as a general rule, the UN addresses climate change largely through the lens of mitigation. This approach has not been entirely successful and has lost political momentum in part because peace, security and human rights are often treated as unrelated. Ken Conca argued that this misjudgement requires a 'conceptual revolution' within the UN that connects the environment with security and human rights, enabling maximization of the full extent of UN organizational power.[14] Likewise we suggest global governance models for managing climate change have been too narrow and not comprehensive enough given that widespread security implications are growing. This realization remains nascent and slow to scale up, and significantly lags behind the mounting risks.[15]

Elevating security risks has led some prominent climate security scholars of the Copenhagen School of security studies to warn the 'securitization' of climate change could, if abused, legitimize a political state, in which drastic mitigation measures are adopted using undemocratic methods. While these views have merit, adherents often assume securitization is likely to precipitate the 'militarization' of climate change responses, which is thus far not well documented in historical records.

The environmental framework at the time of the Stockholm Conference was influenced by dramatic geopolitical changes, such as the

[13] Femia, F., Parthemore, C. and Werrell, C., 'The inadequate US response to a major security threat: Climate change', *Bulletin of the Atomic Scientists*, 20 July 2011.

[14] Conca, K., *An Unfinished Foundation: The United Nations and Global Environmental Governance* (Oxford University Press: New York, 2015).

[15] Werrell, C. and Femia, F., 'The thirty years' climate warming: Climate change, security, and the responsibility to prepare', *Journal of Diplomacy and International Relations*, vol. XX, no. 1 (2018), pp. 21–37; and Brock (note 1).

movement to prioritize economic growth in developing countries. Attempts to change the architecture of climate security governance must therefore be understood within the context of the current political climate.[16] This political climate is characterized by new stresses on international security organizations, as well as increased ethnonationalism and isolationism. However, just as the devastation of the 1939–45 World War II enabled the creation of today's international security architecture, there are now opportunities to incorporate transnational, non-traditional risks like climate change into the strengthening and possible reforming of that architecture.

Strengthening the state-based global governance architecture to handle climate security risks will require a combined effort of ascertaining which pieces of the current architecture should continue to hold, and which should be reformed. This effort should build on and strengthen the hard-won lessons of other international governance models that collectively comprise the current world order.[17]

Current governance models lack the three following elements. They should be informed by climate data at the optimal temporal scale and level of detail. Next, they should assign clear responsibility for climate policy within the bureaucracy. Finally, the models should synchronize the timeline of changes in climate with those of key peace and security events.

Gap 1: Leadership—identifying and holding those responsible to account for preparedness and prevention

Global climate change governance is rooted in scientific and environmentally focused organizations and agencies.[18] The UN Environment Programme (UNEP) and the World Meteorological Organization created the Intergovernmental Panel on Climate Change (IPCC) in 1988. The 1992 UN Framework Convention on Climate Change (UNFCCC), the main forum for global climate governance, was created at the 1992 UN Conference on Environment and

[16] See chapter 2 in this volume; and Werrell and Femia (note 15).

[17] Fuerth, L. and Faber, E. M. H., 'Anticipatory governance: Winning the future', *The Futurist*, vol. 47, no. 4 (July–Aug. 2013).

[18] Allan, B. A., 'Producing the climate: States, scientists, and the constitution of global governance objects', *International Organization*, vol. 71, no. 1 (2017), pp. 131–62.

Development in Rio de Janeiro, Brazil. The historical demarcation of climate change risks as primarily an environmental concern and scientific problem means climate information is generally not tailored for global security decision makers situated in ministries of defence, intelligence and foreign affairs (although this varies widely among countries). This means public officials who are responsible for formulating and implementing peace and security policy are often bureaucratically shielded from decisions relating to managing the adverse impacts of climate change.[19]

Climate change often lacks an internal champion to give it appropriate weight in its bearing on security priorities. Consequently, climate security risks are sometimes communicated, but they do not often lead to substantive action. The risks are either not prioritized, or the issue is not presented in a fashion that appropriately contextualizes the risks as they pertain to other geostrategic priorities. Foreseeable outcomes can thus be overlooked, costing lives and resources.

Furthermore, when decisions are being made about how to manage urgent security matters, environmental ministers or others leading offices responsible for translating scientific information to policymakers and evaluating climate risks are typically not present at the table. Therefore, government officials responsible for decision making on peace and security matters often do not appreciate (or understand) how climate change risks factor into the security issues at hand.

Institutional leadership on climate security within security agencies across governments and intergovernmental organizations would help alleviate this problem, but it is generally missing. Even nascent, but welcome entities—such as the Climate Security Mechanism (CSM), established by the UN's Department of Political and Peacebuilding Affairs, the UN Development Programme and the UNEP—do not receive the political or financial support they deserve, given the comprehensive nature of the risks they are tasked with.[20] Further finance solutions, improved coordination and partnerships across sectors of society are needed to allow the

[19] Weart, S., *The Discovery of Global Warming* (Harvard University Press: Cambridge, MA, 2003).

[20] UN, CSM, *Toolbox: Briefing Note* (New York: UN, 2020), p. 10.

CSM to systematically address climate-related security risks on the international scale.[21] In this context the success of climate security integration into security planning and decision making relies too heavily on politically influential individuals with a personal interest, thus leading to a volatile waxing and waning of interest.

Much advancement in climate security governance has come from individuals within governments and organizations leading by example and providing cover for the ranks below them. The downside is that as a person moves to another position, the leadership and individual interest in the topic often subsides. There is little institutional memory unless institutions are long established. Creating robust institutions with the support of senior political leadership and permanent leadership positions in security agencies mandated to address climate security risks is essential.

To address the leadership gap it will be critical to establish institutions led by credible security practitioners, to convey basic climate security information to global security decision makers and guide the development of policy options. This will help elevate attention to risks and drive institutional commitment to climate security. Unlike with other significant security risks such as nuclear weapons proliferation and international terrorism, there are fewer security organizations that champion climate and security, and fewer still that prioritize it. Some intergovernmental organizations such as the Commonwealth of Independent States, the European Union, the North Atlantic Treaty Organization and the UN Security Council are engaged in climate security to various degrees, but actions thus far have not been commensurate to the risks.[22]

There is still a need for institutional capacity to help drive integration of climate security risks into the analysis of other critical security priorities at the UN, at regional and national levels. This need is justified by the multidimensional nature of the threat. For example, conflict, international terrorism and nuclear proliferation are all critically important issues often on the UN Security Council agenda. In March 2017 the adoption of Security Council Resolution 2349 on the humanitarian emergency in the Lake Chad Basin region

[21] Okai, A., 'Addressing climate-related security risks through concrete action', speech at the 74th UN General Assembly side event, 22 Sep. 2019.

[22] Dellmuth, L. M. et al., 'Intergovernmental organizations and climate security: Advancing the research agenda', *WIREs Climate Change*, vol. 9, no. 1 (2018).

identified the need for climate security risk assessments and risk-management strategies, but this request was only partially fulfilled in subsequent reports.[23]

Gap 2: Actionable information for security policymakers

There is a vast amount of data on physical climatic changes. There are observations from every corner of the earth and the far reaches of outer space. There are numerous models showing a wide array of future climate scenarios, as well as current climatic changes in real time. Furthermore, there is a seemingly endless amount of data measuring the implications of climate change on food, water and energy systems. However, officials in positions responsible for national security who manage the security implications of these changes (which are social and political in nature) need information at the necessary scale and granularity to make it actionable.

Many international climate policy and security mechanisms remain based upon the risks of the past century. The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer and the 1996 Comprehensive Nuclear-Test-Ban Treaty are counterexamples that have clear and agreed upon measuring and monitoring requirements.[24] Agreed upon metrics and monitoring techniques have yet to be developed to assess how climate change scales up to higher-order security risks and increases state fragility. The lack of standardized metrics for measuring and assessing and monitoring climate security risks and the lack of agreed upon future projections in a field dominated by forensic analysis impede the ability of those responsible for addressing security risks to receive the most useful information.

Lack of standardized global metrics for climate security risks

That the climate is changing rapidly, in a manner that is largely unprecedented for human civilization, puts public officials trying to

[23] Born, C., Eklöw, K. and Mobjörk, M., 'Advancing United Nations responses to climate-related security risks', SIPRI Policy Brief, Sep. 2019.

[24] Committee on Reviewing and Updating Technical Issues Related to the Comprehensive Nuclear Test Ban Treaty, 'Chapter 2 technical monitoring capabilities and challenges', *The Comprehensive Nuclear Test Ban Treaty: Technical Issues for the United States* (National Academies Press: 2012).

make sense of the policy implications of the changes at a disadvantage. Information is available; however, there is so much of it and it is evolving so quickly, which can cause policy paralysis. This is particularly the case for security policy practitioners, for whom sufficient tools and guidance for managing, interpreting and judging this environmental information do not exist.[25]

Ideally, such tools would take into consideration metrics of societal resilience to climate change based on a combination of social, economic and environmental factors. These factors could include, for example, settlement/infrastructure sensitivity, food security, ecosystem sensitivity, human health sensitivity, water resource sensitivity, economic capacity, human and civic resources, and environmental capacity.[26]

The UNEP put out a call in 2019 for a 'digital ecosystem for the planet' that will draw upon a range of frontier and digital technologies to monitor and increase the sustainability of earth systems.[27] A globally standardized digital ecosystem does not yet exist, which contributes to disagreement and confusion about levels of sustainability worldwide—never mind about how those levels of sustainability interact with global security. This is further complicated when combining quantitative data measuring, such as water availability, drought and precipitation, with more qualitative data sets measuring access to water, or motivations for emigration and political unrest.

Lack of data harmonization is particularly acute in climate security. The field of climate security is relatively young and contested, as evidenced by varying approaches to security such as human security, ecological security, post-human security and ontological security described elsewhere in this volume. These multiple definitions mitigate against the establishment of globally accepted and standardized metrics, and serve to highlight their necessity. As an example general climate change governance benefits from the

[25] Archie, K. M. et al., 'Unpacking the "information barrier": Comparing perspectives on information as a barrier to climate change adaptation in the interior mountain west', *Journal of Environmental Management*, vol. 133 (2014), pp. 397–410.

[26] Malone, E. L. and Brenkert, A., 'Vulnerability, sensitivity and coping/adaptive capacity worldwide', eds Ruth, M. and Ibarrarán, M. E., *Distributional Effects of Climate Change: Social and Economic Implications* (Edward Elgar Publishing: Cheltenham, 2009).

[27] UNEP, 'Foresight brief: Early warning, emerging issues and futures', Sep. 2019.

established IPCC, which produces periodic and authoritative assessment reports capturing the scientific consensus on climate change for policymakers. However, while the IPCC's fifth assessment report on global climate change, released in 2014, contained a comprehensive literature review of grey literature of the human security implications of climate change, other definitions of security were not considered.[28]

There is no global hub of standardized, authoritative climate security information that reflects (as much as possible) the security and/or social science consensus on the issue, that ranks the confidence of certain relationships in the climate security nexus (such as the relationship between climate and conflict, or climate and state fragility) or that presents credible climate security futures. This is not because such information does not exist. Indeed, there is a growing body of academic literature on climate security, climate security assessments from governmental and intergovernmental agencies, and assessments from non-governmental organizations.[29] However, it is difficult for national governments to agree on policies that are commensurate to the risks without a standardized, authoritative and aggregated assessment of climate security risks by a legitimate intergovernmental entity. There needs to be some baseline of agreement about the risks, and a credible means of communicating that information.

Lack of future projections in a field dominated by empirical data

The climate security field in general and the climate–conflict field more specifically favour approaches consisting of studies of past instances of statistically significant climate security correlations. These methodologies present case studies or information on past events, rather than future scenarios that social science methods cannot reliably test.[30]

[28] Adger, W. N., 'Human security', eds Pachauri, R. K. and Meyer, L. A., *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC: Geneva, 2014).

[29] Climate and Security Resource Hub, 'Climate security 101', Center for Climate & Security, [n.d.].

[30] Gulledge, J., 'Countries should assess climate risks the way they assess other security risks', Center for Climate & Security, 13 July 2015.

However, policymakers need to anticipate risks and prevent a problem from arising, as they may be held responsible. If there is even a small but plausible chance that climate change could increase the likelihood of significant social, economic or political stress and instability, governments should take such a possibility seriously. This means public officials would benefit most from future projections of security risks deriving from climate change, not forensic analysis. There is a serious disconnection between the kind of information governments and intergovernmental institutions need to address future climate security risks and the prevailing climate security literature.[31] Government actors require credible future projections to enact policies to address those future risks, but mainly have access only to forensic climate security analysis (most of which is narrowly focused on exploring causal climate–conflict linkages).

General climate change governance benefits from the vast array of credible and authoritative physical climate models, which are scientifically accepted projections of future changes. Conversely, climate security is a field of social science, where most of the academic and grey literature relates to past risks, and future climate security scenarios are generally not considered as acceptable science. Some national intelligence and defence communities have filled this gap by conducting climate security scenario threat assessments, and communicating those assessments to their respective governments.[32] However, the details of these assessments are often classified, and the assessments are tied to the specific equities and missions of the individual organizations that produce them. A global assessment of future climate security projections that governments and intergovernmental institutions can use to guide their actions does not yet exist.

In summary, there is an unprecedented amount of climate change and climate security data available, and an unprecedented ability to anticipate climate change risks. However, transferring this information into a means that is globally usable across scales and time remains a significant challenge.

[31] Ross, L. et al., 'The climate change challenge and barriers to the exercise of foresight intelligence', *Bioscience*, vol. 66, no. 5 (2016), pp. 363–70.

[32] Climate and Security Resource Hub (note 29).

To address the actionable information gap, our proposal to address global climate governance rests on an analytical foundation affirmed by credible institutions that includes future projections and a description of climatic changes and impacts to date. The framework includes a comprehensive review of empirical analysis of climate security risks (past case studies and global assessments) and future climate security scenarios (foresight exercises, sophisticated games, future trends analysis, intelligence forecasts etc.), in order to avoid the aforementioned gaps in knowledge about plausible climate security futures. Such an assessment can either be produced by existing organizations and institutions in the security and/or climate fields, or by new international entities designed specifically for this purpose.

Having actionable information available would greatly increase the ability to prepare for and prevent climate-related security risks. However, these risks are intertwined in the broader security and security policy landscape. Better coordination across issue areas is thus critical, including those well beyond the traditional environmental or security realm.

Gap 3: Coordination of timelines

Aligning the timelines of mitigating and adapting to climatic change with the timelines of global peace and security events and priorities is an enormous challenge. There is no governance framework for helping to facilitate such efforts. The timeline of physical climatic changes is set by the rate of greenhouse gas emissions released into the atmosphere. Societal responses, including preventive and preparatory actions, exist in that context. There is an entire field of practice dedicated to analysing and anticipating global temperature thresholds and tipping points. These shift as emissions increase and decrease annually due to variable actions by governments, non-governmental entities and the broader global market. That analysis informs how governments and institutions make decisions about climate change mitigation and adaptation. However, it is an incredibly complex situation. When adding volatile political dynamics associated with changes in the security landscape—those affecting conflict for example—the picture becomes even more complicated. Governance mechanisms at the national or international

level designed to align climate change policy and security policy decisions are inadequate or do not enjoy sufficient political support or resources. There are also no such mechanisms for anticipating or addressing the unintended security consequences of climate or climate security actions, such as those from geoengineering.

An entity dedicated to facilitating alignment of the climate change policy windows and global security policy windows is missing. John Kingdon identifies three stream policy windows: (*a*) as a condition for what is considered as a problem; (*b*) as alternatives to the problem that can be implemented; and (*c*) as politicians' willingness and ability to change policy.[33] These three streams must align for policy change to occur. For climate security these streams must align across climate policy and security policy timelines—doubling the complexity of addressing climate change alone.

These complexities point to the need for a governing body devoted to facilitating such alignment. This body would need to include coordinating responses to climate risks through existing international mechanisms, such as the UNFCCC, with actions on climate-relevant security problems such as conflict prevention and resolution being addressed by the UN Security Council and other key security forums. The body would also take climate change policy actions via the UNFCCC and climate assessments by the IPCC into consideration.

There are no systematic processes for facilitating the coordination and alignment of non-governmental climate policy networks with global security policy networks. This lack of engagement across sectors may result in the adoption of climate policies that are security insensitive and security policies that are climate insensitive. Coordination should not be limited to security institutions and the UNFCCC. It should also engage other areas of international governance, the broader public and civil society to promote fluency on climate security risks and solutions, and to help facilitate more robust whole-of-society efforts on climate security. This could include acting as a facilitator of cross-sectoral non-governmental organization network coordination, such as between international

[33] Thankur, R. D., 'Kingdon's three stream policy window model and cardiac rehabilitation policy', 30 Mar. 2014, as cited in Moser, S. C. and Ekstrom, J. A., 'A framework to diagnose barriers to climate change adaptation', *Proceedings of the National Academy of Sciences of the United States of America*, vol. 107, no. 51 (21 Dec. 2010), pp. 22026–31.

climate policy and global security policy networks, to drive win–win outcomes for climate change mitigation and security.

The proposed global body could, at its inception, draw lessons from the existing process undertaken by the Nansen Initiative, an international organization located in Geneva, Switzerland. The Nansen Initiative is a state-led, bottom-up consultative process launched by the governments of Norway and Switzerland in October 2012. It is intended to identify effective practices and build consensus on key principles and elements to address the protection and assistance needs of persons displaced across borders in the context of disasters, including the adverse effects of climate change.[34]

Consistent with the premise of our proposed framework, the Nansen Initiative regional consultations have repeatedly identified the need to develop new and innovative tools to generate better data, research and analysis on cross-border disaster displacement. A new organization based on this model could develop a broader climate security agenda and serve as an initial coordination mechanism for climate security governance. Importantly, such a new organization should include the USA and other permanent members of the UN Security Council that maintain extensive predictive and analytical capabilities in the field of climate change, to ensure the organization is acting on the latest and most reliable information.

II. Realizing the responsibility to prepare and prevent climate security risks

Five decades after the Stockholm Conference, the world is at a critical juncture that will set its course for well beyond the next 50 years. The window of opportunity to strengthen global governance in the Anthropocene is narrowing as the impacts of global climate change worsen. Stalled or delayed actions may result in diminishing returns and, in the worst-case scenarios, difficult and perhaps inhumane choices in the face of continued strains on natural resources and political will.

Whether or not the response to climate security risks from the international security community will be commensurate to new threats remains to be seen. However, in the Anthropocene,

[34] 'About us', The Nansen Initiative, [n.d.].

organizations with extensive predictive and analytical capabilities do not have the excuse that they did not see the threat coming. Such foresight gives the responsibility to prepare and prevent moral and practical weight. The international community would be well advised to begin in earnest the process of establishing a responsibility to prepare a climate security governance framework—a framework that can enable countries to manage the global security risks of a changing climate.

5. The security space in the Anthropocene epoch

DAN SMITH

The world is facing a troubling array of security challenges. These include issues that are the traditional fare of international relations and security, like the risk of nuclear war, a burgeoning international arms trade, international disputes and conflicts, and the increasing toxicity of international politics. Other issues came into sharp focus for many observers in the 1990s following the end of the cold war, such as intrastate wars and armed violence in which no state actors are involved. And others, such as cyber vulnerabilities, the impacts of climate change and the consequences of pandemics, are largely new in this century. Taken individually, these challenges are complex and difficult to respond to. Taken together, as they interact with other features of the social, economic and political landscape, they are even more worrisome.

Different parts of this array are prioritized by different and contending approaches to the great issues of peace and conflict. These approaches are commonly referred to in shorthand: national, state, state-centred or hard security for the traditional approach; and human or soft security for the newer approach that has taken shape since the mid 1990s. Each approach asks different questions, provides different answers and accordingly identifies different priorities. The distinction between approaches highlights a choice between emphasizing concerns such as the strategic threat an adversary poses to national interest and concerns such as the consequences of environmental degradation or growing social inequalities.

In short, each approach identifies and takes on part of the contemporary and unfolding combination of security challenges. Consequently, each approach misses important pieces of the whole picture. Most researchers and commentators who focus on human security barely address geopolitics, political rivalries and self-aggrandizing states. The human security world view tends to prioritize drivers of insecurity and conflict over the actors and their rivalries. While many development aid donors have drawn security

concerns into their policies, they have focused on internal challenges in beneficiary countries, without looking at international relations more broadly. Similarly, researchers and commentators who focus on hard security have little to say about pressures on security stemming from environmental degradation, social inequalities, water stress and food insecurity. Some have examined how climate change may affect the operating conditions of armed forces or explored scenarios of future threats resulting from global warming but have identified limited implications for security preparations. Broadly speaking, each approach has kept to its own sphere.

Recognizing the unsatisfactory nature of that bifurcation, the purpose of this chapter is to outline a possible conceptual underpinning for an approach that can take on the full combination of security challenges. To do so begins by acknowledging that entry into the Anthropocene epoch makes this an era unlike any other. But it does not end there. The compound environmental crisis that has led to the case for characterizing the epoch as the Anthropocene is not the whole story of security challenges today and in the coming decades. A security concept that is fit for purpose in the Anthropocene age must be able to address security challenges arising from other sources as well. It should at least encompass responses to globalization and growing global connectivity, socio-economic inequalities, changes in land use due to population growth and economic development, interstate rivalries, and deficiencies of governance and leadership. These process and phenomena interact with each other, and have direct and indirect consequences. If the developments summarized by the Anthropocene explain why the coming period will be different from previous decades, they do not describe the full reality. To focus security policy exclusively on the environmental challenges—fundamental though they are—would lead to some misleadingly one-dimensional thinking, an incomplete picture and poor policy.

Two concepts may help to understand the task facing security analysts and practitioners in the coming period. The first recognizes there is *a single security space* of interlocking challenges and problems. Looking at it through a human or a hard security lens means seeing only a part of the whole, missing important

components and also the links among them.[1] The second focuses on *the operating sphere* of security policy. The meaning of this second concept will hopefully become clear as the argument unfolds. In brief, the concept of an operating sphere demarcates the area within which policy and its institutional expressions are active. Within this sphere we see what the business of security policy is, at least in the view of policymakers and practitioners.

This chapter begins by assessing current insecurity, to establish that neither a human nor a hard security lens is adequate to appreciate the overall situation. It then looks at the evolution of the human security concept. A key distinguishing feature between this concept and its hard counterpart is the question of operating sphere. The chapter explores how the operating sphere is constituted at the intersection of a range of key challenges. It concludes by proposing that the objectives of security policy could be formulated in relation to the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda for Sustainable Development, with international cooperation as the major policy instrument.

I. Current dimensions of insecurity

Assessing the balance sheet of insecurity is tricky. While there are often general trends, there are almost always significant exceptions. A detailed balance sheet is beyond the scope of this chapter, but a summary offers a useful starting point.

Following the end of the cold war at the start of the 1990s the world experienced two decades with notable gains for security, including fewer and less-lethal armed conflicts, fewer nuclear weapons and more major arms control agreements. The gains were real, despite important exceptions—not least the wars in Afghanistan, Darfur,

[1] The vocabulary used in this chapter to depict the two contrasting security approaches is 'hard' for the traditional approach, and 'human' for the newer approach. I recognize that the terms have developed out of the antinomies of 'human/state' and 'soft/hard', but 'soft' and 'state' (or state centred, state centric and so on) seem to be inadequate characterizations. 'Soft' is inadequate because, in some treatments, human security includes policing and even military actions. 'State' is inadequate because most human security discussions also stress the importance of a strong, responsive and accountable state. Thus, although the terms are not opposites, of the range of adjectives available for describing the different approaches, 'hard' and 'human' seem the most useful. However, as the chapter unfolds, readers will hopefully find the division between hard and human security—or whatever they prefer to call it—is ultimately unhelpful and should be superseded.

Iraq, Rwanda and Western Balkans. In contrast there has been a significant deterioration in global security since 2010. By 2020 military spending had risen to its highest level since before the end of the cold war, as did the international trade in major weapons.[2] And in 2020 there were 54 armed conflicts worldwide. This was an 80 per cent increase in numbers compared to 2010, and more than there had been in 1990.[3] In the decade from 2010, arms control between Russia and the United States descended into crisis, while all states that owned nuclear weapons were upgrading their arsenals, either through technological development or numerical increase, or both. The increasingly toxic nature of geopolitics was visible between China and the USA and between Russia and the West, and also in regional rivalries, especially between Iran and Saudi Arabia and between India and Pakistan. This formed a malign part of the global context as the 2020s began. The murky area of cyber vulnerabilities also attracts attention, against the background of rising tensions and confrontation. Part of the problem is the risk of cyberattack.[4] However, much of what goes wrong in the cyber realm is simply the software and sometimes the hardware malfunctioning. From a security point of view the risk that a cyber incident is interpreted as an attack, resulting in retaliation against the assumed attacker, is as serious as the underlying vulnerability.[5]

Anthropocene realities loom in the background. The climate crisis poses a direct threat to human well-being in many places and contributes to the context of insecurity and instability in others. For example, there is evidence that water insecurity sharpens conflicts over basic resources, while poor governance exacerbates the shortages and weakens the capacity to manage conflicts.[6] Contemporary experience in the Horn of Africa and the Middle East shows these challenges can trigger and sustain major upheaval

[2] Wezeman, P. D. et al., 'Trends in international arms transfers, 2019', SIPRI Fact Sheet, Mar. 2020.

[3] See Uppsala Conflict Data Program (UCDP), 'UCDP conflict encyclopedia', accessed 30 Dec. 2020, <https://www.ucdp.uu.se>.

[4] Kaplan, F., *Dark Territory: The Secret History of Cyber War* (Simon & Schuster: New York, 2017); and Sanger, D. E., *The Perfect Weapon: War, Sabotage and Fear in the Cyber Age* (Crown Publishing: New York, 2018).

[5] Turell, J., Su, F. and Boulanin, V., 'Cyber-incident management: Identifying and dealing with the risk of escalation', SIPRI Policy Paper 55, Sep. 2020.

[6] Rüttinger, L. et al., *A New Climate for Peace: Taking Action on Climate and Fragility Risks* (Adelphi: Berlin, 2015).

and violence.[7] To take a different example, what used to be once-in-a-century extreme sea-level events are likely to occur at least annually in many places by 2050.[8] Sudden surges in sea level will have a dramatic impact on the 570 cities in low-lying coastal areas, 20 of them with populations over 10 million each, including major financial and trading centres.[9] The prospect is of governments and communities being overwhelmed, generating need that cannot be met, disputes that cannot be settled and consequent instability with far-reaching consequences. The Coronavirus disease 2019 (Covid-19) pandemic—a threat to the lives and well-being of people all round the world—has illustrated the lack of resilience in national and international systems. The pandemic is a burden for rich countries and a potential catastrophe for poor and war-torn ones.[10] It is the latest in a series of pandemics that, in this century, already include severe acute respiratory syndrome (SARS), H1N1 influenza (swine flu), Middle East respiratory syndrome (MERS) and Ebola virus disease. In addition, cholera remains a mortal threat, as seen in Zimbabwe (2008–2009), Haiti (2010–11) and Yemen (2016–), where the impact of Covid-19 is also heavy.[11]

Some countries—Syria and Yemen are two current examples—face a triple tragedy of climate change, violent conflict and disease, with each one exacerbating the consequences of the others. Such a multiple blow could be seen as one of the sharpest security risks—yet also a characteristic risk—of the Anthropocene epoch. It combines the consequences of human impact on the environment with poor governance and the power politics that lead to and feed on war.

[7] See e.g. Smith, D. and Krampe, F., 'Climate-related security risks in the Middle East', eds Jägerskog, A., Schulz, M. and Swain, A., *Routledge Handbook on Middle East Security* (Routledge: Abingdon, 2019); Schaar, J., 'A confluence of crises: On water, climate and security in the Middle East and North Africa', SIPRI Insights on Peace and Security no. 2019/4, July 2019; and Eklöw, K. and Krampe, F., 'Climate-related security risks and peacebuilding in Somalia', SIPRI Policy Paper no. 53, Oct. 2019.

[8] Pörtner, H. O. et al. (eds), 'Summary for policymakers', *Special Report on the Ocean and Cryosphere in a Changing Climate* (Intergovernmental Panel on Climate Change: Geneva, 25 Sep. 2019).

[9] 'The uncertain future of the coasts', *World Ocean Review*, vol. 1, chapter 3 (2010); and C40 Cities, 'Staying afloat: The urban response to sea level rise', [n.d.].

[10] See Blanc, J. and Brown, F. Z. (eds), *Conflict Zones in the Time of Coronavirus: War and War by Other Means* (Carnegie Endowment for International Peace: 17 Dec. 2020).

[11] Nagi, A., 'Yemen's devastating war continues despite an unchecked pandemic', eds Blanc, J. and Brown, F. Z., *Conflict Zones in the Time of Coronavirus: War and War by Other Means* (Carnegie Endowment for International Peace: 17 Dec. 2020).

Awareness of the challenge of climate change has grown, along with awareness of other environmental issues. These include the link between environmental change and disease, not least with zoonotic (animal-to-human) infections, whose increased incidence partly results from urbanization and other changes in land use. A better idea of the scale of the problem leads to acknowledging the need to change course; at the same time, it reveals the depth of the practical challenge of doing so. Global heating is a result of economic growth and progress. Doing things differently and achieving carbon neutrality by 2050 or soon after will not be easy. It means reversing one century's worth of increases in greenhouse gas emissions in two to three decades, while ensuring economic output meets the needs and expectations of a growing global population.[12]

Addressing the interconnections among the different components of the environmental crisis, the Stockholm Resilience Centre has promoted the idea of 'planetary boundaries' to depict the scale of the risks being taken with the natural environment.[13] Within these boundaries there is a 'safe operating space'; outside them there are dangers we currently glimpse but do not know about because they are unprecedented. The area outside the boundaries of safety could be seen as the area where the Anthropocene epoch's risks emerge and grow.

Three points are important to bring these strands together and identify their implications for discussing the security horizon in coming years. One planning assumption must be to expect continuing climate change and its unfolding consequences, because it will take decades to reduce greenhouse gas emissions. The security agenda of the 2030s may be so full of shocks and stresses as to be essentially unmanageable for many countries in all regions of the world. A second planning assumption is that the precise form of those shocks and stresses is unknown and hard to forecast. As many commentators have noted the entry into the Anthropocene epoch means entering a period characterized by uncertainty, with unpredictable

[12] 'The past, present and future of climate change', *The Economist*, 21 Sep. 2019.

[13] Stockholm Resilience Centre, 'The nine planetary boundaries', [n.d.]. The boundaries are stratospheric ozone depletion, loss of biodiversity loss and extinctions, chemical pollution, climate change, ocean acidification, freshwater consumption and the global hydrological cycle, land system change, nitrogen and phosphorus loading, and air pollution.

(or, at least, unpredicted) environmental tipping points.[14] Third, on recent form, toxic geopolitics in a world with rising numbers of armed conflicts and increased investment in military preparations will likely mean the great powers cannot (or will not) cooperate in support of vulnerable populations.

With these risks lying ahead, where do we look for the source of greater security?

II. The conceptual evolution of human security

There has long been recognition that the traditional security concept is too narrow. Non-military means (e.g. diplomacy) may be as effective as military means for responding to threats. Security may take many forms other than direct threats from other states. The North Atlantic Treaty Organization (NATO) adopted a 'new strategic concept' in November 1991 as the cold war ended. It stated 'the security challenges and risks which NATO faces are different in nature from what they were in the past', and stressed the importance of achieving objectives through political means.[15] It put crisis management and conflict prevention as core business. NATO thus started to change the security discourse. However, the real broadening of the security agenda came with the 1994 edition of the UN's *Human Development Report* and the introduction of the human security concept.[16]

The report's core concept was 'security in the daily lives of the people'.[17] It linked development to conditions of insecurity, including in the aftermath of or run-up to armed conflict, although that was not its primary focus. It appeared to have particular resonance in countries where states proved unable to provide security for their populations, as in Liberia and Sierra Leone, and where the state itself was a major threat to large groups of citizens, as in Iraq and Rwanda.

[14] See e.g. Steffen, W. et al., 'Trajectories of the earth system in the Anthropocene', *Proceedings of the National Academy of Sciences of the United States of America*, vol. 115, no. 33 (2018), pp. 8252–59; and Hamilton, C., *Defiant Earth: The Fate of Humans in the Anthropocene* (Polity Press: Oxford, 2017).

[15] 'The alliance's new strategic concept, agreed by the heads of state and government participating in the meeting of the North Atlantic Council', NATO, 7–8 Nov. 1991.

[16] UN Development Programme, *Human Development Report 1994* (Oxford University Press: New York, 1994).

[17] UN Development Programme (note 16), p. 1.

The linkage between peace and security and development has become more accepted over time. Whereas the UN Millennium Development Goals adopted in 2000 said nothing about peace and security, 15 years later the UN's 2030 Agenda included SDG 16 focused on peace, justice and strong institutions. In 2009 the United Kingdom's Department for International Development (DFID)—generally if loosely acknowledged at the time as a global leader in official development assistance policy—asserted: 'We cannot eradicate world poverty if we ignore countries affected by conflict or bad governance.'[18] The World Bank's *World Development Report 2011* used a human security lens to explain what was needed for further development progress.[19] Insecurity was the fundamental development challenge and human security the way forward for DFID and the World Bank.

A first comparison of human security and hard security shows a sharp contrast: one puts the people's needs ahead of the state's, and the other puts the state at the centre. But this dichotomy is not the whole story. In liberal democratic politics, although individuals and communities often have different and conflicting interests, the overall, balanced interests of the people as a whole—the citizenry—and the state should be coterminous. When they are not, the state is repressive.[20] When the state represents and serves the collective will of the people, the result is a 'well-ordered society' with a shared and unifying 'conception of political justice' and institutions in which citizens engage and to which they generally give their trust.[21] The point of hard security provision is to ensure human well-being of the citizenry, contributing, in short, to their human security.[22] And it can be argued that the relationship also works the other way round. Issues of human security that do not feature in thinking about military preparations can nonetheless have distinctly hard security

[18] UK DFID, *Eliminating World Poverty: Building our Common Future*, Cm 7656 (UK DFID: July 2009), p. 69.

[19] World Bank, *World Development Report 2011: Conflict, Security, and Development* (World Bank: Washington, DC, 2011).

[20] Fawcett, E., *Liberalism: The Life of an Idea*, 2nd edition (Princeton University Press: 2018), pp. 3–4.

[21] Rawls, J., *Political Liberalism* (Columbia University Press: New York, 1996), pp. 35, 48 and 85.

[22] Lodgaard, S., 'Human security: Concept and operation', eds Muller, M. and de Gaay Fortman, B., *From Warfare to Welfare: Human Security in a Southern African Context* (Royal van Gorcum: Assen, 2004).

consequences. For instance the pressure of drought and poor water management is an important part of the background narrative of how the wars in Syria and Yemen came about.[23] Understanding such pathways to violent conflict is a good example of how the concept of human security has served the important purpose of broadening perspective on security.

III. The operating sphere of security policy

A major difficulty with the human security concept is its breadth, which is potentially boundless. The concept is hard to pin down, and risks being indeterminate and infinitely expandable. The *Human Development Report 1994* specifies seven elements of human security: economic, food, health, environmental, personal, community and political security.[24] Impressively encompassing as that list is, it does not include justice and protection against crime, gender equity and protection against gender-based violence, or the importance of education. These gaps could suggest conceptual enlargement was inevitable. The report of the Commission on Human Security in 2003 describes human security as addressing 'a number of distinct but interrelated areas concerned with conflict and poverty'.[25] The UN General Assembly's human security resolution in 2012 referred to 'widespread and cross-cutting challenges to the survival, livelihood and dignity of their people'.[26] The list of what is relevant to human security can be so broad that it is reasonable, if rhetorical, to pose the question: 'if human security is all these things, what is it *not*?'[27]

Vulnerability is the key issue in broader versions of human security, with a focus that includes protection from threats such as disease and extreme weather.[28] A narrower, crisper version focuses on political and criminal violence, especially when politics and crime

[23] Smith and Krampe (note 7).

[24] UN Development Programme (note 16), pp. 24–25.

[25] Commission on Human Security, *Human Security Now* (Commission on Human Security: New York, 2003).

[26] UN, General Assembly, Resolution adopted by the General Assembly on 10 September 2012, A/RES/66/290, 25 Oct. 2012.

[27] Paris, R., 'Human security: Paradigm shift or hot air?', *International Security*, vol. 26, no. 2 (2001), p. 92.

[28] Suhrke, A., 'Human security and the interests of states', *Security Dialogue*, vol. 30, no. 3 (1999), pp. 265–76; and Thakur, R., 'A political worldview', *Security Dialogue*, vol. 35, no. 3 (1 Sep. 2004), p. 348.

intersect.[29] The broader version's conceptual inclusivity arguably results in reduced analytical clarity. But the narrower version's analytical clarity comes at the price of arbitrariness. Studies of how extremes of violence and insecurity become endemic in many countries, yet have been overcome in others, reveal the importance of a multidimensional understanding of security.[30] Disease and the consequences of environmental change are, in some circumstances, as important drivers of insecurity as social inequality and the general level of economic development are in others. Meanwhile, the concept of everyday peace indicators shows that the mundane and the daily are as much a part of peace—thus, of security properly understood—as is, for example, a reduced scale of violent death in a given country, city or locality.[31] It may be analytically cleaner to lop off considerations of disease, the environment and so on, but it does not make for conceptual consistency.

One point about this debate on the conceptual scope of human security is that it is posed in terms of the causes of insecurity and the objectives that a human security policy should attempt to achieve. Perhaps this is the core of the difficulty: the more one wants to address root causes of conflict as part of security policy, the more likely it is that the policy objectives will be all-embracing. If the limitation of hard security is that, at best, it addresses only the symptoms of insecurity, which is too narrow, the problem of human security is that addressing causes leads it to get too wide.

Therefore, it may be more productive to address the issue of scope operationally. This is one way in which the human and hard security approaches are differentiated—the sphere within which each one operates. The traditional hard security concept offers a clearly defined operating sphere, emphasizing armed preparations against potential adversaries and the diplomacy of alliance as part of security. The actors in this operating sphere are the armed forces and the institutional set-up that, in and out of uniform, supports

[29] Felbab-Brown, V., 'Human security and crime in Latin America: The political capital and political impact of criminal groups and belligerents involved in illicit economies', Florida International University Western Hemispheric Security Analysis Center, Sep. 2011.

[30] See e.g. North, D. C. et al., *In the Shadow of Violence* (Cambridge University Press: 2013); and Kleinfeld, R., *Savage Order: How the World's Deadliest Countries can Forge a Path to Security* (Pantheon: New York, 2018).

[31] Everyday Peace Indicators, 'About', accessed 24 Mar. 2021.

them, including through science, weapons procurement, diplomacy, intelligence and counter-intelligence. Their activities are directed against known and unknown counterparts operating in the same sphere, whether on behalf of other states or of non-state forces. Of course there are many complexities beyond this simple outline. Adversaries, alliances and strategic objectives are often far from clear and obvious. However, this is an operating sphere occupied by a reasonably narrow range of actors engaged in a not very wide range of activities. By contrast, the debate on human security over the past 25 years has not produced a clear sense of its operating sphere. Indeed, the broad version of the human security concept could lead one to think of an operating sphere spanning almost everything.

A different approach starts with the foundational assumption that the diverse threats and challenges our security faces today, outlined earlier in this chapter, reveal something that can be called a single security space. Category differentiations between human and hard security are of little interest when approaching challenges to security in this way. What matters in war-torn, pandemic-ridden, cholera-attacked, water-insecure, long-time poorly governed Yemen is to address the full range of threats to people's well-being and security. A hard distinction between human and hard security would only get in the way of a consistent policy. It could lead to actions in the name of security shoring up problems of bad governance without solving them, thus weakening health services and sustainable hydro-policy. Many regions beset by complex insecurity have experienced similar problems. In these circumstances the operating sphere for security policy includes actions to address health and water issues alongside the mayhem of war. In other contexts the operating sphere might include addressing food security and migration from rural areas to informal urban settlements alongside instability and repressive policing. In a rich country, the operating sphere might include responding to the physical instability of the coastline given the risk of sea-level surges, the impact of rising unemployment in a pandemic-driven economic recession and a context of adversarial relations with neighbouring states.

Exploring the operating sphere for security policy in this way makes at least two things clear. First, that the security space is not the only policy space, and second, that actors in the security space need to be well informed about other policy spaces.

On the first point it is beyond argument that security is not the only policy space that is of interest for thinking about the well-being of people. There are also economic, social, governance, environmental, cultural, educational, health, communications and other spaces. In any society, these spaces are interconnected and mutually influenced. No single one of them is conceptually dominant; many are—in part or whole—of interest in security policy. Thus, the operating sphere for a new security policy fit for purpose in the Anthropocene epoch is formed by the interaction of several policy spaces, with the exact combination varying from one setting to another.

On the second point the emphasis on intersections means security actors need awareness of adjoining policy spaces. However, they do not need to be experts in everything. The approach taken here avoids the problem of boundlessness in the human security concept by setting the security space alongside other policy spaces. A degree of self-limitation is inbuilt. Issues of inequality, environmental deterioration and political exclusion, for example, influence security, but security policy is not expected to lead the way in reducing inequality, cleaning up the environment and enhancing the quality and reach of political participation. Similarly, agencies and actors on other policy issues—while aware of the interplay—do not have lead responsibility on security. Decisions on security and the intersecting issues benefit from this mutual sensitivity. One implication of this is the need to enhance the capacity for teamwork among different specializations, disciplines and departments—an enhancement that in many cases will be dramatic.

IV. A parallel operating sphere: Economics

If the idea of the operating sphere of security policy as formed by the intersection of key issue areas and their risks has some validity, it seems logical that the operating sphere for other policies would also be intersecting. One comparable approach in a different space is the metaphor of doughnut economics deployed by Kate Raworth.[32] Her approach imagines a doughnut with a hole in the middle; readers

[32] Raworth, K., *Doughnut Economics: Seven Ways to Think Like a 21st-century Economist* (Random House Business: London, 2017); see also the exploring doughnut economics website, <https://www.kateraworth.com/doughnut/>.

unfamiliar with ring doughnuts could instead imagine a lifebelt. The outer edge of the doughnut or lifebelt is established by the concept of planetary boundaries associated with the Stockholm Resilience Centre.[33] For Raworth one objective of economic policy is to stay within the safe zone defined by the nine planetary boundaries—the ecological ceiling of planet earth.

The inner edge of the doughnut—not the empty space in the middle but the inner edge of the substance—comprises 12 other necessities of life: water, food, health, education, income and work, peace and justice, political voice, social equity, gender equality, housing, social networks and energy. For Raworth a further objective of economic policy is to ensure all citizens can access all these goods, not just at the level of barely meeting basic needs, but at an equitable level of comfort. She labels these necessities as the social foundation.

The overall goal of economic policy, then, is to stay on the substance of the doughnut—above the minimum level of the social foundation, below the ecological ceiling, in a zone that is environmentally safe and economically successful. The goal, starting point and metric for economics in this perspective are not money and output but human well-being.

Raworth's approach thus reimagines economics for the 21st century on the basis of the intersection of a number of social issues that are normally compartmentalized from each other along with environmental issues. That is what also needs to happen in the security space: rethinking the overall goal, objectives, key concepts, instruments and the operating sphere of policy in the security space in a way that meets the challenges of the Anthropocene epoch.

V. Objectives, actors and instruments

A security policy appropriate to the Anthropocene epoch has to address a complex, interacting array of security challenges. Some come from nature, some from economics, some from power dynamics, and some from over-powerful and ambitious individuals. Its operating sphere, it has been proposed above, is at the intersection of these diverse issue areas. The discussion has necessarily left a number of questions to one side, including the not unimportant

[33] Stockholm Resilience Centre (note 13).

matter of 'whose security'. Discussion of hard security—because it is state centred—makes the question of whose security is to be protected relevant and obvious. When discussing human security, the question is equally relevant if less obvious, because of unstated biases and assumptions in the way that arguments are set up. The answer lies in how the policy objective is defined, to some degree at least.

In 2015 the UN agreed a potentially era-defining programme—the 2030 Agenda, with its 17 SDGs.[34] Under the headline goals there are 169 targets to achieve by 2030. If achieved the 2030 Agenda could mark the next phase in human progress. Even if not achieved—which is more likely since there was limited progress up to 2020 when the Covid-19 pandemic hit and made the task significantly more difficult—the goals are still a marker of ambition and also a way of focusing energy and effort towards a valid, shared objective.[35] If human progress is a journey, the SDGs help navigate a safe route. This is human progress as it could be, towards a better world that is not just imaginable but also practicable.

To make the next step in identifying the objectives of security policy suitable for the Anthropocene epoch, borrowing Raworth's doughnut metaphor is helpful. Although in Raworth's economic doughnut, some SDGs form part of the outer ring—the ecological ceiling—in our security doughnut, 15 SDGs taken together form the inner ring, the exceptions being SDG 16 on peace and SDG 17 on partnership. Call this ring the sustainability foundation. Humanity must not fall below it. The viability of these goals is threatened by many things, including security challenges. Borrowing and adapting Raworth's terminology, safety from security challenges forms the peace ceiling; this is where SDG 16 on peace sits, along with SDG 17 on partnership, to achieve the SDGs as a whole. Beyond the peace ceiling lies violent conflict of many kinds.

In short the objective of a security policy that suits the conditions of the Anthropocene epoch is to support the continuation of human progress as spelled out in the 17 SDGs. This means protecting the ability and opportunity of actors to contribute to SDGs—actors on all scales from global to local, including national governments,

[34] UN, 'The sustainable development agenda', [n.d.].
[35] UN, 'Sustainable Development Goals report', [n.d.].

intergovernmental organizations and alliances, the UN and its agencies, and actors in civil society, the private sector and academia who contribute to that large goal of human progress.

It follows from this objective that a key instrument for an Anthropocene-friendly security policy is the emphasis on cooperation. It is a paradox and a risk of the present period that as the need for cooperation grows, the appetite for it among the great powers of China, Russia and the USA, along with some medium ones, has been visibly declining. International cooperation is key to managing crises and flashpoints, to achieving arms control and disarmament agreements. More generally, cooperation is important for achieving stability in relations between states. And it is a prerequisite for successfully addressing longer-range issues such as climate change and the loss of biodiversity, as well as managing the risk and improving the handling of pandemics.

This emphasis on cooperation does not entail the abnegation of the use of military power, either indirectly to back up diplomacy or, in extremis, directly and violently. It is not out of the question that force might be required to protect the peace ceiling, just as force is sometimes required in policing to protect ordinary citizens. However, to acknowledge that force might sometimes be required for policing does not mean tolerance for kneeling on citizens' necks or attacking demonstrators with tear gas and cudgels. Similarly, to acknowledge that sometimes there might be benefit in using military force does not mean free licence for aggression and repression. Key operating norms must be that action is based on the rule of law and that the instruments of policy and how they are applied do not put at risk achievement of the overall goal.

VI. Concluding thoughts

A survey of articles in the academic discipline of international relations that addressed the challenge of the onset of the Anthropocene epoch identified three different strands of discourse: the endangered world, the entangled world and the extractivist world.[36]

[36] Lövbrand, E., Mobjörk, M. and Söder, R., 'The Anthropocene and the geo-political imagination: Re-writing earth as political space', *Earth System Governance*, vol. 4 (June 2020); and Söder, R., Mobjörk, M. and Lövbrand, E., 'The Anthropocene and global politics: Rewriting the earth as political space', SIPRI blog, 2 Sep. 2020.

These discursive approaches derive from different intellectual and political backgrounds yet are not inherently contradictory with each other. The approach followed in this chapter would not deny that the world is endangered and that over-extraction of natural resources is a key driver of the problems we now face. It would, nonetheless, situate itself alongside the idea of an entangled world in which long-standing modes of thought, of grouping and dividing the key issues for research and policy no longer work.

This chapter has outlined an approach for security policy in this world of entangled problems as an alternative to traditional security policy concepts and to human security. It is an attempt to advance a policy concept, not an academic theory. In this concept the overall goal of security policy is to protect the ability of a diverse range of actors to maintain the course of human progress, taking the 17 SDGs as guidance. The policy's operating sphere is defined by the intersection of key issue areas covered by the SDGs. And the most important instrument for managing and reducing risks is cooperation, which is henceforth the foundation of security.

Part II. Reimagining security in an entangled world

6. To build a better world: Securing global life after fossil fuels

SIMON DALBY

> For the purpose of attaining freedom in the world of nature, man must use knowledge to build, in collaboration with nature, a better environment. To defend and improve the human environment for present and future generations has become an imperative goal for mankind—a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and of worldwide economic and social development.
>
> —Declaration of the United Nations Conference on the Human Environment[1]

In Angela Merkel's speech to the 2019 Munich Security Conference in Germany she suggested 'the structures in which we operate are essentially those that emerged from the horrors of the Second World War and National Socialism, but that these structures are coming under incredible pressure because developments require them to undergo reform.'[2] For much of the history of the rise of European power and the subsequent extension of its mode of economy to encompass most of the world in the processes of globalization, security has been about maintaining this modern social order. In particular, the Covid-19 pandemic has recently challenged the, at least implicit, proviso that such order is the source of well-being for all.

In the face of the new circumstances of the Anthropocene, which Merkel also invoked in her speech, those security structures, and the North Atlantic Treaty Organization (NATO) in particular, are increasingly inappropriate in some key senses. This is so because the forms of security provided are based on fossil fuels and economic growth, which are at the heart of the disruptions that require this new geological specification for our times. In the post-cold war world, NATO has to be understood mostly as the realm of a particular social and political order rather than explicitly as just a military

[1] United Nations, 'Declaration of the United Nations Conference on the Human Environment', Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

[2] German Federal Government, 'Speech by federal chancellor Dr Angela Merkel on 16 February 2019 at the 55th Munich Security Conference', 16 Feb. 2019.

alliance.[3] If NATO perpetuates the current metropolitan modes of economy, which are causing accelerating climate change and rapid species extinction, then such arrangements are part of the problem of increasing insecurity for many of the world's peoples. Hence the need to take ecology seriously in drastically rethinking what security means in this new situation.

The opportunities presented 30 years ago when the cold war ended have been squandered in a failure to think through the implications of the formulations of common security in the 1980s.[4] As peace activists at the time suggested, security would be much better served by a more cooperative set of political institutions and a willingness on the part of the larger states to be less concerned about primacy and more worried about common vulnerabilities.[5] Institutions such as the Organization for Security and Co-operation in Europe offered possibilities of security less reliant on the threats of coercion, and the assumptions of geopolitical rivalry as the given context for policy action. But NATO was expanded, and crucial cold war structures were maintained in modified form. A pervasive national narrative in the United States suggested that it won the cold war and hence this policy was appropriate. What was ignored was that Soviet Union policymakers, in reflecting on security in the aftermath of the 1983 war scare, and the 1986 Chernobyl nuclear reactor accident, had concluded the military rivalry was simply too dangerous to continue.[6] A key opportunity to rethink global security was thus foregone.

The West, in particular, and many states in Asia persisted with notions of security focused on national priorities. They understood their provisions of security to be dependent on economic growth, industrialization and the provision of a consumer lifestyle to their citizens while integrating themselves into international institutions to benefit from trading and security relationships. The promise to secure these conditions into the long-term future underpinned energy security formulations in terms of a reliable supply of

[3] Williams, M. C., *Culture and Security: Symbolic Power and the Politics of International Security* (Routledge: London, 2007).

[4] Independent Commission on Disarmament and Security, *Common Security: A Program for Disarmament* (Pan Books: London, 1982).

[5] Smith, D. and Thompson, E. P. (eds), *Prospectus for a Habitable Planet* (Penguin: Harmondsworth, 1987).

[6] MccGwire, M., *Perestroika and Soviet National Security* (Brookings Institution Press: Washington, DC, 1991).

affordable energy, most of which came from fossil fuels.[7] The contradiction between this mode of economic security, with energy security defined as reliable, affordable fossil fuel supplies, and the needs to address climate security in the sense of keeping disruptions due to climate change to a minimum, is key to present dilemmas and the focus of this chapter.[8]

Precisely these systems of fossil-fuelled economic expansion that have been providing security in terms of perpetuating this mode of life are now undermining the conditions that make it possible.[9] Security dilemmas have been a long-standing concern with international relations thinkers, where weapons production, ostensibly to provide security, causes potential antagonists to arm in turn, hence creating an escalatory dynamic. Now this security order itself is operating to undermine its own systems because the industrial modes of fossil-fuelled life that NATO, and other contemporary security arrangements are protecting, are eroding the ecological basis for the whole edifice. Ironically, those institutions are now grappling with climate change and ecological disruptions understood as an external threat to themselves. But in the process they are mostly failing to deal with the larger trajectories—of economic growth as the expansion of material production and the appropriation of ever-larger amounts of natural resources—of which they are a constituent part.[10]

The dangers of these trajectories were at least tentatively clear as early as the 1972 United Nations Conference on the Human Environment (Stockholm Conference) and the promulgation of its declaration.[11] While the seven proclamations and the related 26 principles in the 1972 Declaration of the UN Conference on the Human Environment (Stockholm Declaration) focused on the dangers of underdevelopment and the pollution consequences of production, and on population matters too, the possibilities of using technology wisely for the larger betterment of what was, in those

[7] Yergin, D., *The Quest: Energy, Security, and the Remaking of the Modern World* (Penguin: New York, 2011).

[8] Nyman, J., *The Energy Security Paradox* (Oxford University Press: Oxford, 2018).

[9] Dalby, S., *Anthropocene Geopolitics: Globalization, Security, Sustainability* (University of Ottawa Press: Ottawa, 2020).

[10] Lippert, T. H., *NATO, Climate Change and International Security* (Palgrave Macmillan: London, 2019).

[11] UN, Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

times often phrased as 'man', were highlighted.[12] The Stockholm Declaration specifically referenced natural and built environments—the point being that both shaped the human condition in particular ways in specific places. The dangers of failing to use technology wisely were implied too. These were loosely linked to concerns about warfare and conflict, even if the precise linkages were unspecified.

But now, half a century later, earth system science and the formulations of the Anthropocene are making it clear that the world that the conference attendees in Stockholm had hoped to avoid is now the world in which we live—one of accelerating disruptions. With regard to how this has happened, this chapter looks first to the geopolitical frameworks used in contemporary security discussions, then looks back at the world in 1972 and how the Stockholm Conference framed matters. Subsequent sections look to the discussion about 'Our Common Future' and sustainable development, and pose the question of, using the phrasing from the Stockholm Declaration—how, by abandoning late 20th century formulations of geopolitics and security policy, we might build a better world.

I. Geopolitics and security

Geopolitics is about the largest-scale rivalries of world politics, the struggles to extend modes of life into larger spaces, and control potentially threatening social arrangements elsewhere, or those that might contest the expansion of particular modes of economy. 'Geopolitics is, at its most fundamental level, a husbandry of global life in which thriving is intimately connected to the particular form of life and the particular lifeworld through which one becomes who one is.'[13] Security is about maintaining these modes of life. The expansion of European, and subsequently US, imperial power that has been based (in the last couple of centuries) on fossil-fuelled energy systems has transformed the modern world, frequently violently. A matter of 'firepower' quite literally in terms of weapons, propulsion systems and industrial production.[14]

[12] UN (note 1).

[13] Grove, J., *Savage Ecology: War and Geopolitics at the End of the World* (Duke University Press: Durham, NC, 2019), p. 3.

[14] Dalby, S. 'Firepower: Geopolitical cultures in the Anthropocene', *Geopolitics*, vol. 23, no. 3 (2018), pp. 718–42.

Geopolitics is also about representations of the world. These encompass the knowledge practices invoked in political decisions in how the world is framed in political discourse and how potential friends are specified and enemies demarcated. It is the largest-scale contextualization of the world that structures political discourse, frequently drawing on cultural assumptions that are so obvious as to mostly go unquestioned—matters of here and there, inside and outside, them and us, nature and culture, human and environment that structure political speech.[15] These formulations structure government policy statements and international declarations, albeit in terms of generalities to provide the contextualization for whatever statement follows.

The first proclamation of the Stockholm Declaration suggested: 'In the long and torturous evolution of the human race on this planet a stage has been reached when, through the rapid acceleration of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale.' The second proclamation talked about protection of environment and economic development being 'the urgent desire of the peoples of the world and the duty of all Governments'.[16] Noteworthy too is the clear elaboration of the rights of states to exploit resources within their territories, but not to do so in ways that inflict harm on other states. This is a key principle of international law that has been especially important in the discussions of climate change and the advocacy campaigns for loss and damage, and which will no doubt be increasingly important in legal cases on climate change disruptions in coming years.

The desirable future for humankind and threats to that constitute the first and last of the Stockholm Declaration principles. In a reflection of the global political situation as the final stages of formal decolonization from European empire were playing out, the first principle states:

> Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies

[15] Agnew, J., *Geopolitics: Revisioning World Politics* (Routledge: London, 2003).
[16] UN (note 1).

promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.[17]

The final principle, number 26, is clear about weapons of mass destruction too:

Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organs, on the elimination and complete destruction of such weapons.[18]

Subsequent efforts at strategic arms limitation between the superpowers began the process for dealing with the worst excesses of nuclear weapons production. However, nuclear weapons remain a key, although frequently ignored, component of contemporary geopolitics. This threat of enormous violence has long undergirded what is called the US-led 'liberal international order', the global political arrangements of recent times. The liberal order renders much of humanity insecure in the process, precisely as it promises material prosperity and hence a form of economic security to its participants.[19] This geopolitical framing reflects the geopolitical concerns of the times, highlighted in the unofficial report to the Stockholm Conference, *Only One Earth*, on the dangers of nuclear pollution. This concern related to weapons testing in the atmosphere and their possible use in conflict, as well as from what was then anticipated as a potential rapid expansion of nuclear reactors as a power source.[20]

II. The environment then and now

Looking back to 1972 highlights the importance of the environmental dimensions of security, albeit they were not phrased in quite those ways in either the Stockholm Declaration or in *Only One Earth*. In *Only One Earth* Barbara Ward and René Dubos were

[17] UN (note 1).
[18] UN (note 1).
[19] Latham, R., *The Liberal Moment: Modernity, Security, and the Making of Postwar International Order* (Columbia University Press: New York, 1997).
[20] Ward, B. and Dubos, R., *Only One Earth: The Care and Maintenance of a Small Planet* (Penguin: Harmondsworth, 1972).

concerned about nuclear radiation and they noted that the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water was the first global environmental agreement.[21] Nuclear weapons were widely seen as a major environmental danger back then—a key linkage between geopolitics and global environment paralleled by extensive military research into the physical environment.

The contrast with the contemporary planetary boundaries/safe operating space framework, which has been key to the policy advice formulations for the Anthropocene in recent years, is noteworthy.[22] Looking back to 1972, and the nuclear arms race of the times, perhaps one of the most important classes of novel entities in the earth system is nuclear weapons, given their potential to wreak havoc with ecological and human systems. But nuclear weapons are not included in the recent planetary boundary discussion explicitly. It is worth noting too that the debate in the 1980s about nuclear winter, and efforts to model the effects of multiple nuclear explosions, was part of the stimulus to climate modelling that has subsequently given us the current detailed understanding of climate change. With rising tensions in contemporary global politics and the fraying of arms control agreements as the Trump administration abandoned them in favour of attempts to coerce Iran in particular, perhaps nuclear weapons should once again be a focus for environmental security discussions.

The sheer scale of the transformations undertaken in the last few decades are dramatic in comparison with the 1972 statements. While it is possible to extrapolate from the Stockholm Declaration principles to present-day policies, in retrospect, those statements simply hinted at what was to come. Where in 1972 the focus was on pollution in the industrialized world, and the problems of underdevelopment elsewhere, population was also an issue that was more prominent than in the more recent Anthropocene literature. Many of the later concerns with global environmental change were at best

[21] Ward and Dubos (note 20).

[22] Rockström, J. et al., 'A safe operating space for humanity', *Nature*, vol. 461, no. 7263 (2009), pp. 472–75; and Steffen, W. et al., 'Planetary boundaries: Guiding human development on a changing planet', *Science*, vol. 347, no. 6223 (2015).

nascent in the 1970s, as various countries manoeuvred to establish international cooperation to deal with these emerging issues:[23]

> At the first major global environmental governance conference—the 1972 Stockholm Conference on the Human Environment—none of the major earth system challenges that we discuss today was on the agenda. And this was merely forty years ago. Hardly anybody talked then about ozone depletion, climate change, desertification, or the mass extinction of species.[24]

Likewise the scientific research efforts on the earth system were only beginning to think about matters of global change as such, and the complicated satellite-based monitoring systems that contemporary science takes for granted were also in their infancy. Accurate weather forecasting based on satellite monitoring was a novelty. The Apollo programme's space flights to the moon were just winding down as the Stockholm Conference took place, but one of the photographs of the blue earth against a black sky graced the front cover of the British version of *Only One Earth*. The view of the whole earth was new then, and a cultural phenomenon that also linked up with the contemporaneous discussion of the 'limits to growth'.[25]

However, *Only One Earth* was clear that climate change was a large potential threat. It warned that accelerated warming leading to a world without ice caps 'could mean a catastrophically different topography, with some land masses under water and others indescribably hot'. Ward and Dubos speculated about what a huge growth in car ownership might do to the planet and to the potential for average global heating of 2°C, which would possibly set in motion 'the long-term warming of the planet', thus endangering those ice caps.[26] They also raised the question of ozone depletion and fears that high-altitude supersonic aeroplane activity might be a contributing factor to such depletion. Ocean pollution is also discussed as a problem. The 'technosphere'—a popular term in parts of the current earth system discussion referring to the growing

[23] Boroway, I., 'Before UNEP: Who was in charge of the global environment? The struggle for institutional responsibility 1968–72', *Journal of Global History*, vol. 14, no. 1 (2019), pp. 87–106.

[24] Biermann, F., 'Planetary boundaries and earth system governance: Exploring the links', *Ecological Economics*, vol. 81 (2012), pp. 4–9.

[25] Meadows, D. H. et al., *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (Universe Books: New York, 1972).

[26] Ward and Dubos (note 20), p. 266.

importance of technology in environmental matters—appears in the title of chapter 14.[27]

Most of the themes that were to subsequently populate the pages of global change research and the Anthropocene discussion were in *Only One Earth*, but largely with speculative comments about possible trajectories and repeated calls for more scientific research to work out how these multiple changes might endanger the future of humankind. Subsequent earth system research and the planetary boundaries framework have filled in many of the scientific unknowns of half a century ago, but the larger problematic of a world being dramatically transformed was clearly in view in 1972. The comments about places in future being 'indescribably hot' seems tragically prescient, given the recent emphasis in the discussion about planetary boundaries, on the dangers of runaway climate change leading the world towards a 'hothouse earth' pathway.[28]

III. Our common future?

A discussion of sustainable development or environmental security, the language codified 15 years later in the World Commission on Environment and Development report *Our Common Future*, is not in *Only One Earth* or the Stockholm Declaration.[29] Most of the components for the intellectual synthesis that came in 1987 around these themes were there in 1972, but the way to link them, and deal with the pollution issues of industrialization and the social and health concerns of underdevelopment as a package, had yet to be clearly articulated. Likewise, the wider concerns about conflict as a result of environmental scarcities, which *Our Common Future* outlined, were not clear, although considerable concern was expressed about nuclear weapons, and the strident language in the Stockholm Declaration is emphatic about their elimination being necessary. However, it is clear that warfare with nuclear weapons is

[27] Haff, P. K., 'Humans and technology in the Anthropocene: Six rules', *The Anthropocene Review*, vol. 1, no. 2 (2014), pp. 126–36.

[28] Steffen, W. et al., 'Trajectories of the earth system in the Anthropocene', *Proceedings of the National Academy of Sciences of the United States of America*, vol. 115, no. 33 (2018), pp. 8252–59.

[29] World Commission on Environment and Development, *Our Common Future* (Oxford University Press: Oxford, 1987).

an existential threat to humanity—one that needs to be removed if 'man', to use the phrasing of the times, is to thrive in the future.

Our Common Future explicitly linked environment to security. Arguing that sustainable development required a functional physical environment as the premise for its programmes, it also suggested that only sustainable development could, in the long run, guarantee environmental security. The circularity of the logic was notable and carries within it a repackaged modern assumption that scarcity is the intrinsic human condition; consequently, resources, especially renewable ones, are key to long-term prosperity. It also follows the long-standing assumption that scarcity is a source of conflict, and hence sustainable development to alleviate shortages of key resources is sensible development policy. This is because conflict derails development. *Our Common Future* also notes, in line with the Stockholm Declaration, that the ultimate threat to environmental security is the threat of nuclear war, and suggests money spent on warfare and the 'arms culture' would be much better spent on practical measures to promote health and development.[30] Different notions of security are contrasted here, where a common disastrous fate is certain in the event of nuclear war.

As with so much of the discussion of environment where resources and pollution are mixed in with considerations of wildlife protection, population and related matters, the implicit assumption of scarcity structures much of the narrative. The Anthropocene formulation makes clear, especially in terms of climate change, that the problem is too much fossil fuel, not too little. The climate issue would not be on the agenda if fossil fuel were much scarcer. It is precisely because there is too much easily accessible fuel that combustion is so widespread and hence the carbon dioxide emission problem has become acute. Keeping fossil fuels in the ground should now be a policy priority, but this is sharply at odds with US federal policies in particular. In the USA the ideologies variously termed 'petro-masculinity' or just plain 'carbonism' have been remarkably persistent and effective in maintaining the case for fossil fuel production, and its modes of consumption. This has continued

[30] Dalby, S., 'Our common future in earth system perspective', eds Meadowcroft, J. et al., *What Next for Sustainable Development? Our Common Future at Thirty* (Edward Elgar Publishing: Cheltenham, 2019), pp. 10–27.

until recently despite the growing frequency of wildfires, floods and storms enhanced by climate change.[31]

Insofar as such disruptions due to climate change present security problems, climate change only indirectly follows the scarcity narrative at the heart of much contemporary economic discourse. It does so when climate disruptions to peripheral societies are formulated in terms of shortages of water, shortages of food due to agricultural impacts, overfishing and mismanagement. Those made insecure indirectly are so in part because of the consumption of fossil fuels by others mostly elsewhere. But conventional security thinking frequently poses these disruptions as potential threats to metropolitan societies, and, in the process, focuses on symptoms rather than causes.[32] In doing so it fails to grapple with either the causal mechanisms of contemporary changes or with the shift in thinking that an economy consistent with the constraints the planetary boundaries framework implies is necessary.[33] Continuing to extract ever more resources in search of material growth cannot be the basis of a sustainable future economy.

The fossil fuel era will end one way or another. A benign end should be possible if careful policy initiatives to rapidly build a new energy system and economy powered without widespread fossil fuel consumption are implemented. But if this is not done, and hence the planet heads down the hothouse earth pathway, then some kind of eventual collapse of the global economy is plausible. The disruptions to trade, agriculture and infrastructure due to climate change, and attempts to deal with it, may overwhelm the abilities of societies to cope. To avoid this disastrous end, security policy needs to focus on rapidly changing economic activity rather than trying to perpetuate the existing fossil-fuelled mode.

Facilitating the transition to urban life powered by renewable energy is now key to the future, but this transition will have fundamentally different effects in states that are relatively independent from fossil

[31] See respectively Daggett, C., 'Petro-masculinity: Fossil fuels and authoritarian desire', *Millennium: Journal of International Studies*, vol. 47, no. 1 (2018), pp. 25–44; and Meyer, R., 'Trump isn't a climate denier. He's worse', *The Atlantic*, 5 Nov. 2019.

[32] Hardt, J., *Environmental Security in the Anthropocene: Assessing Theory and Practice* (Routledge: London, 2018).

[33] Raworth, K., *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist* (Random House: London, 2017).

fuels and the rentier states that are dependent on petroleum and gas revenues.[34] The security ramifications of these transitions will likely be, in the words of *The Economist* magazine, 'messy', but clearly less of a problem in the long run than the disruptions that will result from failing to make the transitions to a sustainable economic future.[35] All this requires thinking about security in terms of adaptation.

The ability of fossil fuel producers to move on to new economic modes is key to their long-term security, but the Middle East petrostates in particular face substantial difficulties in plotting a transition to a future post-petroleum world.[36] Either their failure to do so, and attempts on their part to perpetuate the use of fossil fuels, or their future economic collapse, present potentially dangerous regional instabilities. This is not a problem limited to the Middle East. Russia also faces transition problems, and despite the frequently green rhetoric from Canada, its efforts to substantially tackle climate change in line with its limited international commitments have so far been a failure.[37] The rapid fluctuations in oil prices, most obviously in the aftermath of reductions in demand caused by the Covid-19 pandemic in 2020, emphasize the economic insecurities implicit in relying on this volatile commodity.

IV. To build . . . a better world

In Clive Hamilton's terms the Anthropocene is an epistemological 'rupture'.[38] The earth system perspective understands industrial humanity as an increasingly important actor in a complex earth system of global scale, whereas traditional disciplines looked at landscapes and ecosystems, and interpreted environmental change in these terms. The focus on terrestrial systems has to be complemented by looking at the oceans and atmosphere too, with climate

[34] Global Commission on the Geopolitics of Energy Transformation, *A New World: The Geopolitics of the Energy Transformation* (International Renewable Energy Agency: 2019).

[35] 'Is it the end of the oil age?', *The Economist*, 17 Sep. 2020; and 'The great disruptor', Special report, *The Economist*, 17 Sep. 2020.

[36] Ulrichsen, K. C., 'Post-rentier economic challenges', *India Quarterly: A Journal of International Affairs*, vol. 73, no. 2 (2017), pp. 210–26.

[37] MacNeil, R., *Thirty Years of Failure: Understanding Canadian Climate Policy* (Fernwood Publishing: Halifax, 2019).

[38] Hamilton, C., 'The Anthropocene as rupture', *Anthropocene Review*, vol. 3, no. 2 (2016), 93–106.

change caused by fossil fuel combustion playing out in terms of ocean warming, ice melting, acidification, and increasingly severe storms and weather disruptions. These larger-scale phenomena are key to the human future. While *Only One Earth* hinted that climate change in particular might be dramatic, the science of how this works was not understood then. It is now.

Discussions at the Stockholm Conference led to the establishment of the UN Environment Programme. However, it has become clear that its efforts, worthy though they may be on many issues, are not grappling with the speed or scale of current earth system transformations. In Peter Dauvergne's terms the 'environmentalism of the rich' has failed to grapple with either the scale of contemporary transformations or the legacy of the destruction of Indigenous peoples and their ecologies by the rapid expansion of European colonization.[39] Radoslav Dimitrov suggests that, so far at least, environmental governance has frequently produced empty or 'decoy' institutions that distract attention from the economic processes that drive ecological disruption.[40] The Anthropocene is about more than environment traditionally understood; it is about earth system transformation and how the growing technosphere will be shaped in the future.[41]

The Anthropocene formulation points squarely to the future as a matter of economic production not environmental protection. It is not just about limits in pollution or resource terms; it is about making the future and deciding what will be made to shape the planetary system in coming decades. The global economy is what provides practical sustenance for many people, and how it is structured determines the likely security systems for much of urban humanity in future.[42] The politics of this is key in terms of decisions about production: who decides what gets made in coming decades influences subsequent human possibilities. If funds go to investments in solar panels,

[39] Dauvergne, P., *Environmentalism of the Rich* (MIT Press: Cambridge, MA, 2016).

[40] Dimitrov, R. S., 'Empty institutions and global environmental politics', *International Studies Review*, vol. 22, no. 3 (2020), pp. 626–50.

[41] Haff, P., 'The technosphere and its relation to the Anthropocene', eds Zalasiewicz, J. et al., *The Anthropocene as a Geological Time Unit: A Guide to the Scientific Evidence and Current Debate* (Cambridge University Press: Cambridge, 2019), pp. 138–55.

[42] Stiglitz, J. E. and Kaldor, M. (eds), *The Quest for Security: Protection Without Protectionism and the Challenge of Global Governance* (Columbia University Press: New York, 2013).

batteries and aerogenerators, the future looks different than if those funds are invested in further expanding fossil fuel extraction and making vehicles powered by internal combustion engines rather than electric motors.

This implies that the key decisions of the present are investment ones, which will determine trajectories towards a sustainable earth, or towards a hothouse earth of accelerating ecological disruptions, which seems unlikely that a civilization of more than 7 billion people will survive. The disruptions caused to the global economy by the Covid-19 pandemic offer opportunities while shaping economic recovery strategies, to direct investment funds into new strategies for development—ones that move away from dependence on fossil fuels. Major investment funds also need to be directed to key biophysical systems to help in steering the global economy towards a stable future for the earth system.[43]

In terms of geopolitics, understood as the struggles to impose particular modes of life on the world, rapid decarbonization is essential. Failing to do so, the global economy faces increasingly severe stresses and possible eventual collapse due to the dislocation of social and economic systems caused by geophysical disruptions. As the scrambles to deal with recent global economic crises suggest, it is not at all clear that existing international institutions are robust enough to cope with multiple simultaneous stresses if such social and economic changes compound one another in coming decades.[44] Actions on climate change in particular are urgent to avert potential disruptions to key ecological systems, if the long-term promise of the UN Sustainable Development Goals is to be achieved.[45]

A peaceful transition to a world beyond fossil fuels is the preferable outcome to the likely disruptions that follow from continued emphasis on combustion. Finding ways to facilitate it is therefore a priority for all who try to implement the Sustainable

[43] Gaffney, O. et al., *Sleeping Financial Giants: Opportunities in Financial Leadership for Climate Stability* (Global Economic Dynamics and the Biosphere Programme, Future Earth and the Stockholm Resilience Centre: Stockholm, 2018).

[44] Homer-Dixon, T. et al., 'Synchronous failure: The emerging causal architecture of global crisis', *Ecology and Society*, vol. 20, no. 3 (2015), p. 6.

[45] Dalby, S., 'Climate change, security and sustainability', eds Dalby, S. et al., *Achieving the Sustainable Development Goals: Global Governance Challenges* (Routledge: London, 2019), pp. 117–31.

Development Goals.[46] Environmental security cannot be premised on firepower. The political fractures in global politics that matter are now much more about struggles for implementing useful technological innovations, in energy in particular, rather than the traditional rivalries of great powers. However, those states that move quickly to adopt new energy systems are likely to fare better in the long term. Climate strikes and Extinction Rebellion and Green New Deal protests have revealed a powerful generational split in Western societies, challenging the assumptions that NATO and Western security institutions were built on, and one that links directly to Anthropocene geopolitics in terms of who decides what kind of future is made for the planet's inhabitants.

The nightmare scenario is of warfare resulting from efforts by elites to maintain economic and political control if climate change accelerates towards a hothouse earth. If that transpires, alas, an old-fashioned geopolitical focus on interstate conflict—potentially in the form of a major confrontation between China and the USA, reminiscent of the superpower rivalries that were a backdrop to the Stockholm Conference—will once again tragically be germane for security scholars.[47] The alternative geopolitical framing that is even more urgently needed now than in the 1970s is one that replaces this competition with a recognition of common vulnerabilities to climate change and global species extinction. Anthropocene security requires a flourishing global biosphere, rather than the attempted imposition of modern modes of combustive consumption on a world that cannot accommodate them, if the conditions for civilized life are to be provided for future generations.

[46] Selby, J., 'The Trump presidency, climate change, and the prospect of a disorderly energy transition', *Review of International Studies*, vol. 45, no. 3 (2019), pp. 471–90.

[47] Allison, G., *Destined for War: Can America and China Escape Thucydides's Trap?* (Houghton Mifflin: New York, 2017).

7. From human environment to post-human earth: Troubling the nature/culture divide in the Stockholm Declaration

ANTHONY BURKE AND STEFANIE FISHEL

Looking back on the 1972 Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration) after 50 years affords an invaluable opportunity to reflect on the efficacy of international institutions to respond to and regulate global and cross-border environmental issues.[1] Fifty years of hindsight allows us to trace the emergence of global environmental concerns and their institutionalization into legal and state practice. This leads towards a broad critical reassessment that asks: which actors, policies, norms and world views have been most influential in shaping subsequent environmental governance? Ecocentric ones that consider the human relation and debt to the biosphere to be an ongoing matter of common survival, or more anthropocentric views that consider the environment a source of safety and profit for humans? Which world views have stymied efforts to pursue environmental regulation and protection, and how do they need to change with the advent of the Anthropocene?

This chapter traces an arc across two important (and incomplete) legal, institutional and discursive transitions initiated at the 1972 UN Conference on the Human Environment (Stockholm Conference): from an anthropocentric vision of international environmental law to an earth-centric one, and from a state-centric and anthropocentric vision of environmental security to a post-human and ecological one.[2] This unfinished transition is complicated by the weak institutional and conceptual linkages between legal, governance and security

[1] UN, 'Declaration of the United Nations Conference on the Human Environment', Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

[2] UN, Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

domains. This chapter acknowledges the ongoing value of the way in which the Stockholm Conference initiated environmental human rights, but argues that the intensifying structures of interlinkage, degradation and vulnerability represented by the Anthropocene demand a more ecocentric transition—a more post-human and ecological structure than the post-1972 system of international environmental law has allowed.

A 'post-human' perspective accepts that humankind cannot stand above or apart from nature but has become an active force of nature, forcing an integration of social and planetary systems into a global 'social nature'.[3] It decentres the human morally and ontologically, acknowledging the intrinsic rights of non-human nature to flourish and exist apart from human use, and its growing power and agency as climate change and biodiversity loss gather speed. The assemblage of the Covid-19 pandemic and climate crises—which link together human encroachment on wildlife, geopolitical competition, environmental racism, and wildfires, floods and hurricanes into a complex structure of common threats—exemplifies this strange new landscape of planetary insecurity. It is an Anthropocene insecurity that affects multiple communities and species across differences of locale, race and vulnerability, yet has planetary sources and manifestations driven by the entanglement of social and ecological worlds across the earth system. A post-human approach addresses the crisis by drawing on ethics of value, entanglement and kinship across species, cultures, borders and worlds.[4]

The Stockholm Declaration marks a key early moment when the international society of states, as it was recreated after 1945, envisioned the environment as a totality—that began to see nature as an integral part of human existence rather than a backdrop to human activity. This chapter will honour these early formulations by following the legacy of the Stockholm Conference and its declaration through the two (anthropocentric and ecocentric) strands

[3] Burke, A. and Fishel, S., 'Power, world politics and thing-systems in the Anthropocene', eds Biermann, F. and Lövbrand, E., *Anthropocene Encounters: New Directions in Green Political Thinking* (Cambridge University Press: Cambridge, 2019), pp. 87–107; and Gibson, K., Bird-Rose, D. and Fincher, R. (eds), *Manifesto for Living in the Anthropocene* (Punctum Books: New York, 2015).

[4] Barad, K., *Meeting the Universe Halfway* (Duke University Press: Durham, NC, 2007); Clark, N., *Inhuman Nature* (Sage: London, 2011); and Haraway, D., *Staying with the Trouble: Making Kin in the Chthulucene* (Duke University Press: Durham, NC, 2016).

highlighted above. The first strand will trace the crucial linking of human rights and environmental protection and how it evolved over subsequent decades. The second strand will focus on what we argue is a deeper potential legacy of the Stockholm Declaration that values ecosystems intrinsically, rather than from the view of human needs and uses.[5]

The final two sections of the chapter argue that a merging of these two strands—and connecting international law to environmental security—cements the spirit of the Stockholm Declaration into an ecocentric understanding of security that can sustain human life within planetary boundaries and honour the other non-human species coexisting with human communities. We argue the reality of human entanglement with the earth system should be combined with a normative demand for social justice and be reflected in any discussion or implementation of security theory or practice. A demand for human security over state security remains, but the human is enmeshed in its environmental milieu.

I. Two genealogies of environmental awareness

The Stockholm Declaration emerged out of a perceptual shift in how to understand, respond to and regulate the natural environment. These changes included a questioning of the competence and ability of the state to respond to environmental issues and emerging scientific data on human-induced changes and damage to the environment such as acid rain and water and air pollution.[6] This section summarizes two genealogies of environmental awareness: an anthropocentric one that institutionalizes a concern with the human environment, and an ecocentric one that emphasizes the intrinsic value of earth systems within which humans exist as partners with other animals.

[5] Burke, A., 'Blue screen biosphere: The absent presence of biodiversity in international law', *International Political Sociology*, vol. 13, no. 3 (2019), pp. 333–51.

[6] Franchini, M., Viola, E. and Barros-Platiau, A. F., 'The challenges of the Anthropocene: From international environmental politics to global governance', *Ambiente & Sociedade*, vol. 20, no. 3 (2017), p. 177.

The normative power of the Stockholm Declaration

After the Stockholm Conference concerns about the human relationship to the environment were inserted into existing conceptions of international order, law, governance and regulation. New programmes, institutions and organizations were created. The UN Environment Programme (UNEP) was established and tasked to provide leadership, encourage partnership, and help educate, monitor and inspire states to improve their quality of life through environmental regulation. The amount and kind of international governmental environmental agencies and organizations have increased in number, from 1000 in 1951 to 68 000 in 2016.[7] Non-governmental organizations have also gained influence in responding to environmental issues, from grassroots movements to those with strong international ties.

The Stockholm Declaration called attention to sites of struggle that exist to this day: underdevelopment, poverty and population growth. It pointed out how, if we wish to fix these pressing issues, we cannot choose to harm natural systems—their collapse will only add to the suffering of those already burdened under human systems. The irony of the power that allows humans to transform their surroundings can also wreak:

> incalculable harm to human beings and the human environment. We see around us growing evidence of man-made harm in many regions of the earth: dangerous levels of pollution in water, air, earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources; and gross deficiencies, harmful to the physical, mental and social health of man, in the man-made environment, particularly in the living and working environment.[8]

The proclamations that begin the Stockholm Declaration outline its most important element: an explicit linking of human rights to a healthy environment. The 'protection and improvement of the environment', natural and human made, is the urgent duty of all governments and the desire of all peoples. Humans are at the point in history when we know our biosphere can be changed by our actions, but conversely, we also have the capacity and knowledge to address

[7] McCormick, J., *Environmental Politics and Policy* (Palgrave: London, 2018), pp. 99–101.
[8] UN (note 1).

the consequences of these actions. The Stockholm Declaration proclaims:

> we can achieve for ourselves and our posterity a better life in an environment more in keeping with human needs and hopes. There are broad vistas for the enhancement of environmental quality and the creation of a good life.[9]

This strong normative commitment for environmental law to protect human rights, security and flourishing is a crucial element to the creation of later environmental security regimes. The above proclamation also lays out the entanglement of human and ecological environments. Additionally, those organizing the Stockholm Conference were aware of emerging environmental threats and what this could mean for the ability of the UN and its system of agencies to respond. In the decades after its creation the UN was active in global issues such as housing, building and environmental planning, population and demographics, and women and social progress. Therefore, many of the UN's specialized agencies were key players in the environmental field by the time the conference was held.[10] Swedish ambassador Sverker Åström and others therefore felt the UN was the optimal place from which to organize action to create awareness and institutional effectiveness at the global level, and that the environment could be a 'constructive issue for the UN to focus on in the tense atmosphere of the Cold War'.[11] When the UN General Assembly met to debate the proposal in December 1968, Åström discussed why the UN was the best forum and gave an early iteration of the spirit of the Stockholm Declaration:

> Man depends for his survival on an infinitely complex system of relationship and balance between innumerable living organisms, all existing in or on the extremely thin crust of earth or just above it … It seems, therefore, that a broad consideration of the environmental problems and of possible approaches to their solution is of equal interest to all peoples on earth. The United Nations provides a unique forum for such consideration.[12]

The accomplishments of the Stockholm Conference should not be diminished by noting the right to live a dignified life in a clean environment was recognized through soft law rather than treaty.

[9] UN (note 1).
[10] Johnson, S., *The First 40 Years: A Narrative* (UNEP Publishing: Nairobi, 2012), p. 14.
[11] Åström, S., cited in Johnson (note 10), pp. 9–10.
[12] Åström (note 11), p. 9.

The fact remains that in 1972 the international community met and set the standard for the future.[13] Additionally, soft law agreements play a pivotal role in international environmental and human rights law, argues Luis Rodriguez-Rivera, and 'the lesson that remains clear from the Stockholm Conference is that ever since the very first international meeting concerning the human environment, it was obvious to all present that the human right to environment existed and was recognized by the international community.'[14] Soft law is a crucial element of standard setting in the international arena where rights have not emerged fully developed, but rather 'arose out of an expectation based on customary practice, eventually embodied in international norms or principles' and 'reflected in the increasing number of international, and national, instruments, as well as jurisprudence, where reference to such a right is recognized and upheld'.[15]

The normative history of the legacy of the Stockholm Declaration, even the narrow interpretation that 'derived environmental rights by re-interpreting and expanding existing and recognized human rights . . . thus taking advantage of existing international and regional monitoring and enforcement mechanisms' opened a strategy important to law in an arena where little formal enforcement exists.[16] The Stockholm Conference paved the way for more stringent international agreements like the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage, the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora and the 1979 Convention on the Conservation of Migratory Species of Wild Animals.[17]

The ontological foundation for planetary security

As we journey further into this epoch named the Anthropocene, it is ever more important to shore up the hard-won victories from

[13] Rodriguez-Rivera, L. E., 'The human right to environment in the 21st century: A case for its recognition and comments on the systemic barrier it encounters', *American University International Law Review*, vol. 34, no. 1 (2018), p. 157.

[14] Rodriguez-Rivera (note 13), p. 157.

[15] Soveroski, M., 'Environmental rights versus environmental wrongs: Forum over substance?', *Review of European Community & International Environmental Law*, vol. 16, no. 3 (2007), p. 271.

[16] Rodriguez-Rivera (note 13), p. 184.

[17] Johnson (note 10), p. 23.

the past and take stock of that which will serve those fighting for environmental rights and justice. As Louis Kotzé writes, 'Reflection on the relationship between human rights and the environment has never been more urgent' given that humans are now pushing/operating beyond safe limits in the earth system.[18] The urgency also demonstrates that the debates about environmental rights and their connection to human rights and justice must lead to more nuanced discussions of the relationship between humans and their living planet. Humans are central because they are responsible for the destruction and are also best placed to address the destruction that they have wrought upon themselves, earth systems and non-human lives.

The normative power of the Stockholm Declaration helped set the international stage where an earth-centred space could be visible: 'This space is made up of humans as ecological agents, of non-human living entities, and of the many interconnected Earth-system processes that interact in complex ways to sustain life on Earth.'[19] This chapter turns to the protection of the environment based on its own intrinsic value, to bring out this ontological foundation of environmental thinking since 1972. This means decoupling the protection of nature from its use value to humans. The tension between ecocentric and anthropocentric approaches in environmental rights is often evident in environmental rights—in that most of the formulations are unthinkingly and 'decidedly anthropocentric'.[20] There is definitely a link between nature and humans, and humans derive many useful and necessary things from the environment. However, this is not the only reason for other entities and earth systems processes to be protected.

An ecocentric approach would value shift the focus from *Homo sapiens* to the planet, from organisms to systems, and maintains that nature has value regardless of whether humans find use or value

[18] Kotzé, L. J., 'Human rights, the environment, and the Global South', eds Shawkat, A. et al., *International Environmental Law and the Global South* (Cambridge University Press: New York, 2015), p. 171; Steffen, W. et al., 'Planetary boundaries: Guiding human development on a changing planet', *Science*, vol. 347, no. 6223 (13 Feb. 2015); and Steffen, W. et al., 'Trajectories of the earth system in the Anthropocene', *Proceedings of the National Academy of Sciences of the United States of America*, vol. 115, no. 33 (14 Aug. 2018), pp. 8252–59.

[19] Kotzé (note 18), p. 171.

[20] Kotzé (note 18), p. 179.

in it. It has a long legacy in environmental political theory and is philosophically complex. Should it be grounded in an axiological view that extends the intrinsic value of the human to the non-human (as John Baird Callicott does), and can we (following Robyn Eckersley) navigate the tension between the otherness of nature and its institutional and scientific interpretation by the human? Our new materialist ethic asserts the need for human institutions to acknowledge the independent agency, power and flourishing of non-human lives and ecosystems, and grounds its ethics there. This provides an ecological awareness and a material focus on earth's systems and their interrelatedness that a singular focus on humankind cannot.[21]

We will begin in June 1980 for a parallel and increasingly ecocentric journey. The UN representative of Zaire submitted a draft World Charter for Nature to the 35th session of the UN General Assembly. Ambassador Kamanda wa Kamanda, in his letter requesting the charter's inclusion into the agenda, writes that the document 'proclaims principles of conservation by which all human conduct affecting nature must be guided and judged'.[22] In the 1982 World Charter for Nature, the technocratic language of the Stockholm Declaration is replaced with statements recognizing the rights of nature as something with intrinsic value, for example: 'Every form of life is unique, warranting respect regardless of its worth to man, and, to accord other organisms such recognition, man must be guided by a moral code of action'.[23] To demonstrate the shift in tone from the Stockholm Declaration towards a more earth-centric philosophy in the World Charter for Nature, two similar principles from each document are given below. The Stockholm Declaration's principle 5 states:

[21] Eckersley, R., *Environmentalism and Political Theory: Toward an Ecocentric Approach* (State University of New York Press: New York, 1992); Eckersley, R., *The Green State* (MIT Press: Cambridge, MA, 2004); Baird Callicott, J., discussed in Burke (note 5); and Burke, A. and Fishel, S., 'Across species and borders: Political representation, ecological democracy and the non-human', eds Castro Pereira, J. and Saramago, A., *Non-human Nature in World Politics: Theory and Practice* (Springer International Publishing AG: 2020).

[22] Letter dated 2 June 1980 from the permanent representative of Zaire to the UN addressed to the secretary-general, 'Request for the inclusion of an item in the provisional agenda of the thirty-fifth session: Draft World Charter for Nature', A/35/141, 11 June 1980; and UN, General Assembly, 'World Charter for Nature', A/RES/37/7, adopted at the 48th plenary meeting, 28 Oct. 1982.

[23] UN, General Assembly (note 22).

The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind.[24]

The World Charter for Nature's general principle 4 states:

Ecosystems and organisms, as well as the land, marine and atmospheric resources that are utilized by man, shall be managed to achieve and maintain optimum sustainable productivity, but not in such a way as to endanger the integrity of those other ecosystems or species with which they coexist.[25]

The reordering of the concerns in both documents also point towards a gentle rethinking of priorities towards the more ecocentric approach. Principle 1 of the Stockholm Declaration states:

Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.[26]

Whereas the annex to the World Charter for Nature states:

(*a*) Lasting benefits from nature depend upon the maintenance of essential ecological processes and life support systems, and upon the diversity of life forms, which are jeopardized through excessive exploitation and habitat destruction by man, (*b*) The degradation of natural systems owing to excessive consumption and misuse of natural resources, as well as to failure to establish an appropriate economic order among peoples and among States, leads to the breakdown of the economic, social and political framework of civilization.[27]

In ever-clearer language international environmental documents continue to call for action against environmental degradation with a more earth-centred approach—although not universally. The 1992 UN Conference on Environment and Development did not take up this viewpoint, neither did the 2002 World Summit on Sustainable Development nor the 2012 UN Conference on

[24] UN (note 1).
[25] UN, General Assembly (note 22).
[26] UN (note 1).
[27] UN, General Assembly (note 22).

Sustainable Development.[28] In 2009 the UN General Assembly adopted a resolution in its 64th session entitled 'Harmony with Nature' (HwN) that recalls the World Charter for Nature and its earth-centred approach. The nine such resolutions since adopted by the UN 'contain different perspectives regarding the construction of a new, non-anthropocentric paradigm in which the fundamental basis for right and wrong action concerning the environment is grounded not solely in human concerns.'[29] Michelle Maloney writes that the HwN initiative is an important step in aligning earth jurisprudence goals with other UN activities. The sixth HwN dialogue in 2016 gathered a group of experts in earth-centred approaches, and Maloney hoped that 'the UN can be influenced by the HwN dialogues, and that the concepts and practice of Earth-centredness can be understood and implemented' in other more fundamentally anthropocentric initiatives like the Sustainable Development Goals.[30]

It is here that we can tie this genealogy of human rights, environmental rights and earth rights to international security. The World Commission on Environment and Development published a report entitled *Our Common Future* in 1987, which contained one of the earliest uses of the phrase 'environmental security'.[31] The commission was asked to formulate a 'global agenda for change' that would address long-term environmental strategies for achieving sustainable development and to recommend how concern for the environment could be harnessed into effective international cooperation and aspirational goals around environmental issues. The report notes that despite the Stockholm Conference delineating 'the "rights" of the human family to a healthy and productive environment', the 1970s were 'marked by a retreat from social concerns' in the face of global warming, the ozone layer and desertification. The response was a demand for more details and 'assigning the problems to

[28] UN, General Assembly, 'Annex I: Rio Declaration on Environment and Development', Report of the United Nations Conference on Environment and Development, A/CONF.151/26 (Vol. I), 12 Aug. 1992; and UN, General Assembly, Resolution adopted by the General Assembly on 27 July 2012, '66/288. The future we want', A/RES/66/288, 11 Sep. 2012.

[29] UN, 'Harmony with Nature', [n.d.].

[30] Maloney, M., 'The Harmony with Nature initiative: Why it matters and what it might achieve', *Ecological Citizen*, vol. 1, no. 1 (2017), pp. 22–23.

[31] World Commission on Environment and Development, *Our Common Future* (Oxford University Press: Oxford, 1987).

institutions ill-equipped to cope with them'. The chair wrote 'the first step in creating a more satisfactory basis for managing the interrelationships between security and sustainable development is to broaden our vision'. Conflicts happen because of military and political threats and also from 'environmental degradation and the pre-emption of development options' and that 'There are, of course, no military solutions to "environmental insecurity"'. In fact, 'modern warfare can itself create major internationally shared environmental hazards', as also noted by the World Charter for Nature. The chair reiterated the interdependence of human and natural systems, the insufficiency of the nation state to cope with environmental security threats, and that 'threats to environmental security can only be dealt with by joint management and multilateral procedures and mechanisms'.[32]

Just as the World Charter for Nature called for the avoidance of military activities that damage nature and brought attention to the role of resource scarcity in conflict, those concerned with global security began to incorporate environmental security in their agendas. The UN Development Programme's *Human Development Report 1994* also identified environmental change as a threat to security.[33] Policymakers and scholars began to question the efficacy of the state to provide security, as the international environmental movement had done in the legal realm. Security became pluralized and 'moved away from states and war and toward people and the multitudinous risks they must manage'.[34] The idea of human security also appeared in the *Human Development Report 1994*, and further decentred the state.

Human security thinking rightly identified that the singular focus on state security often had the effect of creating significant insecurities and that environmental degradation and resource scarcity put humans in danger. It is here that we can trace a similar shift as in the environmental rights movement. Just as the anthropocentric approaches in environmental rights gave thin accounts of a

[32] World Commission on Environment and Development, 'Chairman's foreword', *Our Common Future* (Oxford University Press: Oxford, 1987).

[33] UN Development Programme, *Human Development Report 1994* (Oxford University Press: New York, 1994).

[34] Barnett, J., 'Environmental security', eds Kitchin, R. and Thrift, N., *International Encyclopedia of Human Geography* (Elsevier: Amsterdam, 2009), p. 554.

complex natural world, state and human security ontologies have trouble acknowledging that humans are a danger to the natural world, destroying the conditions for life on this planet. It is from this understanding that the remainder of the chapter traces the shift from the human environment to the post-human earth.

II. How principle 21 of the Stockholm Declaration damaged environmental law

The Stockholm Declaration presages the Anthropocene with its preambular statement that 'man has acquired the power to transform his environment in countless ways and on an unprecedented scale', but it does so in a one-sided manner.[35] The declaration is overwhelmingly concerned with human beings in ways that are certainly admirable from a human rights perspective: concerned with human dignity and well-being, with human development and with the benefit of future generations of humans. However, it also damaged subsequent environmental law and global ecosystems by licensing widespread resource extraction. While anthropocentrism is a long-standing modern metaphysic, North–South tensions and the emphasis of the countries of the Global South on poverty reduction also influenced the primacy of resources in the declaration (see chapter 2 in this volume). This anthropocentrism is clear in the first five principles of the Stockholm Declaration. Even where the biosphere appears in principles 2 and 3—as 'the air, water, land, flora and fauna and especially representative samples of natural ecosystems'—it is understood as 'natural resources' that 'must be safeguarded for the benefit of present and future generations'. Principle 5 exhibits a concern that 'non-renewable resources' be 'employed' to prevent their future exhaustion with benefits to 'all mankind'.[36]

There is an ontological scission at work here. The earth—understood in a material and scientific way as an *earth system* with the biosphere as its crucial living structure—is largely missing from the Stockholm Declaration. Instead, the earth is an anthropocentric abstraction, a 'human environment' rather than a vast series

[35] UN (note 1).
[36] UN (note 1).

of interlinked systems that takes in more than 8 million species and numerous chemicals, elements, flows and forces. In turn, as a human environment it is further abstracted into the figure of a 'living resource'—a thing for extraction, use, profit and production, rather than a living vitality with intrinsic value and its own desires, history, lifeways and purposes.[37]

The following shows a profound tension made visible in the clash between two of the Stockholm Declaration's key principles. Principle 4 states:

> Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperilled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development.[38]

Principle 21, in stark counterpoint, states:

> States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[39]

According to Sumudu Ataputtu, principle 21 has 'become part of customary international law and constitutes the foundation of modern international environmental law'. She also notes 'it is at odds with environmental principles and the emergence of sustainable development as a principle objective of the international community'.[40] The second part of the principle laid out a profound environmental value later codified in the Trail Smelter case and the 1992 Declaration of the UN Conference on the Human Environment (Rio Declaration) as the prevention of transboundary harm.[41] However, the first part of the principle is a licence for resource extraction and ecosystem damage that has become a key driver of the

[37] Burke (note 5).
[38] UN (note 1).
[39] UN (note 1).
[40] Ataputtu, S., 'The significance of international environmental law principles in reinforcing or dismantling the North–South divide', eds Shawkat, A. et al., *International Environmental Law and the Global South* (Cambridge University Press: New York, 2015), pp. 74–108.
[41] International Law Commission, *Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with Commentaries* (UN: New York, 2001), p. 148.

sixth extinction.[42] It could, however, have been framed with more nuance and care for nature. It could have separated living ecosystems from mineral resources and strongly protected the former, or imposed strong and binding biodiversity protection obligations on states while granting ecologically limited sovereign rights vis-à-vis other states in an anti-imperialist vein. Instead, it institutionalized a wholesale appropriation of non-human lives and ecosystems as *property* to the state and its capitalist partners. In international law, this is known as the principle of permanent sovereignty over natural resources.[43]

By being included as common article 1(2) in the covenants on economic, social and cultural rights and civil and political rights, permanent sovereignty over natural resources also cuts a fissure into the fitful but steady efforts to develop environmental human rights—especially in Africa. As Kotzé explains such 'environmental rights' can be traced back to the Stockholm and Rio declarations and, while having great value, are often conceived in ways that are 'decidedly anthropocentric' and counter efforts 'to foster harmonious interdependence that instils respect for ecological integrity'.[44]

This situation is unbearable and unreal as we push deeper into the Anthropocene. It perpetuates an assumption and practice of (elite, capitalist) human power over the earth that is becoming ever more immoral and impossible to sustain.[45] The Stockholm Declaration thus expresses two humanist faces of the Anthropocene: in principles 2 through to 6, it presents an ontology in which human power is figured as responsibility through conservation and 'careful planning or management'; and in principles 21 and 23, as a 'sovereign right' to exploit and extract that makes no reference to the living autonomy and actuality of ecosystems. Yet neither face captures the reality of the deep human enmeshment with and vulnerability to the earth, recognizes the earth's independent structure of flourishing and being, or challenges the extractive, capitalist relation to nature

[42] Kolbert, E., *The Sixth Extinction: An Unnatural History* (Henry Holt and Co.: New York, 2014).

[43] Bungenberg, M. and Hobe, S. (eds), *Permanent Sovereignty over Natural Resources* (Springer International Publishing: Cham, 2015).

[44] Kotzé (note 18), pp. 179, 190.

[45] Todd, Z., 'Indigenizing the Anthropocene', eds Davis, J. and Turpin, E., *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies* (Open Humanities Press: 2014).

as commodity, property and thing. The Stockholm Declaration's split ontology needs to transform.

III. Planetary security after the Holocene

Many scholars have already sought to understand how the Anthropocene should influence and direct our theories and practices of security. The Anthropocene frame further develops concerns around climate and environmental security, and around security in its myriad other dimensions—human, food, water, energy, national and military—while challenging the mainstream conceptualization and institutionalization of security.[46] It transforms understanding of insecurity as an existential reality in scale, meaning and scope.

To grasp this means questioning dominant mainstream and critical security frames. First, it means acknowledging the reality and complexity of *insecurity* before we think about what security might look like. Insecurity cannot be understood only as a social construct of processes of biopolitics, security politics or securitization; it is a complex reality that degrades and endangers the lives of all earth's beings. At the same time our understanding of whom and what is made insecure—the infamous referent object—must expand beyond the state and the human to take in other species, other worlds and quite possibly the planet.[47] Second, this points towards new theories and paradigms of security, new intersections among such paradigms, and a permanent reflexivity about their descriptions, prescriptions and claims.[48] Here we suggest that elements of four broad approaches—worldly security, ecological security, security cosmopolitanism and an Anthropocene security of care—can provide strong insights and guideposts for a *post-human* practice of environmental security adequate to the Anthropocene.

[46] Holley, C. et al., 'Environmental security and the Anthropocene: Law, criminology, and international relations', *Annual Review of Law and Social Science*, vol. 14, no. 1 (2018), pp. 185–203; Harrington, C. and Shearing, C., *Security in the Anthropocene: Reflections on Safety and Care* (Transcript: Bielefeld, 2017); and Dalby, S., 'Firepower: Geopolitical cultures in the Anthropocene', *Geopolitics*, vol. 23, no. 3 (2018), pp. 718–42.

[47] Harrington and Shearing (note 46), p. 110.

[48] Eroukhmanoff, C. and Harker, M. (eds), *Reflections on the Posthuman in International Relations* (E-International Relations Publishing: Bristol, 2017); and Lövbrand, E., Mobjörk, M. and Söder, R., 'The Anthropocene and the geo-political imagination', *Earth System Governance*, vol. 4 (2020).

A key starting point is Audra Mitchell's argument that we should consider insecurity arising in the form of *harms distributed across worlds*—that is, across 'irreducible, heterogeneous forms of collective being', the 'set of conditions in which all beings co-constitute one another'. Such worlds are relational and entangled: we cannot think of 'harm accruing to one being or set of beings in isolation'.[49] Anthony Burke defines insecurity as 'processes that threaten or cause serious harm to human beings, communities, and ecosystems; harm to their structures of living, dignity, and survival'.[50] In a similar way ecological and care theorizations foreground the non-human as a moral–ethical focus for security.[51] There are also strong affinities here with complex systems, quantum and assemblage theory. These approaches seek to appreciate unpredictability, feedbacks, 'spooky' and non-linear forms of causality: the ways that things, institutions, and living and non-living actants assemble into complex and dynamic structures of degradation, insecurity, resistance and becoming.[52]

This understanding of insecurity then supports positive models of how—as a species divided by states, power politics, culture, geography and privilege—we can seek security in partnership with a turbulent and anthropogenically affected earth. For Matt McDonald an ecological security discourse 'is oriented towards ecosystem resilience and with it the rights and needs of the most vulnerable across time, space, and species: impoverished populations in developing states; future generations; and other living beings'. Climate security aims at 'maintaining ecosystem functions in the context of perturbation and change'. This implies structural transformation towards low-carbon economies and, more

[49] Mitchell, A., 'Only human? A worldly approach to security', *Security Dialogue*, vol. 45, no. 1 (2014), pp. 5–22; and Cudworth, E. and Hobden, S., *Posthuman International Relations* (Zed Books: London, 2013), pp. 8–18.

[50] Burke, A., 'Security cosmopolitanism: The next phase', *Critical Studies on Security*, vol. 3, no. 2 (2015), p. 191.

[51] McDonald, M., 'Climate change and security: Towards ecological security?', *International Theory*, vol. 10, no. 2 (July 2018), pp. 153–80; and Harrington and Shearing (note 46), p. 17.

[52] Harrington, C., 'A quantum Anthropocene? International relations between rupture and entanglement', eds Castro Pereira, J. and Saramago, A., *Non-human Nature in World Politics: Theory and Practice* (Springer International Publishing AG: 2020); and Burke and Fishel (note 3).

controversially, careful consideration of geoengineering given the fears that mitigation actions will fail to prevent catastrophic global heating.[53]

Perhaps wanting to avoid such choices, which risk reproducing Holocene certainties and 'carelessness', Cameron Harrington and Clifford Shearing eschew policy and institutional prescription in favour of 'an abstract and transcendent ethos of security based on the notion of care': 'relational practices that underpin the survival and flourishing of life [and] respond to the various, often strange, forms of human and nonhuman relationships.' Following Fiona Robinson they advance guiding 'virtues of responsibility, trust and friendship', but admit that it is unclear how, by itself, an *ethos* could 'subvert or transform the power-laden carbon lock-ins found in technological, organizational, social and institutional systems'.[54] This may be a problematic lacuna. In light of such complexities, Burke seeks to connect ethics and institutionalization in a way that is reflexive and accountable. He suggests that security should be pursued through 'coordinated and multi-layered efforts to eliminate serious and avoidable harms and protect humanity and the biosphere from them', via the creation of 'legal and structural frameworks that work to build security and ward off disastrous outcomes in a systemic fashion'.[55] This implies a project that works simultaneously at every scale, from the microcosmic to the planetary, and cuts across jurisdictions, cultures, borders and institutions.

IV. The legacy of the Stockholm Declaration

The Stockholm Declaration has left a complex and contradictory legacy. It made the earth visible as a totality but obscured the biosphere, and limited the environment to a functional role as a human resource and envelope of comfort. This has paved the way for environmental human rights and a shift away from state-centric environmental security paradigms but is inadequate for our entangled multispecies situation of uncertainty. We need to treasure the declaration's achievements but push on with legal, institutional

[53] McDonald (note 51), p. 155.
[54] Harrington and Shearing (note 46), pp. 110–16.
[55] Burke (note 50), p. 23.

and ethical innovations that can secure all the beings and worlds that share the earth. Solutions must be found at the most local scale, building on community knowledge, Indigenous sovereignty and local understandings of place. Such solutions need simultaneously to expand upward to the scales of national and global governance, which should be more integrated and more open to communication and participation from human and non-human communities. Such a security must work between past wounds and future possibilities, and bridge immediate and geological spans of time. Its mode must be complex, distributed and *pluriversal*, sensitive to our common and differential entanglements across space, place and species.[56]

[56] Blaser, M. and de la Cadena, M., 'Pluriverse: Proposals for a world of many worlds', eds de la Cadena, M. and Blaser, M., *A World of Many Worlds* (Duke University Press: Durham, 2018), loc. 76.

8. Whose security/security for whom? Rethinking the Anthropocene through ontological security

BEATRIZ RODRIGUES BESSA MATTOS AND
SEBASTIÁN GRANDA HENAO

This chapter presents alternative narratives and sources of (in)security arising from the emergence of the Anthropocene era. We engage the situated effects of global environmental change and argue for the need for a critical re-examination of the ontologies, practices and rationalities. They are brought to the forefront by the discussion around this era—one permeated by multiple risks and uncertainties—in the political and theoretical field of security.

To bring forth this discussion on the Anthropocene, the (in)security literature and different standpoints, we look at the concept of ontological security. We frame security as a condition that relates to the preservation of the body and also of the self. This aims to highlight marginalized narratives from human communities that feel severely threatened by the environmental, social and economic challenges enhanced by the new era. It also emphasizes how the global environmental crisis may provoke and shift the discussion around other ways of thinking about and experiencing insecurity.

A case study of the Marshall Islands is presented as an example of one of many low-lying atoll nations that face the threat of becoming inhospitable due to climate change. Attention is drawn to the everyday struggles of these communities whose territories, ecosystems, customs and cosmologies are affected by traditional security practices and by the current climate crisis. Consideration is given as to how modern practices such as over-exploitation of natural resources and fossil fuel burning have jeopardized ontological security and led to the so-called Anthropocene.

I. The Anthropocene as a new human era?

After Paul Crutzen and Eugene Stoermer coined the concept of the Anthropocene, it became commonplace to point humanity as a

geological force responsible for irreversibly altering the conditions of natural ecosystems.[1] Ultimately, the present global climate change we now experience is the product of anthropogenic intervention, such as the excessive greenhouse gas emissions in the atmosphere.[2] Some scholars claim the Anthropocene represents an ontological shift in what it means to be human. They argue 'the very experience of being secure as a human changes in the context of catastrophic altering of global systems'.[3]

This narrative is centred on and driven by 'humanity', living in the unpredictable and perilous new era founded on the advancement of a modern fossil fuel economy. However, it fails to conceptualize the gross inequalities and the conditions of possibility for the technical and social processes involved in the production of the Anthropocene. These inequalities are played among species and also among human groups.[4] As Andreas Malm and Alf Hornborg argue:

> The rationale for investing in steam technology ... was geared to the opportunities provided by the constellation of a largely depopulated New World, Afro-American slavery, the exploitation of British labour in factories and mines, and the global demand for inexpensive cotton cloth. ... A tiny minority even in Britain, this class of people comprised an infinitesimal fraction of the population of *Homo sapiens* in the early 19th century.[5]

They also argue that transhistorical and naturalized accounts centred on the human species are insufficient if not misleading in trying to understand the new order in which we find ourselves. This new order is derived from modern global social processes such as land disownment, labour exploitation, patterns of production, consumption and accumulation. These dynamics, although human made, need to be the object of further scrutiny.[6]

[1] Crutzen, P. J. and Stoermer, E. F., 'The Anthropocene', *Global Change Newsletter*, no. 41 (2000), pp. 17–18.

[2] Lövbrand, E. et al., 'Who speaks for the future of earth? How critical social science can extend the conversation on the Anthropocene', *Global Environmental Change*, vol. 32 (2015), pp. 211–18; and Malm A. and Hornborg A., 'The geology of mankind? A critique of the Anthropocene narrative', *Anthropocene Review*, vol. 1, no. 1 (2014), pp. 62–69.

[3] Farbotko, C., 'Climate change displacement: Towards ontological security', eds Klöck, C. and Fink, M., *Dealing with Climate Change on Small Islands: Towards Effective and Sustainable Adaptation?* (Göttingen University Press: Göttingen, 2019), p. 252.

[4] Malm and Hornborg (note 2).

[5] Malm and Hornborg (note 2), pp. 63–64.

[6] Malm and Hornborg (note 2).

Depending on the place and time in which an individual is born, their impact may vary tremendously, which makes unjust the argument that puts the burden of the Anthropocene on humanity as a whole.[7] Simon Dalby notes that only a small part of humanity now determines the future conditions of the planet. In this scenario we observe the 'opening up possibilities for new forms of human life while radically endangering the conditions that make most human life possible'.[8]

Dalby's argument resonates with recent research by OXFAM and the Stockholm Environment Institute, which estimates that the wealthiest 10 per cent of the world's population emitted 52 per cent of the cumulative greenhouse gas emissions worldwide between 1990 and 2015.[9] These statistics show that anthropogenic climate change is ostensibly powered by complex political and economic processes, aimed at development and expansion by any means necessary.

Eva Lövbrand et al. claim the failure to take into account the 'entangled relations between natural, social and cultural worlds' is derived from a lack of engagement of the Anthropocene research community (dominated by natural and environmental scientists) with the social sciences.[10] Here, we argue the discussions around the Anthropocene lack this engagement with the social sciences, and so do international security studies lack approaches encompassing the interconnectedness among natural, social and cultural domains.

Madeleine Fagan demonstrates that the Anthropocene quarrels the distinction between referent objects and threats, consequently putting into question the ways in which the concept of security has traditionally been framed.[11] Thus, relying on an ontological security framework, this chapter makes the case for a holistic and lived approach to security. We argue for including social groups and their customs, non-human species and ecosystems as legitimate subjects, in need of protection from the diverse threats exacerbated in the Anthropocene.

[7] Malm and Hornborg (note 2), p. 65.

[8] Dalby, S., 'Biopolitics and climate security in the Anthropocene', *Geoforum*, vol. 49 (2013), p. 184.

[9] 'Confronting carbon inequality: Putting climate justice at the heart of the Covid-19 recovery', OXFAM media briefing, 21 Sep. 2020.

[10] Lövbrand et al. (note 2), p. 212.

[11] Fagan, M., 'Security in the Anthropocene: Environment, ecology, escape', *European Journal of International Relations*, vol. 23, no. 2 (2017), pp. 292–314.

II. Ontological security and anthropogenic environmental change

Ronald Laing introduced the concept of ontological security in the mid 1960s as a sense of presence in the world. Thus, an ontologically secure person would feel 'as a real, alive, whole and, in a temporal sense, a continuous person'.[12] A firm core of ontological security would ensure an individual takes for granted their identity and autonomy, assimilating these traits' coexistence with their body throughout their lifetime.[13]

Laing contemplated his concept would have more of a sociological substance, despite having its origins in psychology.[14] Anthony Giddens redefined ontological security as 'the confidence that most human beings have in the continuity of their self-identity and in the constancy of the surrounding social and material environments of action'.[15] By bringing ontological security to the field of sociology, Giddens approached it as reflexively understanding the biographical continuity of the self across time and space. Therefore, he claimed a person with a stable sense of self-identity nourishes a feeling of biographical continuity that can be grasped and communicated to others.[16]

For Giddens the preservation of ontological security has become an increasingly difficult task in modernity, much due to what he calls 'disembedding mechanisms'. These mechanisms decouple social relations from their particular locations, allowing them to reach wider temporal and spatial distances.[17] Thus, modern institutions and their related practices, such as the nation state and capitalism—as a system of commodity production and market competition—establish dialectical relations between the local and global.[18] These institutions and practices are capable of challenging the

[12] Laing, R. D., *The Divided Self: An Existential Study in Sanity and Madness* (Penguin Books: London, 1969), p. 39.

[13] Laing (note 12), p. 43.

[14] Croft, S., 'Constructing ontological insecurity: The securitization of Britain's Muslims', *Contemporary Security Policy*, vol. 33, no. 2 (2012), pp. 219–35.

[15] Giddens, A., *The Consequences of Modernity* (Stanford University Press: Stanford, CA, 1990), p. 92.

[16] Giddens (note 15), p. 53; and Giddens, A., *Modernity and Self-Identity* (Polity Press: Cambridge, 1991), p. 54.

[17] Giddens, *Modernity and Self-Identity* (note 16), p. 3.

[18] Giddens (note 15), p. 15.

ordinary circumstances of everyday life and suppress localized self-identities.[19] For instance, the emergence of the nation state implies a particular social and political organization unfamiliar to many traditional communities, while global capitalism provides patterns of resource-intensive development and consumption worldwide.[20]

Gidden's notion of disembedding mechanisms depicts the temporal and spatial decoupling particular to the Anthropocene. Global environmental change advances smoothly in time and space, despite being a product of social practices in industrialized societies (e.g. burning fossil fuels, over-exploiting natural resources, and globalized production and consumption patterns).[21]

Curiously, ontological security is not usually approached to analyse the security–environment nexus. Ontological security is deployed to analyse a wide range of topics within international security studies, such as securitization of identities, memory and trauma, terrorism and foreign policy decisions. Authors such as Jef Huysmans, Catarina Kinnvall and Jennifer Mitzen are pioneers in using ontological security within security studies.[22]

For Huysmans the multiplicity of new threats arising from the post-cold war context has created a sense of chaos and ontological insecurity.[23] Kinnvall argues globalization generates structural conditions of insecurity, making individuals and groups search for reaffirmation of their ontological security through identity signifiers, such as nationalism and religion.[24] Mitzen transfers the search for ontological security to the state level and argues states

[19] Giddens, *Modernity and Self-Identity* (note 16), p. 62.

[20] See Nkang Ogar, J., Nwoye, L. and Bassey, S. A., 'Archetype of globalization: Illusory comfort of neo-colonialism in Africa', *International Journal of Humanities and Innovation*, vol. 2, no. 3 (2019), pp. 90–95; and Dirlik, A., 'Global modernity? Modernity in an age of global capitalism', *European Journal of Social Theory*, vol. 6, no. 3 (2003), pp. 275–92.

[21] Mattos, B., *Climate Change and Ontological (In)security in the Marshall Islands*, PhD Thesis in International Relations, PUC-Rio, 2019.

[22] See also Innes, A. and Steele, B., 'Memory, trauma and ontological security', eds Resende, E. and Budryte, D., *Memory and Trauma in International Relations: Theories, Cases and Debates* (Routledge: New York, 2014); Browning, C. and Joenniemi, P., 'Ontological security, self-articulation and the securitization of identity', *Cooperation and Conflict*, vol. 52, no. 1 (2016), pp. 31–47; and Subotić, J., 'Narrative, ontological security, and foreign policy change', *Foreign Policy Analysis*, vol. 12, no. 4 (2016), pp. 610–27.

[23] Huysmans, J., 'Security! What do you mean? From concept to thick signifier', *European Journal of International Relations*, vol. 4, no. 2 (1998), pp. 226–55.

[24] Kinnvall, C., 'Globalization and religious nationalism: Self, identity, and the search for ontological security', *Political Psychology*, vol. 25, no. 5 (2004), pp. 741–67.

also take measures to protect their self-identities. She claims states' ontological security derives from stabilization of their relations to others, no matter if these relations are harmonious or hostile. Thus, the search for ontological security could explain the maintenance of prolonged conflictive relations that may even endanger states' physical survival.[25]

Ontological security studies as a whole differ from mainstream security approaches for delinking security from physical survival, despite being a plural field. Ontological security thus departs from the overwhelming emphasis of security studies on militarized and exceptional dynamics, enacted to protect states from external threats. It also differs from human security approaches that, although considering individuals' right to enjoy 'freedom from fear and freedom from want', are usually based on modern and liberal understandings about what is supposed to be human and secure.[26]

Thus, we share with the scholars engaged with ontological security the broader understanding that security does not merely refer to a physical condition. We claim security means not only the protection of a sovereign territory and human and non-human bodies, but also the preservation of identities, stable environments of action and relations to ourselves, nature and others. We argue the meaning of security is always contingent on geographical, cultural, political and emotional contexts. Contrary to what mainstream security studies suggests, we believe threats and referent objects do not carry with them a permanent, inherent meaning. Rather, they are empty signifiers, filled with meaning by an ontological and epistemological background. In this sense, it depends on who gets to define what is a threat and what needs to be protected.[27]

Huysmans suggests security comes to signify the divide between life and death (either physical or symbolic) and the social organization that produces conditions to sustain life. In this context when different societies realize and organize towards the threat

[25] Mitzen, J., 'Ontological security in world politics: State identity and the security dilemma', *European Journal of International Relations*, vol. 12, no. 3 (2006), pp. 341–70.

[26] UN Development Programme, 'New dimensions of human security', *Human Development Report 1994* (Oxford University Press: New York, 1994), p. 24; and Shani, G., 'Human security as ontological security: A post-colonial approach', *Postcolonial Studies*, vol. 20, no. 3 (2017), pp. 275–93.

[27] Huysmans (note 23).

of anthropogenic environmental changes, it challenges their onto-epistemological stabilities—what is and how we understand the world we live in, based on our surrounding experience. That is how we recognize the production of what is described above as ontological (in)security: the naming and taking action towards whatever it is that threatens onto-epistemological stabilities.[28]

The next section argues the case for *other* security narratives to be predicated and lived. Exploring these narratives brings forth security's inherent dependence on cultural, political, emotional and geographical contexts. What security comes to mean depends on these contexts and can also be reinforced by anthropogenic environmental change.[29]

III. Case study: Ontological (in)security in the Marshall Islands

The Marshall Islands is a low-lying atoll state located in the region of Micronesia, in the Pacific Ocean. The archipelago is considered to be one of the most vulnerable states to global environmental change, yet it is far from being a great emitter of greenhouse gases—it contributes merely 0.00001 per cent of global emissions.[30]

The Marshallese territory comprises 1156 individual islands with an average elevation of between 2 and 10 metres above sea level. For each island, no point inland is further than 1 kilometre from the shore of that island.[31] Some studies estimate the archipelago may become uninhabitable or partially submerged by 2050, due to its geographical features.[32] The effects of climate change—especially rising sea levels—already bring multiple difficulties to local

[28] Huysmans (note 23).

[29] Mattos (note 21).

[30] Republic of the Marshall Islands, 'The Republic of the Marshall Islands nationally determined contribution', 22 Nov. 2018; and Intergovernmental Panel on Climate Change (IPCC), *Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty* (IPCC: Geneva, 2018).

[31] Rudiak-Gould, P., 'Promiscuous corroboration and climate change translation: A case study from the Marshall Islands', *Global Environmental Change*, vol. 22, no. 1 (Feb. 2012), pp. 46–54.

[32] Storlazzi, C. D. et al., 'Most atolls will be uninhabitable by the mid-21st century because of sea-level rise exacerbating wave-driven flooding', *Science Advances*, vol. 4, no. 4 (2018).

communities, including coastal erosion, floods, and the salinization of soil and freshwater reserves. These climate-induced phenomena become even more challenging when they interact with other environmental imbalances, like the frequent occurrence of high (king) tides, typhoons and storms.

Climate change and its multifaceted consequences are far from being the only form of foreign intervention in the lives of the Marshallese people. The history of the Marshall Islands evokes a conjunction of military and non-traditional threats, revealing how both can harm individuals' physical and ontological security.[33]

The archipelago played a major role in the deterrence strategies of the United States during the cold war. At that time US news outlets and politicians used to present the location of the Marshall Islands by 'spinning a globe 180 degrees'. It was seen as being on the other side of the world.[34] From a Western perspective the remoteness of the archipelago made it the ideal place for US military entrepreneurs. The Marshallese atolls were used as a testing ground for the detonation of 67 thermonuclear bombs from 1946 to 1958.[35] The islands were then put under the protection of the USA, designated by the United Nations to 'safeguard the life, liberty and the general well being of the people of the Trust Territory', after the withdrawal of Japanese troops at the end of the 1939–45 World War II.[36] However, the devastating outcomes of the nuclear experiments (defended by security analysts and policymakers as legitimate sources of power and a legitimate way to obtain security) prove the USA might not have been acting in the best interests of the Marshall Islands.[37] The nuclear detonations caused the vaporization of atolls, the definitive exile of entire communities and the disruption of people's ancestral ties to their lands. Many Marshallese residents died due to their exposure to radioactive substances, and some experienced serious

[33] Mattos (note 21), p. 132.

[34] Rudiak-Gould, P. and Schwartz, J. A., 'Insularity and interconnection: Competing territorial imaginaries in the Marshall Islands', eds Dawson, A., Zanotti, L. and Vaccaro, I., *Negotiating Territoriality: Spatial Dialogues Between Space and Tradition* (Routledge: New York, 2014), p. 220.

[35] Republic of the Marshall Islands, 'Republic of the Marshall Islands state of environment report', 2016.

[36] Marshallese people, 'Petition from the Marshallese people concerning the Pacific Islands', Petition to the UN, 20 Apr. 1954, p. 1.

[37] See e.g. Krause, K., 'Critical theory and security studies: The research programme of critical security studies', *Cooperation and Conflict*, vol. 33, no. 3 (1998), pp. 298–333.

chronic diseases such as thyroid cancer, diabetes and reproductive complications.[38]

In 1954, after the Castle Bravo test, the islanders presented a formal complaint to the UN:

> . . . we, the Marshallese people feel that we must follow the dictates of our consciences to bring forth this urgent plea to the United Nations. . . . Land means a great deal to the Marshallese. It means more than just a place you can plant your food crops and build your houses; or a place where you can bury your dead. It is the very life of the people. Take away their land and their spirits go also.[39]

The atolls are considered an inherent part of who the Marshallese people are and where they come from, rather than representing merely a material environment where they live and obtain subsistence. This is a crucial element that defines the Marshallese as a specific community.[40]

In the local language the Marshall Islands are called *Aelōñ kein ad* (these islands of ours), where *ae* means ocean currents, *lōñ* refers to sky and *kein* to land.[41] The local name portrays a delicate balance among the three elements of nature, accommodating the sea, the islands and the sky (or even the heavens), becoming the constitutive parts of the archipelago and its inhabitants.[42] This understanding is the expression of a local cosmology that binds together the human, natural and spiritual worlds, and it inevitably mediates their narratives of security.

Nature has informed Marshall islanders' way of life, spiritual beliefs and social organization over centuries.[43] The 1979 Constitution of the Marshall Islands even recognizes the islands as a sacred heritance from God. According to local beliefs, to find peace after death, the deceased must be buried on the same atoll where they were born.[44]

[38] See e.g. Eknilang, L., 'Learning from Rongelap's pain', *Seattle Journal for Social Justice*, vol. 2, no. 1 (2003); Johnstone, B. and Barker, H., *The Consequential Damages of Nuclear War: The Rongelap Report* (Left Coast Press: New York, 2008); and Rudiak-Gould and Schwartz (note 34).

[39] Marshallese people (note 36), pp. 1–2.

[40] Mattos (note 21).

[41] Rudiak-Gould and Schwartz (note 34), p. 216.

[42] Mattos (note 21).

[43] Republic of the Marshall Islands (note 35).

[44] Republic of the Marshall Islands, *Constitution of the Republic of the Marshall Islands* (Republic of the Marshall Islands: 1979).

Accelerating climate change has caused honouring these traditions to become an increasingly difficult task. Some of the Marshallese atolls are already submerged, and graves are threatened to be swept into the ocean. In some communities islanders gather almost daily during low tide to build sea walls to protect their houses, streets and cemeteries. The rising sea waters also salinize the already limited amount of arable lands, thus compromising the crops. The death of coral barrier reefs, caused by the acidification and increased temperature of the oceans, has also reduced the availability of fish, which is the main source of protein in the Marshallese diet. In some communities most food is now canned or processed, and diabetes has become commonplace among the population. In addition, radioactive contamination further reduces life expectancy and increases health problems.[45] These environmental transformations are endangering the food security and sovereignty of the Marshallese people.

Marshallese islanders now face everyday security conundrums. These are not formulated in military terms, but concern how life beyond mere existence can prosper in an ocean desert scenario. Marshall islanders face uncertain and radically transformed futures, threatened by the same waters that once meant life and by the long-term effects of radioactive pollution. Global climate change and also the nuclear tests are thus interpreted as a source of deep social, spiritual and cultural anxiety and insecurity that go beyond physical annihilation.[46] Mark Stege, a Marshallese person from the Majuro atoll, stated:

> Climate change is my nuclear experience. . . . I can see a lot of connections at the emotional level, and the community level, at the individual family level. The same questions are relevant in both situations. There's this really deep sense of loss.[47]

The Runit Dome, located in Enewetake Atoll, is probably the most powerful illustration of how global environmental change and the nuclear legacy interact in frightening ways in the archipelago. It was built by the US authorities in the 1970s in place of a 106-metre wide

[45] Republic of the Marshall Islands (note 35).

[46] Rudiak-Gould (note 31).

[47] Zak, D., 'A ground zero forgotten: The Marshall Islands, once a U.S. nuclear test site, face oblivion again', *Washington Post*, 27 Nov. 2015.

crater left behind by the Cactus nuclear tests, and presented as a temporary solution to house radioactive waste. Nowadays, the dome remains without maintenance and raises serious concerns about its integrity. Locals frequently refer to it as a concrete tomb. The rise in sea levels and the more frequent occurrence of extreme weather events make the dome a ticking time bomb. There is a risk that nuclear debris (including plutonium-239, which is a lethal substance with a half-life of about 24 000 years) will leak into the Pacific Ocean due to fissures and cracks, causing an unprecedented environmental and human catastrophe.[48]

There is a clear connection between the painful past of the Marshallese people and their uncertain future in the Anthropocene era. Nuclear tests and global climate change endanger their physical survival and also their self-identities and biographical continuity. Both issues imply the privileging of someone's security and ways of life at the expense of others. The nuclear tests were conducted purposefully, animated by the scientific recommendations of security analysts who saw the harm done to the islanders as mere collateral damage of the US pursuit of national security. Human-induced climate change represents the subjectification of the Marshallese people's culture and social organization—the main bases for their ontological security—to colonialist and violent dynamics.[49]

IV. Alternatives and hopes in a troubled Anthropocene

This chapter has sought to expose the fissures and blind spots within hegemonic discourses on security, and examine how these may be exacerbated in the Anthropocene. We have argued for alternative meanings of security based on *other* ontologies beyond modern and Western conceptions. This ontology, as Huysmans argues, depends on the metaphysical conception of life, and organizes societies in defence of imminent annihilation—either physical or symbolic.[50]

We have also tried to engage the literature that regards the epistemological basis for pointing out the Anthropocene as a new human era. This effort brought questions such as the following. Who

[48] Republic of the Marshall Islands (note 35).

[49] Mattos (note 21), p. 131.

[50] Bilgin, P., 'The "Western-centrism" of security studies: "Blind spot" or constitutive practice?', *Security Dialogue*, vol. 41, no. 6 (2010), pp. 615–22; and Huysmans (note 23).

is 'the human' behind our present human-made irreversible climatic condition? Who is most affected by these climate changes, and how do race, gender, class and access to resources to survive play into this vulnerability? Which specific group of humans does climate science and all the current research aim to protect? At what cost and to which extent are these humans being protected? These questions have been gathered from traditional communities worldwide, who ask them before commenting on the Anthropocene. We believe a critical stand on security—as a social and political phenomenon—must aim to find alternatives to everyday issues about our survival, relying on these questions brought up by the communities that look after their own sense of security.[51]

The nuclear testing on the Marshall Islands brought ontological (and physical) insecurity to the Marshallese people. Global climate change is producing conditions of ontological insecurity as a result of the anticipation of forced evacuation and the feasible disappearance of ancestral atolls. Thus, for the Marshallese, the Anthropocene represents a threat to the material spaces where they live and obtain subsistence. The atolls, lagoons, landscapes, animal and plant life are part of who they are, and provide them with a coherent narrative about their self-identities. Hence, the Anthropocene and its climate-induced manifestations challenge the Marshallese stable sense of self and biographical continuity.

However, the Marshallese islanders resist being portrayed as passive and hopeless victims, despite facing tremendous hardship. Marshallese atolls and communities were made possible through the harmonious and powerful interconnection among the elements of nature, as the etymology of the name *Aelõñ kein* makes clear. This cosmology challenges the modern and artificial division between human and nature, and also the Western view of the Marshall Islands as being small, fragile, remote and underdeveloped—a notion frequently reified by labels such as 'small island developing states'.

[51] See e.g. Whyte, K., 'Indigenous climate change studies: Indigenizing futures, decolonizing the Anthropocene', *English Language Notes*, vol. 55, no. 1 (2017), pp. 153–62; Davis, H. and Todd, Z., 'On the importance of a date, or decolonizing the Anthropocene', *ACME: An International Journal for Critical Geographies*, vol. 16, no. 4 (2017), pp. 761–80; and Arach, O. A., 'Guerreros del Antropoceno. Movimientos societales frente a la expansion destructiva', *Athenea Digital: Revista de Pensamiento e Investigación Social*, vol. 15, no. 4 (2015), pp. 255–66.

The work of Jo-Jikum, a local non-governmental organization, is another example of the Marshallese resilience. Its name means 'your place' and it aims to 'turn the tides' and empower youth to contribute to the survival of their islands and customs by developing solutions to current environmental problems.[52] Jo-Jikum adopts the mantra of the 350.org Pacific Climate Warriors: 'We are not drowning, we are fighting!'[53]

The predicaments of the Marshallese reveal the importance of sustaining life—as a condition of physical existence and also as a condition for a thriving harmonious relationship with natural surroundings and customs. The words of Kathy Jetñil-Kijiner, a Marshallese educator, activist and poet, remind us of the need to ensure the physical security, a good life and a feeling of presence in the world for the Marshallese people: 'we deserve / to do more / than just / survive / we deserve / to thrive'.[54]

The fundamentals of security in the Marshall Islands depend more on the sustenance of life in all its ambits than mere correlations of force. These are influenced by the manifestations of the Anthropocene. Thus, the predicament posed here is of another kind—one might say ontological. What is different from traditional security perspectives is the insistence, persistence and resistance in making *ontological security* about life in all its manifestations: for humans, for other living beings, for the spirit and the interconnectedness with a metaphysical terrain, for land and the environment as a whole, and mostly for communities altogether.

Considering climate change and its capacity to reshape and confront our stable environments of action and sense of presence in the world, we might say traditional meanings of security are deeply challenged in the Anthropocene. The separation between referent objects and threats becomes blurred in the context of critical environmental disruptions. It happens especially with individuals such as the Marshallese people, whose security is put under great pressure by the same nature that was once conceived as part of themselves.

[52] See Jo-Jikum website, <https://jojikum.org>.

[53] 'We are not drowning, we are fighting!', Resilience and Exodus, 4 Nov. 2019.

[54] Jetñil-Kijiner, K., 'Dear Matafele Peinam', *Iep Jāltok: Poems from a Marshallese Daughter* (University of Arizona Press: Tucson, AZ, 2017), p. 73.

In line with critical readings of the Anthropocene discourse, we argue that it is necessary to go beyond material evidence of climate change. This would involve finding how climate change increasingly puts modes of living on earth in jeopardy, and how entire populations are struggling and resisting such planetary-scale shifts.

In conclusion we argue the politics of security in the Anthropocene must reclaim creativity and self-determination into sustaining life in its different dimensions and protecting the earth system as the basis for and part of life and livelihood. Redefining security in those terms poses a direct challenge to traditional international relations and international security studies theories in their preoccupation with sovereign states and institutional politics to understand global issues. It is our challenge as scholars to delink from theory, and to engage and learn from communities who strive for survival and protection in an unpredictable and unknown world.

Afterword*

What's next? Security in the Anthropocene

In November 2019 a group of environmental politics and security scholars came together in a cold and rainy Stockholm, Sweden, to reflect upon the years that had passed since the United Nations Conference on the Human Environment (Stockholm Conference) was held in the same city in June 1972.[1] We gathered in the old prison building, Långholmen, now a museum and conference venue, to think through what 'security' means in a time when fossil-fuelled modes of economic development are dangerously disrupting the earth's life-support systems upon which all human societies depend. Our conversations were shaped by the ravaging wildfires that had spread across Australia at the time. Horrifying scenes of burning forests, fleeing wildlife and urban centres dimmed by smoke offered vivid examples of the global landscapes of climate insecurity that are now confronting people and ecologies across the world.

Joined in a mounting sense of crisis, we revisited the international principles and institutions envisioned in the 1972 Declaration of the UN Conference on the Human Environment (Stockholm Declaration) to 'inspire and guide the peoples of the world in the preservation and enhancement of the human environment'.[2] While recognizing the significant efforts made over the past half century to chart a sustainable path for human development, we also debated the limitations and failures of international environmental diplomacy and governance. Despite the adoption of prolific environmental treaties such as the 1992 UN Framework Convention on Climate Change and the 1992 Convention on Biological Diversity, the global

*This text was co-written in a joint effort by Anthony Burke, Sanjay Chaturvedi, Simon Dalby, Francesco Femia, Stefanie Fishel, Sebastián Granda Henao, Judith Nora Hardt, Marcus King, Björn-Ola Linnér, Eva Lövbrand, Lucile Maertens, Beatriz Rodrigues Bessa Mattos, Malin Mobjörk, Henrik Selin, Dan Smith, Rickard Söder and Caitlin Werrell.

[1] UN, Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

[2] UN, 'Declaration of the United Nations Conference on the Human Environment', Report of the United Nations Conference on the Human Environment, Stockholm, 5–16 June 1972, A/CONF.48/14/Rev.1, 1973.

mean temperature continues to rise and the loss of critical habitats is accelerating at alarming rates.[3]

We concluded that the development trajectory carved out 50 years ago has reached a dead end. Over the past five decades, modern societies have pursued economic development and material security at the expense of a healthy and living biosphere. The resource-intensive ways of social and economic life that are spreading across the globe have degraded the earth's ecological systems. They are also fuelling mounting social inequalities. As highlighted in the UN's 2020 *Human Development Report*, 'the carbon and material footprint of the people who have more is choking the opportunities of the people who have less.'[4] Today, the world's wealthiest 1 per cent account for more than twice the combined greenhouse gas emissions of the poorest 50 per cent.[5] Yet, it is those who have contributed the least to the accumulation of atmospheric carbon dioxide who bear the brunt of our rapidly warming world.

We lived through exceptional socio-economic and environmental turmoil during the period that this book was written. Covid-19 quickly spread across the world in 2020, causing immense social suffering and economic disruption. Throughout the same year we also experienced: alarming heat and wildfires in Australia, California and Siberia; heavy rain and extensive flooding over large parts of Africa and Asia; severe drought in inner South America; the most intense storm season in North American history; and record-low summer sea ice in the Arctic region.[6] These unprecedented environmental disruptions effectively illustrate the dangerous planetary condition that the Anthropocene concept seeks to capture. By burning fossil fuels, cutting down forests, rearranging landscapes, degrading soils, commodifying and trading wildlife, and driving millions of species to

[3] World Meteorological Organization (WMO), *State of the Global Climate 2020: Provisional Report* (WMO: Geneva, 2020); and Intergovernmental Science-Policy Platform on Biodiversity (IPBES), *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES secretariat: Bonn, 2018).

[4] UN Development Programme (UNDP), *Human Development Report 2020. The Next Frontier. Human Development and the Anthropocene* (UNDP: New York, 2020), p. iii.

[5] UN Environment Programme (UNEP), *Emissions Gap Report 2020* (UNEP: Nairobi, 2020).

[6] WMO (note 3).

extinction, high-carbon societies have set in motion forces that we can neither fully foresee nor control.

On 2 December 2020 UN Secretary-General António Guterres declared the state of the planet broken. In his landmark speech at Columbia University, Guterres pointed to the dangers of our rapidly warming world and the urgent need to change course:

> This is a moment of truth for people and planet alike. COVID and climate have brought us to a threshold. We cannot go back to the old normal of inequality, injustice and heedless dominion over the Earth. Instead we must step towards a safer, more sustainable and equitable path. The door is open; the solutions are there. Now is the time to transform humankind's relationship with the natural world—and with each other. And we must do so together. Solidarity is humanity. Solidarity is survival. That is the lesson of 2020.[7]

In line with the UN secretary-general's call for action, we here offer a joint statement of alarm in view of mounting environmental insecurities. Although the Anthropocene binds social and ecological worlds together in complex chains of risk and vulnerability, we recognize that any search for security needs to respond to the large asymmetries in causation and suffering. If the Stockholm Declaration invited governments to insert environmental protection into dominant conceptions of international order, law and governance, the Anthropocene prompts us to rethink these conceptions and seek security in contestation with the very institutions that are tearing up the biological fabric of the earth. Honouring the spirit of the Stockholm Conference, we thus end this volume with a list of actions we think are required to change course and safely navigate the global landscape of Anthropocene insecurities. We hope these trajectories for Anthropocene security will inspire those in power to think beyond existing blueprints and to craft new forms of cooperation that bring the communities, generations and species most exposed to the dangers of a transformed global biosphere to the forefront of global affairs.

[7] Guterres, A., 'Secretary-general's address at Columbia University: "The state of the planet"', UN Secretary-General, 2 Dec. 2020.

Trajectories for security in the Anthropocene

Confront the limits of global institutions

- Global environmental change has outpaced institutional capacity. Despite the proliferation of international law and global governance regimes, ecological destruction and human suffering is accelerating across the planet.
- Environmental regulation based on pollution control cannot effectively address the systematic disruption of the global biosphere. Pollution control mechanisms can limit specific forms of ecological damage but neglect how production and consumption decisions are rearranging ecologies on a global scale.
- Current institutions and modes of environmental regulation fail to grapple with the historical legacy of exploitation of Indigenous peoples and their lands.
- As long as our global institutions value nature as a resource—and not as a home to diverse species, communities and generations—environmental degradation and harm will continue.

Bring those most at risk to the forefront of global governance

- The international community has the responsibility to prepare and protect all living beings from the dangers of a rapidly warming world. This will require global governance mechanisms that channel scientific knowledge on climate risks and vulnerability, but also listen to and learn from communities most at risk.
- Ecosystems and non-human beings have the right to flourish independently of human needs and uses. We therefore need legal, institutional and ethical innovations that secure the integrity and survival of all earth's beings.
- Future generations have the right to healthy and flourishing lives. Children and future generations therefore need to be adequately represented in decision-making processes that affect their lives.

Rapidly decarbonize economies and lifestyles

- Climate change is a crisis of a fossil-fuelled economic system that drives high-carbon production and consumption. As climate change or biodiversity loss cannot be reversed, later clean-up is not an option. A rapid decarbonization of the global economy is therefore key to Anthropocene security.
- Security policy requires redirecting the wealth that fossil-fuelled economic growth has created to the making of low-carbon and just societies for all. This will entail accelerated investments in renewable energy technologies and the abandonment of fossil fuel subsidies.
- States, communities and individuals with large material and carbon footprints have a particular responsibility to advance a new trajectory towards low-carbon and just futures.

Pluralize and politicize knowledge on environmental insecurity

- To understand the novel landscape of Anthropocene insecurity, security scholars and analysts need to reach beyond established frameworks and ground their knowledge in the complex environmental realities of our times.
- The complex social, economic and political drivers of environmental destruction prompt us to extend beyond singular problem framings and solutions, and be attentive to multiple ways of knowing, acting and being in the world.
- Security scholars have much to learn from the experiences of communities whose security is jeopardized.
- Environmental problems are essentially political and raise critical questions about the kinds of societies and environments that we want to live in. These questions need to be subject to open scholarly and public debate.

Promote a lived and plural sense of security

- When responding to entangled systems of environmental harm and insecurity, it is important to not simply conform to existing institutional structures and policy frameworks. The monumental risks of the Anthropocene require openness to new ideas, polices and institutions.
- In a world bound together by complex chains of environmental risk and vulnerability, territorial conceptions of security premised on the protection from external threats are misleading. In a tightly interlinked world, security requires cooperative relations of care and peaceful coexistence.
- We make the case for a holistic, lived and plural sense of security, oriented towards solidarity and kinship across species, cultures, generations and worlds.

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Errata

Pages vi, 99	*For* 'From human environment to post-human earth: Troubling the nature/culture divide in Stockholm Declaration' *read* 'From human environment to post-human earth: Troubling the nature/culture divide in the Stockholm Declaration'

The online version of this volume was amended at the time of publication, September 2021.

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In June 1972, the United Nations Conference on the Human Environment was held in Stockholm, Sweden. This event, also known as the Stockholm Conference, was the first of its kind, and it reflected mounting concerns with the transboundary environmental problems caused by modern industrial society. Fifty years later, we find ourselves in a world marked by profound, accelerating and possibly irreversible environmental change. Today, there is simply no place on earth untouched by human influence. The Anthropocene is a concept that has been advanced to capture this novel environmental condition. It refers to an unpredictable and fragile era in planetary history when humanity is dangerously disrupting the earth's biosphere and life-upholding systems.

This volume brings together an interdisciplinary team of scholars and policy experts to examine what security means in this new world of humanity's own making. It asks how global institutions can respond to the systemic production of environmental risks and insecurities, and what political innovations are needed to chart a more sustainable path for global development in the decades to come. The 50-year anniversary of the UN Conference on the Human Environment offers an important backdrop to the volume and an opportunity to imagine constructive ways ahead.

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