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The Stockholm Story

A Progressive Counternarrative

The United Nations Conference on the Human Environment (UNCHE) is indeed a milestone, even the seminal moment, in the evolution of global environmental governance (GEG). Held in Stockholm in June 1972, and thus commonly known as the Stockholm Conference, it was, however, by no means an isolated event in Sweden's long-term contribution to the politics and science of environment and sustainability. The conference, in fact, followed from a longer-term process that started several decades before 1972, continues to this day, and unfolds into the future.

In this book, we attempt to demonstrate what material, intellectual, civic, political, and other assets Stockholm – as a global hub of leading institutions, innovative concepts, and deeply engaged individuals – has been able to bring to bear in enhancing awareness and understanding of environmental issues and in the development of international governance regimes. Progress on these fronts has, to a large extent, been based on advances in scientific knowledge, something that Sweden has excelled at in disciplines ranging from atmospheric chemistry to ecological economics, as well as in developing and popularizing paradigms and concepts such as resilience, sustainability science, and the Anthropocene. Moreover, a significant part of Stockholm's outsized influence has been the result of combining capabilities from multiple realms, as demonstrated in its contributions to science diplomacy, science organization, and science communication. The attributes we analyze have in effect allowed Stockholm to cultivate and sustain, consciously but more often unconsciously, its status as an indispensable player in global environmental governance over an extended period of time.

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Not even knowing for certain what it actually means to be "green" – a complex, hard-to-define concept – it may be even more difficult to conceive of global "green capitals" as a meaningful category. There seems to be established hierarchies of global centers or hubs for other sectors or aspects of society. The way, for example, we think of Frankfurt, London, New York, Singapore, and Hong Kong as global hubs of finance; the Boston area for higher education; or Tokyo, Milan, Paris, and Los Angeles as metropoles of art, fashion, or luxury,[1] Geneva clearly comes to mind as a center and symbol of internationalism, as does Vienna as a venue of environment and security. Vienna, the neutral Austrian capital, is associated with milestones in environmental history, such as the Vienna Convention for the Protection of the Ozone Layer, and became the location of institutions of environmental knowledge like the International Institute for Applied Systems Analysis (IIASA), established in 1972 in nearby Laxenburg. Hence, Vienna is arguably Stockholm's closest analogue, particularly if one were to also include the Austrian town of Villach where, as discussed at length in Chapter 6, a series of important climate science meetings took place during the 1980s.

The literature on such urban hierarchies, their evolution, and explanations for their success grew significantly in the period of intensified globalization in the late decades of the twentieth century. Saskia Sassen famously coined the concept "the global city" in a book with that title in 1991 and went on, like many others, to study financial centers. During this phase of economic globalization, when cities aspired to enhance their competitive position and prestige relative to other locations, scale, centrality, and attractiveness for investment and tourism became important features. Urban competition and world cities also became much theorized by Manuel Castells, Neil Brenner, Doreen Massey, and others in books that attracted a great amount of attention, partly because some of them could be read as manuals on how to succeed in the global economy and achieve status and significance, whether in finance, fashion, art, science, or innovation.[2]

[1] Mario Paris, ed., *Making Prestigious Places: How Luxury Influences the Transformation of Cities* (Abingdon & New York: Routledge, 2018).

[2] On global urban hierarchies and their drivers and processes, see Saskia Sassen, *The Global City: New York, London, Tokyo* (Princeton, NJ: Princeton University Press, 1991). Saskia Sassen, "Global Financial Centers," *Foreign Affairs* 71(1999):1, 75–87. Mark Yeandle & Chiara von Gunten, *The Global Financial Centers Index* (London: City of London, 2013). Neil Brenner & Roger Keil, *The Global Cities Reader* (London: Routledge, 2006). Youssef Cassis, *Capitals of Capital: A History of International Financial Centres,*

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There is no index for environmental significance, no established or quantified hierarchy, and no "global cities" of nature conservation or sustainable development. Nor is it our intention to propose any such hierarchy, let alone to crown Stockholm as the champion of such values. The reason we have conducted extensive research and written a book on this topic has much more to do with our general, and nagging, impression that importance, influence, and leadership are significant for success, and in questions on environment and climate, there has clearly been too little success so far. The world is struggling and not doing well while engaged in a dangerous game. Perhaps even worse, positive, progressive forces too often fail in generating the recognition that the issues deserve and, above all, in sparking the organized action that is needed for humanity to change course and thereby lower the burdens put on the planet and many of its inhabitants. It may be that some cities, established sites of authority, are also linked to a perception of the status of certain voices, the trust and credibility of particular institutions that have gained a right to speak credibly on specific issues, and are known for making a difference through their ability to lead and instigate change.

This is not how environmental communication is typically conducted, nor is it how "the environment" is commonly conceived. When we speak of athletics (as in well-known teams in major cities, or especially successful nations in certain sports), science, or finance, we can often agree upon the location of leadership and the criteria of prowess or success. Almost the opposite is true about the environment. The word is, to a very large extent, associated with problems or challenges, and these moreover tend to be "wicked" and entail a long list of dilemmas and goal conflicts. Much of what is attractive, and indeed ingrained, within finance, fashion, and innovation has "environment" situated at the opposite end of the scale, sequestered and out of sight rather than displayed on Fifth Avenue or aboard the private jets and luxury yachts where Wall Street titans and

1780–2005 (Cambridge: Cambridge University Press, 2006). Doreen B. Massey, *World City* (Cambridge, UK: Polity Press, 2013). Neil Smith, *Uneven Development: Nature, Capital, and the Production of Space* (Athens: University of Georgia Press, 2008). From Manuel Castells' vast output, may it suffice to reference two of his visionary review articles on these topics, "European Cities, the Informational Society, and the Global Economy," *Tijdschrift voor Economische en Sociale Geografie* 84(1993):2, 247–257 and "Local and Global: Cities in the Network Society," *Tijdschrift voor Economische en Sociale Geografie* 93(2002):5, 548–558, and his coauthored book with Peter Hall, *Technopoles of the World: The Making of Twenty-First Century Industrial Complexes* (London: Routledge, 1994).

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Russian oligarchs park their fortunes and pursue high-consumption lifestyles, a consumerist ideal that in turn trickles down to influencers and shapes the aspirations of millions of would-be emulators.

REMEMBERING DECLINE

Global human–environment history has, on the contrary, so far been mostly associated with sites of disaster, decline, and decay. The Yucatán Maya in Mexico and the Norse Settlement in Greenland are known for premodern cultural demise, while Easter Island and New Zealand in the Pacific are known for ancient extinctions.[3] Emblems of more recent environmental disaster abound: Bhopal, Chernobyl, Three Mile Island, Fukushima, New Orleans, Love Canal, and Minamata Bay, to name a few locations of crisis, contamination, and human tragedy. Entire regions are associated with profound anthropogenic change or upheaval: the Arctic (disappearing sea ice and melting permafrost), the Amazon (rainforest destruction and species loss), Antarctica (Ozone hole and ice reduction), Australia (invasive species), Newfoundland (cod stock collapse), the American West (drought and forest fire), the Sahel (desertification), and the Aral Sea (desiccation).[4] These are some

[3] Alfred Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (Cambridge: Cambridge University Press, 1986). Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Penguin, 2005). On the Maya, Scott Heckbert, Christian Isendahl, Simon Brewer, Vernon Scarborough, Arlen Chase, Diane Chase, Nicholas Dunning, Robert Costanza, Timothy Beach, Sheryl Luzzadder-Beach, David Lentz & Paul Sinclair, "Growing the Ancient Maya Social-Ecological System from the Bottom Up," In: Christian Isendahl & Daryl Stump, eds., *The Oxford Handbook of Historical Ecology and Applied Archaeology* (Oxford: Oxford University Press, 2019), 302–322. On the demise of the Greenland Norse as a climatic event, the classic study is Gustaf Utterström, "Climatic Fluctuations and Population Problems in Early Modern History," *Scandinavian Economic History Review*, 3(1955):1, 3–47.

[4] The literature on these and other similar key, indeed global, sites of environmental disaster is comprehensive and enormous. There are numerous studies on, among others, Love Canal, Bhopal, Chernobyl, and Three Mile Island. Here is a sample of significant works on some of the other main sites. On Fukushima, Sara B. Pritchard, "An Envirotechnical Disaster: Nature, Technology, and Politics at Fukushima," *Environmental History* 17 (2012):2, 219–243. On Hurricane Katrina and previous disasters in New Orleans, Craig Colten, *An Unnatural Metropolis: Wresting New Orleans from Nature* (Baton Rouge: Louisiana State University Press, 2006); Ashley Carse & Joshua A. Lewis, "Toward a Political Ecology of Infrastructure Standards: Or, How to Think about Ships, Waterways, Sediment, and Communities Together," *Environment and Planning A*, 49 (2017):1, 9–28; Joshua A. Lewis & Henrik Ernstson, "Contesting the Coast: Ecosystems as Infrastructure in the Mississippi River Delta," *Progress in Planning*, 129 (April 2019),

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of the names at the top of the global hierarchy of "the environment," a greatest hits album of abuse and folly, glorious mistakes, and utmost failure. Very little of what is known about the environment, or for that matter climate, is associated with anything prestigious or progressive, with the possible exception of certain treaties such as the Montreal Protocol, an oft-cited triumph of green diplomacy that has served to repair the hole in the ozone layer that was discovered by British scientists in the 1980s and spurred rapid international action. As a rule, environmental sites have not been associated with accomplishment, quality, or capacity for progress. Rather they are focal points of declensionist, if not "destructionist," or catastrophist narratives. For obvious reasons, although there have been important improvements to local environments as well as periods of optimism in environmental governance, if we look at global trends and consider the planetary scale, most indicators clearly point in the wrong direction. Thus,

1–30. On Minamata Bay, Brett L. Walker, *Toxic Archipelago: A History of Industrial Disease in Japan* (Seattle, WA: University of Washington Press, 2010). On the Arctic, Paul Josephson, "Technology and the Conquest of the Soviet Arctic," *Russian Review*, 70(2011):3, 419–439; Paul Josephson, *The Conquest of the Russian Arctic* (Cambridge, MA: Harvard University Press, 2014); Pey-Yi Chu, *The Life of Permafrost: A History of Frozen Earth in Russian and Soviet Science* (Toronto: University of Toronto Press, 2021); Miyase Christensen, Annika Nilsson & Nina Wormbs, eds., *Media and Arctic Climate Politics: Breaking the Ice* (New York: Palgrave Macmillan, 2013); Batsheba Demuth, *Floating Coast: An Environmental History of the Bering Strait* (New York: W. W. Norton & Company, 2019); Sverker Sörlin, ed., *Resource Extraction and Arctic Communities: The New Extractivist Paradigm* (Cambridge: Cambridge University Press, 2023). The Pacific Northwest (Exxon Valdez) is covered in multiple special studies but also finds a mention in Adrian Howkins, *The Polar Regions: An Environmental History* (Cambridge: Polity Press, 2016). On the Amazon, José Augusto Pádua, "Tropical Forests in Brazilian Political Culture: From Economic Hindrance to Endangered Treasure," In: Fernando Vidal & Nélia Dias, eds., *Endangerment, Biodiversity and Culture* (London: Routledge, 2015), 148–171; José Augusto Pádua, "Brazil in the History of the Anthropocene," In: Liz-Rejane Issberner & Philippe Léna, eds., *Brazil in the Anthropocene* (London: Routledge, 2017), 19–40. On the Antarctic Ozone hole, Sebastian Grevsmühl, "A Visual History of the Ozone Hole: A Journey to the Heart of Science, Technology and the Global Environment," *History and Technology* 33(2017):3, 333–344. On the Newfoundland cod fisheries, Dean Bavington, *Managed Annihilation: An Unnatural History of the Newfoundland Cod Collapse*, with a foreword by Graeme Wynn (Vancouver: UBC Press, 2010). On the Aral Sea desiccation, especially its historical roots, see Maya K. Peterson, *Pipe Dreams: Water and Empire in Central Asia's Aral Sea Basin* (Cambridge: Cambridge University Press, 2019). General background in John R. McNeill, *Something New under the Sun: An Environmental History of the Twentieth Century* (New York: W. W. Norton & Company, 2000). On declensionist narratives and tropes, see Carolyn Merchant, "Declensionist," In: *The Columbia Guide to American Environmental History* (New York: Columbia University Press, 2002), 206.

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global environmental governance has yet to deliver on multiple aspects of the mounting planetary crisis, not least on climate and biodiversity.[5]

Such downward trajectories also reflect and underpin a reading of history where human societies repeatedly demonstrate their inability to establish a sound and sustainable relation to the natural world and, just as often, among themselves. They can be located in an environmental narrative of despair and decline that has tended to dominate not only public memory but also professional environmental historiography. In the past, narratives of gloom, or glory, were prominent tropes, often connected with particular features of nature: mountains, deserts, forests, glaciers, marshes, and coral reefs. Whether the trope was that of gloom or glory was determined by the culture and religion of the commentator. Mountains were, for a long while, the locus of foreboding and fear, but more romantic spirits elevated them to places of beauty and majesty.[6] Forests or jungles became cathedrals of worship and unity with nature, as with Henry David Thoreau or John Muir. Just as often, however, they were dreaded and feared in Western culture, from the Brothers Grimm and before, while other cultures held less passionate views. As Roderick Nash recounted in *Wilderness and the American Mind*, when a Malaysian hunter surrounded by a thick tropical forest was asked by Nash's interpreter how to say "I am lost in the jungle," he simply could not understand the question. A Malaysian hunter "did not get lost in the jungle," the interpreter conveyed, in about the same way as a city dweller does not get lost in his apartment. There is nothing to fear.[7]

To speak of "progressivist" narratives on the global scale is very different. In our time, known by many names – the Western-centric "post-war era," or "the Great Acceleration" that accounts for the planetary-scale impact of "humanity" (in reality, mostly its wealthier segments) – and

[5] Valérie Masson-Delmotte, Panmao Zhai & Anna Pirani et al., eds., "Summary for Policymakers," In: *Climate Change 2021: The Physical Science Basis: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2021). Partha Dasgupta, *The Economics of Biodiversity: The Dasgupta Review* (London: HM Treasury, 2021). IPCC, 2022: *Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, [H.-O. Pörtner, D. C. Roberts, M. Tignor & E. S. Poloczanska, et al., eds.] (Cambridge: Cambridge University Press, 2022).

[6] Marjorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite* (Ithaca, NY: Cornell University Press, 1959).

[7] Roderick Nash, *Wilderness and the American Mind* (1967), 3rd ed. (New Haven, CT & London: Yale University Press, 1982), xiv.

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which might just as well be called "the Age of Environment," environmental decline is not so much a trope in the history of Western ideas about nature as it is now a matter of empirical fact. As such it has become central in the search for new narratives that can capture the full breadth of the story that we need to tell about the human enterprise while giving justice to the enormous knowledge and insight that has been amassed. In essence, environmental declensionism replaced the centuries-long story of progress that has long been the core narrative of modernity.[8] As an undertaking, a progressivist narrative of the environment would immediately run counter to many things we know about the disasters and wrongs that certain individuals and institutions and entire societies have wrought. It would be a *contradictio in adjecto*. Is it possible or at least meaningful? We are convinced that it is important to carry out such a project. Both analytically, to understand what factors can explain environmental progress, and politically, to demonstrate past experiences and suggest pathways forward that can help lead us out of our current quagmire.

Part of the secret is to shift the narrative focus away from the undeniable bad news and instead look at how the instruments of positive change in policy and public understanding became possible. The notion of "progress" as put forward in this book is not meant to evoke some sort of utopian vision of international affairs, and it certainly does not imply that the global environment is at this point firmly entrenched upon a sustainable development pathway. Rather, what we are referring to are the constructive, if incremental and insufficient, steps that have been taken over the past fifty-plus years in establishing the ideas, institutions, and processes that have served as the drivers and catalysts for greater levels of awareness, action, and change in the direction of sustainability and for staying within planetary boundaries. If improvements within the environmental realm thus represent a first-order criterion of progress, the performance of actors and agencies represent second-order criteria, without which advances in the first would not be possible. These two types of narratives are obviously linked. Without overwhelming environmental decline, there would be no impetus for environmental progress. However, we would argue that while the first narrative is well rehearsed, loaded with long-standing tropes and themes, the latter narrative of progressive environmentalism linked to environmental improvement is far

[8] John B. Bury, *The Idea of Progress: An Inquiry into Its Origin and Growth* (London: Macmillan, 1920).

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less developed. Indeed, not even within the massive amount of scholarly literature on (global) environmental governance has there been much focus on what has so far been achieved, where progressive steps have been taken, and why precisely in those places. Much of the effort has rather been on discussing how governance instruments and policies can and should be improved, looking mostly toward *the future* rather than examining recent and contemporary *history* as a source of insights, be they on shortcomings and failures, of which there are many, or about progress and the building of institutions and the initiation of processes.

We, of course, concur with the concern over the current state of the planet, and the eagerness to improve environment, climate, and sustainability policies everywhere. But we would also argue that many important achievements have, in fact, been made. Devoting some attention to what has actually worked reasonably well, and explaining why, is in our estimation beneficial, at least as long as we don't fall into the trap of the all too frequent attempts to sell progressivist narratives as a reason to signal that all will go well if we simply continue to seek technological solutions and stay true to the path of urbanization and economic growth. To carefully analyze and make sense of what has favored progress in environmental policy on the global level does not have anything to do with evangelical providence or with the overblown promises of eco-modernism.[9] Sweeping business-as-usual visions of techno-green utopias seen through rose-colored glasses have, if anything, impeded in-depth, sincere studies of the history of environmental governance.

REMEMBERING PROGRESS

Thus, the background of this book is the fact that the scientific history and political geography of advances in environmental governance have not as of yet been very well studied or understood. That is likely due in part to the magnitude of the task. Global environmental governance is a large and complex phenomenon, and few have been tempted to take it on as a scholarly effort in its own right. While the outlook of this present attempt to produce a history of environmental governance is necessarily global, our fundamental approach is to examine it through the

[9] An early example of this line of thinking was Gregg Easterbrook, *A Moment on the Earth* (New York: Penguin, 1996). A more recent one that has circulated widely in public debates is John Asafu-Adjay et al., *An Ecomodernist Manifesto* (2015), www.ecomodernist.org. See also, among the responses, Eileen Crist, "The Reaches of Freedom: A Response to an Ecomodernist Manifesto," *Environmental Humanities*, 7(2016):1, 245–254.

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experience of a particular region of the world and from a particular city, which has consistently had a certain, even quite remarkable, centrality in this multi-decade process. As will be demonstrated in subsequent chapters, much of Stockholm's contribution to this history has been to serve as a node and locus of ideas and initiative-taking within an array of international networks and organizations that include, among other constellations, the UN and its specialized agencies. *Hence, this book provides a historical perspective on a trajectory of transnational progress through the lens of a particular geographical location that has played a pivotal role in the evolution of global environmental governance.*

Stockholm, we posit, represents a progressive counterstory to the declensionist narrative endemic to many environmental and policy histories, with the Swedish capital symbolizing the emergence and evolution of international efforts to manage the environment at the global or even planetary level. This process is not exclusively northern, or western, as it has since the preparatory phase of the 1972 Stockholm Conference been deeply intertwined with the development imperatives of the global South. In the years since 1972, an expanding assemblage of national, international, and nongovernmental institutions have been established around the world for addressing the science, policy, and advocacy dimensions of environment and development.

The process has not gone in the direction of strong, centralizing global institutions. Rather, the overarching trend over the decades has been one of "dispersal," a wide multi-layered distribution of institutions and responsibilities in a process that may be better seen as a history of an evolving human–Earth relationship rather than a matter of discrete policy choices.[10] The multitude of conferences, conventions, organizations, and other institutions, ranging from climate accords and science panels to UN-arranged Earth Summits and the Agenda 2030 Sustainable Development Goals, constitute what Frank Biermann has called the "architectures" of Earth system governance.[11] The aim of this book is to shed light on the social origins and history of some of the foundational elements and building blocks of its construction. This includes a range

[10] Sverker Sörlin, Paul Warde, Isobel Akerman, Thomas Harbøll Schrøder, Jasmin Höglund Hellgren, Sabine Höhler, Erik Isberg, Eric Paglia & Gloria Samosír, "The Great Dispersal: The Fall and Rise of Global Environmental Governance," (in review).

[11] Frank Biermann & Rakhyun E. Kim, eds., *Architectures of Earth System Governance: Institutional Complexity and Structural Transformation* (Cambridge: Cambridge University Press, 2020).

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of less-heralded events, innovations, and processes facilitated by actors operating through national and transnational networks, bringing both a new narrative arc to the rise of global environmental governance and attention to a number of hitherto less-known case studies, all with a great deal of empirical detail.

Stockholm and the rise of GEG is a real-world history of events, conferences, negotiations, decisions, and activities by national and international organizations, civic movements, scientists, the corporate sector, and many other actors. But it also encapsulates a process of remembering. Stockholm is both a physical space where, for example, institutions are clustered geographically and research is conducted, and a point of reference and locus of memory within the scientific and political story of the environment's ascent on the international agenda. In the parlance of the field of memory studies, Stockholm has become a *noeud de mémoire*, a node of remembrance, in the rising global story of a transforming human–Earth relationship that is now coming of age.[12] We thus also reflect on the problem of *remembering on the global scale*. What does it mean to remember a city and its environmental legacy inscribed within the context of a global story?

Those who share in such remembering are not just those who reside in a global node. To become a site of international memory, the processes of remembering must be spread via media and shared in wider circles. Memory must also last and be passed on over the course of years, decades, and generations; centennial temporalities may even be considered, even if it is perhaps still too early to think of our recent and contemporary history in such timespans. Achieving such status requires at the very least significance, perhaps fame, for the place or process. In the case of Stockholm as a place of environmental memory, possibly more the former than the latter. Although as the environment and, increasingly, climate change gain significance as keywords of the emerging *Weltanschauung*, it can be expected that more remembering in those spheres will take place. After all, as the world is increasingly understood also *qua* environment, *qua* climate, and *qua* vulnerable "planet" – where did this all come from? In the ongoing Anthropocene transformation of global temporalities and emerging, often quantified, rates and trajectories

[12] Michael Rothberg, "Introduction: Between Memory and Memory: From Lieux de mémoire to Noeuds de mémoire," In: Michael Rothberg, Debarati Sanyal & Maxim Silverman, eds., *Noeuds de Mémoire: Multidirectional Memory in Postwar French and Francophone Culture*. *Yale French Studies* 118/119 (New Haven, CT: Yale University Press, 2010), 3–12.

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FIGURE 1.1 Stockholm during UNCHE in the early summer of 1972. Photo: UN Photo/Yutaka Nagata.

of change, we can identify new chronologies – indeed new "spaces of experience" and "horizons of expectation," to use Reinhart Koselleck's concepts.[13] Such fears and hopes of the Anthropocene are closely associated with features of the environment such as climate, biodiversity, the cryosphere, forests, and oceans.

GOVERNANCE IN NEW TIMES OF THE ELEMENTS

These elemental features of the Earth System now present themselves as a set of *environmental times* that increasingly constitute the flow of time and the making of the history of the modern world. This world is not just elemental, material, and natural, it is increasingly interwoven with the human life sphere. More than that, it is, to a perhaps frightening extent, anthropogenic. It is no longer just nature, it is a nature transformed by human action into an environment, and new times that are generated

[13] Reinhart Koselleck, ed. "'Erfahrungsraum' und 'Erwartungshorizont' – zwei historische Kategorien." In *Vergangene Zukunft: Zur Semantik Geschichtlicher Zeiten* (Frankfurt am Main: Suhrkamp Verlag, 1989), 349–372.

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in the interference with those embedded in the Earth.[14] We ask: where is this action taking place? In answering that question, we do not look so much at those sites and processes, or even calamities that generate the impacts, that is, the events and anthropogenic environmental change itself. Instead, we look at the work that has been undertaken to understand the change, mitigate its consequences, and redirect it. Originating on the outskirts of world affairs a century ago as ideas circulating in small groups of thinkers and scientists, and not least among those that were affected in nature, on farms, and in their work places, this effort has come to occupy a central position on the global stage and become a common concern and a political issue at the highest levels of international politics.

Although the rise of the environment on the global agenda affects us all, the way we are all part of history, its ascent as a matter of political, scientific, and societal engagement has played out more distinctly in certain contexts. These can be seen as the *arenas* where GEG *practices* take place. Given that this strand of governance is becoming global, it follows that the key arenas are those that allow for national and local issues to converge with international concerns and their associated actors and agencies, which have grown rapidly in number since the middle of the twentieth century. We will focus in particular on meetings, conferences, institutions, and organizations where these kinds of exchanges have taken place. This is not a process where agency, responsibility, contributions, or, for that matter, reticence and friction, are evenly distributed across nations or cities. On the contrary, nor is it an evolution, neatly following a set of principles or laws; and it is certainly not a metaphysical phenomenon whereby "humanity" seeks a new position in relation to "the earth" according to some preordained theological or ideological scheme. It is history and, as such, is always open-ended vis-à-vis the future at any given point in time.

Studying global environmental governance historically means that we need to analyze and understand actions and events, including for example the formation of institutions and the dynamics of meetings, within their wider contemporary context. At the same time, we are writing this history from the vantage point of the 2020s, a moment in time when GEG has advanced dramatically compared to the early days of

[14] Sverker Sörlin, "Environmental Times: Historical and Scientific Temporalities from *Annales* to Anthropocene, 1920s-2020s," In: Anders Ekström & Staffan Bergwik, eds., *Times of History, Times of Nature: Temporalization and the Limits of Modern Knowledge* (New York: Berghahn Books, 2022), 64–101.

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"the environment" as a slowly evolving policy concept in the immediate post-World War II years. The United Nations has dubbed it the Agenda 2030 decade, suggesting that it is a critical period for achieving the seventeen global Sustainable Development Goals adopted by the UN in 2015. The SDG on climate, number 13, encompasses ambitious goals for drastic reductions in global greenhouse gas emissions by 2030, agreed upon at the 2015 Paris climate conference and reinforced and sharpened at Conference of the Parties (COP) meetings since then. These facts and these trajectories of hope and vision, alongside fear and despair that the chances of reaching the goals are slim, represent necessary vantage points as we return to the historical events covered in this book. If environment and climate had not become and remained one of the supra-narratives of the modern world, there would not have been any pressing need to write this history.

That need now exists, and it is actually surprising that not more such histories have been written to date. One possible reason is that despite all the current interest in environmental, diplomatic, science, and Anthropocene history, issues related to nature and the environment are still not commonplace for most historians. Much of the GEG history so far has been provided as peripheral information by natural and social scientists primarily studying and writing about other – typically contemporary – topics. This is of course essential information that we have drawn upon extensively. The same goes for biographical and autobiographical literature, and a large number of institutional and thematic reports drafted over decades that are themselves historical sources sometimes offer micro-narratives contextualizing their own relevance.

Writing from the vantage point of Agenda 2030 and approaching the environmental policy past historically, *qua history*, allows us to use all this material simultaneously, assembling it in a way that enhances the possibility of better explaining how we should understand the times we live in at present. How can we understand the agendas and tools of environmental and climate policy and governance? Why are global discourse and negotiations focused and structured the way they are? And how did the issues emerge? Guided by these kinds of questions, we can also improve the way we ask questions about the future. The past does not in any simple way determine or predict what will come in the years and decades ahead. But without a profound and detailed understanding of the rise of GEG, our thinking about the planet's future – and thus the chances of reaching crucial sustainable development goals – will be poorer and more simplistic. Rich, textured, and profound historical

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understanding is a bit like an insurance policy: you *can* live without it, but only at your own risk.

This book is therefore part of a larger enterprise that no single intervention can cover. Our aim is to connect the present with the early formations of the environment and the human–Earth relationship – a historical phenomenon that, we argue, is one of the most crucial features of the twentieth century, on a par, over the long term, with watershed events like the two world wars and the revolutions in Russia and China. This entails linking the events and agencies of the twentieth century with our current predicament in the first half of the twenty-first – a time when we can read and reflect upon this history of the rise of GEG while we continue to make it part of our contemporary politics.

Like most history, it means offering more than just an array of facts. It will become meaningful only if the dots are connected within a broader historical interpretation, which in turn must be seen from a particular vantage point and offer a particular narrative that gives justice to the past, and at the same time brings meaning and understanding to the present. Setting out to produce such a narrative of the environment, focused not on the environment itself – including the various catastrophes that have befallen it – but rather on the three-quarter century quest to understand it and mitigate the ongoing disruption of planetary systems, requires its own anchoring points, obligatory passage points, and "truth spots" on the map of the world.[15] The arenas of environmental governance – the knots in the warp of time as it were – where broader change can be detected or important steps were taken are useful tools in crafting such a narrative and memory of past events and processes. Some of the important moments are indeed remembered, even celebrated, like the 1972 UN Conference on the Human Environment in Stockholm. Multi-level repercussions – local, national, and global – are required for large-scale memories to form and last; however, as the reader of this book will discover, many if not most of the key incremental steps as well as decisive turning points are *not* very well remembered. They have faded from our minds, which is why it is necessary to return to them as we craft a meaningful GEG narrative.

History and memory stand in a productive, but also not unproblematic, relation to one another. To remember is a "use of the past." As French sociologist Maurice Halbwachs suggested a century ago, to

[15] Thomas F. Gieryn, *Truth-Spots: How Places Make People Believe* (Chicago, IL & London: The University of Chicago Press, 2018).

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remember is to form community and to expose yourself to the process of being formed by it.[16] A community is a social entity that remembers together and thus worships, mourns, and rejoices together. It requires agreement on what is worth remembering. We find pronounced versions of these processes among nations, professions, and religions, but they can be observed in some form in most communities, including families, firms, and social movements. As the idea of a planetary human–Earth relationship continues to take shape, communities are now forming around this overarching narrative of the human species. This is an ongoing process for which no established narrative yet exists. Proactive groups and actors have achieved a level of institutional density and acknowledged the importance of the environment and climate. These topics are merging in multiple ways with geopolitics, security, diplomacy, progress, risk management, and ideas of the future. Environmental and climate themes are making their way into the writing of general and world history; and when history changes, the present and outlooks on the future will change, too.[17]

WHY CITIES MATTER

This history plays out on multiple levels. One is obviously global, and certain aspects of history, as well as remembering, are now indeed global if not planetary in scale. As Dipesh Chakrabarty has pointed out, the planetary has become a "humanist category." This idea was percolating for a while but has now, in a relatively short amount of time, become firmly established.[18] Many of the most important institutions in the

[16] Maurice Halbwachs, *Les Cadres sociaux de la mémoire* (Paris: Albin Michel, 1925). Maurice Halbwachs and Lewis Coser, ed. and transl., *On Collective Memory* (Chicago: The University of Chicago Press, 1992).

[17] As is increasingly the case, for example, in ocean history, such as David Armitage, Alison O. Bashford & Sujit Sivasundaram, eds., *Oceanic Histories* (Cambridge: Cambridge University Press, 2017), and in global environmental histories that started to appear around 2000, for example, McNeill, *Something New* (2000), J. R. McNeill & William McNeill, *The Human Web: A Bird's-Eye View of World History* (New York: W. W. Norton & Company, 2003), Guha, *Environmentalism* (2000), Joachim Radkau, *Nature and Power: A Global History of the Environment* (German orig. 2002), English transl. (Cambridge: Polity, 2008).

[18] Dipesh Chakrabarty, "The Planet: An Emerging Humanist Category," *Critical Inquiry* 46(2019):1, 1–31. Sverker Sörlin, "Scaling the Planetary Humanities: Environmental Globalization and the Arctic," In Ursula K. Heise, Jon Christensen & Michelle Niemann, eds., *The Routledge Companion to the Environmental Humanities* (London: Routledge, 2017), 433–442.

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environmental arena are global. Some, such as the Nairobi-based United Nations Environment Programme (UNEP), are part of the UN system and have a global reach that transcends the city where the agencies' staff sits. Another example is the Intergovernmental Panel on Climate Change (IPCC) headquartered in Geneva, close to its much-older parent institution, the World Meteorological Organization (WMO).[19] The latter became part of the UN system between 1947 and 1951 with, at the time, a very different rationale and *raison d'être* than monitoring and understanding "the environment" as such. The IPCC reports are almost invariably global, and they make a special effort not to speak from any particular place. It is, and strives to be, a voice from nowhere, reflecting the neutral tone of science, taking all parts of the world into consideration. But as work in the history and social study of science has taught us, there is in reality no voice that can speak from nowhere. Science and knowledge have their own geographies, and knowledge is in a number of respects situated.[20] It is not only data that reflects local conditions and their differences. The stories that are told with data change depending on who collected it, where, and when. Which facts become available depends upon what is being looked for and what research is getting funded and pursued. But perhaps even more important are the conditions for assembling the narratives that the data can sustain.

That is why cities matter. Or, perhaps more specifically, the geographic nodes where facts are assembled and turned into knowledge. In a now-famous book about the social organization of knowledge, Bruno Latour spoke of "centres of calculation."[21] He drew upon colonial science, which for centuries was organized around a protracted collection of data – specimens, samples, and measurements – that were typically brought back from the far reaches of empires to collections in museums, academies, or universities in European capitals and centers of learning.

[19] The IPCC was established in 1988 jointly by WMO and UNEP.

[20] Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14(1988):3, 575–599. David N. Livingstone, "The Spaces of Knowledge: Contributions towards a Historical Geography of Science" *Environment and Planning D: Society and Space* 13(1995):1, 5–34; David N. Livingstone, *Putting Science in Its Place: Geographies of Scientific Knowledge* (Chicago: University of Chicago Press, 2003). Richard C. Powell, "Geographies of Science: Histories, Localities, Practices, Futures," *Progress in Human Geography* 31(2007):3, 309–329. Martin Mahony, "Geographies of Science and Technology I: Boundaries and Crossings," *Progress in Human Geography* 45(2021):3, 586–595.

[21] Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge, MA: Harvard University Press, 1987).

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The storytelling of modern science, the sense-making narratives of the world we lived in, was told from these centers, which framed – and tainted – such stories significantly. Science works much better today, but certain elements of this coloring of knowledge by the institutions and political contexts of their production cannot be completely avoided. That is even more the case if we look at what kinds of policy narratives can be told based on scientific understanding. These are even more conditioned, indeed constrained, by the politics of the institutions and the people that are engaged in writing the reports and turning them into policy.

It is in such a perspective that cities matter even more. If there is a "Washington consensus," there should also be a Brussels perspective, a Beijing outlook, a Moscow, Nairobi, and Brasilia standpoint – and, we argue, most certainly a Stockholm view on the environment as a global concern. We are in this book aiming to illuminate that. What Stockholm and Sweden have contributed is of course part of a much larger entirety of GEG. Yet perhaps in contrast to a wave rising and falling with the flow of an entire ocean, an individual city – including its institutions, traditions, norms, and national political culture – can be more independent and relate more proactively to the wider growth of knowledge and general changes in the global environment. In that sense, the environment as such has a geography, not just in the obvious sense that environments and climates differ with latitude and altitude, but because what becomes environmental governance is related to place and, needless to say, time. In this respect, too, the environment is political.

Our argument is thus that Stockholm is interesting because of what it has specifically brought to bear in facilitating the rise and practice of GEG. It represents history in its own right, with a unique combination of parts and elements, infused with human agency at every step. This is also how we think it can be meaningfully told, as an in-depth presentation of a continuous process where the many actions of a multiplicity of actors operating in special circumstances are needed to demonstrate the thrust of the argument. Similar histories can surely be written about other cities or geographies, and some day such stories may emerge on a broader scale. So far, they are few. One example is Richard Walker's *The Country in the City* (2008) on the rich and progressive environmental history of the San Francisco Bay Area, spanning approximately 100 years from the late-nineteenth to late-twentieth centuries. It is a fabulous book, in its approach not without similarities to this one, but it is, above all, a local or regional history. The aspects of governance it encompasses are on the level of the urban region, beautifully traced over generations and

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across special places in the greater Bay Area – creeks and groves, parks and harbors, wine lands and wetlands – and across ethnic groups, gendered communities, social classes, and a wide diversity of knowledge, traditions, and experiences.[22] Another such book of similar stature is Jens Lachmund's narrative of the modern, green Berlin that emerged, very literally, with *Ruderal* species and all, from the ruins of World War II.[23]

Stockholm has an environmental history of this kind as well. Some of it is captured in prominent works, although none quite as eminent and with such broad spatial and temporal scope as Walker's book on the Bay Area.[24] In our examination of the central role of Stockholm in the rise of GEG, however, that strand of Stockholm's history is of limited interest, although there will be some mention of castles and conference centers where meetings were organized, and of parks and public squares where protesters gathered or talks were held. We would not deny that popular sentiment and a passion for nature and local ecologies have deep roots and may have been important in both the Bay Area and in Stockholm, just as they have proven to be important for environmental engagement elsewhere.

But what interests us is something perhaps even harder to get to the bottom of and write a history about; namely the relationship between a city and something as vast as the "global" and its concomitant environment, and how the governance of these two combined things came into existence over a period of a few generations following World War II. Despite this process being global, it will have certain regional and local

[22] Richard Walker, *The Country in the City: The Greening of the San Francisco Bay Area* (Seattle, WA: University of Washington Press, 2008). A compact, updated version is Richard Walker, "Nature's Popular Metropolis: The Greening of the San Francisco Bay Area," In: Henrik Ernstson & Sverker Sörlin, eds., *Grounding Urban Natures: Histories and Futures of Urban Ecologies* (Cambridge, MA: MIT Press, 2019), 169–200.

[23] Jens Lachmund, *Greening Berlin: The Co-Production of Science, Politics, and Urban Nature* (Cambridge, MA: The MIT Press, 2013). Jens Lachmund, "Regimes of Urban Nature: Organic Urbanism, Biotope Protection, and Civic Gardening in Berlin," In: *Grounding Urban Natures* (Cambridge, MA: MIT Press, 2019), 247–276. Bettina Yvonne Stoetzer, "Ruderal Ecologies: Rethinking Nature, Migration, and the Urban Landscape in Berlin," *Cultural Anthropology* 33(2018):2, 295–323.

[24] From a rich, so far largely journalistic and narrative nonfiction literature on Stockholm urban environmental history in Swedish, for example, Nils-Erik Landell, *Den gröna staden* [The Green City] (Stockholm: Bonnier Alba, 1979); Nils-Erik Landell, *Vattenstaden* [The Water City] (Stockholm: Carlsson, 2006); Gunnar Brusewitz & Henrik Ekman, *Ekoparken: Djurgården Haga Ulrikdsdal* (Stockholm: Wahlström & Widstrand, 1996). Book-length environmental histories of Stockholm available to international readers are basically absent.

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sites of particular significance. Stockholm stands as one of the leading candidates to become a preeminent location of both agency and collective memory for this truly global history. Not another site of environmental disaster, which has its own worthy acts of commemoration, but as a key place of discovery for the narrative itself and the ongoing effort to reorient the course of human progress.

ROADS TO THE CONFERENCE

Stockholm 1972 looks very different from the location of the Conference than it does outside Sweden. From a national perspective, many would consider the most significant site of environmental politics connected to early 1970s Stockholm to be a patch of thirteen Scots elm trees outside the Opera House in the public garden of Kungsträdgården.[25] After over a decade of sweeping redevelopment of central Stockholm, including the demolition of hundreds of centuries-old structures, plans to build a subway entrance where the trees stood sparked, in May 1971, a massive protest and clash with local authorities (Figure 1.2). "The Elm Conflict," organized by an action group that would later become part of the local Stockholm chapter of Friends of the Earth, represented a turning point in modern Swedish politics, as it was framed as a matter of democracy

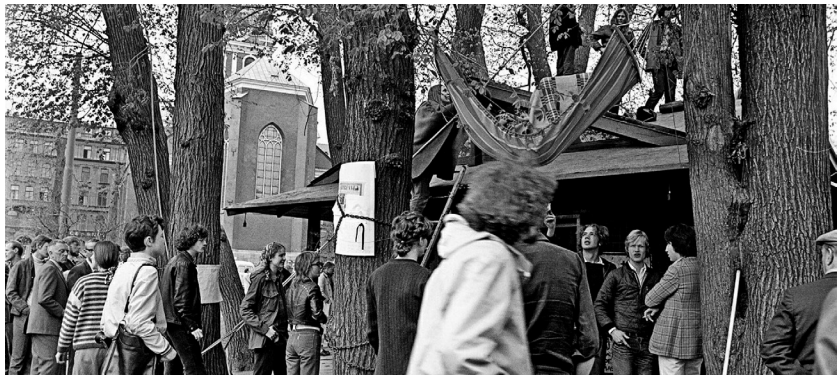


FIGURE 1.2 The "Elm Battle," Stockholm 1971. Activists and engaged citizens opposed the planned destruction of elm trees that stood in the way of a new subway station in the heart of the capital. Photo: Lennert af Petersens. Stockholm City Museum Archives.

[25] Literally, the King's Garden produced herbs and vegetables for the Royal household in the Early Modern period.

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and remains a point of reference for subsequent environmental and city planning conflicts in Sweden.[26]

In terms of establishing Stockholm's status as an *international* site of environmental history, less dramatic processes in preparation for UNCHE were at the same time underway in Sweden's capital and elsewhere, the products of which would have substantial influence on scientific, social, and political engagement with environmental issues at the global level. An array of textual artifacts surrounding the Conference represent objects of significance associated with Stockholm and the origin of GEG. In May 1971, while protesters were scurrying up the elm trees in downtown Stockholm, the UNCHE Secretariat in New York was commissioning what would become the unofficial report and "conceptual framework" for the Conference. The volume, a scientific and philosophical work considered the "conference bible," was written for lay readers but based on expertise from diverse realms of knowledge and all global regions.[27] Prominent environmental and internationalist thinkers, Barbara Ward and René Dubos, were enlisted to coordinate input from 152 experts from fifty-eight countries – carefully chosen to represent first, second, and third world perspectives and provide "a view from everywhere" – and ultimately author the report that carried the Stockholm Conference motto, *Only One Earth: The Care and Maintenance of a Small Planet*.[28] As the first global state-of-the-environment report, and an early articulation of the concept of sustainable development, *Only One Earth* had a substantial impact on public opinion and the thinking of political leaders in the industrial world as well as, to a lesser extent, in developing countries.[29] A half century ago, it was among the first official documents at

[26] Details on this conflict are in Daniel Helldén, *Demokratin utmanas: Almstriden och det politiska etablissemanget* [Democracy Challenged: The Elm Conflict and the Political Establishment], PhD diss. (Stockholm University: Department of Political Science, 2005). See also Anders Gullberg, *City: Drömmen om ett nytt hjärta* (Stockholm: Stockholmia förlag, 2001).

[27] McCormick, *Reclaiming Paradise*. Selcer, *Postwar Origins*. Schleper, *Planning for the Planet*.

[28] Barbara Ward & René Dubos, *Only One Earth: The Care and Maintenance of a Small Planet* (New York: W. W. Norton & Company, 1972).

[29] Lars-Göran Engfeldt, *From Stockholm to Johannesburg and Beyond: The Evolution of the International System for Sustainable Development Governance and Its Implications* (Stockholm: Ministry of Foreign Affairs, 2009). Eric Paglia, "The Swedish Initiative and the 1972 Stockholm Conference: The Decisive Role of Science Diplomacy in the Emergence of Global Environmental Governance," *Humanities and Social Sciences Communications* 8(2021):2.

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the international scale that laid out the emerging understanding of the Earth as a fragile object that required human stewardship.[30]

The seeds of sustainable development were planted in the principles of the Declaration on the Human Environment, one of the most significant Conference outcomes. Several months before Ward and Dubos were commissioned to prepare *Only One Earth*, the second session of the UNCHE preparatory committee created, in February 1971, an intergovernmental working group to begin drafting a declaration for the Conference. Hans Blix, legal advisor to the Swedish foreign ministry and later head of the International Atomic Energy Agency, was instrumental in negotiating and writing the declaration over the course of several meetings in 1971 and 1972, with the final text – consisting of a preamble and twenty-six principles – being adopted on the Conference's last day, June 16, 1972.[31] Although not a legally binding instrument, the Stockholm Declaration is considered a landmark in the establishment and evolution of international environmental law, with its normative contributions in the realm of environment and development reaffirmed twenty years later by the similarly structured 1992 Rio Declaration.[32] The legacy of Stockholm included the environmental summits in Rio de Janeiro in 1992 and 2012 and Johannesburg in 2002, shaping an arc of diplomatic mega-events that can be traced directly back to the Stockholm Conference. A more modest commemoration was held in the Swedish parliament in June 1997, a mini Stockholm+25 convened by Anna Lindh, then Minister of the Environment, with Maurice Strong among the speakers, and a similar Stockholm+40 event was arranged in 2012.[33] In June 2022, the semi-centennial of UNCHE was marked by the Stockholm+50 conference, a major if much less ambitious UN event that lasted only two days compared to the twelve-day gathering in 1972.

[30] Schleper, *Planning for the Planet*.

[31] Hans Blix, "History of the Stockholm Declaration," In: Myron H. Nordquist, John Norton Moore, & Said Mahmoudi, eds., *The Stockholm Declaration and Law of the Marine Environment* (Leiden: Brill Nijhoff, 2003), 15–24. Louis B. Sohn, "The Stockholm Declaration on the Human Environment," *The Harvard International Law Journal* 14(1973):3, 423–515. Engfeldt, *From Stockholm to Johannesburg*.

[32] Sheila Jasanoff & Marybeth Long Martello, *Earthly Politics: Local and Global in Environmental Governance* (Cambridge, MA: MIT Press, 2004). Biermann, "Global Environmental Governance." K. O'Neill, E. Weinthal, K. Marion Suiseeya, S. Bernstein, A. Cohn, M. Stone & B. Cashore, "Methods and Global Environmental Governance," *Annual Review of Environment and Resources* 38(2013), 441–471.

[33] It may, for transparency, be noted that one of us (Sörlin) was also on the list of speakers at the Stockholm+25 event.

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FIGURE 1.3 Anna Lindh and Kofi Annan, photographed in 2002 when Lindh was Foreign Minister of Sweden. Lindh, in a long Swedish tradition, cherished the idea of Sweden as a nonaligned country and also the idea of a strong United Nations. Photo: UN Photo/Eskinder Debebe.

Other international conferences, agreements, and science-policy processes associated with Stockholm and other Swedish locations have followed in the years since 1972. The Stockholm Convention on Persistent Organic Pollutants was signed in May 2001, and Sweden's second-largest city gave name to the 1999 Gothenburg Protocol limiting emissions of multiple chemical pollutants that cause acidification and eutrophication. Adopted within the Convention on Long-Range Transboundary Air Pollution, which Swedish government officials and scientists were instrumental in developing during the 1970s and 1980s, the Gothenburg Protocol also gave rise to a series of international meetings on acid rain science and policy that, despite being held in Gothenburg over the past twenty years, are known as the "Saltsjöbaden Workshops," named after the community on the outskirts of Stockholm where the first meeting took place in 2000.[34] A wide variety of locations across Sweden, ranging

[34] Camilla Andersson et al., *Achievements and Experiences from Science – Policy Interaction in the Field of Air Pollution: Synthesising 20 Years of Research and Outreach, Thinking about Future Needs* (Stockholm: IVL, 2021).

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from conference centers and manor houses in and around Stockholm to marine laboratories and field stations as far north as Abisko in the Swedish Arctic – where for two decades the Swedish Research Council, as part of a productive long-term relationship with Vienna-based IIASA, invited twenty to thirty experts to annual retreats for reflecting on issues related to sustainability and systems analysis[35] – have in fact represented important sites for various processes underpinning the evolution of global environmental governance.

Part of the Stockholm narrative is tied to properties that had for many years been associated with Sweden as a democratic template. Sweden represented "the Middle Way," as Marquis Childs had called it in his 1936 portrait of the model modern nation, a society working according to consensus norms and in a spirit of diplomatic give and take.[36] The notion of consensus also extended to aspects of Sweden's foreign policy, which was strongly invested in the United Nations. Reflecting Sweden's postwar commitment to internationalism, Sverker Åström – a renowned Swedish diplomat who played a decisive role in convening a UN environmental conference – even saw national sovereignty as a hindrance to collective global action on the emerging environment issue.[37] In this small northern country, the environment as a societal problem had by the mid-1960s begun to loom large, with Sweden establishing the world's first environmental protection agency in 1967. Compared to other countries, Sweden was early and comprehensive in its attempts to pass legislation on issues such as vehicle pollution, work environments, acidification, and many other questions surrounding the environment and public health.[38] A ban on ozone-depleting chlorofluorocarbons (CFCs) became

[35] Uno Svedin, personal communication, September 23, 2022. Sweden became a member of IIASA in 1974; responsibility for managing the relationship was eventually passed from the Swedish Research Council to Formas in 2001. Torsten Hägerstrand, Anders Karlquist, Sture Öberg, and Uno Svedin were the main Swedish actors involved in arranging the series of Abisko workshops, which ran from 1983 to 2003.

[36] Childs, *Sweden – The Middle Way*.

[37] Sverker Åström, "Global Consensus or Global Catastrophe?," *Ambio* 1(1972):1, 2–5.

[38] Svante Odén, "The Acidification of Air Precipitation and Its Consequences in the Natural Environment," *Ecological Bulletins* vol. 1 (Stockholm: Swedish Natural Science Research Council, 1968); this publication was preceded by his highly influential op-ed. article in the Dagens Nyheter in October 1967 (see Chapter 4). Hans Palmstierna, *Plundring, svält, förgiftning* (Stockholm: Rabén & Sjögren, 1967). On Swedish environmental chemistry and public health in this period, Michael Egan, "Communicating Knowledge: The Swedish Mercury Group and Vernacular Science, 1965–1972," In: Dolly Jørgensen, Finn Arne Jørgensen & Sara B. Pritchard, eds., *New Natures: Joining Environmental History with Science and Technology Studies* (Pittsburgh, PA: University

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law directly after the 1987 Montreal Protocol – in which Swedish scientists played a prominent role – and a carbon tax, still anathema in most nations, was introduced already in 1991.[39]

This is a far from comprehensive, even impressionistic, review of some of the factors that make up Sweden's domestic environmental governance performance. There is a well-established tradition of comparative study of environmental governance where such performance is measured and quantified across a range of indicators. Such studies have for the last couple of decades confirmed the impression of Sweden as an environmental pioneer and a high performer. "[T]he most progressive country across all observations is Sweden," a study of environmental policy "adoption" in twenty-four Organisation for Economic Co-operation and Development (OECD) countries tells us. A study focusing on environmental policy "change" repeats that Sweden overall does well, but that the early decades after 1970 were its most pioneering phase while other EU member countries have in many cases advanced more quickly in the 2000s. In a study of "sustainable citizenship," Sweden again ranks high, in line with findings about Sweden as a world leader in "political consumerism."[40]

This is essential information in the sense that Sweden's level of performance on a range of *national* environmental policy indicators cannot be disregarded in a study of its role in GEG. This performance builds what we may call progressivist legitimacy, a reputation among other nations, which helps explain Sweden's remarkable career as a

of Pittsburgh Press, 2013), 103–117; Ellen Griffith Spears, *Baptized in PCBs: Race, Pollution, and Justice in an All-American Town* (Chapel Hill, NC: University of North Carolina Press, 2014).

[39] Mats Engström, *Miljöframgångar: Från freonförbud till klimatlag* [Environmental Successes: From CFC Ban to Climate Law] (Stockholm: Fri tanke, 2020).

[40] Christoph Knill, Susumo Shikano & Jale Tosun, "Explaining Environmental Policy Adoption: A Comparative Analysis of Policy Developments in Twenty-four OECD Countries," In: Andreas Duit, ed., *State and Environment: The Comparative Study of Environmental Governance* (Cambridge, MA: The MIT Press, 2014), 53–79, on 69; Thomas Sommerer, "Early Bird or Copycat, Leader or Laggard?: A Comparison of Cross-National Patterns of Environmental Policy Change," In: *Duit, State and Environment*, 149–177; Michele Micheletti, Dietlind Stolle & Daniel Berlin, "Sustainable Citizenship: The Role of Citizens and Consumers as Agents of the Environmental State," In: *Duit, State and Environment*, 203–236. Dietlind Stolle & Michele Micheletti, *Political Consumerism: Global Responsibility in Action* (Cambridge: Cambridge University Press, 2013). The perception of Sweden as a global leader of sustainable development, a main strand of environmental policy since the 1980s, was already well established, see Katarina Eckerberg, "Sweden: Progression Despite Recession," In: William M. Lafferty & James Meadowcroft, eds., *Implementing Sustainable Development: Strategies and Initiatives in High Consumption Societies* (Oxford: Oxford University Press, 2000), 209–244.

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broker and facilitator on the global arena. In fact, we will argue in favor of such a conclusion throughout the volume. However, we also think it is useful to see the differences in analytical approach. The formalized studies of comparative national governance, with large amounts of performance data, do not in and of themselves tell us much about the complex scientific, diplomatic, and political work carried out by relatively small groups of individuals and institutions over long periods of time that have underpinned Sweden's outsized performance as a global governance agent. This is also a reason why our study is mainly historical, tracing what we see as performance trajectories where the various national properties have explanatory value, including those of a city. Very likely, the reverse is also true. If a country performs less well nationally, its legitimacy as a leader in GEG will weaken. We return to this issue at the end of the book.

SCIENCE AND ENVIRONMENTALISM

A significant aspect of Sweden's early adoption of green policies was the relatively peaceful co-existence of the state with a growing environmental movement, parts of which had strong public support and even attracted the attention of the government. From its infancy, Swedish environmentalism cross-fertilized with protest movements against the Vietnam War and the civilian use of nuclear energy, with young activists such as microbiologist Björn Gillberg, and Lennart Daléus – who would later become leader of Sweden's Center Party and eventually the executive director of Greenpeace Nordic – playing prominent roles.[41] Furthermore, Sweden was one of the earliest European countries to establish, in 1982, a Green party, which entered Parliament in 1988 and has remained there for over three decades.[42] This evolution of what has been described as a Nordic "Green State"[43] does not mean that environmental issues did not also

[41] Daléus was founding chairman of the Swedish branch of Friends of the Earth from 1971 to 1976, during which time he was also employed as information secretary at the Royal Swedish Academy of Sciences. His work in government and environmental advocacy has also included serving as head of department at the Environmental Advisory Council (*Miljövårdsberedningen*) and as international secretary at the Swedish Society for Nature Conservation.

[42] Except for a three-year period in the 1990s when they failed to receive the required 4 percent of the national vote.

[43] Robyn Eckersley, *The Green State: Rethinking Democracy and Sovereignty* (Cambridge, MA: The MIT Press, 2004). Karin Bäckstrand & Annica Kronsell, eds., *Rethinking the Green State: Environmental Governance towards Climate and*

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encounter a certain amount of skepticism that has played out in the politics of energy, forestry, and mining, including in relation to the Sami minority of the north.[44] Swedish environmental sins have certainly been committed in all these sectors, not to mention other industries as well as major infrastructure projects that have done significant harm to landscapes and natural systems. And, although environmental goals were introduced comparatively early and remain advanced by international standards, after over twenty years since their inception in 1999, only one of the sixteen politically instituted goals has actually been achieved.[45]

The role of science and scientists has been conspicuous, especially in the early years of establishing the environment as a policy issue, as we will elaborate in some detail in the chapters that follow. Here in the introduction, we will simply provide a basic overview of Swedish scientific performance in the immediate post-World War II decades, a time when Sweden made massive expenditures in science, technology, and medicine. As a formally neutral country during the Cold War, the Swedish state invested heavily in creating an oversized national defense force to underpin the simple strategy of making it too costly for any would-be aggressor to attack Sweden. This in turn justified the massive investments in research and development (R&D) that made Sweden one of the top countries in the world in scientific performance, in absolute terms (not just relative to size!) on par with Italy and Spain, and not far behind much larger countries such as France. Like the other Scandinavian nations, Sweden had a strong international orientation – in society in general, and academia in particular. Denmark and Norway were members of the North Atlantic Treaty Organization (NATO), and Sweden, even as a nonmember, had a well-established *de facto* collaboration with the Western defense alliance throughout the Cold War. All three countries adopted an Americanized popular culture with strong Anglo-Saxon influences in areas such as music, film, media, and design. This made Scandinavian scholars prone to develop a general Western and US-centered orientation. Although this

Sustainability Transitions (Abingdon, Oxon: Routledge, 2015). Andreas Duit, Peter Feindt & James Meadowcroft, "Greening Leviathan: The Rise of the Environmental State?," *Environmental Politics* 25(2016):1, 1–23.

[44] Kristoffer Ekberg & Johan Hultman "A Question of Utter Importance: The Early History of Climate Change and Energy Policy in Sweden, 1974–1983," *Environment and History* (2021), online, 1–23, https://doi.org/10.3197/096734021X16245313030028 (retrieved July 24, 2022).

[45] Swedish EPA (2021). The new environmental legislation of 1999 was prepared during Anna Lindh's term as Environment Minister 1994 to 1998. See, Engström, *Miljöframgångar*, ch 4.

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was most pronounced in the sciences and medicine, it was distinct in the human sciences as well.[46] Some of this science capacity was turned toward the environment, and further nurtured by significant transatlantic links that had started to form in the interwar years and were rapidly strengthened during the Cold War. Some such expertise was also employed in advising the Swedish government and its public agencies.

Sweden had in the 1960s crafted its distinct international persona as a small, scientifically advanced, independent, and neutral – although decidedly Western-leaning – nation. A pronounced version of this image of Sweden as a responsible and "progressive small state" was articulated by Olof Palme when he became Prime Minister in 1969, and throughout his first period in power lasting until autumn 1976. This image in many ways endured under the center-right governments that followed and continued after Palme and the Social Democrats returned to power in 1982. Even after Palme's assassination in February 1986, the image of Sweden's exceptional place in the world to some extent lingered on. It was on this late-1960s foundation, including a major national breakthrough of environmental issues in autumn 1967 (see Chapter 4), that this small country with considerable self-confidence could have the audacity to propose a major intervention on behalf of "the human environment." It was an era of major steps forward, of giant leaps for mankind, of moonrises, great responsibilities, and great expectations.[47] Proposing a conference of this magnitude and scope was an act of ingenuity, boldness, creativity, and

[46] Sverker Sörlin, "Introduction: The International Contexts of Swedish Science: A Network Approach to the Internationalization of Science," *Science Studies*, 5(1992): 1, 5–12. Thomas Schott, "Scientific Research in Sweden: Orientation Toward the American Centre and Embeddedness in Nordic and European Environments," *Science Studies* 5(1992): 1, 13–25. On Norwegian social science research after World War II, see Fredrik W. Thue, *Empirisme og demokrati: Norsk samfunnsforskning som etterkrigsprosjekt* (Oslo: Universitetsforlaget, 1997); Fredrik W. Thue, "Empiricism, Pragmatism, Behaviorism: Arne Næss and the Growth of American-styled Social Research in Norway after World War II," In: Juha Manninen & Friedrich Stadler, eds., *The Vienna Circle in the Nordic Countries: Networks and Transformations of Logical Empiricism* (Dordrecht: Springer, 2010), 219–229.

[47] Robert Poole, *Earthrise: How Man First Saw the Earth* (New Haven, CT: Yale University Press, 2008). Sheila Jasanoff, "Image and Imagination: The Formation of Global Environmental Consciousness," In: Clark A. Miller & Paul N. Edwards, eds., *Changing the Atmosphere: Expert Knowledge and Environmental Governance* (Cambridge, MA: MIT Press, 2001), 309–337. Denis Cosgrove, *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination* (Baltimore, MD: Johns Hopkins University Press, 2001); Denis Cosgrove, "Contested Global Visions: One-World, Whole-Earth, and the Apollo Space Photographs," *Annals of the Association of American Geographers* 84(1994):2, 270–294.

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also hope and confidence in politics and diplomacy – a *human* effort – as a means to tackle complex, international challenges.

The Declaration on the Human Environment, along with the 109-point Action Plan, was adopted on December 15, 1972, by the United Nations General Assembly (UNGA) as part of a series of resolutions on matters related to UNCHE. The adoption of the Stockholm Declaration provided a bookend for the process that was officially launched four years earlier on December 3, 1968, with UNGA resolution 2398. Largely drafted by Swedish diplomat Lars-Göran Engfeldt, UNGA 2398 endorsed "the Swedish initiative" – in the works for a year at that point – to convene the first ever global environmental conference under the auspices of the United Nations. The speech by Sweden's UN ambassador Sverker Åström before the December 1968 vote on the resolution in the General Assembly moreover marked the first instance that concern over climate change was raised in an official UN context.[48] In 1988, twenty years after UNGA 2398, the United Nations Environment Programme – a direct result and lasting legacy of the Stockholm Conference – together with the World Meteorological Organization, established the Intergovernmental Panel on Climate Change, with Bert Bolin as its founding chairman. Professor of meteorology at Stockholm University and a prolific science organizer, Bolin was one of the key Swedish experts who supported the Swedish initiative with scientific insight and played a significant role in bridging the spheres of science and policy during the Conferences preparatory process. As will be demonstrated across most of the chapters in this book, Bolin – perhaps the premier scientific institution builder of his generation – would continue to serve as a catalyst for climate science and governance into the twenty-first century.[49]

FIVE PERIODS OF "ENVIRONMENT"

This book is structured around analyses of what we identify as five especially significant periods in the evolution of GEG. The *first period* is associated with Swedish-born meteorologist Carl-Gustaf Rossby's return to Sweden in the late-1940s after spending the better part of

[48] Engfeldt, *From Stockholm to Johannesburg*. Sverker Åström, *Ögonblick: Från ett halvsekel i UD-tjänst* [Moments: From Half a Century of Service in the Foreign Office] (Stockholm: Bonnier Alba, 1992).

[49] Henning Rodhe, "Bert Bolin and His Scientific Career," *Tellus B: Chemical and Physical Meteorology* 43(1991):4, 3–7. Henning Rodhe, "Bert Bolin (1925–2007) – A World Leading Climate Scientist and Science Organizer," *Tellus B* 65(2013):1: 20583.

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several decades at elite academic institutions in the United States (Chapter 3). Once back in Stockholm, Rossby built up an institute – later under the leadership of Bert Bolin – for cutting-edge atmospheric and climate-oriented research that made Stockholm University a major node in the evolution and organization of climate science internationally. The *second period* is centered around 1972 – including several years before and after the Stockholm Conference – when the concept of "the environment," after a quarter century of growing significance, entered a phase of rapid expansion that included a broad search for policy applications on all scales, local as well as global (Chapters 4 and 5). The *third period* encompasses the late-1970s and the 1980s, when global environmental policy matured alongside the rise of "sustainable development," leading to an increased level of institutionalization at the international level. This period also marked the emergence of Earth System science as a distinct paradigm and its multiple implications for GEG, including the interconnections between global geophysical processes – climate change among them – and the already well-established catalogue of acknowledged environmental problems such as air and water pollution, resource depletion, poverty, and demography (Chapter 6). The *fourth period* starts around the turn of the millennium with a process of rapid conceptual pluralization that produced, popularized, and institutionalized ideas such as "the Anthropocene," "resilience," "planetary boundaries," "the Great Acceleration," and the concept of "environmental governance" itself (Chapters 7 and 8).

While this fourth period of GEG is in many respects still ongoing, we can discern the emergence during the 2010s of a new, *fifth period* marked by greater integration across an even broader range of themes and issues than "the environment" could offer in the postwar decades. A key concept in this period is "transformation," or "transition," indicating the necessity to conceive of sweeping systemic change to redress gross inconsistencies in the currently unsustainable human–Earth relationship. Perhaps it also signals a more proactivist approach, recognizing the weak de facto response to global challenges despite generations of rising awareness and pledges for widespread change. But it also encompasses new, or perhaps not so new but reinvigorated, sources of friction and inertia as the world has entered yet another phase of geopolitical tension, energy shortages, and a weakening of democracies. This includes the rise of a nationalist and populist right, which is often anti-environmentalist, climate skeptic, and opposed to the idea of transition, that is increasingly influencing politics in many countries. Sweden, which has for almost a

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century been seen as a beacon of internationalism, environmental stewardship, and progressive political culture (Chapter 2), has not been left unaffected by these populist trends (Chapter 9).

We argue that Stockholm has had a significant presence in all five of these periods of evolutionary work on and for the global environment, although with significant changes between the periods. Each phase of incremental progress related to GEG encompasses significant institutional formation and conceptual development that directly and indirectly connect Stockholm to processes at larger spatial and political scales. Focusing on these five periods and singling out Stockholm implies, perhaps needless to say, that some aspects of GEG will be examined more in depth, while others will be addressed more in passing. We firmly believe, however, that the selected periods and the activities they encompass are not only representative of the historical drafting and development of GEG but also represent load-bearing elements in its very construction. Also explored are key continuities between the five periods – including individual contributions as well as institutional and conceptual development – that underpin a narrative arc of what already encompasses nine decades, from the 1940s to the 2020s, spanning the entirety of the Great Acceleration so far.

FOUR CONCEPTS OF CONNECTION

Through archival research, oral histories, and a review of published literature, we uncover and examine historically the roles played by some of the key GEG "architects" – diplomats, diverse experts, scientists and science organizers, politicians and government officials including representatives of research funding agencies, activists, communicators, and an array of other actors. In explaining how the architects facilitated the forward motion of GEG over the course of multiple decades, we identify *four facilitating traits* that these actors employed in their efforts to shape the institutional and cognitive structures that social and political initiatives on environmental problems have been built upon. These traits we label as contributing, conceptualizing, connecting, and convening.

Each trait is derived from the Latin prefix *con*, meaning "with" or "together," reflecting the *integrative aspect* of the environment concept. "The environment," around the time its modern conception emerged shortly after World War II, was not in fact so much a new "thing" – a place, a space, or a new theory – as it was a new way of perceiving *relations* between a large number of phenomena in both nature and society.

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Humans became *together with* nature, entangled with it rather than separated from it.[50] Among the multiple ways that societies and governments chose to approach this new predicament, the Swedish model, we argue, emphasized precisely this set of *con*-approaches. We therefore apply these four traits as a set of analytical tools to make sense of the empirical story elaborated in the pages ahead.

It would be difficult for a government, society, or city to play any major role in environmental governance without access to a wide and deep pool of intellectual and institutional resources for science and scholarship on topics of environmental significance. Drawing upon the concept of "contributory expertise,"[51] *contributing* in our analysis entails the scientific knowledge that individuals and institutions have contributed in illuminating emerging environmental problems such as acid rain, climate change, ozone depletion, and many other issues. The contribution of financial and in-kind resources, such as providing facilities for international organizations based in Stockholm, is another salient factor in the building of key institutions that have underpinned the evolution of GEG.

Related to the scientific contributions, but still quite distinct, are the innovative ways in which knowledge and understanding of global environmental change have been framed or popularized. *Conceptualizing*, that is to say, crafting new ideas, terminologies, or cognitive lenses to apply in practice by experts, policymakers, and the wider public, has been a long-standing feature of the Stockholm story. Examples of emblematic GEG concepts with strong Stockholm associations include the Earth System, the Anthropocene, the Planetary Boundaries framework (including the "safe operating space for humanity" formulation), and resilience, among others. We posit that compelling, portable concepts are essential to lubricate social interaction and thus serve as heuristic tools that facilitate increased communication and consensus around governance.

Many of the GEG architects featured in this book have been embedded within and adept at establishing international networks and durable institutions that fostered and fortified structures of global environmental governance. This GEG groundwork largely involved a determined effort of *connecting* within and across national, sectoral, and disciplinary boundaries. The environment was in and of itself a boundless

[50] Warde, Robin & Sörlin, *The Environment*.

[51] Harry Collins & Robert Evans, *Rethinking Expertise* (Chicago, IL & London: The University of Chicago Press, 2008).

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concept. It could be extremely local, like the life-sustaining microcosm of a miniscule organism, but it could also encompass the entire Earth. On a cognitive level, although the environment tended in the early years to only engage a small subset of natural sciences, it has grown into a societal imperative that transcends disciplinary boundaries, making transdisciplinarity an essential prerequisite for scholarly understanding and political engagement, the capacity of which varies between nations and institutions.

Operating through professional networks, as well as utilizing established institutions such as the International Council for Science, the United Nations Environment Programme, the World Climate Programme, and, in Sweden, the Royal Swedish Academy of Sciences, an array of entrepreneurial GEG architects were able to convene a wide range of gatherings – from small but important expert workshops to major international conferences. These fostered and solidified scientific and political agendas on environmental and sustainability issues. *Convening*, and convening power, is therefore an essential aspect in explaining Stockholm's successful facilitation of a remarkable number of GEG ideas and initiatives. Bringing expertise to bear at various meetings – which served as sites of negotiation and circulation, not least of new concepts – could compensate for a lack of critical mass in a small country with a limited amount of hard power. Convening also served as a way of engaging and alerting the array of new, often pronouncedly internationally oriented, institutions that took root in Stockholm, from the International Meteorological Institute at Stockholm University (1947, expanding in 1955) to the Beijer Institute (1977), Stockholm Environment Institute (1989), and the Stockholm Resilience Centre (2007), as well as secretariats of international organizations such as the International Geosphere Biosphere Programme (1987) and one of the five global hubs of the current Future Earth research program (which replaced the International Geosphere-Biosphere Programme [IGBP] and its sister organizations in 2015). Moreover, Stockholm-based scholarly journals such as *Ambio* and *Tellus*, with more or less articulated GEG agendas, have provided platforms for epistemic and policy communities to take shape and to communicate research to wider audiences. At the interface of development and environment, the Uppsala-based Dag Hammarskjöld Foundation has since the 1960s brought together diplomats and leading development experts – many from the Global South – for high-level conferences and influential reports and in the pages of its in-house journal *Development Dialogue*.

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Our aim is not to provide a comprehensive overview of the dispersed GEG edifice.[52] It is rather to gain a degree of granular insight into some of the pivotal aspects of its drafting and development by delimiting our investigation to the particular location of Stockholm within a wider geography of knowledge and political activism. We identify the Swedish capital as a primary node and a knowledge cluster that has played a formidable role, well beyond its relatively small population, in the historical evolution of a polycentric system and a transnational network of experts, officials, and other actors. Our key proposition is that these have fostered expertise and institutions that helped render the entire Earth a governable object – an outcome of the increasing "entangling" of humanity with the interdependent "planetary" features of the human environment.[53] This was preceded by a fairly long period of conceptualizing and configuring the Earth as an *object of knowledge*, which in turn required scientific work in many fields, reaching further back into the early decades of the twentieth century and accelerating in geophysical sciences and cognate fields during the Cold War.[54] Ultimately, through the creative use of environmental numbers and temporalities and synchronizing work performed in multiple fields of science – made possible by rapid digitalization – the planet itself has been turned into a mediated and governable object with the rise of Earth System science since the 1980s.[55] Through these processes, the

[52] But see Sörlin et al., "The Great Dispersal." Other strands of the literature already provide further information, for example, Peter Dauvergne, ed., *Handbook of Global Environmental Politics* (2005), 2nd ed. (London: Elgar, 2013); John S. Dryzek, Richard B. Norgaard & David Schlosberg, eds., *The Oxford Handbook of Climate Change and Society* (Oxford: Oxford University Press, 2011); Amandine Orsini & Jean-Frederic Morin, eds., *Essential Concepts of Global Environmental Governance* (London: Earthscan, 2020); Helge Jörgens, Christoph Knill, and Yves Steinebach, eds., *Routledge Handbook of Environmental Policy* (Abingdon, Oxon: Routledge, 2023).

[53] William E. Connolly, *Facing the Planetary: Entangled Humanism and the Politics of Swarming* (Raleigh, NC: Duke University Press, 2017).

[54] Leah V. Aronowsky, *The Planet as Self-regulating System: Configuring the Biosphere as an Object of Knowledge, 1940–1990*. PhD diss. (Harvard University, Graduate School of Arts & Sciences, 2018). Benjamin W. Goossen, "A Benchmark for the Environment: Big Science and 'Artificial' Geophysics in the Global 1950s," *Journal of Global History* 15(2020): 1, 149–168.

[55] Sverker Sörlin & Erik Isberg, "Synchronizing Earthly Timescales: Ice, Pollen, and the Making of Proto-Anthropocene Knowledge in the North Atlantic Region," *Annals of the American Association of Geographers*, 111(2021):3, 717–728. Erik Isberg & Eric Paglia, "On Record: Political Temperature and the Temporalities of Climate Change," In: Anders Ekström & Hampus Östh Gustafsson, eds., *The Humanities and the Modern Politics of Knowledge: The Impact and Organization of the Humanities in Sweden, 1850–2020* (Amsterdam: Amsterdam University Press, 2022), 259–282, on 260, 266. Johan Gärdebo & Adam Wickberg, *Environing Media* (Abingdon, Oxon: Routledge, 2022).

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Earth System emerged from its previous identity as an object seemingly too massive to destroy and too large to dislodge from its natural state of "self-governance," and gradually entered the realm of what John Dryzek once called the "politics of the Earth."[56]

Although Stockholm as a center of GEG activities and initiatives is our primary object of research, the scope of our investigation extends well beyond that geographic location. Moreover, our analysis is not limited to Swedes operating there, as the cast of Stockholm-associated GEG architects has by no means been composed solely of Swedish nationals. Likewise, some Swedes have made major contributions while not physically based in their home country. These two types of "expatriates" represent a significant part of the Stockholm story. The enrollment of cosmopolitan expertise to Stockholm and the knowledge and networks cultivated by Swedes working outside Sweden are indeed crucial factors in explaining Stockholm's impact over the course of multiple decades. With its focus on the individual GEG architects and their transnational networks, this book is largely a study of an *inter-scalar "human environment."* This environment is *simultaneously local and global*: an extended *social sphere* centered on Stockholm that has been deeply engaged in developing and transmitting important elements of the *knowledge*, *ideas*, and *institutions* that represent *structural components of GEG*. In this book, we will encounter all of these.

OUR GUIDING LIGHTS – AND BLACK HOLES

The literature on the history of global environmental governance is still rather limited, and seen from the viewpoint of a particular city, it is almost nonexistent. There is nonetheless a great deal of research to draw upon. The intellectual terrain we have operated within while writing this book has had its own set of guiding lights, but also vast areas of darkness, and some strange black holes with a great deal of gravitational force that has allowed little enlightenment to escape so far. Book-length

[56] John Dryzek, *The Politics of the Earth: Environmental Discourses* (Oxford: Oxford University Press, 1997). There is also an argument to be made for an evolution from "world" to "global" and onward to "planet"; the latter concept being closer to the language of Earth System science. Hence, we can also see a movement from "globality" – or, even, "globalities" in the plural, suggesting a historical sequence of global understandings – to "planetarity." Rens van Munster & Casper Sylvest, eds., *The Politics of Globality Since 1945: Assembling the Planet* (London & New York: Routledge, 2016), see especially the editors' "Introduction," on 3–5.

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studies on the topic of GEG, widely construed, have included overviews of the environment as a concept, and of environmental diplomacy in the Anthropocene after 1945.[57] Collections addressing GEG issues, to some extent historically, have started to surface, albeit with long gaps in between publications.[58] The somewhat nebulous idea of governance (including its probably unavoidable ring of neoliberal reform from the 1980s until around the financial crisis of 2008–2009) has in recent years been brought together with the literatures on the Anthropocene and on Earth System science, a perspective introduced only in the previous decade.[59] However, none of this cross-disciplinary work has engaged with the geography of knowledge and institutions, and, moreover, there does not yet exist much systematic research on the origins and historical aspects of GEG.

On the conceptual history of "the environment," some of which examine its relation to the idea of "the Anthropocene," several new studies have appeared in recent years.[60] There is also a sizeable literature on environmental movements and organizations; many titles are historical, and most are regional or national. Few such works are global in coverage, although early examples of international histories include the above-mentioned books by John McCormick (1989) and Ramachandra Guha (2000). A fine example of how a national perspective, even from a small country, can be brought to bear on global developments is Peder Anker's recent book on Norway's environmental engagement (2020).[61]

[57] John R. McNeill & Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945* (Cambridge, MA: The Belknap Press of the Harvard University Press, 2016). Carolyn Merchant, *The Anthropocene and the Humanities: From Climate Change to a New Age of Sustainability* (New Haven, CT & London: Yale University Press, 2020).

[58] James Gustav Speth & Peter Haas, eds., *Global Environmental Governance: Foundations of Contemporary Environmental Studies* (Washington, DC: Island Press, 2006). Wolfgang Kaiser & Jan-Henrik Meyer, eds., *International Organizations and Environmental Protection: Conservation and Globalization in the Twentieth Century* (New York & Oxford: Berghahn Books, 2017).

[59] Frank Biermann, "Global Environmental Governance: Conceptualization and Examples," *Global Governance Working Paper* No 12. Amsterdam, Berlin, Oldenburg, Potsdam: The Global Governance Project (2004). www.glogov.org. Frank Biermann, *Earth System Governance: World Politics in the Anthropocene* (Cambridge, MA: MIT Press, 2014). Frank Biermann & Eva Lövbrand, eds., *Anthropocene Encounters: New Directions in Green Political Thinking* (Cambridge: Cambridge University Press, 2019). Biermann & Kim, *Architectures of Earth System Governance*.

[60] Benson, *Surroundings*. Warde, Robin & Sörlin, *The Environment*.

[61] Peder Anker, *The Power of the Periphery: How Norway Became an Environmental Pioneer for the World* (Cambridge: Cambridge University Press, 2020).

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Methodological nationalism is the norm, which often means looking inward while using comparisons and influences from the outside to broaden the analysis. Using nations, let alone cities, to look outward and "globally" mirror the environment is uncommon, although Julia Adeney Thomas has done so using Japan as her prism.[62] There is a great deal of literature, some of it historical, on the environment, sustainability, and the developing world, including justice and legal aspects.[63] But again, these books tell other stories than we do, and links to Stockholm 1972 are typically sparse and tend to repeat what is already known.

A rapidly growing field is the humanities and social sciences working on the Anthropocene, with literally dozens of book-length studies in several languages being published in less than a decade. A few of the Anthropocene volumes clearly go deeper into some elements that we also examine, for example, the history of certain aspects of Earth System science. But typically, these do not make very much of global governance issues, let alone historicize them. The same goes for several works published on the history of the environmental, climate, and geophysical sciences.[64] We share with them their deep curiosity about sprawling new areas of knowledge and the interface between science and policy. However, our interest in science leans more toward understanding the rise of governance rather than the development of scientific knowledge itself. Besides, this body of work pays little attention to GEG and does not attempt to construct a narrative arc of its historical evolution. Another field with tangential relevance is that of the modern

[62] Julia Adeney Thomas, "Using Japan to Think Globally: The Natural Subject of History and Its Hopes," In: Ian Jared Miller, Julia Adeney Thomas & Brett L. Walker, eds., *Japan at Nature's Edge: The Environmental Context of a Global Power* (Honolulu: University of Hawai'i Press, 2013), 293–310.

[63] For example, Borowy, *Defining Sustainable Development*. Eve Croeser, *Eco-Socialism and Climate Justice: A Neo-Gramscian Analysis* (Abingdon, Oxon: Routledge, 2021).

[64] Spencer Weart, *The Discovery of Global Warming* (2003), new ed. (Cambridge: Harvard University Press, 2008). James Fleming, *Fixing the Sky: The Checkered History of Weather and Climate Control* (New York: Columbia UP, 2010). James Fleming, *Inventing Atmospheric Science: Bjerknes, Rossby, Wexler, and the Foundations of Modern Meteorology* (Cambridge, MA: The MIT Press, 2016). Jacob D. Hamblin, *Arming Mother Nature: The Birth of Catastrophic Environmentalism* (New York: Oxford University Press, 2013). Joshua P. Howe, *Behind the Curve: Science and the Politics of Global Warming* (Seattle, WA: University of Washington Press, 2014). Mike Hulme, *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge: Cambridge University Press, 2009). Mike Hulme, *Climate Change* (Abingdon: Routledge, 2021). Naomi Oreskes, *Science on a Mission: How Military Funding Shaped What We Do and Don't Know about the Ocean* (Chicago: University of Chicago Press, 2021).

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history of environmental expertise and advice, including a recent volume that tries to understand the relative tardiness of climate science and other policy-relevant science fields to influence decision-making. In the same category falls Susan Owens' important book on the Royal Commission on Pollution in the United Kingdom.[65] In conclusion, we can say that there is now a fairly sizeable literature on science and cities that has appeared in the last thirty years. Less has been written on the geography of policy influence and very little on the combination of these two fields of study: the geography of environmental science and policy in modern history.

[65] Michael Oppenheimer, Naomi Oreskes, Dale Jamieson, Keynyn Brysse, Jessica O'Reilly, Matthew Shindell & Milena Wazeck, *Discerning Experts: The Practices of Scientific Assessment for Environmental Policy* (Chicago: The University of Chicago Press, 2019). Susan Owens, *Knowledge, Policy, and Expertise: The UK Royal Commission on Environmental Pollution 1970–2011* (Oxford: Oxford University Press, 2015).

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