

Simonis, Udo E.

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## BOOK REVIEWS

Frank Biermann: **Earth System Governance: World Politics in the Anthropocene**  
The MIT Press, Cambridge, MA and London, 2014 (xx+ 267pp.),  
ISBN: 978-0-262-52669-2.

In the year 2015, global environmental governance will go through a veritable stress test. In the summer, the UN will try to set up a new financial architecture for global development; in the autumn, new Sustainable Development Goals will have to be agreed upon; and in the winter, a new global climate treaty – the follow-up to the Kyoto Protocol – is due to be signed in Paris. Will these be successes or failures of global governance?

This book by Frank Biermann arrives at the right time for this strategic scenario. Humans now influence all biological and physical systems of the planet. Almost no species, land area, or part of the oceans has remained unaffected by the expansion of human activity. At the same time it is apparent that the institutions and mechanisms by which humans govern their relationship with the natural environment are utterly insufficient. It is this basic understanding of mismanagement which provides the foundation for the *Earth System Governance* series, edited by Frank Biermann and Oran R. Young.

Biermann starts his new book with two powerful statements: “Humans have altered their environment since prehistoric times; but today, we have begun to transform the planet” and “Humans are no longer spectators who need to adapt to the natural environment; we have become a powerful agent of earth system evolution” (p. 1). He then adds a prediction: “This complex transformation of planetary systems by humankind is becoming one of the key political challenges of the twenty-first century. Political responses that fail to recognize this changed context are bound to fail. A new paradigm in both research and policymaking is needed” (p. 1).

With this book Biermann wants to explore a new perspective on environmental politics: “earth system governance”. For this, he advances both an analytical and a normative perspective on earth system governance.

The analytical part studies the emerging phenomenon as it is expressed in hundreds of international regimes, international bureaucracies, national agencies, local and transnational activist groups, and expert networks. The analytical perspective thus is about how the current governance system functions. The author studies this by assessing five key elements of governance: first, the problem of agency; second, the architecture of governance; third, accountability and legitimacy; fourth, the problem of fair allocation of resources; and fifth, the adaptiveness of governance mechanisms. The detailed analysis of these five dimensions is intended to lead to a better understanding of the prevailing lack of effectiveness in the current system of earth system governance.

The normative part is the critique of the existing systems of government in the light of the exigencies of earth system transformation in the Anthropocene. This normative

approach understands earth system governance as a political project that engages more and more actors who seek to strengthen the current architecture of institutions and networks at local and global level. Therefore, proposals for potential reform are presented in order to make governance better equipped to deal with the challenges that lie ahead. Some of these proposals might not seem realistic in the short run, but do provide a long-term vision.

Biermann concentrates in this book on international and transnational politics. Still he emphasizes that earth system governance has to be seen as a process that must involve, and be strongly based on, local actors and national policies, that draws on the engagement of cities and civil organizations, on the support of local authorities, the social responsibility of corporations, and the general support of citizens. Global multilateral institutions, intergovernmental cooperation, and the UN system are thus only one dimension of earth system governance. Still, most of his policy proposals target multilateral institutions, and the United Nations system in particular.

In conceptualizing his book, the author conceives earth system governance as an emerging domain of political cooperation and conflict, similar to more established domains such as health governance and economic governance. But the subject addressed here is the entirety of the planetary system as shaped by human actions. The need for earth system governance thus is linked to the advent of the Anthropocene, an epoch in which planet Earth is being transformed by the myriad activities of its dominant species – human beings.

No wonder then, that earth system governance is presented as one of the most fascinating areas of research. Such research necessarily transcends the boundaries between different disciplines, and the boundaries between the natural and the social sciences. Hence, various chapters focus on proposals for change, addressing the role of the state, public-private networks, science institutions, and international organizations; the overall global institutional architecture; the accountability, legitimacy, and democratic quality of governance; the equity implications and allocative effects of governance; and, finally, policy options to deal with adaptation to earth system transformation.

Agents are at the core of earth system governance. In Chapter 3, Biermann discusses four important agents: nation-states; transnational public policy networks; science networks; and international bureaucracies. The nation-state is challenged by earth system transformation in a number of ways. Both legitimacy and accountability are becoming more complex, the adaptive capacity of the state has to be increased, and international cooperation becomes more important. But besides this, none-state agents will play an increasingly important role. This can be a complement to effective state action, though not a substitute or even alternative, Biermann states.

Scientists, too, are important agents in earth system governance, through their global networks for research, and the assessment of this research. In this process, scientists, willingly or unwillingly, have become political actors. Finally, in this chapter, international organizations and bureaucracies are looked at, and the lack of a core agency is deplored. Here, Biermann makes a first plea for the upgrading of the United Nations Environment Program to a fully-fledged World Environment Organization (WEO). This topic seems to be a hobby-horse of the author and therefore comes up at various places in the book. But he gives good reasons for this: “The establishment of a World Environment Organization would improve coordination of earth system governance; pave the way for the elevation of environmental policies on the agenda [...]; assist in developing capacities for environmental policy [...]; and strengthen the institutional arrangement for the negotiation of new conventions and action programs” (p. 78).

In particular he thinks such an organization would strengthen the capacity of countries in terms of both mitigation and adaptation.

Chapter 4 is on governance architecture. This notion stands between two other concepts in international relations research: “regimes” and “order.” Architecture, in Biermann’s understanding is more neutral and accounts for dysfunctional and unintended effects, too. He uses a nice picture to hint at the problems that exist: “The concept of architecture does not assume the existence of an architect” (p. 82).

No doubt, the actual architecture of earth system governance is not yet a masterpiece; on the contrary. The fragmentation of governance is common in today’s world politics. “Many policy domains are marked by a patchwork of international institutions that are different in their character (organizations, regimes, norms), their constituencies (public and private), their spatial scope (from bilateral to global), and their subject matter (from specific policy fields to universal concerns)” (p. 83). Different forms of fragmentation exist, ranging from synergistic to cooperative or conflictive fragmentation. One alternative to the established sectoral global environmental policies (ozone, climate, biodiversity, etc.) has been advanced by the Planetary Boundaries Initiative, who base their reasoning on the nine planetary boundaries identified by Rockström *et al.*, arguing that each planetary boundary should be regulated by a specific institution.

Biermann thinks such planned top-down institutional reorganization is neither feasible nor necessary (p. 92). He prefers political institutions to follow social dynamics. In some cases, human activities are directly related to a planetary boundary, as in the case of stratospheric ozone depletion. In others, global interdependencies may require a strong global institution, as in the case of climate change. Other issues are more disparate, and their causation is diffuse. Here, as in the case of land use change, a domain-specific architecture of nested institutions might be more appropriate.

Institutional fragmentation in existing earth system governance is ubiquitous. It hinders progress in negotiating targets and actions, tends to privilege the more powerful countries and groups, limits incentives for subnational actors to take action, and reduces the credibility, stability, and coherence of the architecture of earth system governance. To overcome this fragmentation, Biermann proposes a number of structural reforms. First, he says, there is a need to actively manage institutional interactions in order to minimize negative impacts of fragmentation. Second, a WEO is needed as a powerful agent of governance. Third, a High-Level UN Sustainable Development Council could help to integrate economic with environmental policies. Fourth, a UN Trusteeship Council could advance the governance of those areas that are beyond the jurisdiction of any state. And fifth, most importantly, decision-making procedures in intergovernmental negotiations urgently need reform. The consensus principle, still widely applied, slows down rule making and caters to the wishes of the least interested actor. The one-country-one-vote rule creates imbalances in decision making that put Lichtenstein and Monaco on a par with Brazil and China. Instead, weighted-majority decision making could help to overcome the shortcomings of current systems. In addition, Biermann suggests that certain core norms of earth system governance should be seen as peremptory norms of international law, as norms from which no derogation is permitted.

The author also identifies substantive variations in existing governance arrangements in terms of their legitimacy, accountability, and democratic quality. In Chapter 5, he therefore sketches three avenues for greater citizens’ participation in international decision making: through special chambers of civil society; a parliamentary

assembly; or through a global deliberative citizens' assembly. As all three proposals raise the question of political feasibility, he appraises their acceptability in a number of globally important countries, especially China and the USA. At the same time he deplores the fact that the study of legitimacy, accountability, and democratic quality of earth system governance is still in its infancy.

The allocation of the costs of earth system governance is already a fundamental political question, as the endless climate policy negotiations have shown. As for future modes of allocation, it seems fundamentally important that all mechanisms are based on multilateral agreement, as is demonstrated in Chapter 6. Biermann thinks that a World Environment Fund (WEF) could be one way to ensure a fair allocation of the costs of earth system governance. Another option is international markets of environmental obligations that increase efficiency and flexibility in governance and could at the same time – if well designed – advance the interests of the poorer nations. In terms of mitigation and adaptation, fair allocation of costs is certain to become a major concern for researchers and practitioners alike.

In general, Frank Biermann is an optimist. However, in Chapter 7 he asks us also to prepare for the worst. "If drastic earth system transformations cannot be prevented, the existing institutions, governance mechanisms, and intergovernmental processes face a massive, unprecedented challenge." Food shortages, water scarcity, land degradation, natural disasters, mass migration, or disruption of international trade and communications could require quick and effective responses which the current systems do not guarantee. Governance dilemmas will thus come to the fore should drastic earth system transformation materialize.

Biermann outlines in some length, and with some passion, a specialized regime for the recognition, protection, and resettlement of climate migrants (pp. 184-189). Similar studies seem to be needed for other areas, from water governance to health and food governance – not only in terms of emergency response and disaster relief, but as organized global adaptation.

It seems at first sight that the institutional blueprint of the future earth system governance suggested in this book would imply the largest transformation of the United Nations system since 1945. However, it would in reality only mean a constitutional moment that many authors have called for long since. A complete implementation of these proposals would certainly require a revision of the UN Charter. But many core elements of the reforms suggested could be undertaken without such a revision. For instance, a WEO or a WEF could be established through an intergovernmental agreement among the countries willing to join the organization. Other changes, like qualified majority voting, better inclusion of citizens, or the protection of the most vulnerable people could be enacted, Biermann is sure, by decisions under multilateral environmental agreements.

Globalization is changing our lives in multiple ways. One facet is the global harmonization of cultures, belief systems, and languages. Poetry is a medium that celebrates the diversity of national and local languages while speaking a universal tongue. Frank Biermann had the wonderful idea of illustrating the book with poems that are not only beautiful in their original language (in German) but also in the global language of scholarly and political discourse (in English). The poems chosen (by Jacob von Hoddis; Bertolt Brecht; Johann Wolfgang von Goethe; Klaus Schwitters; and Friedrich Schiller) all add a unique perspective on the challenges of earth system governance. They are from times when greenhouse gases, planetary tipping points, or holes in the stratospheric ozone layer were unknown. Yet they all share a global message, or a global warning.

The eighth poem is Bertolt Brecht's *The Tailor of Ulm* (in 1592), a poem about a tailor who believed he could fly, and the bishop who responded that people never would fly. This poem opens the discussion in the concluding chapter of the book, inviting readers to make their own assessment of the parable. Biermann thinks that there are too many bishops and too few tailors around. Too few people who believe that, with some imagination and strong political will, one can find better pathways of human – nature coevolution. So he tends to side with the Tailor: “Yes, humans can fly, and they can take off to a better future and more effective earth system governance” (p. 212).

To sum up: Frank Biermann's book is an imaginative must-read on the challenges of *Earth System Governance* – a book about a realistic utopianism. It conforms to all central criteria for a seminal academic work: it is theoretically interesting, empirically relevant, and up-to-date. And what is more, it is also a bibliophilic delight.

**Udo E. Simonis**

(Science Centre (WZB), Berlin, Germany)