

ADAPTIVENESS

Rapid and transformational actions are evermore urgently needed to achieve a just, resilient, and ecologically sustainable global society, as envisioned and supported by the Sustainable Development Goals. Moreover, dynamic governance approaches are vital for addressing changing and uncertain conditions. At many levels, governance needs to be responsive and flexible, in one word, adaptive. This book provides a state-of-the-art review of the conceptual development of adaptiveness as a key concept in the environmental governance literature, complemented by applications from global, regional, and national levels. It reviews the politics of adaptiveness, investigates which governance processes foster adaptiveness, and discusses how, when, and why adaptiveness influences earth system governance. It is a timely synthesis for students, researchers, and practitioners interested in environmental governance, sustainability, and social change processes. This is one of a series of publications associated with the Earth System Governance Project. For more publications, see www.cambridge.org/earth-system-governance.

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Cambridge University Press
978-1-108-47902-8 — Adaptiveness: Changing Earth System Governance
Edited by Bernd Siebenhüner , Riyanti Djalante
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Changing Earth System Governance

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CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom
One Liberty Plaza, 20th Floor, New York, NY 10006, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia
314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India
79 Anson Road, #06–04/06, Singapore 079906

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781108479028
DOI: 10.1017/9781108782180

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First published 2021

A catalogue record for this publication is available from the British Library.

ISBN 978-1-108-47902-8 Hardback
ISBN 978-1-108-74914-5 Paperback

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Foreword

Adaptiveness has been a core concept in the global research community on earth system governance since its very beginning. All 11 global conferences on earth system governance that have been held so far included a dedicated stream of panels on adaptiveness, and numerous publications have referred to this concept and the more detailed research questions that were laid down in the first Science and Implementation Plan of the Earth System Governance (ESG) Project.

This success of the adaptiveness strand in the ESG Project was not foreseeable when the project was founded in the mid-2000s. In fact, the concept of adaptiveness was introduced in the first science plan rather as a compromise – as a new umbrella term to bring together strong communities of scholars that all operated under different conceptual terms, and that we hoped to attract to the inclusive global network that the ESG Project was envisioned to become. There were, to name just a few, the prolific community of scholars working around the concept of *resilience*, as well as the many colleagues looking into questions of *adaptive governance* or *adaptive management*. Scholars of *anticipatory governance* tried to explore how current institutions can be made more adaptive to future changes and to better understand the inherent dynamics of socio-ecological systems. A different, even though overlapping, community studied *adaptation*, mainly to the emerging threat of climate change. Further widely used terms in these debates were the *vulnerability* and *adaptive capacity* of communities, regions, and countries. A separate but equally large group of sustainability scholars investigated *social learning* and *institutional dynamics*, and what is today often known as *governance for transformation*.

All these communities looked into ways of how societies and governance systems can adapt to a dynamic environment, anticipate future changes, and learn. *Adaptiveness* became the umbrella concept that brought these communities together.

When we introduced the term ‘adaptiveness’ in the first ESG Science and Implementation Plan, it was of course not a neologism as such; the word adaptiveness has been used in the English language for at least 150 years (following the *Collins Dictionary*). But none of the main research communities at that time worked with explicit reference to adaptiveness. This term, once accepted in the new science plan, thus allowed all communities to join the ESG Project and to find their place in the larger and integrative scientific framework that the first science plan offered. Students of resilience, adaptation, vulnerability, adaptive governance, and social learning could all present their research, engage in fruitful dialogue, and learn from different research traditions in the adaptiveness stream that the ESG Project organised at its annual conferences, at the many smaller workshops, and in its publication outlets. The concept of adaptiveness even helped to organise the research community very practically: research fellows and lead faculty of the project who worked on resilience or adaptive governance were all internally labelled in the project’s databases as part of the adaptiveness stream, and then brought together in specialised mailing lists or other activities by the ESG International Project Office.

The 2009 Science and Implementation Plan also helped to raise attention in the adaptiveness research community about other analytical themes that the plan emphasised.

The analytical theme of ‘architecture’, for example, brought the adaptiveness research community in conversations around the institutional hardware of governance (see *Architectures of Earth System Governance*, Cambridge University Press, 2020). What are the institutional arrangements, for instance, that help foster resilience in local communities? Which institutional arrangements advance social learning, and how can such arrangements be made more dynamic and adaptive? Or, what types of global regimes can best support global adaptation governance, for example when it comes to increasing migration pressures or food crises because of climate change?

The analytical theme of ‘agency’, on its part, supported a more sophisticated analysis of the actors and agents that were influential in earth system governance, including when it comes to adaptiveness (see *Agency in Earth System Governance*, Cambridge University Press, 2019). The ‘agency’ research programme brought a new focus on actors and agency beyond national governments; the debate now focused more on the agency of non-state actors, from environmentalist organisations, business actors, or cities to the many public–private partnerships or private governance schemes, such as the Forest Stewardship Council. All this proved to be highly important for adaptiveness research, where national governments are still important but often need to work in collaboration with private actors, at local, national, and transnational levels.

Finally, the 2009 Science and Implementation Plan of the ESG Project added new normative considerations that other sustainability research programmes – such as the International Human Dimensions Programme on Global Environmental Change – had not emphasised much at that time. One more normative line of investigation was the research theme of ‘accountability and legitimacy’ in the 2009 Science and Implementation Plan, which also covered questions of legitimacy, transparency, and more broadly democracy. Here again, links to the adaptiveness research programme – and related themes of resilience, adaptation, or adaptive governance – proved highly fruitful. At earth system governance conferences, for instance, scholars were able to debate the democratic quality of local adaptation policies or the legitimacy of novel types of adaptive governance that often grant a more limited role to state actors. How can we understand the democratic legitimacy, for example, of the increasing role of private governance mechanisms in local adaptation to climate change? Who takes decisions there, with what legitimacy, and with accountability to whom?

The second more normative line that the ESG Project has prioritised from the start is research on questions of justice. In the 2009 Science and Implementation Plan, research on justice was framed under the heading of ‘access and allocation’; more recently, the terminological debate moved towards a new notion of ‘planetary justice’. Again, the relevance of justice research to questions of adaptive governance, resilience, or adaptation is evident. Adaptation and adaptive governance are, like all political processes, activities that allocate values and goods in societies, from local to global. Adaptation and adaptive governance generate losers and winners: having brought adaptiveness research in dialogue with research on justice within the ESG Project proved tremendously fruitful for both.

The first Science and Implementation Plan of the ESG Project was not implemented until 2018. Since then, multiple harvesting activities have been underway. It is wonderful to see, in this volume, the breadth and depth of the adaptiveness stream in earth system governance research as it has developed over the last decade. Our community is grateful to this volume’s editors – both leading scholars of adaptiveness in earth system governance for over a decade – for having compiled this harvesting volume, a major milestone in its field.

And there is little doubt: this line of research will continue to flourish, be it simply because the planetary crisis of earth system transformations accelerates. The global mean temperature is more than 1°C above pre-industrial levels, and the first impacts of a global climate crisis are widely documented. The loss of biodiversity, the destruction of ecosystems, the expanding gap between rich and poor on this planet, and now added the global pandemic of COVID-19 that is accelerating at the time of writing: all this shows that the adaptiveness of our

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societies, and of the governance systems that we have put into place to steer societal behaviour, is still as relevant as it has been in the mid-2000s when the ESG Project was set up. This adaptiveness of governance will be a key variable in humankind's increasingly stormy voyage into an Anthropocene that is full of uncertainties, risks, and dynamics, but also still hope and promise.

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Cambridge University Press
978-1-108-47902-8 — Adaptiveness: Changing Earth System Governance
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Preface and Acknowledgements

It has been a long journey to conceptualise, bring together, and finalise this book. Its origins can be traced back to a memorable workshop in 2008 in New Delhi, India, when the Earth System Governance (ESG) Project was officially adopted. It was at this workshop that the project's first Science Plan was finalised by the Scientific Planning Committee and welcomed by the Steering Committee of the International Human Dimensions Programme on Global Environmental Change. In the following year, the implementation of the Science Plan began with an international conference of the ESG Project held in Amsterdam. Since then, the ESG community has grown substantially to be the largest global social science research alliance in the area of governance and global environmental change to date.

Subsequent to the launch of the ESG Project, the idea was born to synthesise major research strands and findings concerning the analytical theme of adaptiveness. During the 2016 Conference on Earth System Governance in Nairobi, Kenya, the editors drafted and submitted a first proposal for the initiative. Like similar processes reaping the fruits of research on the themes of architecture and agency, this book contributes to the larger ESG Harvesting Initiative. After the Scientific Steering Committee and in particular Frank Biermann had welcomed the initiative, we outlined a draft concept of the harvesting process in the theme of adaptiveness as one of the core analytical themes of the 2008 ESG Science and Implementation Plan. It was over a hearty African lunch when the idea of an edited book on adaptiveness in the framework of the Harvesting Initiative came into being.

The chapters have been sourced by two calls sent out in January and April 2017 that resulted in a first list of book chapters and authors. The majority of the writing processes took place during 2017 and 2018. During the 2018 Utrecht Conference on Earth System Governance, we presented the initial findings from our synthesis chapter that is now Chapter 2 in this book. There, the author

workshop resulted in the list of guiding questions for the individual chapters and the proposed title of the book. Various authors of this book's chapters presented their ideas and chapter concepts. In a separate meeting with book authors, we presented the progress and discussed lingering research topics and remaining gaps in the literature on adaptiveness. Moreover, together we drafted a new set of forward-looking questions and research agendas on adaptiveness condensed in the so-called Utrecht Questions, as presented in the concluding chapter of the book.

This book was finalised during the first half of 2020 when the World Health Organisation declared COVID-19 a pandemic, affecting almost all nations and communities. These conditions call even louder for the need to strengthen our efforts to create a more sustainable, equitable, and adaptive global society with suitable governance modes and structures. Individuals as well as governments have adapted rapidly, shifting to new modes of life and governance. Privately, we have changed to doing almost everything online. Many governments have demonstrated a high responsiveness towards new data and the urgency of the situation by often drastic measures that have led to the hitherto most effective and fastest emission reductions locally as well as globally. Here again, we need to learn to live with changes and risks, be they dramatic or slow, simple or complex, localised or global, and navigate through them to maintain continuity and progress, and to advance towards the global goals of sustainability. As the concept of adaptiveness is understood and discussed in this book, it can help to manoeuvre through crises such as COVID-19, challenging governance approaches and systems to respond to dramatically changing conditions in socio-ecological systems. The 'new normal' is a dynamic change and it is here with us for years to come. Thus adaptive governance will remain urgent and essential to effectively find and implement solutions.

We would like to thank all of the authors of the 10 chapters who have been actively involved in writing and reviewing the chapters since 2017 and for patiently supporting the publication process. All authors not only contributed their chapters and participated in meetings but also peer reviewed other chapters. In particular, we thank H. Carolyn Peach Brown from the University of Prince Edward Island, Canada, for her continuous support and the expeditious reviews of numerous chapters. As co-author of the first ESG Science Plan chapter on adaptiveness, Louis Lebel supported the process as author and by providing most helpful comments to chapters. Susi Moser gave much appreciated comments during the Utrecht meeting and Raffaella Kozar of the United Nations University – Institute for the Advanced Study of Sustainability (UNU-IAS) in Japan contributed to a chapter, but got interrupted by the COVID-19 crisis. Rakhyun Kim of Utrecht University, who is also the co-author of the new Science Plan, reviewed one of the chapters almost overnight. We remain most grateful for his efforts.

The majority of the editing progress took place in 2019 and 2020. As editors, we wish to express our sincere gratitude to Nicolas W. Jager and Julie P. King who came on board in 2019 as authors and were involved in the editorial process. We are particularly indebted to Julie P. King for coordinating and facilitating the communication and the submission processes in an extremely well-organised and friendly manner. Without her, the book would have hardly come together. We also gratefully acknowledge the research assistance provided by Franziska Beck, Anna Krämer, and André Meinhard, graduate students from Carl von Ossietzky University of Oldenburg, Germany, in helping conduct the data collection for the systematic literature review of the adaptiveness literature as presented in Chapter 2 and reformatting the references for the whole book.

We are greatly indebted to Cambridge University Press, particularly Sarah Lambert in assisting the submission processes until this book came into fruition. Also thanks to Emma Kiddle and Sai Priya Katta at Cambridge University Press for their assistance, patience, and support at different stages of the process. To the three anonymous reviewers of the book proposal, we are grateful for your early input and thoughtful comments. Many thanks also go to Ruben Zondervan, who coordinated the Harvesting Initiative during his term as executive director of the ESG Project. Finally, we would like to warm-heartedly thank our colleague and friend Frank Biermann of the Copernicus Institute of Sustainable Development at Utrecht University, the Netherlands, for his enthusiasm and leadership in the entire ESG Project, for pushing and supporting us in the Harvesting Initiative and for contributing the foreword to this book.

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