

Urbanization and Sustainability

Human-Environment Interactions

VOLUME 3

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Urbanization and Sustainability

Linking Urban Ecology, Environmental
Justice and Global Environmental Change

 Springer

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Preface

In the Anthropocene era, human activity has altered biophysical systems on a planetary scale, accelerating species extinctions, radically changing land cover, and contributing to rising global temperatures. Over the last half century, there has been growing recognition that the ability of earth's ecosystems to support unbridled resource use is limited. Indeed, many biophysical processes on which we depend are presently overburdened, creating new uncertainties about the long-term viability of societies. The grand challenge for the coming decades will be to transform the ways we think about and act upon the relationship between people and the environment in order to transition toward a sustainable future.

In this book, we focus on three themes that, when combined, contribute to sustainability scholarship and practice. The first is global environmental change, understood not as unidirectional human degradation of the biophysical world, but as the integration of social and ecological dynamics on multiple spatial and temporal scales. Global environmental change is meaningful only when we incorporate the feedbacks, cascading effects, thresholds, lags, and interactions between societies and ecosystems.

The second theme is urbanization. We live in the Anthropocene, but we are also living in the urban century. Cities are and will continue to be the primary human habitat, and urbanization processes will drive and respond to the challenges posed by global environmental change. Growing urban populations can create negative pressures on global ecosystems, but as centers of innovation and increased productivity, cities can also be the seedbeds of solutions to global sustainability challenges.

The third theme of the book is justice. Urbanization and global environmental change have created gross inequities, with some people, often the most vulnerable, suffering a disproportionate burden of ill effects. A focus on justice, however, can ameliorate existing and future inequities while addressing the fundamental normative underpinnings of sustainability.

Sustainability means more than surviving – it is about envisioning a desirable albeit plausible future and working toward that goal. The future will be urban and dependent on careful management of socio-ecological systems from local to global

scales and from near to distant time horizons. We argue in this book that justice is a desirable sustainability goal, both from a moral stance and as a framework for reenvisioning the future of urbanization and global environmental change.

This book stems from a workshop on linking ecology, environmental justice, and global environmental change that we organized for the Open Meeting of the International Human Dimensions Programme on Global Environmental Change (IHDP) in Bonn, Germany, in 2009. IHDP is an interdisciplinary international scientific program that catalyzes and coordinates research on the human dimensions of global environmental change. Efforts focus on research, building research capacity, and international scientific networking. IHDP works at the interface between science, policy-making, and funding agencies to coordinate and generate scientific knowledge on socio-environmental systems and advance understanding of global environmental change processes and the consequences for sustainable development. At the 2009 IHDP Open Meeting, Fritz Schmuhl from Springer Press encouraged us to consider a book project based on the workshop theme. In addition to his patience, we are very thankful for his guidance and encouragement in seeing this project through to completion.

We have benefitted a great deal from being part of the Urbanization and Global Environmental Change (UGEC) project, a core initiative of the IHDP. The UGEC project has been an international leader in promoting the science and practice of urbanization and global environmental change. UGEC, through diverse science coordination actions, has helped shift scholarly attention toward gaps of knowledge regarding the bidirectional interactions and feedback loops between urban areas and the global environment. Many of the ideas in this volume originated in conversations with UGEC steering committee members, project associates, and in meetings supported by the project internationally. The National Center for Ecological Analysis and Synthesis, sponsored by the US National Science Foundation, provided support for three workshops that were incredibly fruitful in developing our thinking on the main themes of the book. The Baltimore Ecosystem Study and the Central Arizona Phoenix Long Term Ecological Research projects, supported by the US National Science Foundation, have helped us push the boundaries of urban environmental research and thinking. We also wish to express our thanks for the continued support of the Global Institute of Sustainability and the School of Sustainability at Arizona State University. As well as housing the UGEC International Project Office and providing key financial support, the institute and school have created a stimulating hub of thinking and practice on sustainability science. This book is very much an offspring of that unique and vibrant marketplace of ideas.

Christopher G. Boone
Michail Fragkias

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