

THE SPATIAL DIMENSION OF RISK

How geography shapes the emergence of riskscapes

Edited by Detlef Müller-Mahn

earthscan
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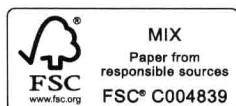
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The Spatial Dimension of Risk

Through its exploration of the spatial dimension of risk, this book offers a brand new approach to theorizing risk, and significant improvements in how to manage, tolerate and take risks. A broad range of risks are examined, including natural hazards, climate change, political violence and state failure. Case studies range from the Congo to Central Asia, from tsunami and civil war-affected areas in Sri Lanka to avalanche hazards in Austria. In each of these cases, the authors examine the importance and role of space in the causes and differentiation of risk, in how we can conceptualize risk from a spatial perspective and in the relevance of space and locality for risk governance. This new approach – endorsed by Ragnar Löfstedt and Ortwin Renn, two of the world's leading and most prolific risk analysts – is essential reading for those charged with studying, anticipating and managing risks.

Detlef Müller-Mahn is Professor of Social Geography and Director of ZENEB (Center for Natural Risks and Development Bayreuth) at the University of Bayreuth, Germany.

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The Spatial Dimension of Risk

How Geography Shapes the Emergence of Risks

Detlef Müller-Mahn

Endorsements

‘*The Spatial Dimension of Risk* offers fresh, practical ways of seeing risk, governance and space. It combines previously separate approaches: sociology of risk, geography of hazard and politics of policy. The authors invite us to think about war, flood, disease and terrorism in new ways – changing our thought as profoundly as Beck’s *Risk Society* 20 years ago.’ – Benjamin Wisner, disaster management consultant with 44 years of experience and author of *Disaster Risk Reduction: Cases from Urban Africa (Earthscan 2009)*, *Handbook of Hazards and Disaster Risk Reduction (Routledge 2011)* and *Disaster Management: International Lessons in Risk Reduction, Response and Recovery (forthcoming Routledge 2013)*

‘The book gives the floor to a central dimension of risk, namely its spatiality. Spatiality comes in many different disguises, in the Global South as well as in the North, be it state border policies, propagation of contagious diseases, distribution of drought or landslide risk, or the question on which scale a risk should be managed in a most optimal way. With the concept of “riskscapes”, the book provides an innovative and comprehensive frame for these widely diverse aspects of risk.’ – Jakob Rhyner, Director of the United Nations University Institute for Environment and Human Security and Vice Rector in Europe of the United Nations University

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Preface

Space plays an important role for risk production, but so far it has been paid relatively little attention in the theorizing of risk. The time dimension has occupied a more central position, since risk is essentially seen as a category that links the present with the future. This book is intended to make a contribution to the understanding of the intricate relationship between risk and space by discussing different conceptualizations of the two, and by exploring how they are related.

The examples of the relevance of space presented in the book are very diverse. In the case of natural hazards like floods, avalanches or landslides, the spatial dimension is obvious, because these risks can be localized and represented on maps. In the political geography of borders, conflicts and transboundary risk governance, risk is often related more or less directly to territorial units. Other types of risk, however, cannot so easily be associated with particular territories or places, as some recent experiences have shown: the Fukushima catastrophe for example was a local event with global consequences. Climate change is a global process with local consequences. Recent outbreaks of pandemic diseases like swine flu or SARS have been perceived as global threats, although their immediate impacts remained more or less locally confined. The production of risk in a local–global continuum can only be understood by taking into account different spatial levels, geographical settings and scalar effects. Space provides the arena for the overlapping of multiple risks in particular places and regions. The case studies in this book show that space may be addressed both as an analytical framework for the study of risk, and as an empirical tool for risk management, based on localizing, measuring, regionalization and mapping of particular risks.

Against this backdrop, the guiding question of the book is: ‘What makes risk a spatial phenomenon, and what can Geography contribute to its study and management?’ Of course, Geography does not hold any claim to exclusive competence in risk research, but the specific contribution of the discipline to the study of risk may be seen in its tradition of studying social and biophysical processes in spatial contexts, an interest in integrative approaches at the interface between science and social studies, and a professional sensitivity for questions related to space and scales.

The articles in this book mostly follow constructivist perspectives, which implies that risk is understood as an object of perception and negotiation within

society. In this context, the concept of 'risky landscape' is introduced to indicate how individual actors and social groups develop personal visions of risk and translate them into spatial settings. The notion of 'risky landscape' has a metaphoric meaning that combines the idea of a territory or a landscape with that of risk. A landscape in this sense is a territorial unit that is characterized by mutual interactions between its elements, whereas risks are regarded as structuring phenomena that shape the landscape into a risky landscape. The concept seeks to link materiality and meaning from an actor-oriented perspective. Similar to a landscape, the physical elements of a 'risky territory' form obstacles to and opportunities for the movement of people, and they are therefore part of their action frame of reference. The concept of the risky landscape also allows the analysis of multiple risks and how people manage them. Risky landscapes may therefore be understood as landscapes of multi-layered and interacting risks that represent both the materiality of real risks, and the perceptions, knowledge and imaginations of the people who live in that landscape and continuously shape and reshape its contours through their daily activities.

The chapters of the book present a wide range of conceptual approaches, case studies and risky landscapes, but there are some similarities that can be explained by the fact that the authors – with the exception of Ortwin Renn who is a sociologist – are geographers based at universities in Germany, Austria and Switzerland. This has some influence on their thinking and the selection of empirical examples. Their shared interest is not simply their focus on territories or spatial containers, but the social constructedness of space, social practices of appropriation and formation of space, and the way individuals and societies give meaning to material objects situated in space. In other words, the shared geographical perspective in the contributions to this book lies in the duality of space as material structure and social construction.

Editing this book has been a long process and I wish to thank all who have contributed to it for their endurance. Special thanks go to Ragnar Löfstedt and four anonymous reviewers for their valuable comments, Sebastian Köllner and Sebastian Scholl for their help in formatting the texts, Michael Wegener for producing the maps, and Ruth Schubert for helping with proofreading and language editing.

Detlef Müller-Mahn, Bayreuth, April 2012

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1 Space matters!

Impacts for risk governance

Ortwin Renn and Andreas Klinke

The first chapter of this edited volume conceptualizes the role of space and time in risk governance. The main objective is to integrate spatial dimensions into a systematic approach to organizational and policy learning in assessing, evaluating and managing risks. For this purpose, the risk governance model suggested by the International Risk Governance Council (IRGC) is expanded to include more spatial dimensions at the stages of pre-estimation, interdisciplinary risk estimation, risk characterization and evaluation, risk management, and monitoring and control. This new risk governance model also incorporates expert, stakeholder and public involvement as a core feature at the communication and deliberation stage.

Introduction

Deciding on suitable locations for hazardous facilities, setting standards for chemicals, making decisions about cleaning up contaminated land, regulating food and drugs, or designing and enforcing safety limits all have one element in common: these activities are collective endeavours to understand, assess and handle risks to human health and the environment. These attempts are based on two requirements. First, risk managers need sufficient knowledge about the potential impacts of the risk sources under investigation, and the likely consequences of the different decision options for controlling these risks. Second, they need criteria to judge the desirability or undesirability of these consequences for the people affected and the public at large (Rowe and Frewer 2000; Horlick-Jones *et al.* 2007; Renn and Schweizer 2009). Criteria in respect of desirability are reflections of social values such as good health, equity or efficient use of scarce resources. Both components – knowledge and values – are necessary for any decision-making process independent of the issue and the problem context.

Anticipating the consequences of human actions or events (knowledge) and evaluating the desirability and moral quality of these consequences (values) are the core elements of risk analysis. ‘Crucial for these understandings is the idea that we are living increasingly in a world that changes, not according to what has happened, but according to what is anticipated, i.e. what may happen in the future [...]’ (Everts, in this volume). Anticipating future events and judging their desirability poses particular problems if the consequences are complex and