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Mitigation of Natural Hazards and Disasters MDPI
Disasters by Design provides an alternative and sustainable way to view, study, and manage hazards in the United States that would result in disaster-resilient communities, higher environmental quality, inter- and intragenerational equity, economic sustainability, and improved quality of life. This volume provides an overview of what is known about natural hazards, disasters, recovery, and mitigation, how research findings have been translated into policies and programs; and a sustainable hazard mitigation research agenda. Also provided is an examination of past disaster losses and hazards management over the past 20 years, including factorsâ€"demographic, climate, socialâ€"that influence loss. This volume summarizes and sets the stage for the more detailed books in the series.

Natech Risk Assessment and Management Springer Nature
The International Year of Planet Earth (IYPE) was established as a means of raising worldwide public and political awareness of the vast, though frequently under-used, potential the Earth Sciences possess for improving the quality of life of the peoples of the world and safeguarding Earth's rich and diverse environments. The International Year project was jointly initiated in 2000 by the International Union of Geological Sciences (IUGS) and the Earth Science Division of the United Nations Educational, Scienti?c and Cultural Organisation (UNESCO). IUGS, which is a Non-Governmental Organisation, and UNESCO, an Inter-Governmental Orga- sation, already shared a long record of productive cooperation in the natural sciences and their application to societal problems, including the International Geoscience Programme (IGCP) now in its fourth decade. With its main goals of raising public awareness of, and enhancing research in the Earth sciences on a global scale in both the developed and less-developed countries of the world, two operational programmes were demanded. In 2002 and 2003, the Series Editors together with Dr. Ted Nield and Dr. Henk Schalke (all four being core members of the Management Team at that time) drew up outlines of a Science and an Outreach Programme. In 2005, following the UN proclamation of 2008 as the United Nations International Year of Planet Earth, the "Year" grew into a triennium (2007–2009).

Environmental Hazards Springer Science & Business Media
Emphasizes Resilient Policies, Rather Than Rigid PhilosophyEconomic and environmental consequences of natural and man-made disasters have grown exponentially during the past few decades. Whether from hurricanes, chemical spills, terrorist incidents, or other catastrophes, the negative impacts can often be felt on a global scale. Natural Hazards Ana

Identifying, Quantifying, and Proving Loss of Productivity Springer Science & Business Media
Uncertainties are pervasive in natural hazards, and it is crucial to develop robust and meaningful approaches to characterize and communicate uncertainties to inform modeling efforts. In this monograph we provide a broad, cross-disciplinary overview of issues relating to uncertainties faced in natural hazard and risk assessment. We introduce some basic tenets of uncertainty analysis, discuss issues related to communication and decision support, and offer numerous examples of analyses and modeling approaches that vary by context and scope. Contributors include scientists from across the full breath of the natural hazard scientific community, from those in real-time analysis of natural hazards to those in the research community from academia and government. Key themes and highlights include: Substantial breadth and depth of analysis in terms of the types of natural hazards addressed, the disciplinary perspectives represented, and the number of studies included Targeted, application-centered analyses with a focus on development and use of modeling techniques to address various sources of uncertainty Emphasis on the impacts of climate change on natural hazard processes and outcomes Recommendations for cross-disciplinary and science transfer across natural hazard sciences This volume will be an excellent resource for those interested in the current work on uncertainty classification/quantification and will document common and emergent research themes to allow all to learn from each other and build a more connected but still diverse and ever growing community of scientists. Read an interview with the editors to find out more: https://eos.org/editors-vox/reducing-uncertainty-in-hazard-prediction

Disaster by Choice John Wiley & Sons
"The Ostrich Paradox boldly addresses a key question of our time: Why are we humans so poor at dealing with disastrous risks, and what can we humans do about it? It is a must-read for everyone who cares about risk." —Daniel Kahneman, winner of the Nobel Prize in Economics and author of Thinking, Fast and Slow We fail to evacuate when advised. We rebuild in flood zones. We don't wear helmets. We fail to purchase insurance. We would rather avoid the risk of "crying wolf" than sound an alarm. Our ability to foresee and protect against natural catastrophes has never been greater; yet, we consistently fail to heed the warnings and protect ourselves and our communities, with devastating consequences. What explains this contradiction? In The Ostrich Paradox, Wharton professors Robert Meyer and Howard Kunreuther draw on years of teaching and research to explain why disaster preparedness efforts consistently fall short. Filled with heartbreaking stories of loss and resilience, the book addresses: • How people make decisions when confronted with high-consequence, low-probability events—and how these decisions can go awry • The 6 biases that lead individuals, communities, and institutions to make grave errors that cost lives • The Behavioral Risk Audit, a

systematic approach for improving preparedness by recognizing these biases and designing strategies that anticipate them • Why, if we are to be better prepared for disasters, we need to learn to be more like ostriches, not less Fast-reading and critically important, The Ostrich Paradox is a must-read for anyone who wants to understand why we consistently underprepare for disasters, as well as private and public leaders, planners, and policy-makers who want to build more prepared communities.

Natural Disaster Hotspots Humanities Press International
Social Network Analysis of Disaster Response, Recovery, and Adaptation covers systematic social network analysis and how people and institutions function in disasters, after disasters, and the ways they adapt to hazard settings. As hazards become disasters, the opportunities and constraints for maintaining a safe and secure life and livelihood become too strained for many people. Anecdotally, and through many case studies, we know that social interactions exacerbate or mitigate those strains, necessitating a concerted, intellectual effort to understand the variation in how ties within, and outside, communities respond and are affected by hazards and disasters.

The Ostrich Paradox Springer Science & Business Media
This collection of articles provides a unique overview of the state of the science in the prediction of and response to natural disaster events. The uniqueness of this volume is that it comprises more than just the physical science perspective. For each natural hazard included in this text, social scientists have provided research summaries of how public perceptions are related to the actions that are likely to be undertaken when people are confronted with information about the existence of a natural hazard threat. In this book the reader can find a truly international characterization of both hazard perception and prediction. The American and European contributors provide state-of-the-science overviews of empirically-based research knowledge that expands beyond any national boundaries. This approach has resulted in broader understanding of what is currently known about predicting natural hazard events and predicting how those events, or warnings of them, will be responded to by different types of societies.

Natural Hazards Amer Society of Civil Engineers
In the Earth Sciences, the concept of fractals and scale invariance is well-recognized in many natural objects. However, the use of fractals for spatial and temporal analyses of natural hazards has been less used (and accepted) in the Earth Sciences. This book brings together twelve contributions that emphasize the role of fractal analyses in natural hazard research, including landslides, wildfires, floods, catastrophic rock fractures and earthquakes. A wide variety of spatial and temporal fractal-related approaches and techniques are applied to 'natural' data, experimental data, and computer simulations. These approaches include probabilistic hazard analysis, cellular-automata models, spatial analyses, temporal variability, prediction, and self-organizing behaviour. The main aims of this volume are to present current research on fractal analyses as applied to natural hazards, and to stimulate the curiosity of advanced Earth Science students and researchers in the use of fractals analyses for the better understanding of natural hazards.

Natural Hazards Analysis United Nations University Press
A comprehensive overview of the concepts of vulnerability and resilience for natural hazards research for both physical and social scientists.

Inaugural Section Special Issue Springer Nature
Natech Risk Assessment and Management: Reducing the Risk of Natural-Hazard Impact on Hazardous Installations covers the entire spectrum of issues pertinent to Natech risk assessment and management. After a thorough introduction of the topic that includes definitions of terms, authors Krausmann, Cruz, and Salzano discuss various examples of international frameworks and provide a detailed view of the implementation of Natech Risk Management in the EU and OECD. There is a dedicated chapter on natural-hazard prediction and measurement from an engineering perspective, as well as a consideration of the impact of climate change on Natech risk. The authors also discuss selected Natech accidents, including recent examples, and provide specific 'lessons learned' from each, as well as an analysis of all essential elements of Natech risk assessment, such as plant layout, substance hazards, and equipment vulnerability. The final section of the book is dedicated to the reduction of Natech risk, including structural and organizational prevention and mitigation measures, as well as early warning issues and emergency foreword planning.

Tree Rings and Natural Hazards World Bank Publications
CDRM 5 explains the the practical aspects of using quantitative risk assessment (QRA) to develop optimal engineering designs that mitigate the effects of natural hazards, especially on civil infrastructure.

Measuring Vulnerability to Natural Hazards University of Pennsylvania Press
This book addresses relevant aspects of earthquakes, volcanoes, and landslides from a scientific and applied engineering perspective. It aims to provide information on the physics and physical processes, indicators, monitoring, mitigation, and geology of these natural hazards.

Vulnerability and Resilience to Natural Hazards The Energy and Resources Institute (TERI)
This synthesis summarizes the findings of the Global Natural Disaster Risk Hotspots project. The Hotspots project generated a global disaster risk assessment and a set of more localized or hazard-specific case studies. The synthesis draws primarily from the results of the global assessment. Full details on the data, methods and results of the global analysis can be found in volume one of Natural Disaster Hotspots: A Global Risk Analysis. The case studies are contained in volume two (forthcoming).

Encyclopedia of Natural Hazards Psychology Press
The 16 contributions to Geographical Information Systems in Assessing Natural Hazards report on GIS investigations into landslides, floods, volcanic eruptions, earthquakes and groundwater pollution hazards. Current methods for predicting extreme events are critically discussed, the emphasis being on the intrinsic complexity of this type of operation, requiring many spatial data, long historical records and sound models of the physical processes involved. Within this context, the potentials and limitations of GIS are addressed in terms of data acquisition, spatial data structures and modelling for simulation of the causal phenomena. Geographic Information Systems in Assessing Natural Hazards will help investigators in both public and private institutions

to evaluate the actual effectiveness of GIS in coping with natural disasters, and to develop new strategies for projects aimed at the assessment and mitigation of the effects of such catastrophic events.

Fractal Analysis for Natural Hazards Springer

This book provides a wide range of studies on methods of assessing natural disaster risks and reducing those risks in the context of land use. A major benefit of the book is that it presents extensive research and practices from interdisciplinary perspectives through case studies of land use management against various natural disasters. The natural hazards include earthquakes, tsunami, floods, and other disasters, with case studies ranging from urban areas to areas with natural environments such as mountains, coasts, and river systems. By quantitative and qualitative analysis, this work illustrates how interactions between natural and human environments create natural disasters, and how disaster risks can be managed or reduced through methods related to land use. This book also covers a variety of challenges in land use management with sample cases from Asia as well as the United States and Europe. The main purpose is to provide greater insight into studies of natural disaster risks from the perspective of land use and the possibility of non-engineering methods to reduce those risks. This goal can be achieved through management of land use against various natural hazards in diverse environments.

Understanding the economic and financial impacts of natural disasters Butterworth-Heinemann

Practitioners in natural hazards reduction and policy makers in climatic change and natural hazards management

Land Use Management in Disaster Risk Reduction Elsevier

A state-of-the-art overview of natural hazard risk assessment, for researchers and professionals in natural-hazard science, risk management and environmental science.

Natural Hazards Springer Science & Business Media

We speak of earthquakes, floods, and wildfires as 'natural disasters'. In this provocative book, Ilan Kelman argues that the true disaster is not caused by natural phenomena, but by human choices which leave people unprepared and at terrible risk. He explores how we can and should act to stop people dying when nature unleashes its powers.

Quantitative Risk Assessment (QRA) for Natural Hazards World Bank Publications

This book collects selected high-quality papers published in 2018 – 2020 to inaugurate the “ Natural Hazards ” Section of the Geosciences journal. The topics encompass: trends in publications at international level in the field of natural hazards research; the role of Big Data in natural disaster management; assessment of seismic risk through the understanding and quantification of its different components; climatic/hydro-meteorological hazards; and finally, the scientific analysis and disaster forensics of recent natural hazard events. The target audience includes not only specialists, but also graduate students who wish to approach the challenging, but also fascinating

The Role of Ecosystems in Disaster Risk Reduction Springer Science & Business Media

This edited volume assesses capabilities of data mining algorithms for spatial modeling of natural hazards in different countries based on a collection of essays written by experts in the field. The book is organized on different hazards including landslides, flood, forest fire, land subsidence, earthquake, and gully erosion. Chapters were peer-reviewed by recognized scholars in the field of natural hazards research. Each chapter provides an overview on the topic, methods applied, and discusses examples used. The concepts and methods are explained at a level that allows undergraduates to understand and other readers learn through examples. This edited volume is shaped and structured to provide the reader with a comprehensive overview of all covered topics. It serves as a reference for researchers from different fields including land surveying, remote sensing, cartography, GIS, geophysics, geology, natural resources, and geography. It also serves as a guide for researchers, students, organizations, and decision makers active in land use planning and hazard management.