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Playing Against Nature: Integrating Science And Economics To Mitigate Natural Hazards In An Uncertain World (Wiley Works)



Synopsis

Defending society against natural hazards is a high-stakes game of chance against nature, involving tough decisions. How should a developing nation allocate its budget between building schools for towns without ones or making existing schools earthquake-resistant? Does it make more sense to build levees to protect against floods, or to prevent development in the areas at risk? Would more lives be saved by making hospitals earthquake-resistant, or using the funds for patient care? What should scientists tell the public when “as occurred in L’Aquila, Italy and Mammoth Lakes, California” there is a real but small risk of an upcoming earthquake or volcanic eruption? Recent hurricanes, earthquakes, and tsunamis show that society often handles such choices poorly. Sometimes nature surprises us, when an earthquake, hurricane, or flood is bigger or has greater effects than expected from detailed hazard assessments. In other cases, nature outsmarts us, doing great damage despite expensive mitigation measures or causing us to divert limited resources to mitigate hazards that are overestimated. Much of the problem comes from the fact that formulating effective natural hazard policy involves combining science, economics, and risk analysis to analyze a problem and explore the costs and benefits of different options, in situations where the future is very uncertain. Because mitigation policies are typically chosen without such analysis, the results are often disappointing. This book uses general principles and case studies to explore how we can do better by taking an integrated view of natural hazards issues, rather than treating the relevant geoscience, engineering, economics, and policy formulation separately. Thought-provoking questions at the end of each chapter invite readers to confront the complex issues involved. Readership: Instructors, researchers, practitioners, and students interested in geoscience, engineering, economics, or policy issues relevant to natural hazards. Suitable for upper-level undergraduate or graduate courses. Additional resources can be found at: <http://www.wiley.com/go/Stein/Playingagainstnature>

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Customer Reviews

Good and Fast

When I got this book into my hands, I wasn't able to put it down for a long time, and I ended up taking it with me everywhere. It is written exceedingly well and therefore very easy to understand. What's even better though is that the author illustrates his points on a wide range of recent events - catastrophes that are still fresh in our minds and thus easy to relate to. I particularly liked the structure of the chapters: The main chapters deal with the state of and challenges for the integration of science and economics in our society. Each chapter is then followed with a section titled "further reading and sources", where the author not only sources his material (as one would expect), but furthermore gives a really good list of resources where the reader can find additional information for each idea or concept that came up in that chapter. Each chapter is concluded by a list of questions designed to make you sit down and really think about the issues presented. I've spent many hours digging through those additional resources and researching possible solutions to the questions. Seth Stein gives brief introductions to the mathematics behind uncertainty and probability and the basics of mitigation. The book helped me to understand how policies are created and how they are influenced from various parties. As a geoscientist myself, who gets asked these kinds of questions a lot, I was happy to finally come across an excellent, concise explanation for why, while we have relatively good forecast models for some hazards, it is really very hard to reliably predict most others. My favourite chapter, however, remains "Communicating What We Know and What We Don't". The ideas therein are now always on my mind whenever I am presenting scientific data or results to others. I can fully recommend "Playing against Nature" to everyone interested in geoscience and natural hazards.

Well written and a good introduction to the emerging interdisciplinary field blending science, economics, policy, and communication. Focused on earthquakes and tsunamis, but easily applicable in a broader sense. Includes lots of additional resources for those looking to learn more

about specific subjects.

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