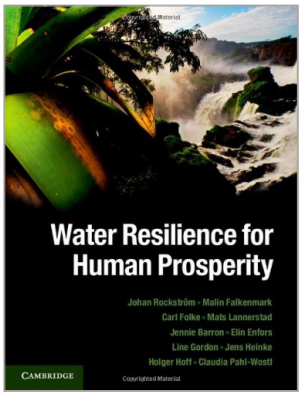
selecting the relevant and more general sections for those who do not want to go through all the details.

All in all, The Finite-Difference Modelling of Earthquake Motions, Waves and Ruptures is an excellent book for starting, as well as broadening the knowledge, in numerical seismological techniques. It covers not only the main aspects of computational methods, and in particular FDM, but also familiarises the readers with the applications of the method for more advanced seismological problems.

Kasra Hosseini
hosseini@geophysik.uni-muenchen.de
PhD Student, Department of Earth and Environmental Sciences, Munich University, Germany

Book review: Water Resilience for Human Prosperity



By J. Rockström, M. Falkenmark, C. Folke, M. Lannerstad, J. Barron, E. Enfors, L. Gordon, J. Heinke, H. Hoff, C. Pahl-Wostl

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The concept of ecological resilience – persistence of a system through change – was introduced by the Canadian ecologist C.S. Holling in 1973. Now, over 40 years later, Water Resilience for Human Prosperity sets an ambitious goal by tackling the world's key resource in the spotlight of global change. While the book's title suggests a focus on the resilience of water resources, Rockström et al. clarify that it rather deals with the role of water in sustainable development. Thus, it addresses students, researchers, planners and decision makers; in short: everyone playing a direct or indirect role on the Earth's ecological path for the future. However, it should be said that it is more of a well-rounded textbook than a how-to guide if you are in an executive position.

The book, written by Sweden- and Germany-based researchers, is separated into nine chapters and includes up-to-date scientific references and excellent figures. The examples are manifold and relevant for practical applications: for instance, two invited authors analyse and compare the socio-economic consequences of groundwater extraction in the plains of China and North America. A summary closes every chapter and key terms are defined in a glossary. The global-level maps and graphs provide the reader with a detailed impression of where our water and sustainability problems are located. All this said, Water Resilience for Human Prosperity is a densely written volume that comes along a bit theoretical at times, but is generally tangible for the reader.

Starting with a thorough look at the role of water in the biosphere, the book then moves to human alterations of the water cycle and the complex socio-economic interrelations connected to them. On the way, it addresses today's urgent issues such as climate change, land conversion and the growth of population which, for themselves, may be worth looking into. Processes are linked from the local to the global scale and across the gap between ecology and economy. Finally, the volume offers approaches on how the resulting new dynamics can be managed.

A thematic focus is put on food production. The reason for this is a required 70% increase in production to feed the expected population in 2050, combined with the fact that water is the limiting resource for food production in many strong-growing countries. Additionally, the authors devote an extra chapter to the savannah zone, as it represents 30% of land area and population and has high agro-hydrological potential, which suggests the possibility of more than doubling the yield from farming in the future.

What I appreciated most about the book is that it does not simply collect, point out and link sustainability issues around the world, but names and explains strategies to increase water and food resilience, such as a functioning global food trade, the increase of food stocks and diet change towards a greater share of plant-based calorie intake. It is, however, realistic by admitting the challenges and limits of the various approaches.

Overall, this isn't a book you would bring on a holiday; reading Water Resilience for Human Prosperity is hard but fruitful work given how informative the volume is. If you haven't worked on water, it's a great interdisciplinary and contemporary introduction to it. If you're a hydrologist, you may still find it a valuable read, because it comprises the global, socio-economic and complex perspective of today's changing world.

Marcus Schmidt
PhD Student, Buesgen Institute – Soil Science of Tropical and Subtropical Ecosystems, Georg-August University of Göttingen, Germany

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