

Understanding Water in a Dry Environment: Hydrological Processes in Arid and Semi-Arid Zones

edited by Ian Simmers, A.A. Balkema Publishers (IAH International Contributions to Hydrogeology 23), \$144

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As explained in the foreword, *Understanding Water in a Dry Environment: Hydrological Processes in Arid and Semi-Arid Zones* (“*Understanding Water*”) contributes to the five-year long (1996–2001) Phase V of UNESCO’s International Hydrological Programme (IHP). The umbrella theme of IHP’s Phase V is “Hydrology and Water Resources Development in a Vulnerable Environment.” The subordinate theme, “Integrated Water Resources Management in Arid and Semi-Arid Zones,” received high priority under IHP. Appropriately, a parallel volume to *Understanding*

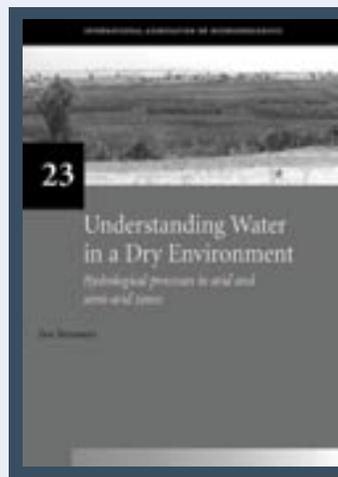
Water, titled *Water Resources Assessment Methodologies*, is also in preparation.

Understanding Water comprises eight individual contributions from a working group convened by Ian Simmers of the Faculty of Earth and Life Sciences at Vrije University, Amsterdam. This international panel included 12 authors, representing the United Kingdom, Australia, Netherlands, Germany, India, and the United States. Simmers prepared the first chapter, which provides an overview. Subsequent chapters cover the relevant topics of precipitation, actual evapotranspiration, surface runoff, vadose zone processes, aquifer response, hydrogeochemical processes, and management issues.

Conspicuously absent is a chapter specifically addressing recharge, despite assertions that “Water resources management in [dry] regions requires good knowledge of ... *all* phases of the hydrological cycle” [emphasis added, p. 50]. *Southwest Hydrology* readers may be interested in knowing that the “vadose zone processes” chapter is a contribution by our colleagues from the New Mexico Institute of Mining and Technology, Drs. Hendrickx, Phillips, and Harrison.

Given the title of this volume vis-à-vis the stated goals of the IHP, one might anticipate extremely useful content for decision makers responsible for resource assessment and management of dry regions. In the introductory chapter, Simmers attempts to integrate the individual topical contributions; however, it seems the book lacks the internal consistency and integration needed to best serve its intended utility.

In Simmers’ words, the volume represents “an appraisal of arid and semi-arid zone hydrological processes and does not



aspire to being the ultimate word on the subject. It does not, therefore, relieve the reader of the need for independent thought on a specific problem, but should be considered as a source of summary information to facilitate further local/regional developments.”

He further asserts, “The principal aim of this book is to supplement the wealth of information contained

in the various text- or handbooks on the collection and analysis of hydrological variables, and to relate this specifically to the world’s arid and semi-arid zones.”

Individual contributions are well written and supply interesting case studies and “acre-feet” of information, concepts, and insight from contemporary water researchers. As a whole, however, *Understanding Water* adds up to just slightly more than the sum of its parts. Individual chapters present recommendations that vary widely in terms of specificity and context. Another level of editing perhaps would have channeled these into a more helpful presentation. Conclusions and recommendations regarding the insufficiency of data, value of remote sensing, artificial recharge, reuse of reclaimed water, and desalination are all worthy of further discussion. In fairness, perhaps this discussion has been reserved for the forthcoming “methods” work. We’ll have to wait and see.

Overall, I would rate *Understanding Water* “three water drops out of five.” But before *Southwest Hydrology* readers venture out to buy this book based on its promising title, they should consider its price tag of \$144 plus shipping. The publisher does, however, offer a 60 percent discount to members of the International Association of Hydrogeologists.

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