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Book Review

Handbook of Water Economics, edited by Ariel Dinar and Kurt Schwabe (Eds). Published by Edward Elgar Publishing, Cheltenham, UK, 2017, 544 pp, ISBN: 9781782549659, US\$ 310 (hardcover), US\$ 70 (paperback).

The economics of water resources management is a rapidly expanding area of research. Important insights and results are scattered across countless research reports and journal papers. It is therefore very timely and useful that this edited volume provides an overview of expanding area; establishes the state-of-the-art in analysis; explores novel approaches; and tries to formulate what economic knowledge can contribute to policymaking and management.

It is well-known that water as an economic good has several distinctive features that pose challenges to economic analysis. In his seminal contribution to the literature, Hanemann (2006) discusses its mixture of public and private good characteristics, its mobility, its variability in space and time, its essentialness in production and consumption and its heterogeneity in location, timing, quality and uncertainty. The authors of the Handbook are well aware of these distinctive features. The first and main message of the book is that economic analysis of water-related management problems can be very valuable, as long as these distinctive features are taken into account. The second, implicit, message is the demonstration of the extremely broad scope of water economics, across multiple types of water resources, uses and users.

The handbook of water economics is divided into eight sections and 25 chapters. The sections successively deal with the following: (i) concepts and theoretical foundations; (ii) water demand and use in economic sectors; (iii) different water sources; (iv) valuation of water; (v) water quality management; (vi) water scarcity; (vii) transboundary water management; and (viii) water issues in developing countries. The individual chapters are written by eminent scholars in the field of water economics. The chapters may give an overview of particular problem areas, discuss theoretical concepts and methods, illustrate these with a number of applications, give suggestions for further research and make policy recommendations.

The 25 chapters of the book address a great variety of issues. Given the important roles of water for many uses and users, it would be clearly too much to ask that the book would cover every aspect of water as an economic resource. Yet, given the increasing interest in the potential impacts of climate change on water-related issues (floods, droughts, quality), it is a pity that there is only one chapter on water and climate change that is relatively limited in its scope and focuses only on the USA.

The book starts off with an introduction by the editors that briefly explains the structure of the book and briefly summarises the individual chapters. In addition to its slightly ridiculous assertion that the development of water economic mirrors the development of civilisation (?), it does not do much to justify the structure of the book nor does it guide the reader where to find the information that best suits his or her interests and level of knowledge.

The order of the chapters does not help guide the reader much either. Part one (concepts and theoretical foundations), for example, starts with a fine treatise on institutions and water that argues that the economics of water resource management cannot be properly understood without a thorough understanding of the particular institutions that govern supply and demand of water across different using and settings. This first chapter is directly followed by a highly technical case study on constrained dynamic optimisation of the extraction of groundwater from an aquifer. Although interesting in its own right, it will surely scare-off unprepared readers.

The book continues in this way: it contains interesting chapters that provide a broad and accessible overview of certain research domains, alternated with *case studies* and chapters that address issues (e.g. biofuels, marine fisheries) that do not shed much light on the economics of water use and management. It is also difficult to find particular information, because titles and index do not adequately cover chapter content.

All in all, the book offers very interesting individual contributions by eminent scholars, illustrating the wide scope of water economics and the careful analysis that is necessary for this economic resource 'with distinctive features'. However, the editors should have put more effort in interpreting the various contributions and place them into a proper context. From a *Handbook*, the reader might expect more structure, guidance and interpretation.

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Reference

Hanemann, W.M. (2006). The economic conception of water, in Rogers, P.P., Llamas, M.R. and Martínez-Cortina, L. (eds), *Water Crisis: Myth or Reality?* Taylor & Francis, London, UK, pp. 61–92.