

Book reviews

Ronald C. Griffin

Water Resource Economics: The Analysis of Scarcity, Policies and Projects

The MIT Press Cambridge, Massachusetts, 2006.

ISBN: 0-262-07267-X7x9, 432 pp., 55 illus. Price: \$50.00/£32.95 (cloth).

I was surprised and impressed by Ronald Griffin's new book on water resource economics, reviewed here, and highly recommend it, both for use in the classroom as course literature and as a reference work for practitioners in the field. I was surprised because as a researcher in the field of water economics, one of the major challenges that I have faced is explaining the art of economic analysis (primarily its limitations) to collaborators and groups of natural scientists, and it has been difficult. Griffin takes on the challenge in his book and my expectations before opening the book were that his efforts would fall short. I was surprised. Griffin has managed to write a book that assumes that the reader is both mathematically competent and has a background in the logic of science and is interested in complementing this background with an understanding of the economics of water management. I was impressed because this applies equally for readers with economic training who want to learn about applications to the field of water management *and* for hydrologists, soil scientists, limnologists and other natural scientists who want to learn about economic analysis, the allocation of scarcity.

Water economics is complex in part due to the comprehensiveness of the subject. While Griffin limits his work to the allocation of water quantities (not quality), he does include references to ground water and surface water as well as institutional and policy issues. The economics of water management has changed in significant ways in the last 20 years ago. Prior to this time, there were two main considerations connected to the allocation of water resources: political issues and engineering design. The political creation of institutions and laws to regulate the rights to water usage is driven by water scarcity and the ensuing competition between interests over this valuable resource. The costs of constructing and maintaining a system for the distribution of water would sometimes have an impact on the political decision or be resolved once the question of rights was resolved. In either case the primary economic concern was to achieve engineering efficiency subject to political constraints. This has changed and this book by Griffin serves as a guide to understanding the current attitude to the use of economic analysis in the management of water resources.

The focus of the book is to understand allocation in two ways: supply enhancement and demand management. The disposition of the text is built

up around an exploration of the potential and limitations of these two subjects. Following a short motivational introduction, chapters two and three are devoted to a compact presentation of the economics of supply and demand with respect to water. These chapters provide the mathematical and theoretical foundation needed for non-economists to understand the remaining chapters where more specific reference is made to water management issues. Griffin assumes here that the reader is familiar with the use of derivatives, integrals and has some notion of vector notation, but uses the appendix in the second chapter for the presentation of the Lagrangian method and Kuhn–Tucker conditions. The assumption that the reader is mathematically competent is what makes this book so useful for both an entire course based on the book or a short set of lectures for professional water managers or engineers. The remaining chapters cover a wide range of important issues in water management including social issues, policy and cost-benefit analysis, water marketing and perhaps most importantly, water pricing. That so much emphasis is placed on this last subject is one of the important changes in water management referred to above, the use of the market for allocation decisions.

Throughout the book, examples from case studies and real world management problems are included in boxed texts as well as in the running text and in end of the chapter exercises. The exercises are well written and support the use of the text for an upper level or graduate course in water resource economics. Although cases and institutional information are based on American experience, this does not detract from the accessibility of the material. The text is equally relevant for European users. In addition, the writing style is very personal. The informal style and commentary, which are used to present what some would rightfully regard as pretty abstract theory, are very accommodating for economic novices.

Lastly, we economists tend to be fairly critical of each other's biases and analytical perspectives. We often feel that a particular school or point of view is more or less logically superior and find fault with economists who do not fit into our particular box. I am not sure if my reading of Griffin only reflects my own biases, but I found his work to be very well balanced and self-critical, which raises the value of the work as well. However, since a review would not be complete without a little negative critique, let me point out what I believe would improve the text. Firstly, more care in editing would seem to be warranted. When I find careless mistakes (missing letters, words, numbers) I consider it to be an indication of resource scarcity. These small errors usually disappear in new editions, but why should it be left up to readers to find them? Secondly, the final chapter of the book (Chapter 12: The Water Challenge) could have instead served admirably as the introduction. About 10 years ago I came to the realisation that, rather than waiting until near the end of a lecture or course to explain the purpose, motivationally it was better to explain for students at the start where we were headed and why, and then build up the logic of the principle(s) through lectures using a series of assumptions and mathematical derivations. I started doing this and it worked

so well that I have continued using the technique since then for lectures, research and writing book reviews. Why wait until the end to reveal the punch line?

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doi:10.1093/eurrag/jbl008