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Pricing Irrigation Water: Principles and Cases from Developing Countries, by Yacov Tsur, Terry Roe, Rachid Doukkali & Ariel Dinar

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shows support for a program that sounds good, but ultimately fails to address the underlying issue.

Dempsey also offers a number of suggestions for developing effective institutions. These include the collection of data to determine the health of the ecosystem and the communication of this information to the public. In contrast with Dempsey, this review suggests that these institutions also must include all parties involved: not just ecosystem advocates, but also business and government interests. Without all of these parties, the goal of ecosystem protection will be ultimately frustrated. On the other hand, involving all of these parties enables better integration of policy making, implementation, enforcement, and compliance.

While emotions are important to motivate people to participate, we will also need the cold calculation of data collection and the methodical plodding of institutional building to effectively manage the Great Lakes. Through all of these, perhaps we can serve as better stewards of the Great Lakes for the ecosystems of now and future generations.

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Pricing Irrigation Water: Principles and Cases from Developing Countries. By Yacov Tsur, Terry Roe, Rachid Doukkali & Ariel Dinar. Washington, DC: Resources for the Future Press, 2004. Pp. 320. \$65.00 hardcover.

Pricing Irrigation Water provides the reader with an extensive literature review followed by the theoretical principles of irrigation water demand and supply and an application of this theory to case studies in Morocco, China, Mexico, South Africa, and Turkey. Particular emphasis is given by the authors to the policy implications of alternative strategies for pricing irrigation water.

There are four aspects of this book that distinguish it from the existing large body of literature addressing the "water pricing" issue. First, the authors go well beyond the standard arguments for the "efficient" pricing of water, based on the economist's paradigm of marginal cost pricing, to include analyses of the many pricing structures that actually exist in the real world. Examples include average pricing, the use of block-rate pricing, issues related to the question of "who pays for fixed costs," the pricing of multiple sources of water with differing quality, and volumetric pricing versus per-acre pricing. Analyses of

these pricing structures extend beyond welfare maximization to include implications for income distribution and relative costs of implementation.

Second, the authors set out, in a manner that is accessible to the non-technical policy maker, the substance of tools used by the analyst for the purpose of estimating the demand for water. Here the authors go beyond standard Linear Programming techniques to include Positive Mathematical Programming techniques and, of particular interest for the water planner, Computable General Equilibrium (CGE) models. The CGE model allows for analyses of the interrelationship between policies and management strategies adopted in the irrigated agricultural sector and other sectors of the economy, and can provide shadow prices for water across regions of a country.

Third, water pricing strategies are placed by the authors within the context of an interesting discussion of a broad range of water institutions—an issue that is largely ignored in other works. In their discussion of legal institutions, the authors consider water law and water rights as they are defined in the United States and their case study countries and attempt to draw out the strengths and weakness of alternative institutional arrangements. Particular attention is given to water markets. The prerequisites for an effective market are reviewed (well-defined property rights, reasonable transactions costs, enforcement, etc.). The authors do a nice job of setting out the potential political and economic costs that may attend reliance on water markets (an issue that is gaining increasing attention in the eastern United States). They correctly point to the social strains that can attend efforts to establish water markets in societies that do not have in place the institutions required to deal with potential abuses in markets, noting that “there is often considerable tension between market transferability and highly regulated trading.” (p. 30) Equally important, emphasis is given to potential perverse conservancy incentives and difficulties encountered in efforts to establish water markets due to public distrust of purely private markets. The authors’ discussions of water institutions include water-supply organizations and water user organizations. The interested policy maker will find particularly instructive the authors’ policy-related institutional aspects: centralized policies, market-based policies, water banks, and international trading agreements.

Fourth, and finally, a remarkable aspect of the book is the authors’ use of “Guidelines” that carefully and concisely summarize each important “lesson” that follows from their discussion of an issue. The Guidelines are purposely structured so as to be easily accessible to the non-technical reader—a down-to-earth summary of what a decision maker should understand about an issue is provided. As examples, in

their discussions of theoretical aspects of water pricing (chapter 3), following the development of the properties of average-cost and block-rate pricing, Guideline 2 (p. 76) advises the reader that “[a]verage-cost pricing guarantees a balanced water supply budget but entails a loss in efficiency as it decreases the joint welfare of farmers and water suppliers. Moreover, the farmers carry the burden of the welfare loss,” and Guideline 3 stresses the point that “[b]lock-rate pricing can be used to transfer wealth between water suppliers and farmers, while retaining efficiency.” Comprehensive guidelines developed by the authors in their presentation of alternative policy designs and examples of policy implementation in case study countries are nicely summarized in an overview of policy implications given in chapter 6.

In summary, *Pricing Irrigation Water* is a comprehensive, informative book that takes the reader through the conceptual principles relevant for water pricing, as well as through the related institutional aspects relevant for the design of policies intended to enhance the effective use of a country’s water resources. It is a “must read” work for policy makers charged with the management of water used in irrigation.

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Oil and Gas Law in Kazakhstan: National and International Perspectives. By Illias Bantekas, John Paterson & Maidan Suleimenov. The Hague: Kluwer Law International, 2004. Pp. 500. \$181.00 hardcover.

Wondrously productive arteries of petroleum reside not only in the imagination of international oil companies, hungry nation states, and gasoline consumers, but sometimes they materialize, documented in the dry analyses of geologists’ log books and transmitted to Wall Street. When those things happen, the dreamers of personal wealth, national prosperity, and a cure for world hunger confront the truly harsh realities of the difficult business of oil: the laws that govern actual production of petroleum.

Those harsh realities, in their statutory construction and practical application, are the focus of several studious essays included in *Oil and Gas Law in Kazakhstan: National and International Perspectives* by Illias Bantekas, John Peterson, and Maidan Suleimenov. Bantekas and Peterson, United Kingdom legal “readers” in oil, and Suleimenov, offering a Kazkh perspective, present a rather broad, if sometimes esoteric, collection. But it works. Rarely off-point, the pieces succeed in binding together, offering pointillistic but coherent approaches to understanding the governance, impediments, and potential for