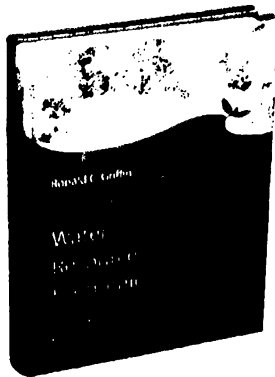


Water Resource Economics: The Analysis of Scarcity, Policies, and Projects

Ronald C. Griffin

Economics can bring powerful insights to water management, but most water professionals receive limited training in this area. This text offers a comprehensive development of water resource economics that is accessible to engineers and scientists



as well as economists. The goal of the book is to build a practical platform for understanding and performing economic analysis using both theoretical and empirical tools. The mathematics needed to understand the subjects covered include basic optimization methods and integral calculus. Familiarity with microeconomics or natural resource economics is helpful, but all the economics knowledge needed is presented and developed progressively in the text. Many water-based calculations are included, and each chapter ends with a summary and exercises. The following list of the book's chapter titles also includes some topics covered in each section:

- Introduction—an array of decision types, supply enhancement and demand management, and organization and conventions.
- Optimal Allocation and Development—the costs of water sup-

ply, efficiency for a single water-using agent, economic efficiency in the presence of return flows, and water conservation as an additional goal.

- Efficiency in a Dynamic World—the social time value of money, dynamic improvement and dynamic efficiency, drawing from a reservoir, and groundwater depletion.

- Social Institutions—the economics of institutions, water law, surface water law, groundwater law, conjunctive management, and treaties and compacts.

- Policy Analysis—theoretical and empirical policy analysis; consumer and producer surplus measurement; price-rationing, quantity-rationing, demand-shifting, and supply-shifting policies; and secondary economic effects.

- Cost-Benefit Analysis—obtaining benefits and costs, multipurpose projects, the costs of borrowed funds, and cost allocation by separable costs-remaining benefits.

- Water Marketing—the instruments of water marketing, unlocking the resource from low-value applications, a typical exchange framework, guarding against market failures, worldwide marketing, leading US markets, and the groundwater challenge.

- Water Pricing—the terms of pricing, the objectives of rate setting, accounting practice, the economic theory of pricing, specifying seasonal volumetric rates, and wastewater charges.

- Demand Analysis—demand methodology, nonmarket valuation techniques, residential water demand, industrial and commercial water demand, and agricultural water demand.

- Supply Analysis—the roles of supply information, conceptualizing costs, basic methods of supply estimation, and the privatization question.

- Modeling With Demand and Supply—moving from theory to empiricism, features of more advanced models, and a brief survey of studies.

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