

## Book Reviews

### **Groundwater Markets and Irrigation Development: Political Economy and Practical Policy**

Tushaar Shah

*Bombay, Oxford University Press, 1993, 262pp, £18.95, ISBN 019-563-22-73*

How can Indian water resource policies better address three central sets of issues: productivity, equity and sustainability? In this well-written and clearly argued book, Tushaar Shah reviews research findings and policy experiments related to groundwater development and lift irrigation technologies in India. The book presents research on the workings of groundwater markets in different parts of India—defined as a localized institutional set-up through which owners of modern pumps supply water to other members of the community at a price. However, this information is also used to make policy recommendations for water resources management for different areas, in relation to their water economy.

Groundwater development has been critical to both economic and social transformation in India. A central theme of the book is that, despite the importance of groundwater, public policy towards its development and management is ineffective, and can neither stimulate nor regulate this precious resource in an effective manner. Key reasons for this include: the predominance of private development; the logistical limits to current legal instruments; and the fact that most public organizations have roles restricted to planning and monitoring. The real power in groundwater management lies with the users themselves—and the electricity agencies. Thus new groundwater policies have to encompass incentives for positive change and more collective action, and not just controls and restrictions. Shah's work suggests that the evolution of competitive water markets can be as—or more—beneficial than the direct transfer of subsidized technology, and also have substantial equity.

In the first part of the book, the author develops economic models to study the responses of farmers to both economics and the environment, in relation to choice of energy supply, sources, size of water-extraction mechanism, and the effects of the pricing policies of electricity agencies on operating regimes. The book then examines the development of groundwater markets in different locations. The book surveys experiences in: the fragile coastal aquifers; canal systems with conjunctive water use options; the uncertain hydrogeology of drought-prone areas with hard-rock geologies; and finally more water-abundant areas where ease of technology adoption has led to rapid development and some mining of water tables. This analysis allows the author to differentiate 'hydro-economic regimes', where different levels of groundwater development and irrigation have been feasible.

Finally Shah reviews the range of policy instruments in use for water resource

management in India, looking at power tariffs, power supply, licensing, subsidies and public tubewells. Shah draws on the earlier sections to differentiate policy options for different 'hydroeconomic regimes'. He shows how water markets can be relevant in many different areas, but need different policy instruments to develop in equitable forms. The book gives special attention to the effects of electricity services and tariffs on the nature of groundwater markets. The book includes several very useful tables categorizing water environments, policy instruments and options for water markets in different hydro-economic contexts.

The book will not only be of great interest to Indian policy makers and researchers involved with water. Its arguments and policy recommendations also have an international relevance for areas facing groundwater management problems, and similar concerns about equity and productivity in rural development. The book should also interest students and researchers in terms of documentation of research. It shows clearly how research can be structured to inform policy. The book presents new models for the study of the economics of water use and also reports the methodologies used to study change and test hypotheses about groundwater in different environments. Tushaar Shah presents his recommendations for new policy initiatives in Indian water management on the basis of evidence rather than opinion. Let us hope that this book will stimulate the debate it seeks and deserves.

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### **Hydropolitics Along the Jordan River: Scarce Water and its Impact on the Arab-Israeli Conflict**

Aaron T. Wolf

*Tokyo, United Nations University Press, 1995, viii + 272 pp., maps, diagrams, appendices, tables, references and index, ISBN 92-808-0859-1*

This book is part of a series on water issues and conflict resolution sponsored by the United Nations University. *Hydropolitics Along the Jordan River: Scarce Water and its Impact on the Arab-Israeli Conflict* is an extremely interesting case study of the strategic role that water resources can play within a region. The Jordan watershed is relatively small yet it is crucially positioned given historical developments. Water shortages are rapidly becoming the norm within this watershed.

Wolf begins with a brief hydrography and a relatively extensive history of the region. The historical material sets the required context for his examination of water conflict and the potential for cooperation. A very adequate examination of important historical factors is presented as well as a nicely balanced perspective of the riparians and their relationship within the region.

Next, Wolf turns our attention to the difficult task of analysing such a complex and contentious international watershed. Chapter 3 presents a careful development of his interdisciplinary framework for evaluating watershed development and analysing water conflict. Several disciplines that have something to offer

those interested in water policy and management are summarized: physical sciences, law, political science, economics, game theory and alternative dispute resolution. These overviews present a nice, yet brief, introduction to the tools and lessons that these fields offer for the management of water resources. As a result, the interdisciplinary framework that the author develops draws on the strengths of each tradition. Wolf postulates three phases in the process of water conflict analysis: preliminary watershed analysis, the evaluation framework (options and viability) and implementation.

In Chapter 4, this interdisciplinary framework is applied to the Jordan watershed; the historical context previously developed in Chapter 2 is critical for this application. Wolf begins his analysis by addressing the water crisis in the Jordan basin. He formulates a four-stage water development plan for the watershed: (1) negotiate an equitable division of existing resources; (2) emphasize greater efficiency for water demand and supply; (3) alleviate short-term needs through interbasin water transfers (if available and politically viable); and (4) develop a regional desalinization project in cooperation-inducing stages. Wolf addresses the water conflict dimension as well by focusing on cooperation-inducing strategies for implementation efforts. He suggests three examples of cooperation-inducing implementation: an agreement for sharing existing resources, negotiations over the mountain aquifer and a Med–Dead or Red–Dead Canal desalination project. The attention given to the political viability of alternatives gives his interdisciplinary analysis much credibility.

Chapter 5 provides a concise summary of the book. An Afterword addressing significant recent events of the peace process brings the reader up to date and illustrates how change is an ever-present factor in our world. The Appendices offer many useful maps, documents, the PRINCE Political Accounting System, a water projection model, and information on the desalination projects. The bibliography is extensive; it is an excellent resource and reading list for this region.

Wolf provides readers with a well-researched and insightful study of the strategic importance of water resources. He takes his qualitative interviews and weaves a very careful story that illustrates the crucial role of water in the Jordan watershed. The consideration given to the historical contexts of political conflicts provides us with a deep and balanced treatment of the issues surrounding water in this region. Wolf gives us an example of the development and use of an interdisciplinary framework for water planning and management. In doing so, he both offers solutions and helps to broaden our perspectives. It may increasingly take this breadth of understanding with respect to our watersheds experiencing significant conflicts to generate insightful solutions to increasingly scarce water supply such as he develops in this work.

I highly recommend this book to those with an interest in Middle East water issues and to those who are new to this contentious watershed. It serves as an excellent international watershed case study for advanced undergraduates and graduate students (although an expensive supplemental paperback text at approx \$50). Additionally, it serves as a strong example of a thorough research project within an interdisciplinary framework.

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Political economy is the study of production and trade and their relations with law, custom and government; and with the distribution of national income and wealth. As a discipline, political economy originated in moral philosophy, in the 18th century, to explore the administration of states' wealth, with "political" signifying the Greek word polity and "economy" signifying the Greek word "oikonomÅa" (household management). The earliest works of political economy are usually attributed to the British

Start by marking "Groundwater Markets and Irrigation Development: Political Economy and Practical Policy" as Want to Read: Want to Read savingâ€¦| Want to Read. This volume presents the lessons learned from a wide range of groundwater and irrigation projects throughout the country of India. It offers information on their development, projected scope, and ultimate impact on agricultural productivity and economic activity. This valuable resource will be read with interest by all professionals involved with setting or implementing wa This volume presents the lessons learned from a wide range of groundwater and irrigation projects throughout the country of India. Fundamentals of Political Economy. Item Preview. remove-circle. Share or Embed This Item. EMBED. texts. Fundamentals of Political Economy. by. Communist Party of China. Topics. Maoist, textbook, economics, maoism, mao zedong, tse tung, marxism, communism, Collection. opensource. International Food Policy Research Institute 2033 K Street NW Washington, DC 20006-1002 USA Tel. +1-202-862-5600 Fax +1-202-467-4439 E-mail ifpri@cgiar.org www.ifpri.org. Under these conditions, irrigation development offers the promise of greater food security and the rural-area development by ensuring yearlong agricultural production. Despite considerable potential for development and the emphasis placed on irrigation development in many plans, less than two percent of the total cultivatable area in Ghana is irrigated. Sub-surface and groundwater-based irrigation systems are not evenly distributed across the regions but are fast spreading beyond traditional enclaves such as the Volta region's Keta strip. Are you sure you want to remove Groundwater markets and irrigation development from your list? Groundwater markets and irrigation development. political economy and practical policy. by Tushaar Shah.

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Economic policy-makers tend to confront policy issues one at a time, stating policy objectives in single dimensional terms. This approach presents difficulties because a policy aimed at achieving a single objective usually has unintended and unrecognized consequences. Water managers and policy-makers need to assess the entire range of government interventions to understand fully the economic, social and environmental impacts on a given sector, region or group of people. While water consumption and quality requirements are tied to local populations and development levels, local water availability usually changes with climatic variations throughout the year and over longer cyclical swings.

Political economy - Political economy - Historical development: Political economy is a very old subject of intellectual inquiry but a relatively young academic discipline. The analysis of political economy (in terms of the nature of state and market relations), both in practical terms and as moral philosophy, has been traced to Greek philosophers such as Plato and Aristotle as well as to the Scholastics and those who propounded a philosophy based on natural law. A critical development in the intellectual inquiry of political economy was the prominence in the 16th to the 18th century of the mercantilist theory of political economy. Groundwater irrigation has come to be the mainstay of irrigated agriculture in much of India, the Punjab and Sindh provinces of Pakistan, the Terai region of Nepal, and Bangladesh. Farmers in this populous South Asian region use more than 21 million pumps, about half of them powered by heavily subsidized electricity, to irrigate their fields and the energy sector's stake in agriculture has risen sharply. Agricultural use of electricity accounts for 15-20 percent of the power consumption and the pricing of power to agriculture is a hot political issue. Rapid groundwater development is at the heart of the agrarian.

4. TABLE 1. Groundwater usage, number of pumps used and extraction rate, and dependence on groundwater in different countries.