

DECENTRALIZAT
COORDINATION OF WATER
RESOURCE MANAGEMENT



dandelion.com

© 2008 AGI-Information Management Consultants
May be used for personal purposes only or by
writing to: info@dandelion.com or dandelion.com network.

edited by

Douglas D. Parker

University of California, Berkeley, USA

Yacov Tsur

Hebrew University of Jerusalem, Rehovot, Israel

University of Minnesota, St. Paul, USA



KLUWER ACADEMIC PUBLISHERS

Boston / Dordrecht / London

Contents

Acknowledgments	v
-----------------	---

1. <i>Introduction and Overview</i>	1
Douglas D. Parker and Yacov Tsur	

PART I	
REGIONAL WATER CONSTRAINTS: MIDDLE EAST, CALIFORNIA, FLORIDA, AND AUSTRALIA	7

2. <i>The Israel Water Economy: An Overview</i>	9
Dan Yaron	

3. <i>The Jordan River Basin: Beyond National Concerns</i>	23
Janusz Kindler	

4. <i>Water Resources in Turkey: Availability, Use, and Management</i>	33
Erol H. Cakmak	

5. <i>California's Water Resources and Institutions</i>	45
Douglas D. Parker	

6. <i>Decentralized Water Allocation in Florida</i>	55
William G. Boggess	

7. <i>Australia's Water Situation: Resource Allocation and Management in a Maturing System</i>	67
John J. Pigram	

PART II**ECONOMIC MODELING OF DECENTRALIZED WATER
MANAGEMENT POLICIES**

87

A. Political Economy of Water Allocation

8. *The Political Economy of Domestic Water Allocation:
The Cases of Israel and Jordan*
Richard E. Just, Sinaja Netanyahu, and John K. Horowitz 89
9. *Transboundary Water Agreements and Development
Assistance*
George B. Frisvold and Margriet F. Caswell 115
10. *Informational Imperfections in Water Resource Systems
and the Political Economy of Water Supply and Pricing
in Israel*
Pinhas Zusman 133
11. *The Strategic Interdependence of a Shared Water Aquifer:
A General Equilibrium Analysis*
Terry Roe and Xinshen Diao 155

**B. Water Institutions: Transition to Markets and Other
Decentralized Allocation Mechanisms**

12. *Designing Institutions for Water Management*
James Roumasset 179
13. *Employing Market Mechanisms to Encourage Efficient
Use of Water in the Middle East*
Nir Becker, Naomi Zeitouni, and Mordechai Shechter 199
14. *Efficient Management of Water in Agriculture*
David Zilberman, Ujjayant Chakravorty, and Farhed Shah 221

15. *Deriving Short-Run, Multistage Demand Curves and Simulating Market Prices for Reservoir Water Under Weather Uncertainty*
Norman Dudley and Bradley Scott 247
16. *Water Institutions, Incentives, and Markets*
K. William Easter and Gershon Feder 261

C. Incorporating Uncertainty in Resource Management Models

17. *On Event Uncertainty and Renewable Resource Management*
Yacov Tsur and Amos Zemel 283
18. *Quantifying Tradeoffs Between In-Stream and Off-Stream Uses Under Weather Uncertainty*
Norman Dudley and Bradley Scott 299
19. *An Ex Ante Approach to Modeling Investment in New Technology*
Amy P. Thurrow, William G. Boggess, Charles B. Moss,
and John Holt 317
20. *The Economics of Conjunctive Ground and Surface Water Irrigation Systems: Basic Principles and Empirical Evidence from Southern California*
Yacov Tsur 339

PART III

CASE STUDIES

21. *Peace and Prospects for International Water Projects in the Jordan-Yarmouk River Basin*
Richard E. Just, John K. Horowitz, and Sinaia Netanyahu 365

22. *Modeling the Impacts of Reducing Agricultural Water Supplies: Lessons from California's Bay/Delta Problem*
David Sunding, David Zilberman, Neal MacDougall,
Richard Howitt, and Ariel Dinar 389
23. *Water and Conflict in the Twenty-first Century:
The Middle East and California*
Peter H. Gleick 411
24. *Decentralized Mechanisms and Institutions for Managing Water Resources: Reflections on Experiences from Australia*
Warren Musgrave 429
- INDEX 449**