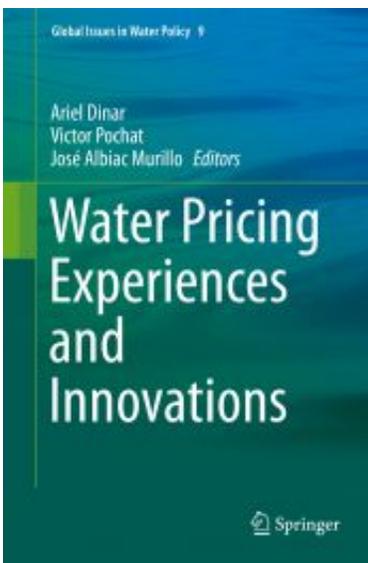


# Global water-pricing practices suggest possible approaches to managing California water scarcity

June 2 2015, by Bettye Miller

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As water scarcity and quality issues grow in California and around the world, a new book co-edited by UC Riverside water economist Ariel Dinar and water experts in Spain and Argentina examines the experience of 15 countries where conservation has been achieved through water-pricing incentive systems.

"Water Pricing Experiences and Innovations" (Springer, 2015) presents practices and implementation experiences from many countries that face

[water](#) scarcity conditions similar to those faced by California and elsewhere, and introduces a wide set of water-pricing methods that California agencies might consider as they address the state's historic drought. Dinar, professor of environmental economics and policy in the UCR School of Public Policy, edited the book with José Albiac Murillo of the Agrifood Research and Technology Centre in Zaragoza, Spain, and Victor Pochat, a consultant in Buenos Aires, Argentina.

"This discussion is very relevant for California, especially in light of the present public debate about issues related to the constitutionality of pricing in California," Dinar said, referring to the April ruling by a state appellate court that declared unconstitutional a tiered pricing plan in San Juan Capistrano to encourage [conservation](#). "Water pricing works in many countries and should also work in California. There is much we can learn from other countries about how to design and implement incentives for users in various sectors to conserve water."

"Water Pricing Experiences and Innovations," written by experts in water pricing from various countries, presents the latest water-pricing experiences in Australia, Brazil, Canada, Chile, China, Colombia, France, India, Israel, Italy, Mexico, The Netherlands, New Zealand, South Africa and Spain. The book also reviews innovations in water pricing, such as new reform mechanisms, achieving social objectives via water pricing achieving revenue recovery, water-use efficiency and customer equity, and schemes for charging the poor.

Increasing water scarcity over time and across regions, coupled with short- and long-term catastrophic droughts in certain locations, have contributed to increasing interest in [water conservation](#) in the various water-consuming sectors – urban, rural, agricultural, and environmental, Dinar explained.

"Water pricing as an economic incentive for water conservation gained

popularity in the 1990s as a policy [intervention](#) tool that could be used to affect the environmentally, socially, and economically efficient use of water," he said. "Pricing of water might achieve two objectives. It could cover the cost of producing water that is paid by the public sector, and it could send an important signal to internalize the scarcity level of water and change the behavior of consumers."

Public discussions about how to price water have tended to characterize water as an economic good, or a social good, with humans entitled to a minimal level of quantity and quality of safe water.

"While all agree that water is a resource/commodity that is essential for life, there is less agreement on the appropriate ways it should be regulated by society," Dinar said.

California is part of the global trend of increased water scarcity and greater regulatory interventions, he noted.

"Recent drought in California gave rise to changes in pricing schemes used to regulate water use in irrigated agriculture and residential sectors. The San Juan Capistrano court ruling that seems to rule out as unconstitutional tiered pricing that 'educates' water wasters is a punch in the face of efforts to establish regulation that follows the human behavior and responsiveness in order to minimize wastage," he said.

One chapter of the book addresses the development and implementation of water budget-based rates, using Western Municipal Water District in Riverside County in Southern California as an example. The utility implemented rate structures that reflect the costs of water supply and delivery and recognizes customers by their water-use efficiency. Revenue that exceeds cost goes into conservation programs.

"There is no single best practice that can be recommended to one

country or sector," Dinar said. "Water-using sectors in various locations face different situations and needs for pricing approaches. Future scarcity affected by climate change will most likely lead to different water pricing needs than the schemes we know from the past."

Here is a sample of what the researchers found:

- Australia uses a common national water-pricing framework, but different approaches to water pricing across states and water sectors (urban, rural, environmental). There is a shared commitment to recovering the full cost of water provision.
- Pricing and decentralization reforms in Chile have improved efficiency, but challenges remain, such as increasing extreme climatic events, a highly informed and organized consumer base, the sustainability of groundwater extraction, and the deterioration of water-dependent ecosystems due to over-allocation of water rights.
- France in the last 20 years has shifted the focus of water pricing from budget balancing (cost recovery) to water conservation and now to social protection.
- India has renewed its focus on water pricing and cost recovery given public concern about [water scarcity](#). Much of the debate has focused on irrigation of crops, which accounts for almost 80 percent of total water consumption but for which only a fraction of supply costs is recovered.
- Water pricing in Israel reflects the true scarcity value of water, with different pricing schemes based on water sources (treated wastewater, desalinated water, groundwater, storm water, surface water) and uses.
- Mexico's water price structure reflects water availability and its economic value.
- Spain, long known for its water-pricing strategies, is facing more droughts, severe water pollution, and negative impacts of climate

change. Controversial water-pricing policies under consideration may significantly affect affordability for all water uses.

**More information:** "Water Pricing Experiences and Innovations." Springer International Publishing. [DOI: 10.1007/978-3-319-16465-6](https://doi.org/10.1007/978-3-319-16465-6)

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