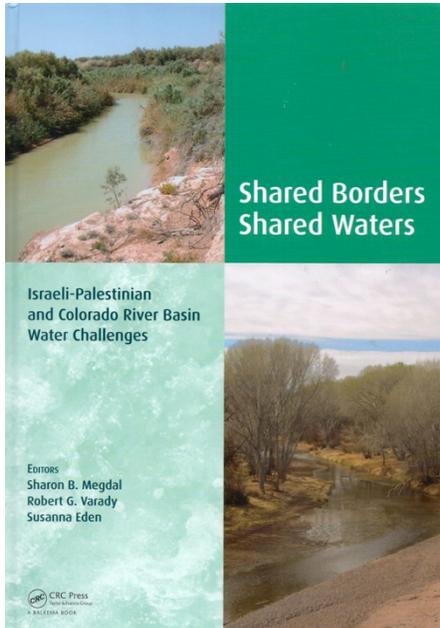


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Climate: Unimportant until It Matters

A review of *Shared Borders, Shared Waters: Israeli-Palestinian and Colorado River Basin Water Challenges*. Edited by Sharon B. Megdal, Robert G. Varady, and Susanna Eden



The Colorado River system in the American Southwest and the Jordan River system in the Middle East are much alike. They flow through arid, hot regions with populations that are greater than these rivers can support. Serious efforts are being made in both regions to increase the use of these climatically limited river systems by reclaiming water for repeated use and by desalinization, but with limited success. Because these river systems are located in regions where highly charged political systems exist side by side, continuing negotiation is needed to resolve conflicts. Challenges now faced by the Middle East and the American Southwest are case studies of what happens when people run out of water. They point to structural, political, and economic changes that should be considered even in regions that now have enough fresh water to meet needs.

Shared Borders, Shared Waters is based on the Arizona, Israeli, and Palestinian Water Management and Policy Workshop that took place at the University of Arizona, Tucson, in 2009. Sponsors included UNESCO's International Hydrological Programme and three centers at the University: the Water Resources Research Center, the Arizona Center for Judaic Studies, and the Center for Middle Eastern Studies. Financial support came from several sources. The book contains seventeen chapters arranged into five sections: (1) Water development: Infrastructure and institutions; (2) Political and economic perspectives on water; (3) Learning from comparison; (4) Challenges, new and old; Climate change and wastewater; (5) Expanding water supplies: Promising strategies and technologies.

Thirty contributors from around the world are listed as authors (eight chapters with single writers and nine with two or more). Nine contributors were located at the University of Arizona, Fourteen were based at other universities in the United States, Israel, and elsewhere. Contributors came from all of the territories discussed in the book and represented several scientific disciplines, political jurisdictions, and management responsibilities. They reached differing conclusions about the issues discussed. Most of the chapters contain charts, graphs, and photos, many in color. All were written in serious, academic prose, and several chapters challenge readers who are unfamiliar with the technical language that their authors use. Other authors wrote in styles that are more easily understood by general readers.

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The book contains 276 pages of exposition, with notes and bibliographical information at the end of each chapter. In the final two pages, the editors offer five insights or “take-away messages.” First, “It is essential to find solutions that meet the needs of neighboring societies.” Second, scientific research and analysis “contribute to a better understanding of the implications of alternative approaches to problem-solving.” They provide the basis for dialogue that can lead to solutions. Third, the scarcity of water resources is necessarily leading to innovation and “the adoption of emerging technologies.” Fourth, “factors such as geographical setting and scale, climatic conditions, history, social and cultural values, demography, political systems, economic incentives, institutional capacity, legal structure, and civil society” determine “whether a particular technology can succeed” and therefore have to be taken into consideration. Fifth, a multi-disciplinary approach must be taken if we are to resolve the challenges facing us.

The editors chose to offer blandly stated, methodological conclusions, but the book, despite its abstract and technical language, is much more interesting and challenging than these conclusions indicate. My alternative list offers five insights that focus primarily on issues discussed in these chapters and their implications for people everywhere.

First, there is not enough water in either region to support current patterns of use. These patterns were designed to distribute available water supplies among domestic, industrial, and agricultural users. Policies for distribution were shaped when populations were smaller than they have become. In both regions formulas for apportioning water were established on estimates of the amounts of water and the rates of recharge that were unrealistically high, but little has been done to rectify the resultant shortages or revise the agreements. In both regions, especially the Middle East, political conflict has brought about increasingly unjust distributions of the limited supplies of water. The immediacy of this crisis is made clear in chapter 9, “Water, land, and development: Comparative Arizona – Israeli-Palestinian perspective,” in which the authors refer to an estimate by the World Bank (in 2008) that the Gaza Strip “may run out of fresh water in a 15-year timeframe” (which would end in 2023). This conclusion should be compared with the statement in *The West without Water* by B. Lynn Ingram and Frances Malamud-Roan (published in 2013) that Lake Mead and Lake Powell on the Colorado River could reach the state of “dead pool” by 2021 (196).

Second, both regions are making serious efforts to respond to the fresh water crises they are experiencing. Conservation, increased efficiency, and changes in usage extend the adequacy of available fresh water for current needs. Reclaimed water and desalinization, when used appropriately, increase the supplies. Because the Jordan River region borders the Mediterranean, desalinization of sea water is a more immediate option than it is for the landlocked Colorado River region. Greater progress has been made in the Middle East, both in the volume of reclaimed water and in the degree to which it has been purified for use. Chapter 14, “Management of trans-boundary wastewater discharges,” by Alon Tal is one of the most important chapters in the book. In language easily understood by general readers, he reviews Israel’s experience with reclaimed water. He describes the wide range of long-term health hazards and the alterations of the composition of the soil when reclaimed water is used. The essay does not discuss the interaction between Israel and Palestine, which is largely unfavorable to the Palestinians.

Third, the chapter by Karen L. Smith, “Expanding water resources in Arizona: Role of reuse

in reaching sustainability,” discusses the use of reclaimed water in Arizona, but with little of the cautionary information that Tal offers. Although these chapters, along with other references throughout the book, indicate that reclaimed and desalinated water are important factors in easing the challenges faced by these regions, there is little reason to believe that they can produce enough usable water to maintain even current fresh water usage, and no basis to believe that they can allow significant expansion of water-dependent activities. Furthermore, the book makes only brief references to economic and environmental challenges, especially in the high-energy demands, that accompany the extending of water resources.

The fourth insight that can be derived from *Shared Borders, Shared Waters* is that the challenge of negotiating agreements is increased significantly because of the political borders that separate sources of water, the communities that use the water, and the authorities that oversee the processes. It is clear from explicit statements and from inferences easily drawn that decisions routinely benefit those with power at the expense of those lacking power. The imbalance is greater in the Middle East than in Arizona-Mexico. The chapters understate the problem in both regions, but the avoidance of this reality in the Middle East is especially regrettable. Chapter 4, “The role of creative language in addressing political realities: Middle-Eastern water agreements,” illustrates this problem. What the authors describe as “creative language” and postponing of basic decisions makes it possible to reach agreements while leaving the power differential intact. Debates over water usage in this region are characterized by much movement but little progress as is the case with virtually every aspect of peace-making in this troubled region.

The fifth conclusion that I draw from this book is that the outlook for these water-challenged regions is hopeful in the short term and discouraging in the long term. There is little reason to believe that current patterns of water usage, continued population growth, and existing political systems for governing these matters can solve the problems that already exist, let alone those that are almost certain to come in the future.

The essays in *Shared Waters, Shared Borders* can be understood as confirmation of a conclusion that Michael F. Logan draws in his 2002 book, *The Lessening Stream: An Environmental History of the Santa Cruz River.* Logan’s family came to southern Arizona in the 1880s and he grew up near the Santa Cruz River in the arid region just north of Nogales. He describes successive civilizations that have lived in this region, reports on their methods of utilizing the limited water resources available to them, and concludes that each civilization expanded beyond the river’s capacity to support it. Each civilization perished. In understated language, Logan states that despite our civilization’s prowess, we too will outgrow the natural world’s capacity to sustain us. As has been true in previous centuries, we too will disappear but the river will still be there.

A more hopeful prospect for the American Southwest is described in another book of essays, *Stitching the West Back Together: Conservation of Working Landscapes*, edited by Susan Charnley, Thomas E. Sheridan, and Gary P. Nabham (published in 2014). This book focuses attention on developing economically viable and environmentally responsible ways of using the natural resources of the West. Its thesis is that the land and the people need each other and will be healthy long into the future when the right kind of cooperative practices emerge. Building on

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the idea of “the radical center,” the book declares that people representing a wide range of competing interests can come together and develop strategies that accomplish purposes all can claim. Most essays are based on developments in rural, agricultural, and natural areas of the American Southwest, but some attention is given to the expanding Tucson metropolitan region. I want to believe that in the Jordan River and Colorado River regions – and elsewhere around the world – more “radical centers” will emerge so that human societies will flourish within the constraints that the natural world imposes. Nearly everywhere, however, balkanized conflict is the primary way that individuals and institutions relate with one another, and it is hard to believe that things will change.

Earlier in this review, I referred to the chapter on the management of transboundary wastewater discharges by Alon Tal as one of the most useful to general readers. Samer Alatout’s chapter on revisiting water politics and policy in Israel is also accessible to general readers. It provides a history of scientific and political factors that have shaped policies and practices in Palestine-Israel. Alatout offers three conclusions: (1) All “knowledge about water resources is *partial*.” (2) All “knowledge about water resources *mediates relations of power*.” (3) We need to keep “all of those affected by water policymaking in the process from beginning to end,” and we need a “dynamic framework that sees all elements of water policymaking as moving targets” (87).

Because of my theological interests, chapter 10, “Perspectives on water conservation in Israel and Palestine: Foundations and future,” is especially interesting. In their introduction, the three contributors state that “[Water] holds a particularly interesting and important position both in Judaism and Islam. These two religions, born of similar beginnings but fundamentally different in practice and doctrine, currently find many of their followers at odds over their shared water resources, despite its use by both sides as a metaphor for divinity, goodness, blessing, and purity” (151). They summarize “holy texts and teachings of Islam and Judaism” to support their thesis. Most of the essay describes water resources and conservation practices in Israel and Palestine. The authors conclude with a brief evaluation of religious factors that could encourage conservation, indicating that Islamic teaching provides a stronger foundation than is offered by Judaic teaching. It is interesting to reflect upon this conclusion in the context of Steven Solomon’s book *Water: The Epic Struggle for Wealth, Power, and Civilization* in which he shows that despite their homeland in arid lands Islamic powers were able to develop sophisticated cultural systems and great military power. Islamic civilization continued to challenge the West into the sixteenth century (137).

Although I have lived for several years in the arid southwestern desert, most of my life has been lived in well-water regions of the United States – the Pacific Northwest and the Ohio River watershed of the Middle West where “snowmelt hydrology” seemingly protects humankind from the challenges discussed in *Shared Borders, Shared Waters*. Chapter 12, “Climate change challenges and solutions for water managers,” provides the essential link between freshwater issues in these radically different parts of the world. Author Gregg M. Garfin writes that for the most part “in Arizona, California, and New Mexico the system has been robust enough to insulate urban dwellers from drought, though there have been occasional water use restrictions in some communities, and significant damages due to floods and extreme precipitation” (188).

Garfin notes that rural populations are more exposed to water shortages because their livelihoods are climate-sensitive and local economics and water infrastructure are less robust. “The situation could be summed up by the phrase that climate is really of no consequence until it matters. It is now increasingly perceived that climate variability and change has a potential to serve as the straw that can break the camel’s back, given other substantial concerns regarding water resources and infrastructure vulnerabilities” (188). He refers to “impacts from upward trending temperatures in conjunction with a lack of upward trending precipitation” that can “result in non-linear step-like changes of ecosystem state as mortality thresholds or tipping points” (189). More rain and less snow in the Cascade Mountains results in longer dry periods and increasing water challenges in western Washington and Oregon. While the crisis is more remote than in the desert Southwest, it is similar in kind. This chapter is addressed to water managers and it urges them to pay attention to climate change that “exacerbates existing vulnerabilities” (197).

Not only water managers, but everyone who uses the water they manage needs to pay attention.

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Bibliography

Shared Borders, Shared Waters: Israeli-Palestinian and Colorado River Basin Water Challenges. Edited by Sharon B. Megdal, Robert G. Varady, and Susanna Eden, (CRC Press/Balkema, 2013).

Stitching the West Back Together: Conservation of Working Landscapes, edited by Susan Charnley, Thomas E. Sheridan, and Gary P. Nabham (Chicago: University of Chicago Press, 2014).

The Lessening Stream: An Environmental History of the Santa Cruz River, by Michael F. Logan (Tucson: University of Arizona Press, 2002).

The West Without Water: What Past Floods, Droughts, and Climate Cues Tell Us about Tomorrow by B. Lynn Ingram and Frances Malamud-Roam (Berkeley: University of California Press, 2013)

Water: The Epic Struggle for Wealth, Power, and Civilization, by Steven Solomon (New York: Harper, 2010).

Note: The photo on the lower right corner of the book jacket is by Keith Watkins and shows the San Pedro River as seen from Arizona Highway 82 near the abandoned village of Fairbank.