The future of water management in the west

By Dana Hoag¹ and David Zilberman²

Water is one of the major constraints for agricultural development in the West. While there are common themes, each state faces its own unique problems. In the first issue of the revised Western Economics Forum we asked a group of prominent economic scholars from seven western states to discuss the future of water management in the West. Our focus is on providing scholars and practitioners with perspectives on how economics can help society better manage water, especially when it comes to the costs and benefits of (in)flexibility in water institutions.

Dr. David Zilberman and Ben Gordon from University of California, Berkeley, view water policies in the West within a historical context and much of their story applies across the West. Water and agricultural policy evolved through four stages from the 1850s to today. To encourage development, early settlers were granted rights to divert water, but trading in water was restricted. Water development was pursued through water district, state, and federal projects until the 1970s. Development solely for economic returns was phased out in a fourth stage, which the authors call the “conservation and environmental era,” when policies shifted toward more balance between financial returns and the environment. Technologies that utilize water use efficiency allow coping with increased competition and reduced supplies.

Dr. Frank Ward, Dr. Brian Hurd and Sarah Sayles from New Mexico State University explain how economics can guide policymakers in water management and conservation. People state that they want water conservation, but water conversation practices may be expensive. Conservation may be desirable from a social perspective, but not affordable privately. Economics can help policymakers spend limited public funds for the public good. The authors show how water trading and banking, transboundary aquifer sharing, and headwater flow capture can all help with climate stress adaptation and improve water use efficiency.

Dr. Gregory Torell and Dr. Reid Stevens from Texas A&M University emphasize issues of water planning associated mostly with surface water management. They use the major 1990s drought in Texas to discuss how the state water plan had to evolve to meet the state’s needs. While top-down policymaking was complemented

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with significant bottom-up decision making in 1997, that was not enough. The authors explain that the regions needed to explicitly include the linkage between supply and demand through prices when considering strategies. This inclusion would allow more regional flexibility and use a more holistic approach to water management.

Dr. Jonathan Yoder from Washington State University looks at the economics and politics of groundwater. He argues that “judicial innovations in Washington State…drive legislative, administrative, and private institutional innovation.” In particular, he shows how a State Supreme Court decision on criteria for exempting wells from permitting in 2016 led to political gridlock. The decision required counties to prove water availability before issuing well permit exemptions for building homes in rural areas. Yoder looks at the potential economic impacts of the original legislation and showed that, by changing the way counties accounted for water use from exempt wells, the state overcame gridlock.

Dr. Bonnie Colby and Ryan Young from the University of Arizona offer a unique way to reduce political gridlock when reconciling water rights among multiple users. They give an interesting account about how Native Americans have found innovative ways to use their water rights to resolve regional water management issues. Negotiated settlements with tribes that result in water trading have helped urban interests in Arizona, and elsewhere, enhance long-term water supply reliability and improve the financial situation of various tribes.

Dr. Karina Schoengold and Dr. Nicholas Brozović from the University of Nebraska-Lincoln explain how groundwater use can be more effective when users can adapt their choices to local conditions rather than follow only top-down policies. Farmers tend to be skeptical about regulations, but they have been effectively implemented when those regulations are designed locally. The suboptimal outcomes of top-down regulations are both a result of rigidity and lack of inclusion.

Finally, Dr. Dana Hoag, Dr. Chris Goemans and Tony Orlando suggest that water managers are challenged by conflicting regulations and policies of water use and quality. Regulations cannot be written in isolation; policies for water use and water quality need to be made more complementary. Through a current example in Colorado, they demonstrate how complex and overwhelming it can be to manage water to meet multiple objectives when some tradeoffs will be necessary. They also show how economists can work with other sciences to make it easier for local stakeholders and decision makers to understand the tradeoffs in front of them.