



**DAVID ROCKEFELLER CENTER  
FOR LATIN AMERICAN STUDIES**  
HARVARD UNIVERSITY

## **Water Challenges on the U.S.-Mexico Border**

Wednesday, October 28, 6 pm ET. This event is virtual. To register, [click here](#).

A Food Security in the Americas Series Event

Gabriela Soto Laveaga, Series Convenor

Presented in collaboration with the Department of the History of Science

### **Water Traveling Incognito: US-Mexico Transboundary Hydro-Policy and Virtual Water in Agricultural Exports**

América N. Lutz Ley, Assistant Professor, Centro de Estudios del Desarrollo, El Colegio de Sonora

This presentation offers analytical elements to understand the complexity of water exchanges between Mexico and the United States through the concepts of “virtual water” and “water footprint” related to agricultural exports. Although both countries have a long and outstanding relationship in terms of water-sharing agreements, agricultural production for international commerce, especially in the transboundary US-Mexico area, requires us to take into account the usually “unseen” transfers of significant amounts of virtual water contained in food. These transfers make water exchanges more complex than they appear at first sight, or as portrayed in official international agreements for water sharing between the two countries. The battle over water for irrigation vs international water payments at the Rio Conchos Basin, in Chihuahua, Mexico, is an example of these conflicting situations emerging from the water-food-politics nexus at a transboundary scale. This situation, however, is an instance of a more general water challenge, involving Mexican irrigation districts pressed by dynamics of global commodity chains, with uncertain implications (and further complications) in a globalized society, subject to climate change, and further inequalities between large-scale and peasant producers.

### **Transboundary Aquifers between Mexico and the United States: The Beauty of the Unknown and the Way Forward**

Rosario Sanchez, Senior Research Scientist and Associate Graduate Faculty, Texas Water Resource Institute, Texas A&M University

Over the last decade, transboundary aquifers traversing the Mexico-Texas border have generated growing interest of federal institutions on the Mexico side and state and federal

institutions on the Texas side. Notwithstanding this, binational efforts to understand, assess, and manage shared groundwater resources remain limited and politically sensitive. On the Mexico side, long-standing centralized groundwater governance structures have created institutional barriers at the local level to the expansion of knowledge and cooperation. On the Texas side, property rights related to groundwater resources limit the scope of options available for cooperative management of cross-border aquifers. This presentation examines stakeholders' perspectives on the borderland between Mexico and Texas through 44 surveys and personal interviews. Findings show that stakeholders appear to support a binational groundwater agreement as a means for assuring the sound long-term management of transboundary groundwater resources in the border region; however, the majority of stakeholders also suggest that short-term local or regional arrangements may be preferable over binational agreements. Second, participants identified leadership and individual personalities as key factors for success at the local level but noted that such influence had limited sustainability and limited regional-systemic effects. Third, the stakeholders indicated that water quality, rather than water quantity, is the main driver of transboundary cooperation efforts. Fourth, participants suggested that failures and successes in groundwater cooperation efforts are based more on fear and political lobbying than on understanding of scientific facts.

### **Food, Energy and Water Security in the Borderlands: Chihuahua as the Linchpin of Mexico-U.S. Hydrodiplomacy**

Christopher Scott, Director, Udall Center for Studies in Public Policy; Professor, Geography, Development & Environment; Director, Consortium for Arizona-Mexico Arid Environments, University of Arizona

Chihuahua is both water abundant and historically renegade from Mexico City's federal reach, placing it center-stage in Mexico's water-treaty relations with the United States. This talk frames the hydrodiplomacy of the Río Bravo/ Rio Grande as a challenge at the nexus of water, energy and food security. With looming water-resources collapse on the Río Conchos in the state, plus the region's aquifers in free-fall resulting from pumping with overly subsidized electricity, the Chihuahua crisis is a product of farmers' claims for water dammed in over-built reservoirs, a legacy of federal control over water, climate-driven dependence on groundwater, and food-security policy premised on US-Mexico-Canada trade agreements that are locally imbalanced and sectorally skewed.

**Moderated by:** Gabriela Soto Laveaga, Professor of the History of Science and Antonio Madero Professor for the Study of Mexico; Co-Chair, Faculty Committee on Mexico

### **Participant Bios**

**América Lutz-Ley** holds a PhD in Arid Lands Resource Sciences with a minor in Global Change from the University of Arizona, and a MA in Social Sciences with a concentration in Public Affairs from El Colegio de Sonora. Her research and publications focus on the social-environmental dynamics of adaptation to global change in northwest Mexico-Southwest US in critical aspects of human development; including water security, the water-food nexus, rural sustainable livelihoods, gendered environmental impacts of change, and adaptation

institutions and practices. Her most recent project investigates the effects of large-scale mining on rural water security, especially regarding impacts on agrarian livelihoods.

**Rosario Sanchez** is a Senior Research Scientist for the Texas Water Resources Institute (TWRI) at Texas A&M University. She is the PI of the Transboundary Aquifer Assessment Act Program, working to integrate data and produce research on transboundary aquifers between Mexico and Texas, and recently over the complete border between Mexico and the United States. She leads the transboundary groundwater research team at TWRI, with 15 years of academic and work experience on transboundary issues between Mexico and the U.S. She is also the Director of the Permanent Forum of Binational Waters and Co-Chair of the International Association of Hydrologists Transboundary Aquifer Commission.

**Christopher A. Scott** is an interdisciplinary scholar working on water security, climate resilience, the water-energy-food nexus, and transboundary resource governance — with 20+ years' focus on Mexico. Dr. Scott received BS and BA degrees from Swarthmore College and M.S. and PhD from Cornell University. He will be a 2020-21 Fulbright Scholar in Mendoza, Argentina — COVID-19 permitting — researching and teaching on hydropower-irrigation conflicts and interprovincial water disputes.