

**American Water Resources Association
2011 SUMMER SPECIALTY CONFERENCE
Integrated Water Resources Management:
The Emperor's New Clothes or Indispensable Process?
June 27 - 29, 2011
Snowbird, UT**

Tuesday, June 28

10:30 AM – 12:00 Noon

SESSION 12: Agricultural Considerations

The Conservation Challenge for Western Irrigated Agriculture in the Face of Emerging Demands and Climate Change - Glenn Schaible, Economic Research Service, USDA, Washington, DC (co-author: Marcel Aillery)

Population and economic growth, water quality and environmental values, and Native American water-right claims continue to drive increases in the demand for water resources across the U.S. However, biofuels development and expected water demand/supply impacts from climate change are placing new pressures on water allocations, heightening awareness of the importance of water conservation and the sustainability of the irrigated agriculture sector. The critical linkage for irrigated agriculture between growing water supply/demand pressures and a more sustainable future is adaptability. This paper examines the challenge for agricultural water conservation in terms of the "state-of-affairs" in the demand for water resources across the West, expected climate change impacts on water supply/demand conditions, how efficient irrigated agriculture is as of 2008, and the status of investments in irrigated agriculture.

This study used USDA's Census of Agriculture, its Farm and Ranch Irrigation Surveys, and USGS's water-use summaries to characterize the current status in the demand for water resources for the U.S., how important irrigation is to U.S. agriculture, how efficient irrigated agriculture is, and the possibility of improving real agricultural water conservation by integrating improved public water conservation programs with improved institutional water-management programs.

Irrigated farms (farms irrigating any cropland) account for roughly 40 percent of the value of U.S. agricultural production. Study results demonstrate that while substantial improvements in irrigation water-use efficiency have already occurred over the past several decades, there still exists significant room for improvement. At least 50 percent of irrigated cropland acreage is still irrigated with traditional (less efficient) irrigation application systems, and most irrigators do not make use of the more conserving onfarm water-management practices. Given the probability of climate change, its prognosis for reduced water supplies, a sustainable future for irrigated agriculture may require a broader water-conservation policy focus than the traditional emphasis on physical irrigation application-system improvements. Greater emphasis on producer adoption of conserving 'irrigation production systems', and the integration of onfarm water conservation with institutional water-management initiatives could enhance the potential for real agricultural water conservation, and help ensure a more sustainable future for the irrigated agriculture sector.

An abstract submitted for the AWRA Summer Specialty Meetings, June 27-29, 2011, Snowbird, Utah. The views expressed here are the sole responsibility of the authors and do not necessarily reflect those of the U.S. Department of Agriculture.

Selecting and Working with an IWRM Facilitator - Lisa Beutler, MWH, Sacramento, CA (co-author: Dale Schafer)

A skilled facilitator can make or break an IWRM process. Our goal is for agencies, technical consultants, and stakeholders to be informed consumers of IWRM facilitation services. Topics will include practical tips to help you determine what you need, evaluate what you have and obtain the best value for your investment. Also discussed will be the pros & cons of 3rd party facilitation, and what's best for you.

Innovative Management Systems to Cope with Drought: The Case of South-western France – Yoro Sidibe,
University Montpellier 1, Montpellier, France (co-authors: Jean-Philippe Terreaux, Mabel Tidball)

Water managers are increasingly aware of the problem of water scarcity and the randomness of rainfalls. This problem is exacerbated by recurrent droughts observed in south-western France in recent years where water consumption exclusively by agriculture often exceeds 80% in summer. In the given context of climate hazard, some management companies have introduced new water pricing methods with very specific features aiming particularly at a certain anticipation of the demand of irrigation water. The objective of this research is to analyze the effect induced by the application of these different water pricing methods on water demand, especially in case of drought, on farmers' income and on the revenue collected by the management company. To undertake this analysis a stochastic model that simulates farmers' behavior and their response to different water pricing scenarios has been built. Empirical application of the model has been carried out with the help of an agronomic model of plant growth and data collected from Midi-Pyrenees (France). The results show that these pricing policies create a wide range of effects that can be searched by management companies according to their characteristics and their access conditions to the resource. These pricing systems prove to be powerful tools to mitigate the impact of drought. This study provides very useful lessons for the design of water management policies.