Diversifying the Water Portfolio for Agriculture in the Rio Grande Basin

The Rio Grande extends 1,900 miles from Southern Colorado through New Mexico and Texas to the Gulf of Mexico and is the fourth longest U.S. river. It is listed, however, as one of the world's most endangered rivers. The Rio Grande Basin's water resources, plus the societies, economies, species and ecosystems that depend on them, are seriously threatened by drought, climate change and rapid population growth.

Population growth and demand for municipal water supplies in the basin are expected to double over the next 50 years while agriculture uses 80 percent of the water from the Rio Grande. Climate change is projected to increase temperatures and decrease net available water. Higher temperatures will result in increased evapotranspiration and increased crop irrigation requirements, further stressing water supplies.

Many other arid-region river systems are facing similar crises and there is an urgent need for innovative responses. The Rio Grande is an ideal place to better understand these issues and test technology and management approaches.

The Diversifying the Water Portfolio for Agriculture in the Rio Grande Basin, a Coordinated Agriculture Project (CAP), seeks to explore various water management strategies by evaluating the use of alternative technologies, such as treated wastewater and desalination, and improved crop mixes and agricultural practices, to identify the most efficient and cost-effective use of water.

The project's long-term goal is to optimize water resources to help sustain agricultural production while enhancing regional water use efficacy and economic and employment opportunities, and improving ecosystem services.

This integrated, multistate project will be valuable to stakeholders, producers and communities throughout the Rio Grande Basin.

Objectives

- Evaluate water sources, including nontraditional sources, for urban, agricultural and ecosystem use under changing climate, water management and demographics
- Demonstrate the appropriate use of saline and reclaimed water resources across agricultural, municipal and industrial uses.
- Develop research and demonstration tools focused on improving the management of water at all scales (on-farm, M&I systems, canal operation and irrigation district) within the basin.
- Broaden outreach, demonstration, teaching and tools to facilitate efficient use of all available water resources for regional stakeholders.

Project Collaborators

- Texas Water Resources Institute
- Texas A&M AgriLife Research and Extension Service
- Texas A&M University
- New Mexico State University
- New Mexico Water Resources Research Institute

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