

rio grande basin initiative

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The federally funded **Efficient Irrigation for Water Conservation in the Rio Grande Basin** initiative focuses on increasing available water, meeting present and future water demands, and creating new sources of water.

Rio Grande Basin agriculture is highly productive with irrigation claiming more than 85 percent of its water. In addition, population growth and urban water demands in the basin have already increased and are expected to double in the next 50 years. Persistent drought in the region also limits the amount of water available for agriculture and urban uses.

The basin's agricultural crop industry, comprised principally of cotton, grain sorghum, grapefruit, chiles, pecans, citrus, sugarcane and vegetables, has an economic impact of more than \$1 billion annually. By investing in improvements in irrigation conveyance systems and efficiently using water on-farms and in-homes, both urban and agricultural interests can benefit from increased water availability and resulting economic enhancements.

The project team is comprised of Texas AgriLife Research and New Mexico Agricultural Experiment Station researchers and Texas AgriLife Extension Service and New Mexico Cooperative Extension Service specialists and agents. The team is working with local irrigation districts, agricultural producers, homeowners and other agencies to address water issues.

Objectives

- Meet present and future water demands through efficient irrigation and water conservation measures
- Expand efficient use of available water resources by

improving water conveyance canals and implementing more efficient irrigation systems

- Broaden outreach and teaching programs on how to efficiently use water resources and apply water-conserving practices for agricultural producers and urban water users

Components

- **Irrigation District Studies:** Conduct economic and engineering evaluations of irrigation district infrastructure needs and develop cost-benefit data and strategies for more efficiently delivering water to users
- **Irrigation Education and Training:** Conduct irrigation system and component research, and develop and deliver on-farm demonstrations, trainings and public meetings for growers, county agents and basin citizens
- **Institutional Incentives for Efficient Water Use:** Identify legal and institutional barriers that keep irrigation districts and growers from investing in or creating incentives for water conservation, evaluate impacts of alternative water management practices and provide scientific input to policymakers
- **On-Farm Irrigation System Management:** Research and demonstrate tools that improve on-farm irrigation scheduling and management, maximize efficient water use and identify the most effective irrigation systems while maintaining crop yields

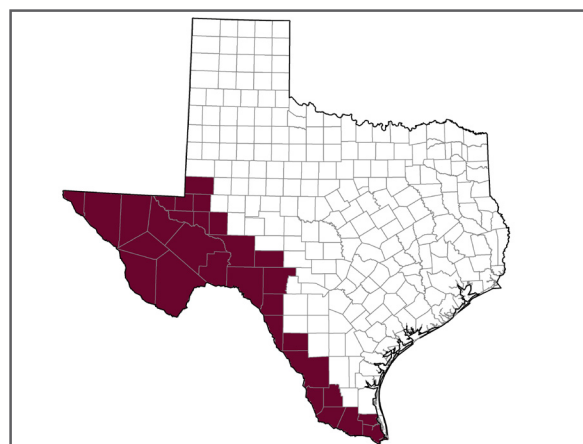


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- **Urban Water Conservation:** Develop strategies for increased landscape water conservation, rainwater harvesting and reuse of municipal effluent and provide education for improved in-home water usage and leak detection
- **Environment, Ecology and Water Quality Protection:** Evaluate and deliver various methods for riparian and aquatic weed and invasive species control and screen water for purity
- **Saline and Wastewater Management and Water Reuse:** Support the appropriate use of saline and reclaimed water resources to irrigate urban landscapes and agricultural crops and train homeowners and professionals on proper installation of these systems
- **Basinwide Hydrology, Salinity Modeling and Technology:** Continue limited modeling efforts in support of on-farm systems and enhance tools for managing groundwater-surface water interactions
- **County Programs:** Conduct demonstrations, field days and other public and youth outreach events related to project components in coordination with specialists and researchers to continue educating the public on the importance of water conservation and efficiency

Accomplishments

- Economic assessment of citrus pack-out from traditional and narrow border flood irrigation showed grapefruit citrus growers using border flood had higher percentage of fruit yield than traditional flood irrigators.
- Educational programs on rainwater harvesting have led to new demonstrations and home installations. Survey results indicate an estimated 70 million gallons of rainwater could be harvested by capturing run-off, conserving potable water.
- Since 1999, nine irrigation districts have installed nine different types of synthetic canal lining materials totaling 26 miles. Engineers tracked long-term effectiveness and durability, determining that the best performer continues to be synthetic liner overlaid with shotcrete.



- Grass carp demonstrations have reduced or eliminated submerged aquatic vegetation from irrigation canals, with estimated savings of more than \$500,000 per year.

Collaborators

- Texas Water Resources Institute
- Texas AgriLife Research
- Texas AgriLife Extension Service
- New Mexico Cooperative Extension Service
- New Mexico Agricultural Experiment Station
- New Mexico State University Water Task Force
- USDA Natural Resources Conservation Service
- U.S. Bureau of Reclamation
- U.S. Geological Survey
- Texas Department of Agriculture
- Texas Water Development Board
- North American Development Bank
- Border Environmental Conservation Commission
- International Boundary and Water Commission
- Lower Rio Grande Development Council
- Irrigation Districts
- Regional Water Planning Groups

Funding Agency

- USDA National Institute of Food and Agriculture



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