Story by Danielle Kalisek

WATER USE, ECONOMIC VALUE OF IRRIGATED AGRICULTURE EXAMINED IN NEW REPORT

In 2007, statewide irrigated agriculture had a $4.7 billion economic value, according to the Texas Water Development Board and Texas State Soil and Water Conservation Board.

Texas A&M AgriLife Research and Texas A&M AgriLife Extension Service experts recently released a report, *Status and Trends of Irrigated Agriculture in Texas*, highlighting the current status of irrigation impacts in Texas.

"Irrigation is very important to agriculture in Texas," said Dr. Kevin Wagner, associate director of the Texas Water Resources Institute and lead author of the special report, published by the institute. "Not only does it contribute billions to our economy, it helps farmers mitigate production risk in the state's semi-arid climate while also improving crop quality and value."

According to the report, regional impacts of irrigated agriculture vary greatly, and in regions such as the High Plains, the economic impact is significant. In that region alone, the total economic impact of converting all irrigated acres to non-irrigated dryland farming would be an annual net loss of more than $1.6 billion of gross output, more than $616 million of value added and nearly 7,300 jobs. In addition, loss of irrigation in the Winter Garden (Frio, Medina, Uvalde and Zavala counties) would result in a loss of $55 million in vegetable and melon production, $22 million in additional economic activity and 872 jobs. Finally,

Agricultural irrigation systems continue to gain efficiency, experts say. Photo by Kay Ledbetter, Texas A&M AgriLife Communications.

in the rice-producing middle Gulf Coast region (Colorado, Matagorda and Wharton counties), the irrigation-dependent rice industry contributed $441 million in annual output to the region and supported 3,900 jobs across all sectors based on 2008–2010 data.

Projected economic impacts from lost irrigation are due not only to reduced production and associated processing, but also to reduced demand for inputs such as fertilizer, chemicals, energy and machinery. All of these factors are linked throughout the state's economy, according to experts.

"Irrigation is critical to our food production and food security and is a vital component of Texas' productive agricultural economy," Wagner said.

Because of drought conditions and water supply concerns, he said Texans are looking to improve water conservation and management strategies across the board.

"Decision makers need the facts on just how much water agriculture is using as well as how much food and fiber it's producing with that water."

The content in the report was drawn primarily from data published by Texas A&M University, AgriLife Research, AgriLife Extension, Texas Water Development Board and U.S. Department of Agriculture's National Agricultural Statistics Service.

"The report aims to be a concise survey of the most current body of knowledge on irrigated agriculture in Texas," Wagner said.

"Over the past several decades, significant advances have been made in irrigation efficiency, as many irrigators now use high-efficiency advanced irrigation technologies, such as low-pressure center pivot sprinkler systems or subsurface drip irrigation," said Dr. Dana Porter, associate professor and Extension agricultural engineering specialist, who also contributed to the report.

"However, challenges remain and there are opportunities for continued improvements in water-use efficiency through application of situation-appropriate efficient irrigation technologies and best management practices, including irrigation scheduling, and through use of drought-tolerant crop varieties and integrated crop and pest management practices," she said.

Highlights from the report include:

- While statewide agricultural irrigation application rates have stayed relatively constant since the mid-1970s, agricultural yields have increased significantly as improvements in irrigation technology and management, crop management and crop genetics have been developed and implemented.
- Texas agricultural irrigation averages less than 18 inches per acre annually. In comparison, a College Station study found that average households supplemented rainfall by applying 22 inches of water annually to lawns.
- The statewide economic value directly derived from irrigated agriculture was $4.7 billion in 2007.
- Agriculture is a part of the broader food and fiber sector—which accounts for 9 percent of the state's economy.
- Although both surface water and groundwater are used for agricultural irrigation, the source of most agricultural irrigation water is groundwater. In 2000, 86 percent of the irrigated acres in the state used groundwater.
- Irrigation efficiency has gone from 60 percent to 88–95 percent in much of the state today, allowing Texas to get much more value and agricultural output from its water.

The report can be viewed online at *twri.tamu.edu/publications/educational-materials/2012/em-115/*.

As of 2008, center pivot sprinklers are used on nearly 80 percent of Texas' irrigated acres.