

Economic Impacts of Irrigation in Uvalde County, Texas

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The economic impacts of irrigated crop production on Uvalde County were estimated using IMPLAN. This model utilizes economic multipliers for each sector of the economy to estimate how a change in one sector affects business activity, value-added and employment in other sectors of the economy that supply inputs and services to the crop production sector. Baseline economic impacts in Uvalde County were estimated for the value of annual average production of corn, sorghum, wheat, cotton, and sunflower/sesame production for the period 2007-2008, and vegetable and melon production for 2005-2008.

This analysis assumes that acreage and cropping patterns would remain constant with or without water for irrigation, with the exception of vegetable and melon crops which are assumed not to be technically feasible without irrigation water. Therefore, this should be considered a very conservative economic impact of the contribution of irrigation to agriculture and the economy in Uvalde county. As a result, it is likely a lower bound of what the actual economic impact of irrigation may be. Excluded from the analysis due to insufficient data are sorghum for forage, improved pasture and livestock.

Output is analogous to total sales for a sector such as corn or vegetables. Value Added includes employee compensation, proprietor's income, rents and royalties, and payment of business taxes, and is a component of Output. Value Added is also referred to as income or gross state product. Employment is reported in full-time equivalent jobs, so the actual number of employees for any sector is higher than reported here because part-time workers are combined in this analysis.

	Output		Value Added		Employment	
	Value of Production	Total Economic Impact	Farm Level	Total	Farm Level	Total
	(\$)		(\$)		(FTE Jobs)	
Current Situation <i>(Irrigated & Non-Irrigated)</i>	\$44,724,360	\$61,284,196	\$19,849,680	\$30,502,445	621	952
Economic Impact if No Irrigation	\$12,801,606	\$17,169,900	\$4,817,423	\$7,621,896	269	353
Economic Impact of Irrigation	\$31,922,754	\$44,114,296	\$15,032,257	\$22,880,519	353	599

The Current Situation includes both irrigated and dryland production in Uvalde County averaged for the period 2007-2008, except for fruits and vegetables which were averaged for 2005-2008 in order to account for wide swings in acreage and production. The total value of crop production was \$44.7 million for the Current Situation. Using the Uvalde County economic multiplier of 1.37 results in a total economic impact for agriculture of \$61.3 million. About \$44.7 million impact occurs on the farm, while \$16.3 million is non-farm economic impact.

Major non-farm sectors supporting irrigated agricultural production in the county include: support activities such as crop spraying, land surveying, soil preparation, and custom planting and harvesting operations. Total Current Situation employment for the county is nearly 1,000 workers: 621 are employed on the farm and another 311 work in agriculture supporting sectors, but not on the farm.

If the county reverted to dryland agricultural production the total economic impact of crop agriculture would decline to \$17.2 million, \$7.6 million of which would be value added. A total of 353 workers would be employed, with 269 of those on the farm. Therefore, the total economic impact of irrigated agriculture in the county is estimated to be \$44.1 million, with \$32 million on the farm and \$12 million in the non-farm sectors noted above. About 600 full-time workers are supported by irrigated agriculture. More than 350 of those work on farms, while another 246 have off farm employment.

When considering crop sectors, vegetables are most dependent upon irrigation as vegetable and melon crops are assumed not to be technically feasible without irrigation water. Corn, sorghum, wheat and cotton are all dependent on irrigation to varying degrees. It is important to reiterate that this analysis assumes that acreage and cropping patterns would remain constant with or without water, and that enough rainfall would occur each year. There are often years where there is not enough rainfall and that production is severely curtailed or impossible without irrigation water.

Crops	Economic Impacts of Uvalde County Crop Production with Irrigation			Economic Impacts of Uvalde County Crop Production without Irrigation		
	Value of Production	Total Economic Impact	FTE Jobs	Value of Production	Total Economic Impact	FTE Jobs
Vegetables	\$19,578,000	\$27,856,241	283	\$0	\$0	0
Corn	\$11,152,841	\$15,015,015	325	\$4,339,615	\$5,842,403	126
Sorghum	\$4,515,631	\$6,079,371	132	\$2,913,777	\$3,922,803	85
Wheat	\$5,545,826	\$7,466,317	162	\$4,239,569	\$5,707,711	124
Sesame/Sunflowers	\$112,572	\$144,007	2	\$72,610	\$92,886	1
Cotton	\$3,639,490	\$4,723,245	49	\$1,236,035	\$1,604,097	17
Total Impacts	\$44,724,360	\$61,284,196	952	\$12,801,606	17,169,900	353



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