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ASSESSMENT AND IMPACT OF WATER CONSERVATION POLICIES IN TEXAS HIGH PLAINS

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The availability of water in the Texas Panhandle is a major concern. The top twenty-six counties of West Texas have a semi-arid climate, with little surface water available for consumption. The majority of the water used in the region for agriculture comes from the Ogallala Aquifer, which provides groundwater for Kansas, Oklahoma, and Nebraska as well. The southern portion of the aquifer has a very slow recharge rate, which strengthens the need for conservation practices.

Due to the limited availability of water from the Ogallala Aquifer, water conservation plans need to be developed and implemented. The irrigation of crops accounts for 95% of the groundwater use in the Texas Panhandle. New technologies such as drip and low-energy pivot irrigation systems would ordinarily provide for increased water conservation, but the increased production of crops requiring irrigation in the semi-arid region has led to greater water consumption rather than conservation.

The objectives of this study are to first, determine the actual economic benefit that irrigation provides over non-irrigation, and second, to assess possible conservation policies given the economic benefit from irrigation. To meet the first objective, we plan to use existing production and water use models to show the actual difference in revenue of irrigation versus non-irrigation in an effort to assess the cost to producers in terms of lost revenue per acre by switching to non-irrigated crops. We will then address the policy implications surrounding this decrease in revenue, including policies that will encourage water conservation, to address the second objective.

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