

Water Meters for Smart Savings and Conservation? Examining Water Meters as a Tool for Sustainable Irrigation in Oklahoma's Rural Communities

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Summary

This study aims to evaluate the effectiveness of water meters in conserving groundwater resources for agricultural irrigation in Western Oklahoma. As groundwater supplies continue to decline and water conservation policies remain a topic of debate, this research will be the first to evaluate whether water meters actually reduce water use for crop irrigation on the field. Understanding the impact of water meters is crucial, as their success depends not only on the technology itself but also on active engagement by farmers and regulatory oversight. To answer this question, we will conduct a field experiment involving up to 12 irrigators across seven target counties in Western Oklahoma over a two-year period. In the first year, smart water meters will be installed to remotely transmit data to the research team, establishing a baseline of water usage. However, irrigators will not have access to this data to prevent any behavioral changes driven by monitoring. In the second year, participants will be divided into two groups: a control group, where the smart water meters remain inaccessible, and a treatment group, where irrigators will have full access to real-time water usage data, allowing them to make informed decisions and adjust their practices to conserve water. Across the two-year experiment, we will survey participants at the beginning, after one year, and after two years asking various questions regarding their farm, attitudes towards farming and water management, policy viewpoints, and demographics. By analyzing water consumption patterns, utility costs, and attitudes, this study will generate valuable insights to guide future water conservation policies. Ultimately, the findings will contribute to broader efforts to enhance agricultural sustainability, strengthen food and water security, and support the economic resilience and economic growth of rural communities facing ongoing water challenges.