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Economics of Agricultural Water Conservation: Empirical Analysis and Policy Implications

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Abstract

Climate change is a global challenge that requires urgent action. This study analyzes the economic impact of agricultural water conservation in North America. The study focuses on the role of water rights in irrigated agriculture and the impact of water conservation on the surface to drip irrigation system. The findings show that water conservation choices on the surface to drip irrigation system are influenced by the amount of water available for water conservation. The study also shows that the amount of water conservation is influenced by the amount of water available for water conservation. The study also shows that the amount of water conservation is influenced by the amount of water available for water conservation. Our findings show that where water rights exist, water rights

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administrators will need to guard against increased depletion of the water source in the face of growing subsidies for drip irrigation. Our approach for analyzing water conservation programmes can be applied where water is scarce, irrigation is significant, food security is important, and water conservation policies are under debate.

Acknowledgements

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Notes

1. Many irrigation researchers prefer the term consumption to depletion, as shown for example in Perry et al. (2009) and Hellegers et al. ([2011](#)).
2. The following amortization was used to translate capital into annual equivalent costs of investing in a drip irrigation system: $AP = i(CC) / [1 - (1+i)^{-T}]$, where AP (annual equivalent amortization payment) = \$364; CC (unsubsidized drip irrigation system capital cost/acre) = \$2500; i (interest rate) = 7.5%; and T (system life) = 10 years.
3. Our approach to PMP is an example for approaching an “inverse problem”, in which observed data are used to estimate the parameters of a process based on an assumed model.
4. GAMS (General Algebraic Modeling System) is a mathematical programming software. Business



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