Brief #5: Predicting Participation

Identifying Factors Associated with Farmer Willingness to Participate in Regional Water Conservation Programs

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Overview

➢ While the feasibility of limited irrigation practices is important, achieving regional water conservation targets will also depend on farmers' willingness to participate in conservation programs.

➢ We summarize the findings from a survey of 500+ agricultural water users across Colorado's West Slope to highlight factors associated with their likelihood to enroll in an agricultural water conservation program.

➢ The findings can provide a foundation for forecasting how participation rates may impact the region's ability to meet conservation targets.

Purpose

This study examines how characteristics of producers, land parcels, and program design features influence willingness to participate in voluntary conservation efforts.

The findings will help stakeholders and policymakers:

- Better anticipate participation levels and water conservation outcomes.
- Identify opportunities to improve program participation and meet regional targets through strategic program adjustments.

Approach

Through our survey, we collected information about demographics, operational characteristics, and attitudes toward water conservation.

We used a Discrete Choice Experiment to assess preferences for different water conservation practice features.

- Practice options included full season withdrawal, full season limited irrigation, and split season withdrawal
- Compensation rates varied from $150 to $1600/acre.

We applied Bayesian statistical models to analyze how various factors influence participation decisions.

Findings

The demographic profile of respondents aligned with 2022 USDA Census data for producers on Colorado's West Slope.

- Most respondents reported irrigating primarily for hay or grass pasture production.

Among examined policy/practice features, the compensation rate was the strongest predictor of participation.

Other results:

- Programs requiring full-season withdrawal had reduced participation, regardless of compensation rate.
- Adding an East Slope match to the amount of water conserved increased likelihood of participation about 10%.

A significant factor for participation was respondents' attitudes toward water conservation programs.

- Respondents with negative attitudes were unlikely to opt-in to participation, even at high compensation levels.
- For respondents with neutral or favorable attitudes, compensation became increasingly important.

Insights

The findings offer guidance for designing more effective and appealing water conservation programs. For example, participation could rise if:

- Negative perceptions are addressed through outreach, trust building, & transparency.
- Program officials maintain a focus on hay and pasture acres, which dominate irrigated agriculture in the region.
- Competitive compensation is offered, with rates up to $1,200/acre showing potential to drive participation.
- Program features are offered, like East Slope water conservation matches and Water Shepherding, which increased appeal and opt-in rates.
- Flexible irrigation options are offered, as producers had more interest in limited irrigation practices than full-season curtailment practices.
- Incentives are strategically combined; for example, split-season irrigation paired with $600/acre compensation yielded a 2% opt-in rate, but that jumped to 37% for $1,200/acre and an East-Slope match.

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