Water Leases:
Attitudes of South Platte Farmers

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Presentation Outline

- Competing water demands in Colorado
- Negative impact of permanent water transfers as catalyst for finding alternatives
- Producer survey and results
Population Growth, Increasing Water Demand, and Loss of Irrigated Acreage

<table>
<thead>
<tr>
<th>Basin</th>
<th>Anticipated Population Growth</th>
<th>Additional Water Needs (AF)</th>
<th>Estimated Loss of Irrigated Acres</th>
<th>Economic Impact of Acreage Reduction (million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>55%</td>
<td>98,000</td>
<td>47,500 (9%)</td>
<td>$20.3</td>
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<tr>
<td>Rio Grande</td>
<td>35%</td>
<td>4,300</td>
<td>80,000 (13%)</td>
<td>$107.5</td>
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<tr>
<td>South Platte</td>
<td>65%</td>
<td>409,700</td>
<td>179,500 (18%)</td>
<td>$110.1</td>
</tr>
</tbody>
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South Platte Basin

Economic Activity Generated per Irrigated Acre = $690

- **Direct Activity**: irrigated crop sales
- **Indirect Activity**: fertilizer, seed, chemical sales (only margins if the input is not produced locally)
- **Induced Activity**: wages spent locally
Permanent Water Transfers from Agriculture to M&I Uses

- Individual farmers compensated
- Third parties not typically compensated (indirect and induced economic activity not replaced)
- Portion of economic base removed: Formerly irrigated land typically fallowed and not always developed for other uses (Crowley County, CO)
- “Hot spots” tend to occur: clustered acreage losses result in concentrated economic impacts
- Stakeholders seek alternatives to ‘buy and dry’

Survey Objective: Will Leases Avoid ‘Buy and Dry’?

- Farmer as water manager
  1. Input to irrigated crops
  2. Lease to cities (a high-value crop)
     - Rotational fallowing program
     - Limited irrigation farming
       - Innovative crop mixes
       - Timing irrigation to coincide with critical growth stages

- Survey of Potential Water Leases and Irrigation Practices in the South Platte River Basin
  1. Who is Willing to Lease?
  2. At What Price?
  3. How Much Water?
Survey Design and Methods

- Sample Frame
  - National Agricultural Statistics Service
  - Farmers with \( \geq 50 \) irrigated acres
  - 1,731 successful mailings
  - Usable response rate: 19%
  - No significant differences between demographics of respondents and non-respondents (sample deemed representative)
- Likert scale: SD, D, N, A, SA

Attitudes Toward Leases in General

- If plans to sell any water rights within the next 5 years: 7% Agree, 30% Neutral, 63% Disagree
- Water leases can mean benefits and maximization of water rights: 70% Agree, 21% Neutral, 9% Disagree
- Water leases can be a source of revenue: 80% Agree, 11% Neutral, 9% Disagree
- Water leases between upstream and downstream users: 57% Agree, 17% Neutral, 26% Disagree

Legend: [Agree (%) | Neutral (%) | Disagree (%)]
Minimum Price per Acre Required to Fallow all Acres for 1 Year

How Much Water Would be Available for Lease?

Approximately 33,000 total acres with 50,000 to 60,000 AF
Characteristics of Farmers Who are Willing to Lease

Binary logit based on agreement with statement:
“I am willing to participate in a water lease if paid enough.”

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<tr>
<th>Variables with Significant Negative Effect</th>
<th>Variables with Significant Positive Effect</th>
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</thead>
<tbody>
<tr>
<td>Proximity to Urban Center</td>
<td>Concern for Rural Communities</td>
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<tr>
<td>% Groundwater</td>
<td>Farming Experience</td>
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<td></td>
<td>Willingness to Work with Municipalities</td>
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<tr>
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<td>Willingness to Work with Other Organizations</td>
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Conclusions, Limitations, and Opportunities

- A functional lease market is possible
  - Farmers are willing to sign leases
  - Reasonable prices and sufficient amounts of water

- Lingering questions:
  - What are municipalities willing to pay?
  - Do transactions costs overwhelm the lease prices?
  - Who will negotiate lease agreements?