Economic Impacts and Economic Development Opportunities
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REDUCED WATER FOR AGRICULTURE IN
THE WALKER RIVER BASIN
OUR QUESTION

What would be the economic impact of leasing or buying enough water rights in Mason and Smith Valleys to bring an additional 50,000 AF/yr past Wabuska Gauge?

Answer preview: It depends.
WHAT ARE ECONOMIC IMPACTS?

- Movement of money throughout the economy, GDP type impacts
- Specific to a region, Smith and Mason Valleys
- Does not include existence values for agricultural communities and landscape, wildlife, Walker Lake, etc., no externalities
Figure 1: Overview of Community Economic System

- Inputs & Labor → Basic Industry
- Basic Industry → PRODUCTS
- PRODUCTS → Inputs & Labor
- INPUTS → LABOR
- LABOR → Goods & Services
- Goods & Services → Service Firms
- Service Firms → Products
- Products → Household
- Household → Labor
- Labor → Basic Industry
- Basic Industry → Inputs & Labor
BASELINE CROPS AND WATER USE
FOUR POSSIBILITIES

1. Land goes from agriculture (alfalfa rotations) to desert
2. Existing crop rotations altered
3. Alternative crops
4. Other non-agricultural water sources
ALTERNATIVE CROPS

Switchgrass (total costs $849/acre, profits $393/acre, water use 3 AF/acre/yr)

Alfalfa (total costs $755/acre, profits $119/acre, water use 4 AF/acre/yr)

G. B. Wild Rye (total costs $244/acre, profits $49/acre, water use 1 AF/acre/yr)

Onions (total costs $9,572/acre, profits $478/acre, water use 3 AF/acre/yr)

Leaf Lettuce (total costs $6,680/acre, profits $320/acre, 1 AF/acre/yr)
MORE CROPS

Teff seed (total costs $862/acre, profits $148/acre, water use 3 AF/acre/yr)

Two Row Malt Barley (total costs $860/acre, profits $400/acre, water use 2 AF/acre/yr)

Wine Grapes (total costs $5,041/acre, profits $288/acre, water use 0.3 AF/acre/yr)

Also: variations related to the crops (hay instead of seed, etc,) rotation schedules or crop practices
THREE EXAMPLES

1. 35% of water from ag land taken out of production, 10% from modified crop rotations, 41% from switch to alternative crops
2. 58% of water from ag land taken out of production, 10% from changing crop rotations, 18% from switch to alternative crops
3. All water except the 14% from geothermal option from ag land taken out of production
SOME KEY ASSUMPTIONS

- 14% of water from an option for geothermal water already obtained (7000 AF)
- Impacts are reported in terms of value-added (like GDP) not total sales
- Positive impact from water rights sale income mitigates losses (example: $81.20/acre total value added impacts for sale of 50% reliable water rights, $108/acre total value added impacts for lease of water rights)
MINIMIZING ACREAGE TAKEN OUT OF PRODUCTION & MAXIMIZING USE OF ALTERNATIVE CROPS IS BEST.
LIMITATIONS

- Risks
- Changes in production costs, externalities
- Sale of water rights may mean producer leaves the region entirely
QUESTIONS?