Water Quantity, Quality and Cost: A Look at Water Science and Policy

2021 Agricultural Outlook Forum
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The findings and conclusions in this presentation are those of the authors and should not be construed to represent any official USDA or U.S. Government determination or policy.
USDA & Water

• Policy & Funding
  - Natural Resource Conservation Service (NRCS) Programs e.g. Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP)

• Data
  - National Agricultural Statistics Service’s (NASS) Irrigation and Water Management Survey and Census of Agriculture

• Analysis
  - Agricultural Research Service (ARS), Economic Research Service (ERS), NRCS, etc.
Source of surface water applied to irrigated acreage in 2018, On-farm surface water vs. off-farm surface water

= Off-farm surface water

= On-farm surface water

Size of regional pie charts is proportional to the total number of acres irrigated with surface water in the region.

Source: USDA, National Agricultural Statistics Service, 2018 Irrigation and Water Management Survey
2019 Survey of Irrigation Organizations

- Collaboration between ERS, NASS, & OCE
- Update of 1978 Census of Irrigation Organizations
- Survey collected data on:
  - Water delivery organizations
  - Groundwater management organization
- Developed in partnership with local, state, and regional stakeholders
Irrigation organizations perform multiple water-related functions

- Irrigation water delivery
- Groundwater management
- Municipal / residential water management
- Agricultural drainage management
- Recreation of wildlife management
- Flood retention
- Electricity generation
- Other

Percent of organizations with function

Secondary Function  Primary Function
Off-farm water comes mostly from federal projects or streams, lakes, and ponds.

- Federal projects
- State projects
- Private or local projects
- Other supplier
- Municipal or industrial
- Streams, lakes and ponds
- Other reservoirs
- Pumped groundwater
- Drainage water

Direct withdrawal
Contracted or purchased

Millions of Acre-feet
Sixty-two percent of outflows from delivery organizations go to farms.
USDA-ERS Water Research

- Irrigation organizations
- Managed aquifer recharge
- Irrigation demand and weather shocks
- Water conservation and irrigation technology adoption
- Value of water in agriculture
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Research Partners and Stakeholders