Accounting for California’s Water

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California needs to improve accounting of water assets and liabilities

- Understanding the balance sheet:
  - How much is there?
  - Who has claims to use it?
  - What is actually used?

- Managing and sharing information

Source: Bureau of Meteorology of the Australian Government
The drought has spotlighted weaknesses in California’s water accounting

- Surface water allocations and curtailments
- Long-term depletion of aquifers
- Water for the environment
- Water trading
Other dry regions teach valuable lessons

Our study looked at:
- Accounting systems for 12 western states, Australia, and Spain

We analyzed:
- Legal and institutional frameworks
- Management protocols
- Information technologies
California’s water supply is physically interconnected, but institutionally fragmented

- Several federal and state agencies manage water
- Over 1,000 irrigation districts
- Over 400 urban agencies
- Nearly 200 priority groundwater basins
- Over 1,400 large dams

Source: Hanak et al. (2011), Managing California’s Water: From Conflict to Reconciliation
California has critical water accounting gaps

Understanding water availability
- Surface water
- Groundwater
- Surface-groundwater interactions

Understanding legal claims on water
- Surface water rights
- Groundwater rights
- Environmental claims

Understanding water use
- Surface water diversions
- Groundwater pumping
- Return flows
- Environmental uses

Managing and sharing information
- Consistent accounting and data standards
- Authoritative and transparent models
- Useful public information
Closing these gaps would improve the state’s water management

- California is making progress but ...

- … better water accounting will:
  - Improve allocation of scarce surface water
  - Enhance groundwater management
  - Strengthen environmental water management
  - Expand water trading opportunities
Improving allocation of scarce surface water

The problem:
- Lack of info on water rights, availability, and use

Solutions:
- Develop comprehensive flow monitoring for river basins
- Firm up surface claims
- Improve estimates of net use and return flows
Enhancing groundwater management

The problem:
- Long-term depletion of aquifers that must be brought into balance

Solutions:
- Define groundwater accounting standards
- Develop modeling standards and authoritative models
- Firm up claims
- Account for groundwater use and recharge
Strengthening environmental water management

The problem:
- Lack of info on environmental requirements and flows

Solutions:
- Monitor flows in environmentally sensitive streams
- Define environmental water budgets
- Consolidate information on water availability and ecological indicators
Expanding water trading opportunities

The problem:
- Stagnation of water trading during drought

Solutions:
- Clarify how much water is tradable
- Increase public information on water trading
Modernizing California’s water accounting

- Provide more accurate assessments:
  - How much water is there?
  - Who has claims to use it?
  - What is actually used?

- Fill accounting gaps, consolidate information, and make data useful

- Make the most of available water
Notes on the use of these slides

These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.