



# The social and economic dynamics of water demand and climate change

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# Why social and economic dynamics?

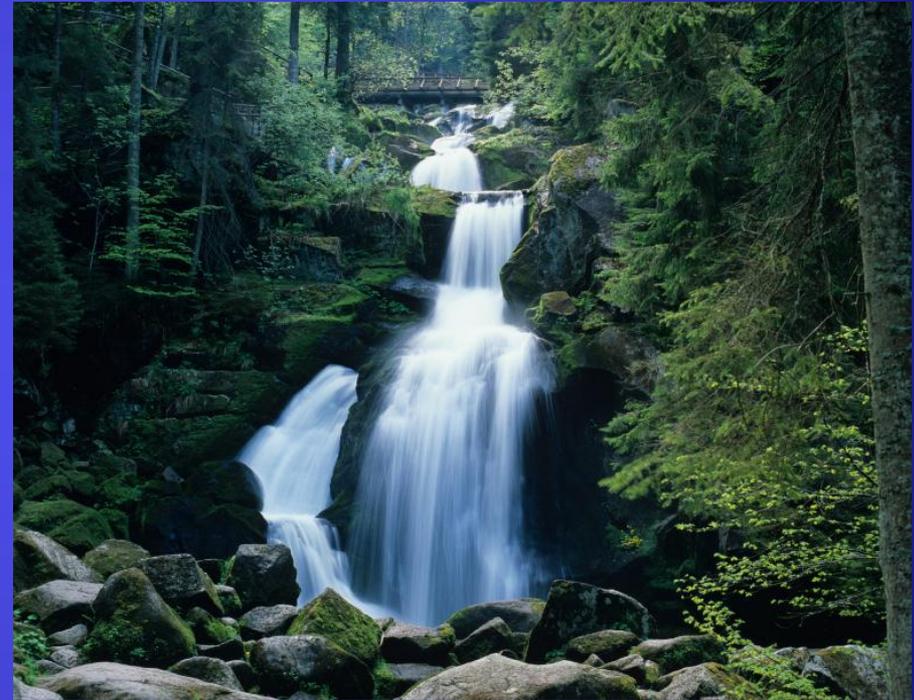
- These factors are widely recognized as important to understanding climate change and society's adaptation to changed conditions.
- “Widely recognized” includes IPCC, MEA, other.
- BUT, they are not well understood.

# USGS Circular 1331

- **“Climate change is but one of many challenges facing water resource managers, and a holistic approach to water resources management includes all significant drivers of change” (p.8).**

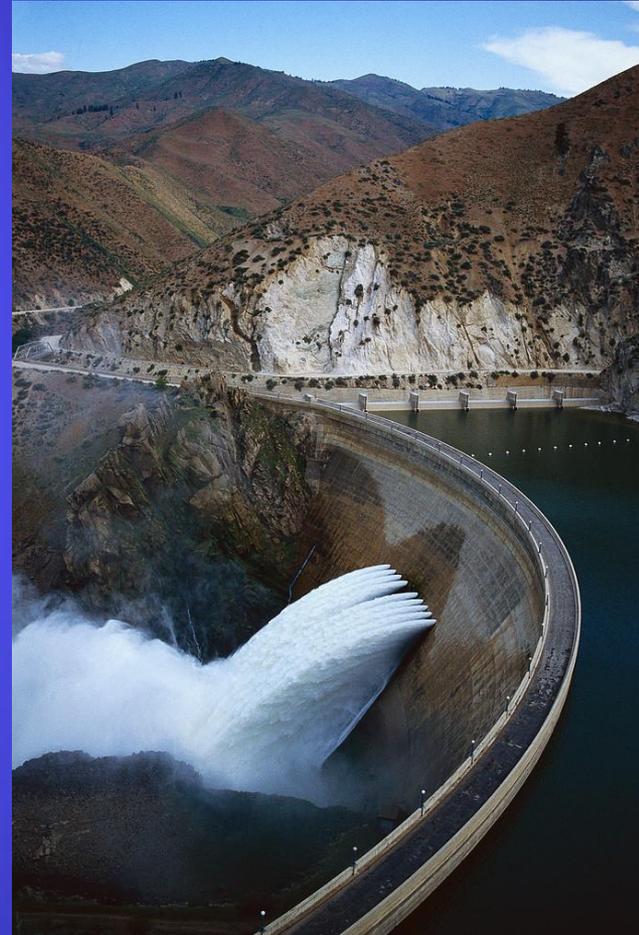
# Water demands include:

- **Municipal/industrial**
- **Irrigation**
- **Navigation**
- **Hydropower**
- **Energy production**
- **Environmental flows/ecosystem services**



# Water demand

- May increase or decrease for various sectors, depending on biological and social/economic responses.



# Gap 5: Ability to assess social systems' response to climate change

- Defined in USGS Circular 1331 as “Improving our understanding of how social systems mediate climate change impacts and establish expectations for water resource system performance and reliability, which would presumably need to be preserved under a changing climate” (p. 34).

# Gap 5 questions

- **What are the social responses that constrain reservoir management? For example, surface water demands, flood protection values and expected service, environmental protection values and expectations.**
- **What are water use requirements for different crops under various climate change projections? What are the potential social and economic effects of those changes?**

# Developing a network

- **Federal partners identified—BOR, USGS, NOAA, EPA, BIA, NPS, USFS, USDA.**
- **First activity: online brainstorming.**
  - **Consider current social and economic factors affecting water demand and supply.**
    - **Sectors identified: domestic/municipal; agriculture; energy; environmental uses.**

# Next steps

- **Coordinate with Colorado River Basin studies**
- **Work on scenario planning activities**
  - **Consider social and economic factors and their effects.**
- **Help define social science research needs for climate change effects on federal lands.**
- **Reflect on how vulnerability and resiliency frameworks can inform this work.**

# Thank you

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