Rapporteur Summary for Session 5B: Hydroeconomic and CGE Modeling

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Resources for the Future
September 9, 2014
Presentation #1

- **Title:** Evaluating a Water Conservation Response to Climate Change in the Lower Boise River Basin
- **Presenter:** Robert Schmidt
- **Research question:** Can canal lining counteract diminished supplies resulting from climate change?
- **Hydroeconomic elements:** Partial equilibrium model with irrigator demand functions and cost functions with canal seepage hydrologic response terms for canal water, groundwater, and drain water irrigators
Presentation #2

• **Title:** Economic Evaluation of the Diamer-Basha Dam: Analysis with an Integrated Economic/Water Simulation Model of Pakistan

• **Presenter:** Sherman Robinson

• **Research question:** What are the benefits of building the Diamer-Basha dam on the Pakistani economy under different climate-change scenarios?

• **Hydroeconomic elements:** CGE model of the economy and a separate but linked hydrology model; climate change scenarios
Presentation #3

- **Title:** A Multipurpose Dam in the White Volta: Impacts on Economic Growth and Poverty Reduction”
- **Presenter:** Rita Cestti
- **Research question:** What are the benefits of building a dam on the White Volta River for flood management, hydropower, irrigation, water supply, and fisheries?
- **Hydroeconomic elements:** A CGE model of the economy and a separate but linked hydrology model
Title: Optimal Rates of Adopting Water Conservation Measures in the Aral Sea Basin

Presenter: Maksud Bekchanov

Research question: What are the benefits of improving conveyance and irrigation efficiency in the Aral Sea Basin?

Hydroeconomic elements: Integrated node-based river basin model, irrigated agriculture production model, and hydropower model
Issues in hydroeconomic analysis raised in this session

• “Modular” vs. “holistic” models
• Integrating different techniques:
  – Hydrologic models → Simulation
  – Economic models → Optimization
• Differences in time scale
  – Hydrologic models → Days or months
  – Economic models → Years
• Uncertainty on a decadal scale
• Differences in spatial scale
  – Hydrologic models → Watersheds/basins
  – Economic models → Administrative boundaries