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### SLIDES: Practicing Sustainability in Natural Resource Industries

Gary D. Libecap

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# Practicing Sustainability in Natural Resource Industries

Gary D. Libecap

Bren School of Environmental Science and Management and Economics  
Department  
University of California, Santa Barbara  
National Bureau of Economic Research (NBER)

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# Sustainability: Concepts

- The Brundland Report (1987):
  - Sustainable development meets “the needs of the present generation without compromising the ability of future generations to meet their own needs.”
- Natural sustainability = consumption that does not deplete the resource stock.
- Human sustainability = consumption, savings, and investment for future generations that may diminish the resource stock.
- Competing definitions of the concept.
- Inherent tradeoffs.

# Sustainability: Governance

- Absent property rights—no sustainability for either definition.
- Property rights—state, communal/group, individual (includes organizations, where the organization holds individual rights).
  - i.e., TNC fishing quotas
  - Private mineral/water rights
  - Communal rights (group owns with members having access):  
Some irrigation districts
  - Government owned—BLM, Forest Service
- Each has different transaction costs of decision making and long-term commitment potentials.

# Sustainability: Governance

- Avoid open access that leads to over entry, over use, and depletion.
- Property rights regimes:
  - Align incentives for long-term protection, investment in conservation, and use
  - Potential for trading to reallocate, including across time
  - Internalize costs and benefits in decisions
  - Can apply to non-commercially valuable resources
    - Conservation easements, credits
    - Habitat credit banks
    - Water quality credits

## Sustainability: Governance Issues

- Essential is that the right is secure and well-defined.
  - Conflicting uses: Purchase
  - Forces consideration of opportunity costs
  - If transaction costs are high, useful policy is to lower them
    - i.e., Adjudication of groundwater rights
    - i.e., Platforms for trading
- Holistic view of property rights—the more they are abridged, the more incentives are altered

# Sustainability: Governance Issues

- One of the most thoroughly studied phenomena in natural resource economics is the problem of open access and its results:
  - Fisheries
  - Water
  - Air
  - Land
- Also, strong empirical evidence on reallocation across time/conservation.
- Less evidence of long-term political commitments via Public Trust Doctrine and other government environmental policies. No clear residual claimant. Inherently risky.

# Sustainability: Governance Issues





# Sustainability: Governance Issues



## Sustainability: Governance Issues

- If transaction costs are increased, property rights weakened and sustainable management not be feasible.
- How can this happen?
  - Do not respect existing property rights. Los Angeles/Mono Lake Controversy.
  - Political process can authorize additional stake holders to have a claim but no corresponding assignment of costs.
  - Circumvents existing rights and incentives.
  - Oakdale Irrigation District and Westlands Irrigation District Water Transfer blocked.
  - Resort to groundwater extraction.

# Sustainability: Governance Issues

- Sustainability requires clear, secure property rights to natural resources.
- In their absence it is not possible, regardless of definition.
  - No residual claimant for costs and benefits
  - No long-term commitment mechanism