Strengthening Transboundary Water Security

Adaptive Management to Reduce Climate Change Vulnerability

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Mileposts for today's talk

- What do we mean by "water security" and "adaptive capacity"?
- Transboundary asymmetries
- Water-climate research in border regions
- Changing institutions
- Transboundary science-policy dialogues for climate mitigation & adaptation
- A water security network in the arid Americas and implications for elsewhere

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What is “Water security”?
Working definitions

Every person has access to enough **safe water at affordable cost** . . . **natural environment is protected** and enhanced. River basins & aquifers must be managed **sustainably** (Global Water Partnership, 2000).

[Water] . . . for **health, livelihoods, production**, . . . acceptable level of **water-related risks** to people, environments and **economies** (Grey & Sadoff , Water Policy, 2007).

Protection against **hazards such as floods and droughts** (UNESCO 2008).

. . . a **climate of peace and political stability (**UN Water 2013).

Adequate quantities and qualities . . . in the context of current and **future global change** (Scott, et al., 2013).

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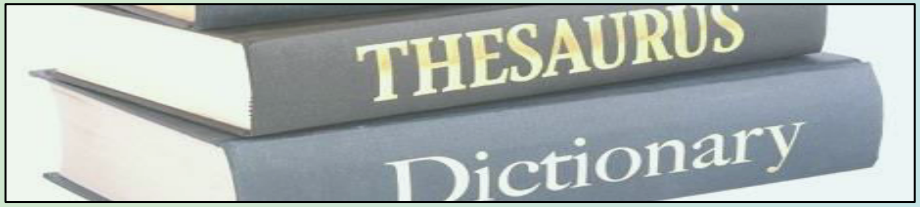
“Adaptive capacity”

Working definition



Adaptive capacity = Ability of a social or environmental system to:

- Respond to or recover from internal/external demands of environmental change
- Cope with consequences
- Engage in “social learning” leading to a desirable system state & reduced vulnerability

—Wilder, et al., 2013

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Transboundary asymmetries

- Culture, language, economy
- Physical infrastructure & human resources
- Legal systems, regulation, enforcement
- Administration
- Robustness of institutions & civil society

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Trajectory of water-climate research in border regions

- New institutions
- Involvement by stakeholders
- Adoption of “soft-path” approaches
- Joining of inter-related agendas—water policy & climate information
- Consensus on *how* to conduct water-climate research in border regions
- Need to distinguish between risk, vulnerability, mitigation, adaptation

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Common themes in research on water, climate, vulnerability, adaptation

- Essential role of *institutions*
- Cooperation built on *trust*
- *Public participation*
- *Information flows* & access to *comparable data*
- *Communities of practice* that include transboundary institutions
- Thinking from *as many disciplines and perspectives as possible*
- *Added degree of complexity* of dealing with *transborder setting*
- Centrality of *human agency*

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Changing institutions

- Institutions also must be able to adapt
- Are institutions . . .
  - Using best available data & research?
  - Well-connected to scientists & other researchers?
  - Employing current technology?
- Do they . . .
  - Have trained personnel?
  - Have flexibility & resilience?
  - Factor stakeholder input?

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Changing institutions (2)

- Are they
  - Transparent?
  - Financially viable?
  - Employing sustainable policies & procedures?
  - Backed by appropriate authority?
  - Sharing best practices?
  - Adapting to climate change & other environmental forces?

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Ingredients of effective transboundary science-policy dialogues
for climate mitigation & adaptation

- ***Public participation***
- Robust ***communities of practice***
- Strong institutions, esp. ***binational/multinational institutions***
- Interconnectedness of **water management** & ***climate mitigation/adaptation***
- Access to ***comparable data*** & reliable ***information flows***
- Significance of ***governance*** and ***soft-path solutions***
- Need for ***trust***

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Water Security in the Americas

The International Water Security Network (IWSN)

Relationships & capacity-building

- Researcher-scientist networks
- Postgraduate student involvement
- Stakeholder engagement & workshops
- Development of communities of practice

Research

- Regional/local projects & transboundary settings
- Development of water-security index
- Identification of hotspots

IWSN partners

- Univ. of the West of England
- Monash Univ./South Africa
- Univ. of Arizona, Udall Center

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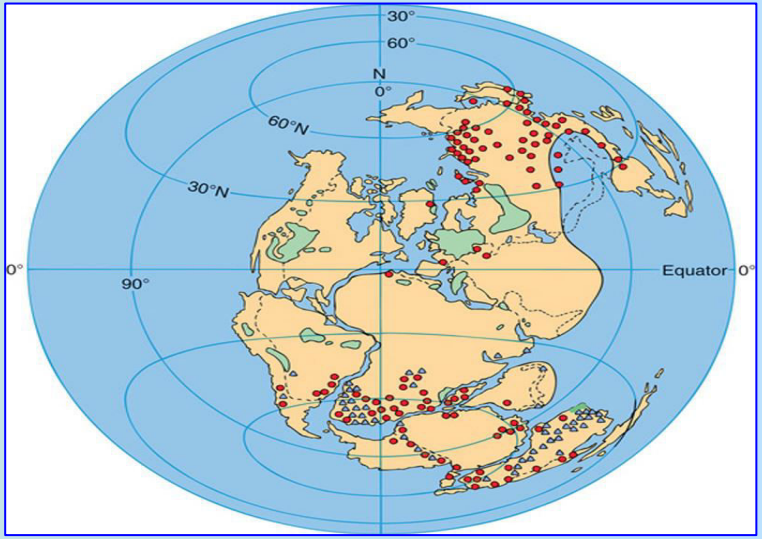
Some implications from our Americas experience



- Framing water security & adaptive capacity
- Incorporating transboundary institutions
- Identifying & engaging key players
- Cross-border complications
- Factoring sectoral inter-connectedness
- Assessing, measuring, enhancing, security & capacity

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Water Security and Adaptive Capacity in a Transboundary Context

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