WHY TRANSBOUNDARY CONDITIONS ARE SIGNIFICANT: ARE NATURE-BASED SOLUTIONS BEING DEPLOYED?

Presented by: Tamee R. Albrecht
with Robert G. Varady, Adriana Zuniga-Teran, Andrea K. Gerlak,
Rafael De Grenade, América Lutz-Ley, Facundo Martín, Sharon B. Megdal, Francisco Meza,
Diego Ocampo Melgar, Nicolás Pineda, Facundo Rojas, Rossi Taboada, Bram Willems

Nature-based Solutions for Water Security workshop, jointly hosted by the Centre for Science and
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Transboundary waters

Legend
- Transboundary River Basins
- Basin Country Unit Boundaries
- Country Boundaries

Map from Transboundary Water Assessment Program
Water security is multidimensional
Water security attributes

Supporting resilience in:

- Ecological Resilience
- Cross-cutting
- Social Resilience

Fundamental  Fundamental

- Water quantity
- Water quality
- Environmental flows: minimum flows & natural variability

Influential  Influential

- Land management
- Climate change
- Natural hazards
- Uncertainty
- Watershed system

Sustainability
- Sanitation

Food & energy resources
- Climate change
- Risk and Vulnerability

Access: Water rights, Ability, Affordability, Infrastructure
- Health & Well-being
- Economic growth
- Livelihoods
- Reliability
- Equity

Policies & institutions
- International cooperation
- Political stability & national security
- Preference, culture, spiritual
- Capital: financial, knowledge, human
- Participation & engagement

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Water security is contextual...

...how do borders matter?

- Traverse continuous landscapes, ecosystems, habitats
- Border transect social networks and impose incongruent political and administrative regimes

*Border fence along the U.S.-Mexico border in Ambos Nogales.*
Factors compounding water security challenges for transboundary water

- Asymmetries
- Power
- Capacity
- Information
Approaches to transboundary water

- History of focus on river basin development
- International cooperation, state-to-state interactions, geopolitics
- Multilateral institutions at the international river-basin scale
Transboundary water security approaches

**Traditional:**

- International cooperation:
  - treaties, cooperation, RBOs, negotiation

- Precautionary principle
- Data sharing
- No harm
- Equitable and reasonable use
- Good faith cooperation
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**Expansive:**
- Multiple levels, multiple actors:
  - international, national and local levels; actors outside of government such as NGOs, civil society

- Beyond the river basin:
  - cross-sectoral food, energy, water, land tradeoffs; “problemshed” approaches; socially-constructed water flows
# Cases from the Arid Americas

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<td>2. Binational desalination, US-MX</td>
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<td>Transboundary Aquifer, US-MX</td>
<td>• Binational scientific cooperation</td>
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<td>Ica River Basin, interjurisdictional, Peru</td>
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<td>Shared glacial headwaters of the Maipo &amp; Mendoza River Basins</td>
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<td>• Civil society leveraged support for a national glacier protection law in Argentina</td>
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Nature-based solutions in Transboundary Contexts?

- **Information**: Need for knowledge and information to characterize the holistic physical system via scientific cooperation

- **Responsive**: Need for flexible and responsive policies that promote access & equity within and across borders

- **Multi-level**: Need support at local, national and regional levels
  - Combine local approaches with international cooperation
  - Leverage civil society
Further exploration:

• Consider the environmental in agreements
• Need political will and strong civil society
• Flexibility in institutional arrangements
• Promote equitable outcomes
• Address question of scale
• Integrate water, food, energy, land policies
• Build socio-ecological resilience

Santa Cruz River near Tumacacori, Arizona.
Thank you

www.watersecuritynetwork.org
www.twitter.com/water_network

Maps by Adriana Zuniga-Teran

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Lessons Learned – Institutional Responses

• With limited legal frameworks for groundwater, cooperation advances via scientific collaboration and building social networks [US-MX Transboundary groundwater]

• Without improvement in regulations for desalination in Mexico and sufficient binational environmental protections, US-MX binational desalination has the potential to create inequitable water-security benefits and uneven environmental burdens between the countries [US-MX Binational desalination]

• Despite a history of contentious political relations, Ecuador and Peru are increasing binational dialogues around water in the Catamayo-Chira transboundary basin, yet they still need to overcome incongruous national water policies [Ecuador-Peru]

• Economic drivers have created disparate upstream/downstream water security. While local-level efforts to improve planning exist, there is little support at the national level. [Ica transjurisdictional basin, Peru]

• Strong civil society movements garnered support for a national glacier conservation law – but only in Argentina. Binational cooperation on glacier conservation is limited to scientific research [Shared glacial headwaters, Argentina-Chile]