



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

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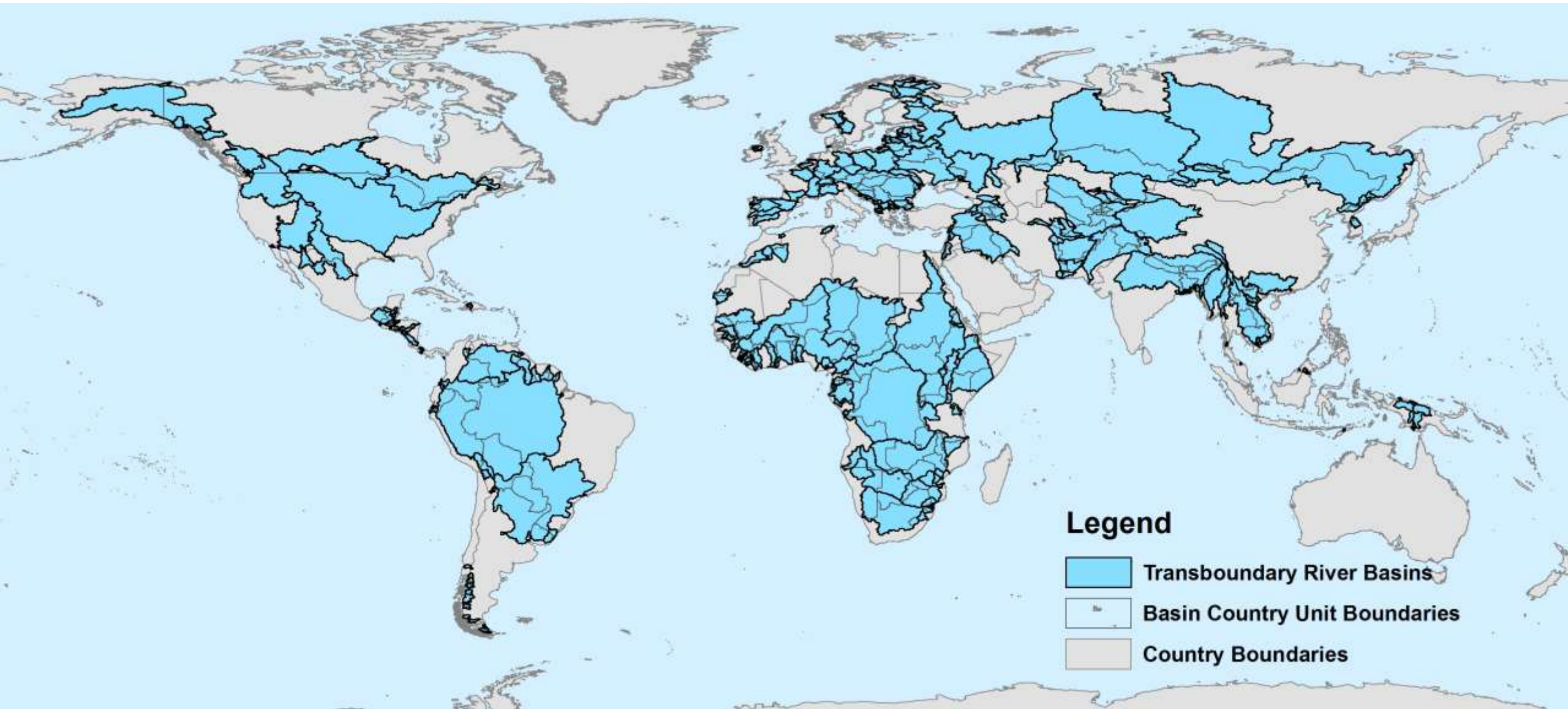
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Transboundary waters



Map from Transboundary Water Assessment Program

Water security is multidimensional

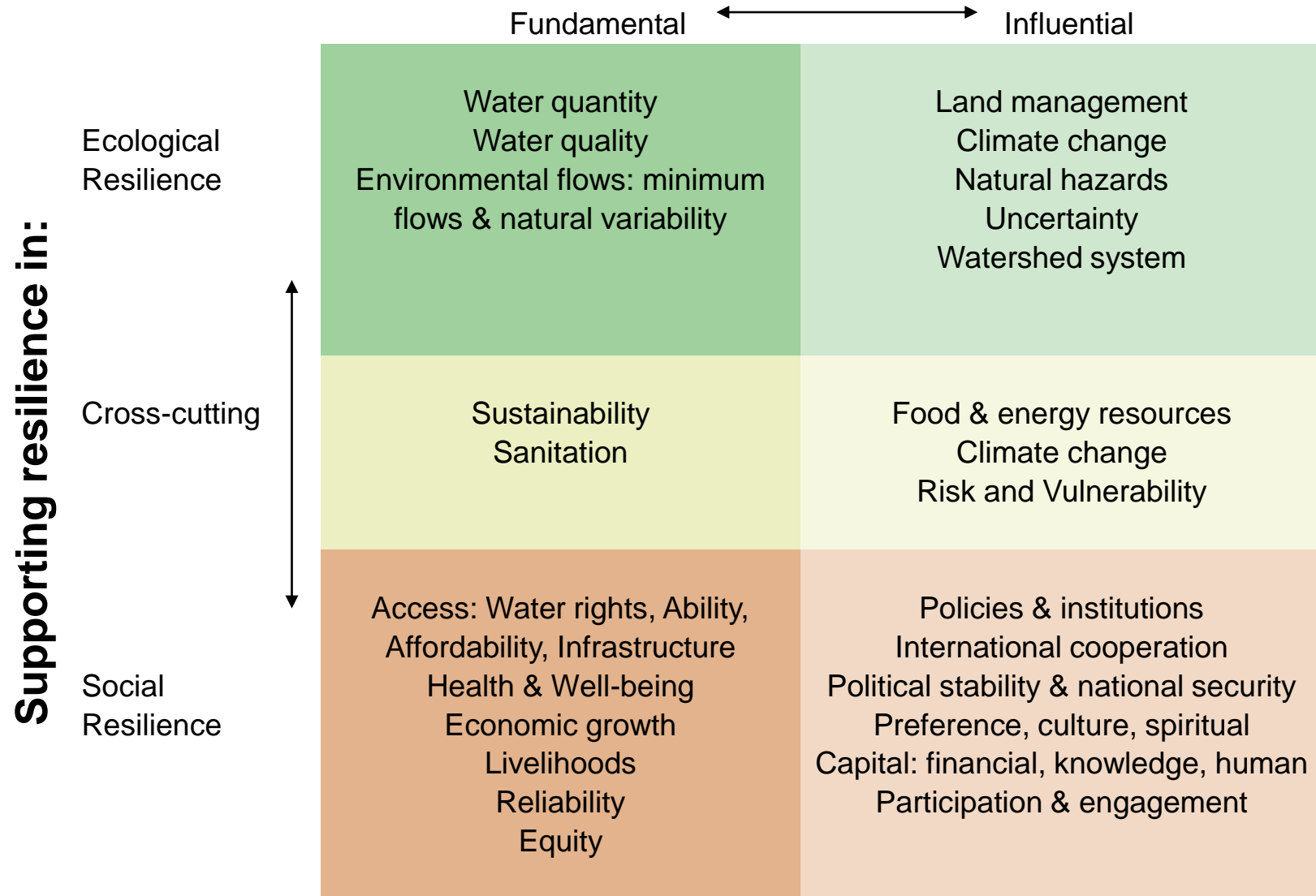
Environment



Human use



Water security attributes



Water security is contextual...



Border fence along the U.S.-Mexico border in Ambos Nogales.

...how do borders matter?

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

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:

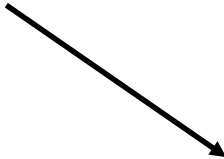
- International cooperation:
 - treaties, cooperation, RBOs, negotiation

- *Precautionary principle*
- *Data sharing*
- *No harm*
- *Equitable and reasonable use*
- *Good faith cooperation*

Transboundary water security approaches

Traditional:

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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; “problemshd” approaches; socially-constructed water flows

Cases from the Arid Americas

Site	Water-security Challenges
1. Binational aquifer, Upper Santa Cruz, US-MX	Cooperation on transboundary aquifer assessment amid contentious binational relations
2. Binational desalination, US-MX	Binational water transfers from desalination in fragile ecosystem & volatile political environment
3. Catamayo-Chira transboundary basin, Peru-Ecuador	Institutional arrangements to govern transboundary rivers amid international mistrust & dispute
4. Ica basin, transjurisdictional, Peru	Trans-jurisdictional asymmetries between poor upstream & prosperous downstream provinces
5. Shared glacial headwaters of Maipo & Mendoza, Chile & Argentina	Changing water availability from transboundary sources of ice & snowmelt



Lessons Learned – Institutional Responses

Site	Advances	Limitations
Transboundary Aquifer, US-MX	<ul style="list-style-type: none"> • Binational scientific cooperation • Water Treaty • Social networks 	<ul style="list-style-type: none"> • Limited coverage for groundwater in binational water treaty
Binational desalination, Mexico and US	<ul style="list-style-type: none"> • Expands water supplies • Binational institutional capacity and national water management 	<ul style="list-style-type: none"> • Weak environmental policy in MX • Limited environmental protection and equity in binational benefits-sharing
Catamayo-Chira transboundary basin, Ecuador and Peru	<ul style="list-style-type: none"> • Growing binational dialogue • Binational peace agreement 	<ul style="list-style-type: none"> • Incongruous national water laws
Ica River Basin, interjurisdictional, Peru	<ul style="list-style-type: none"> • Local-level planning and cooperation 	<ul style="list-style-type: none"> • Limited basinwide planning and equity • Limited support from higher governance levels
Shared glacial headwaters of the Maipo & Mendoza River Basins	<ul style="list-style-type: none"> • Binational scientific cooperation • Civil society leveraged support for a national glacier protection law in Argentina 	<ul style="list-style-type: none"> • National glacier protection law only in Argentina • Limited inclusion of glaciers in regional treaties

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 environment 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]

