

# The Dilemma of Boundaries: Looking Beyond the Basin for Benefits and Identity

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and Transformation

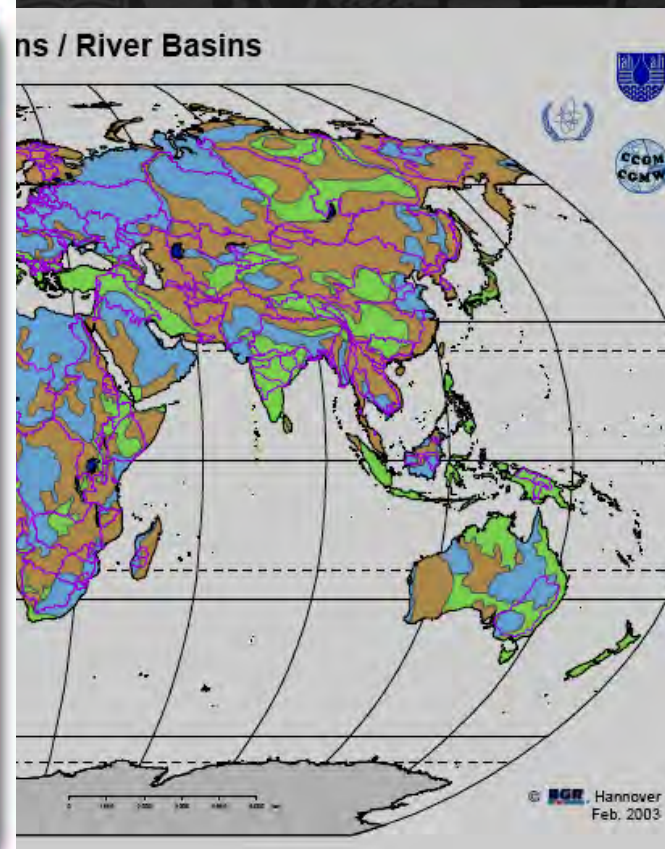
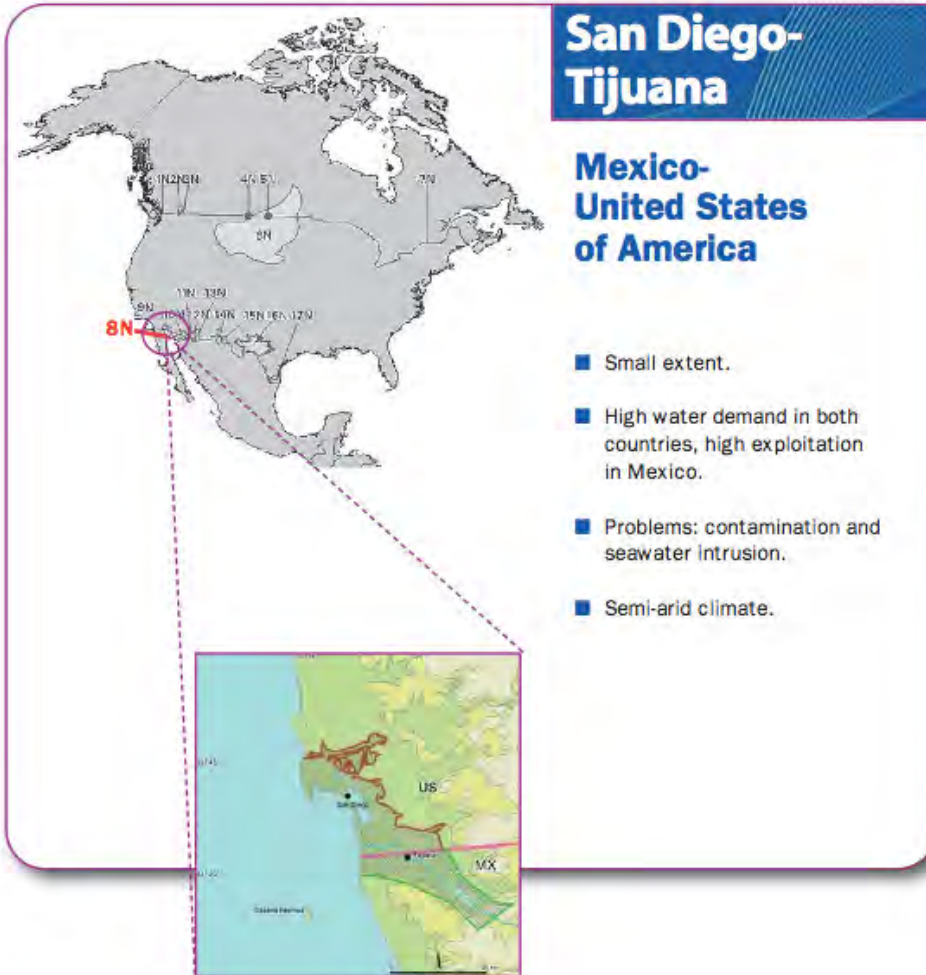
Oregon State  
UNIVERSITY

INSTITUTE FOR  
WATER AND  
WATERSHEDS

# Overview

- 💧 **Look back at where we have been before looking where we are going**
- 💧 **Causes of conflict over water**
- 💧 **Negotiation strategies**
- 💧 **Approaches to blurring the boundaries**

# 270 International River Basins 270+ Transboundary Aquifers



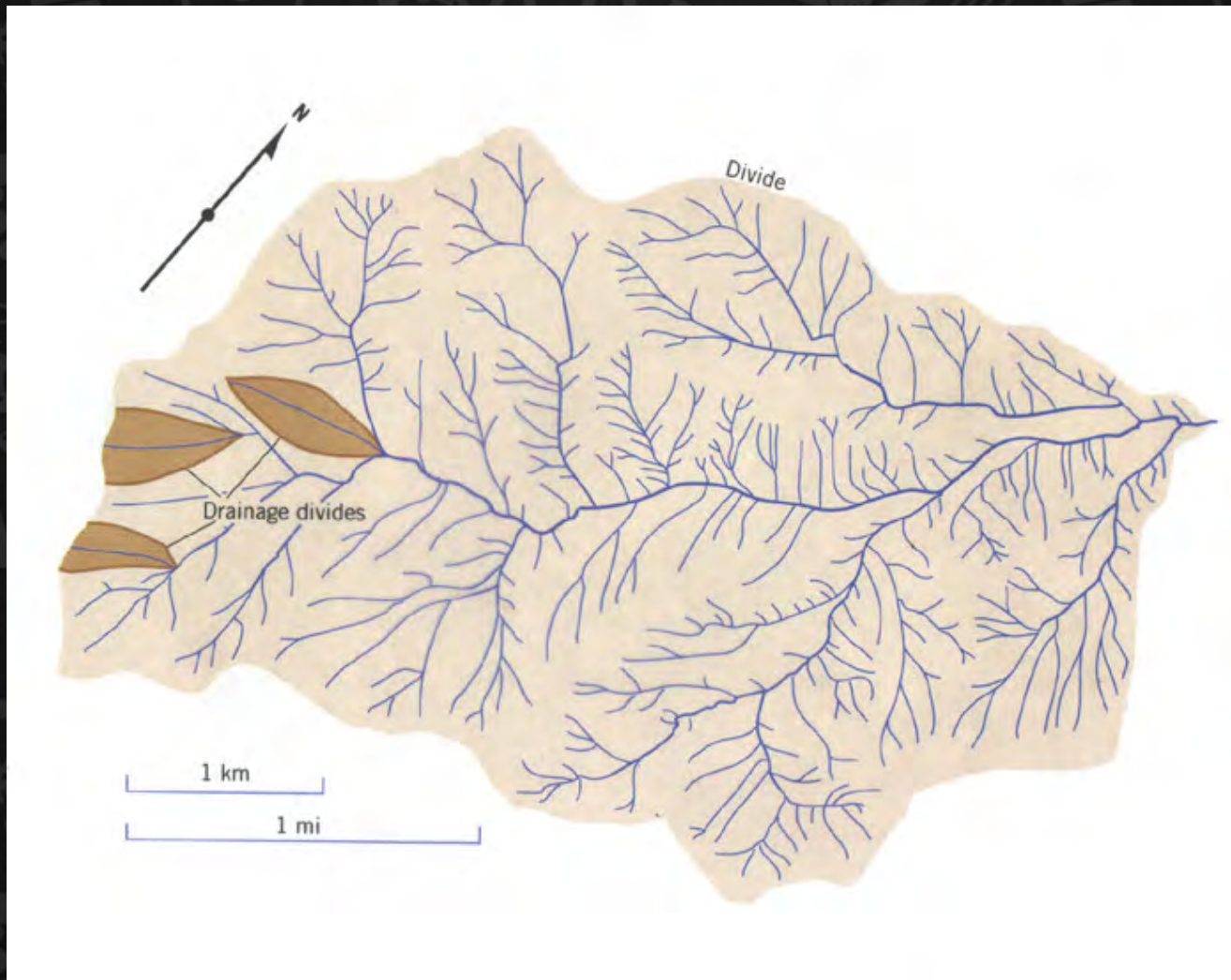
Black Aquifers = 47%  
Structure = 18%

Blue – Groundwater Basin = 35%

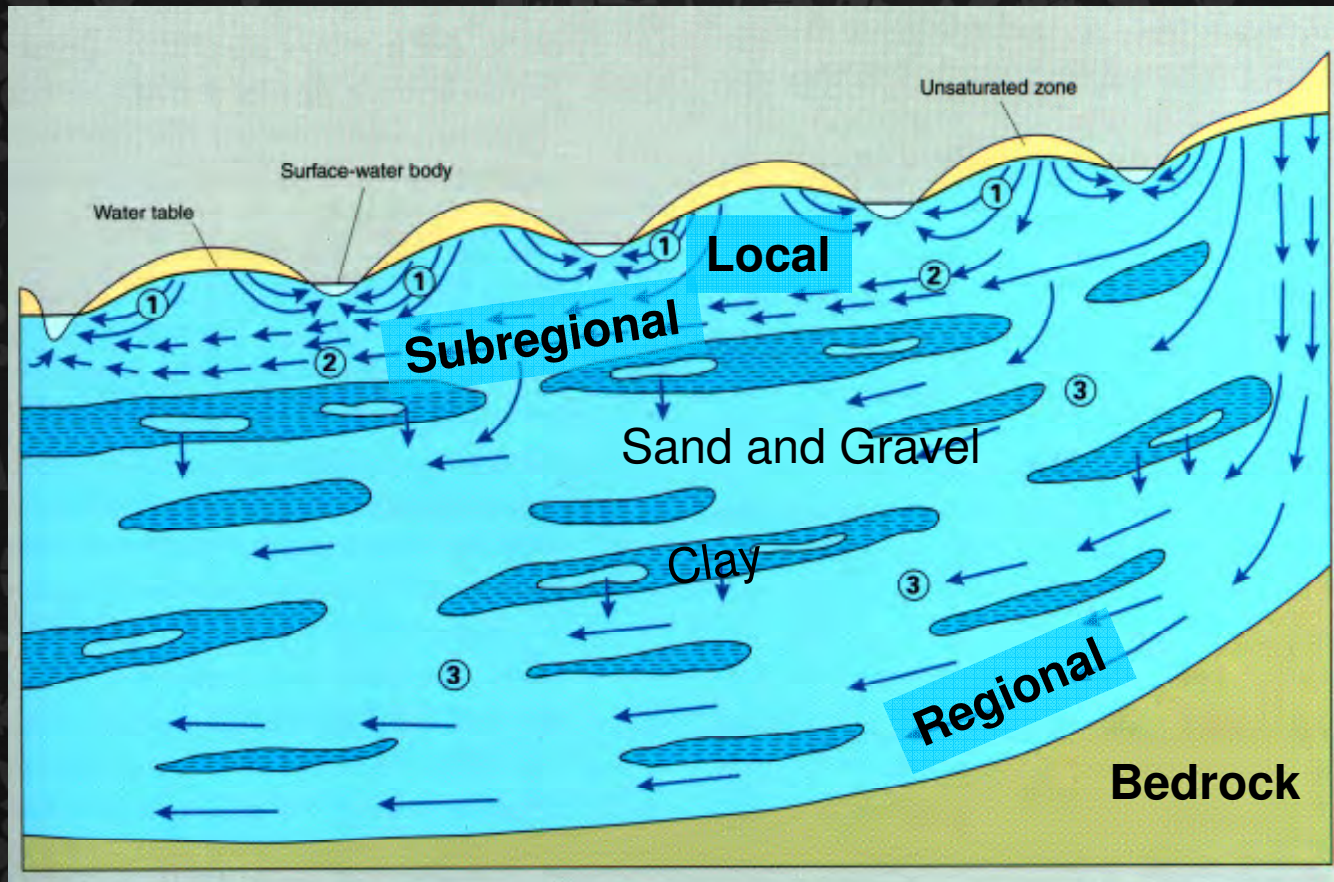


WHYMAP and the World Map of Transboundary Aquifer Systems. World-wide Hydrogeological Mapping and Assessment Programme (WHYMAP), IGRAC, and ISARM Atlas of Transboundary Aquifers

# Geographic Boundaries in Watersheds



# Groundwater flow systems are local, subregional, and regional in extent



# Geographic Boundaries in Groundwater

## *“Bona fide”* Boundaries in “the Commons”

Outcrop  
Watercourse  
Catchment, Watershed  
Megawatershed  
Springshed  
Recharge Zone  
Discharge Zone  
No-recharging Aquifers  
GW Ecosystems  
Chemical “Facies”

**Groundwater  
Domains**

## *“Fiat”* Boundaries in “the Hydrocommons”

Land Rights  
Drainage Area or Capture Area  
Radius of Influence  
WHPA, SWPA, “Belts”  
Conservation Area  
Sole Source Aquifer Area  
EU “Groundwater Bodies”  
Control / Mgmt. Area  
Megawatersheds  
Unitization

## *“Fiat”* Boundaries in “the Common Heritage”

Spiritual  
Therapeutic  
Historical  
Hydrogeological-  
Nature Reserves

# “Water” Circle of Conflict

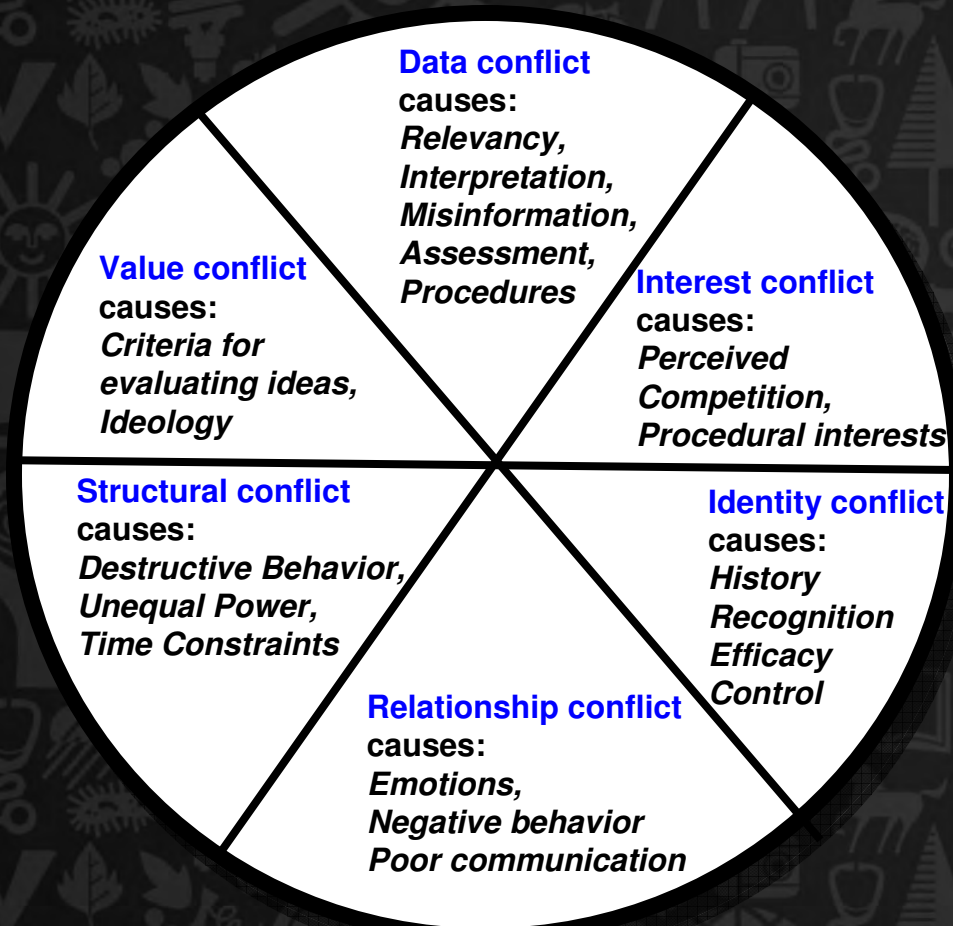


Photo credit: Outside Magazine

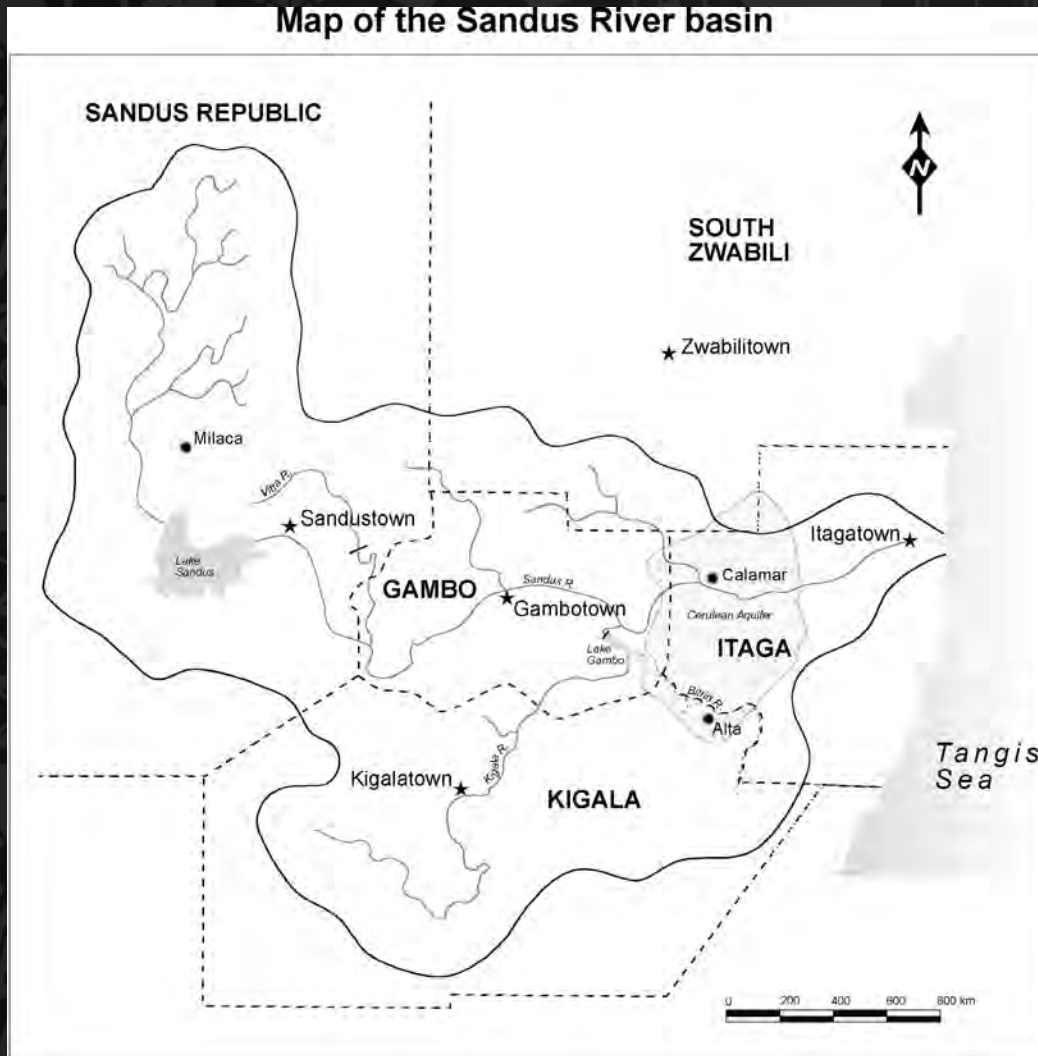
# ARIA: Four Stages of Negotiations

- **Adversarial** -- each side defines its positions, or *rights* (win-lose, zero-sum, distributive).
- **Reflexive** -- the *needs* of each side bringing them to their positions is addressed.
- **Integrative** -- negotiators brainstorm together to address each side's underlying *interests* (win-win, positive sum).
- **Action** -- negotiators work on implementation and re-entry.

Rothman, J. 1991. *Negotiation as Consolidation*. *Journal of International Relations*. 13 (1).

# Overview: Basins with Boundaries

Map of the Sandus River basin



## Common Criteria: “Rights”

## Key Concepts:

Intro to Hydropolitics

Intro to Negotiations

## Exercises: Trust-building

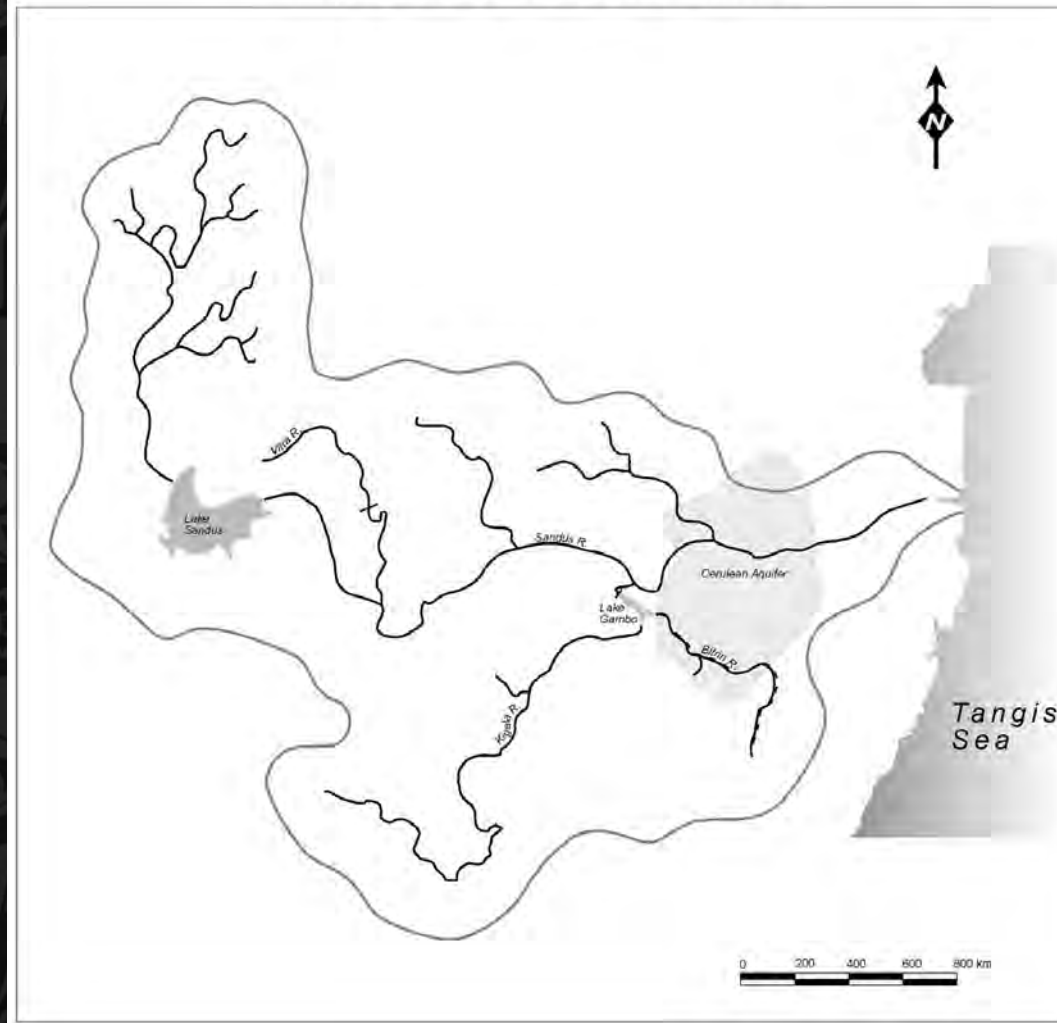
Assessing a basin:

Identifying parties, issues, interests

Planning by nation

# Changing Perceptions: Basins Without Boundaries

Map of the Sandus River basin



**Common Criteria: “Needs”**

**Key Concepts:**

Cooperative Framework

Lessons Learned

The New Diplomacy

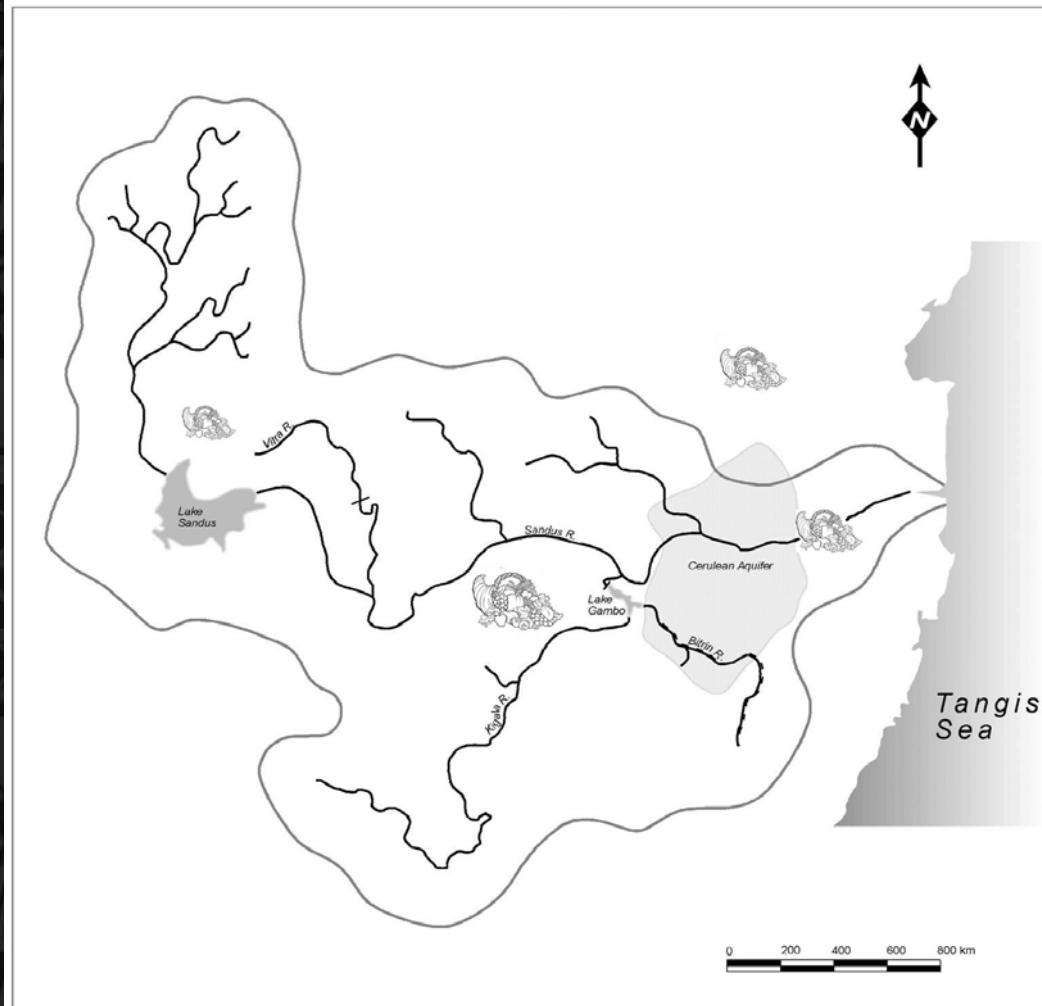
**Exercises: Skills-building**

Interpersonal skills “Active”  
listening

Thinking as a basin: Planning by  
sectors

# Enhancing and Sharing Benefits

Map of the Sandus River basin



## Common Criteria: “Benefits”

### Key Concepts:

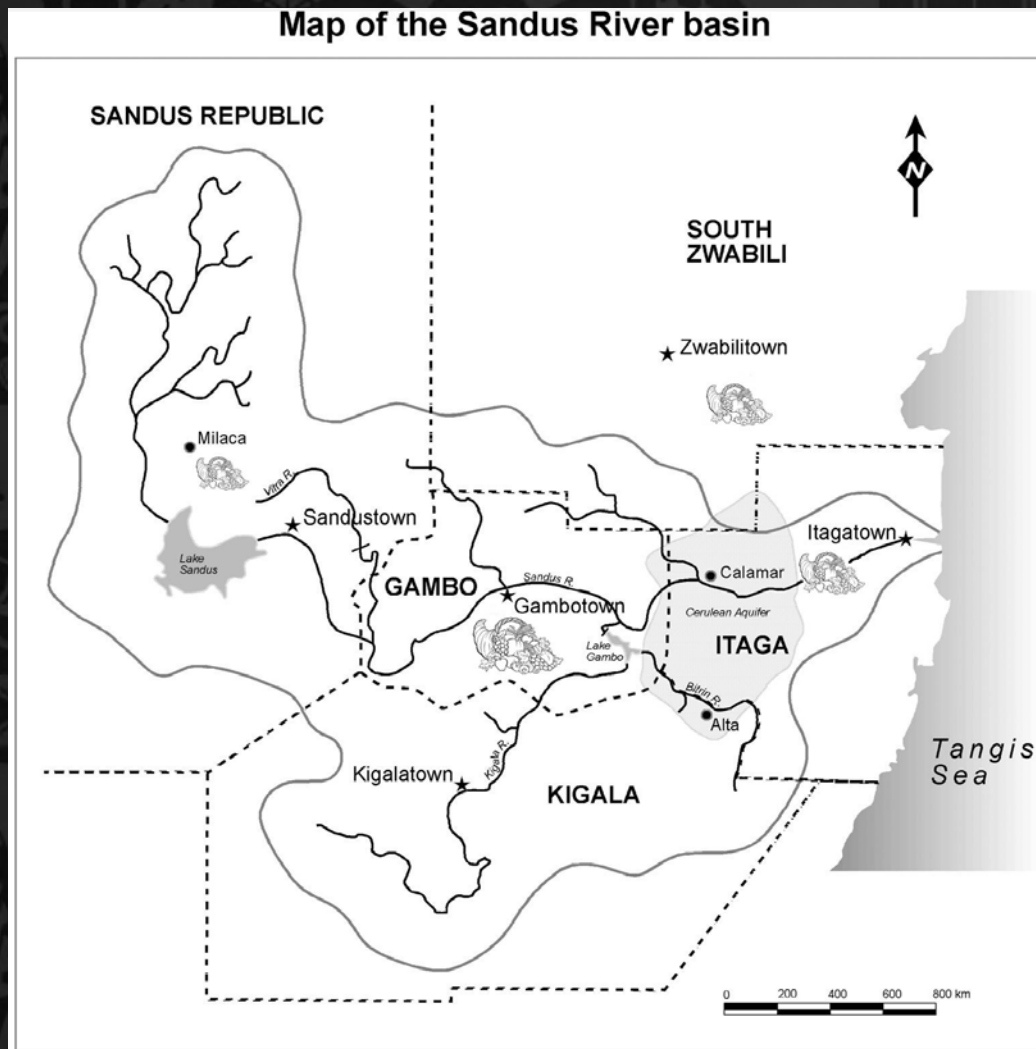
Economics of Int'l waters

Equity, Efficiency, and Thinking  
Beyond the River

### Exercises: Consensus-building

Enhancing benefits

# Putting it all Together: Capacity building



Common Criteria: “Equity”

Key Concepts:

International Water Law





Institutions in Practice, Track II,  
Stakeholder Participation

Exercises: Re-entry

Crafting Institutions

“Forgotten” and Unforeseen Issues

# WATER & SPIRITUALITY

<b>Adversarial</b>	<b>Rights</b>		<b>Physical</b>
<b>Reflexive</b>	<b>Needs</b>		<b>Emotional</b>
<b>Integrative</b>	<b>Interests</b>		<b>Knowing</b>
<b>Action</b>	<b>Equity</b>		<b>Spiritual</b>

*Wolf, A.T. (2008) Healing the enlightenment rift: Rationality, spirituality and shared waters. Journal of International Affairs, vol 6, no 2, pp. 51-73*

# Blurring the Boundaries

<b>Negotiation Stage</b>	<b>Common Water Claims</b>	<b>Collaborative Skills</b>	<b>Geographic Scope</b>	<b>Core Motive Influencing Decision Making</b>
<b>Adversarial</b>	<b>Rights</b>	Trust-building	Nations	Physical/ Institutions
<b>Reflexive</b>	<b>Needs</b>	Skills-building	Watersheds	Emotion/ Information
<b>Integrative</b>	<b>Benefits</b>	Consensus-building	“Benefit-sheds”	Knowing/ Incentives
<b>Action</b>	<b>Equity</b>	Capacity-building	Region	Spiritual/ Identity

*Jarvis, T. and Wolf, A. in review, Managing Water Negotiations and Conflicts in Concept and in Practice, Transboundary Water Management, Stockholm International Water Institute and van Vugt, M. (2009) Triumph of the commons: Helping the world to share, New Scientist, vol 2722, pp 40-43.*

## Massachusetts Episcopal Diocese reorganized along watersheds

“Simply demonstrating that we are all connected by water: rich and poor, urban and rural, upstream and downstream, is a fine place to start. I think the Holy Spirit will take care of the rest.”



Thank you for your invitation  
and attention.