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Thank you.



Rules of the Road: Navigational and Non-Navigational Rules for International Border Rivers

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Presentation Outline

Navigational Rules

- **Historical Development**
- **General Rules**

Non-Navigational Rules

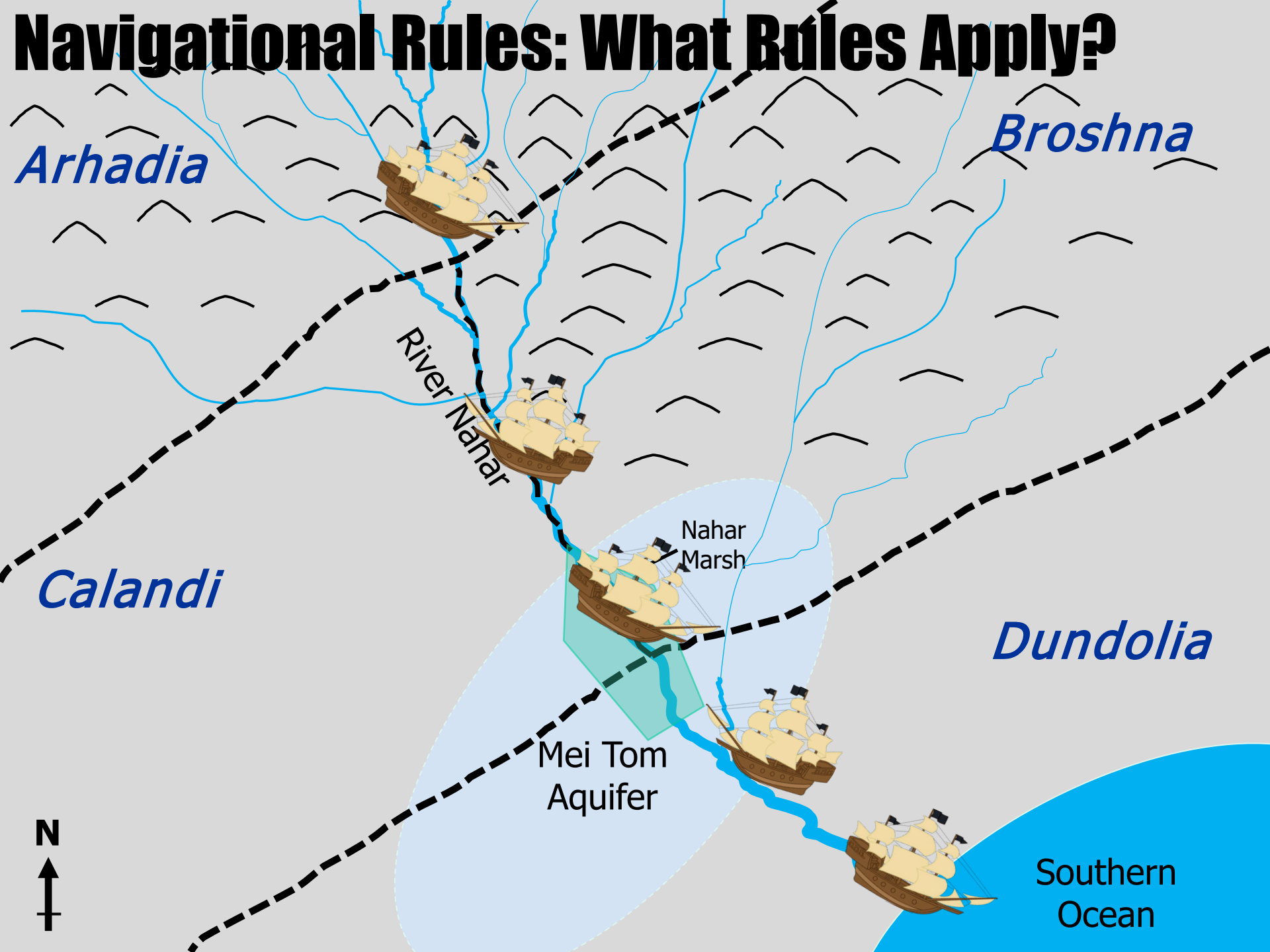
- **Historical Development**
- **General Rules**

Transboundary Groundwater Resources

- **Basis for emerging legal trends**
- **Trending Rules**

The Future

Navigational Rules: What Rules Apply?



Navigational Rules

Reasons to Navigate International Boundary Rivers

- **Commerce**
- **Transport**
- **Travel**
- **Recreation**



Navigational Rules

Modern Navigational Rules – Freedom of Navigation

– Scope of Freedom

- Some extend “freedom” to all
- Some restrict “freedom” to
 - Contracting States
 - Riparian States
 - “Domestic” transport of people and/or goods
- Restrictions on war vessels

- 1948 Belgrade Convention on the Danube (Art. 24)
- 1995 Mekong River Agreement (Art. 9)
- 2002 Agreement on the Sava River (Art. 10(1))

- 1921 Barcelona Convention (Arts 3 and 5)
- 1978 Convention on the River Gambia (Art. 6)
- 1966 ILA Helsinki Rules

- 1948 Belgrade Convention on the Danube (Art. 30)
- 2002 Agreement on the Sava River (Art. 10(5))

Navigational Rules

Modern Navigational Rules – Freedom of Navigation

– Purpose of Freedom

- Early treaties focused on commerce
- More recent agreements have a more general purposes
 - Facilitate transportation of people and goods
 - Facilitate communication
 - Promote safety of vessels and navigation (e.g., uniform regulations)
 - Encourage regional cooperation
 - Facilitate implementation of river projects

- 1814 Treaty of Paris (Art. 5)
- 1815 Congress of Vienna (Art. CIX)
- 1887 Heidelberg Resolution (Art. 3)

- 1966 ILA Helsinki Rules (Art. XIV)
- 1995 Mekong Agreement (Art. 9)

Navigational Rules

Modern Navigational Rules – Duties, Customs & Tariffs

– Types of Dues, Customs & Tariffs

- **Customs duties**
- **Import/export tax**
- **Port charges**
- **Inspection, maintenance and improvement of navigability**
- **Supervision of navigation**

- **1921 Barcelona Convention (Arts 4, 7 and 9)**
- **1948 Belgrade Convention on the Danube (Arts 35 & 37)**
- **1978 Convention on the River Gambia (Art. 8)**

– Amount of Dues, Customs & Tariffs

- **Expenses**
- **Profiting**

– Equal Treatment and Discrimination

Navigational Rules

Modern Navigational Rules – Navigability of the Watercourse

– Obligation

- Extends to section within jurisdiction, or
- Extends to entire watercourse

– Cost

- Individually
 - All costs
 - To the extent of the means available
 - If supported financially
- Cost sharing

- 1921 Barcelona Convention (Art. 10)
- 1966 ILA Helsinki Rules (Art. XVIII)
- 1978 Convention on the River Gambia (Art. 7)
- 2002 Agreement on the Sava River (Art. 10(4))

Navigational Rules

Modern Navigational Rules – Other Rules

- Applicability of the regime to tributaries**
- Creation and duties of a River Navigation Commission**
- Dispute resolution mechanism**
- Maintenance of facilities (e.g., ports, ferries, mills, etc.)**
- River Traffic**
 - Insurance requirements**
 - Local passengers and freight traffic**
 - Policing for customs, public health, and related reasons**
 - Registration and licensing requirements of pilots and/or ships**
 - Shipwreck/grounding**
 - Social provisions for crews**
 - Technological or natural hazards**

Navigational Rules

Basis for Modern Navigational Rules

– Agreements

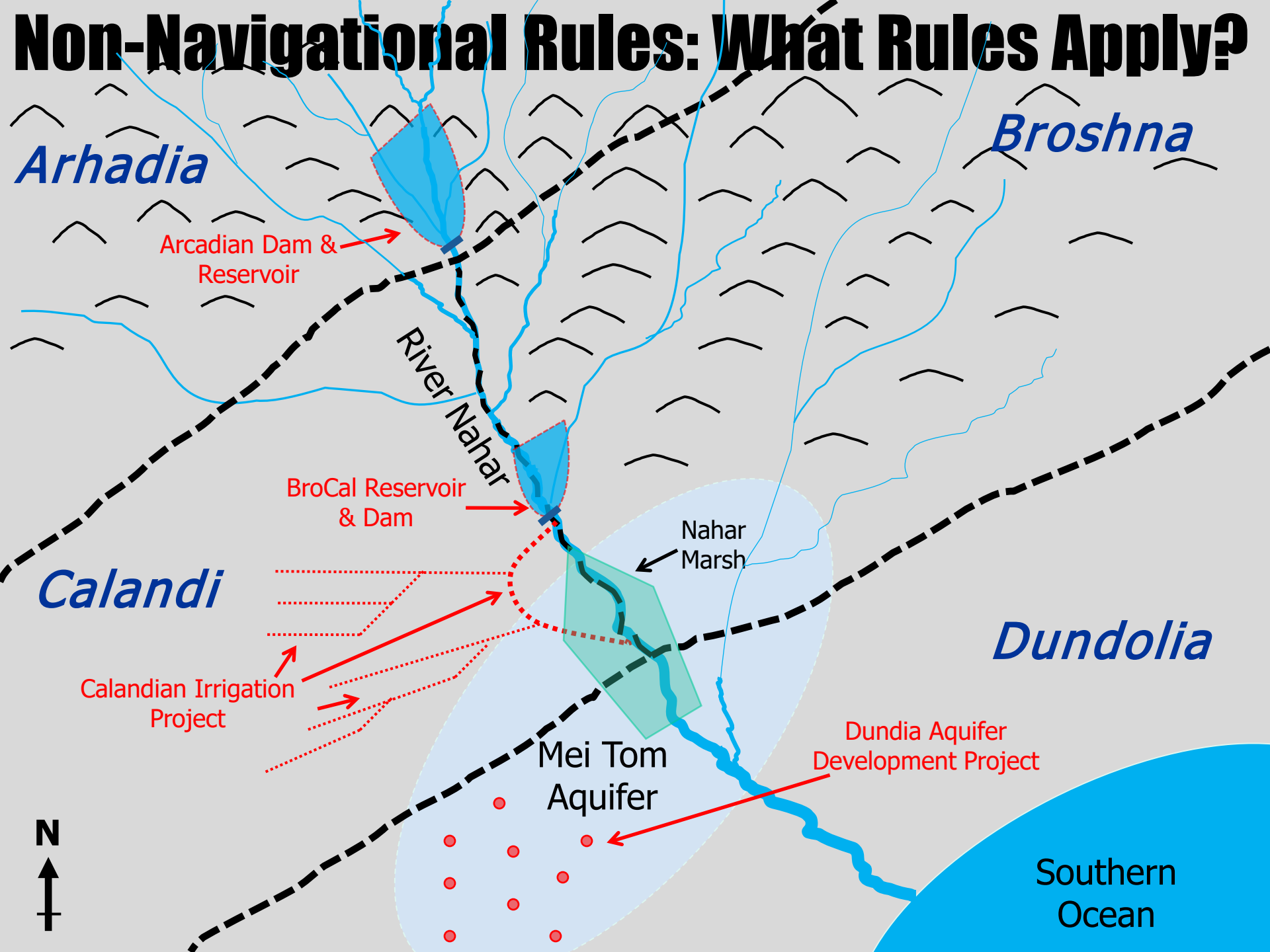
- Treaty of Paris of 1814
- Final Act of the Congress of Vienna of 1815
- International Regulation on River Navigation, Resolution of Heidelberg of 1887
- Convention and Statute on the Régime of Navigable Waterways of International Concern, Barcelona, 20 April 1921
- Convention Instituting the Statute of Navigation of the Elbe, Signed at Dresden, 22 February 1922
- International Law Association's Helsinki Rules on the Uses of Waters of International Rivers of 1966
- Series of agreements governing the Rhine and Danube rivers

– Cases

- PCIJ Decision in the River Oder Case of 1929

Non-Navigational Rules: What Rules Apply?

Non-Navigational Rules: What Rules Apply?



Non-Navigational Rules

Historical Development – Navigational vs. Non-navigational Uses

- Historically, navigational uses of international rivers enjoyed considerable if not supreme priority**
 - Commerce**
 - Transportation**
 - Travel**
- Industrial revolution generated growing demand for non-navigational uses**

Non-Navigational Rules

Historical Development – Navigational vs. Non-navigational Uses

– Non-Navigational Uses of International Boundary Rivers

- **Drinking/cooking water**
- **Irrigation for agriculture**
- **Hydropower**
- **Industrial use**
- **Fishing**
- **Fish farming**
- **Flood control**
- **Timber floating**
- **Environment and habitat**



Non-Navigational Rules

Historical Development – Navigational vs. Non-navigational Uses

- General Modern Rule: no priority between navigational and non-navigational uses of an international border river**
 - Navigation is one of many different types of uses**
 - Conflicts resolved based either on treaty provisions, or on principles of equity and (of course) international relations/politics**

Non-Navigational Rules

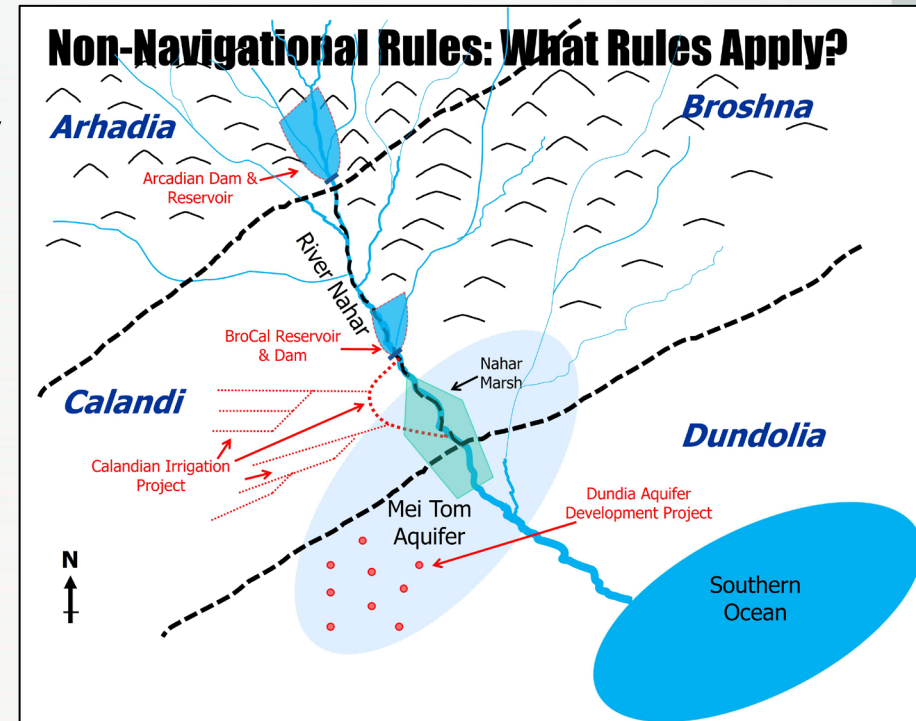
Historical Development – Rules Rejected for Non-navigational Use

– Absolute territorial sovereignty

- States have the right to unrestrained use of resources within their territories
- Harmon Doctrine
- Favored by upper riparians (right to take as much as they want)

– Absolute Territorial Integrity

- Lower riparian states have the right to the continuous or natural flow of a river
- One state may not undertake an action that would violate the territorial integrity of another state
- Favored by lower riparians (power to veto upstream activities)



Non-Navigational Rules

Modern Non-navigational Substantive Rules: Equitable and Reasonable Use

- Benefits derived from water use must be *equitable*
- Uses to which the water is put must be *reasonable*
- Factors to assess equitable and reasonable include:
 - Geographic, hydrologic, hydrographic, climatic and ecological circumstances
 - Prior, existing and potential uses
 - Economic and social needs of basin states
 - Feasibility and practicability of alternatives
 - Avoidance of waste
 - Practicality of compensation to resolve conflict
- Arguable favored by upper riparians

Non-Navigational Rules

Modern Non-navigational Substantive Rules: Equitable and Reasonable Use

- 1966 International Law Association's Helsinki Rules on the Uses of Waters of International Rivers (Arts. 4 & 5)
- 1997 UN Watercourses Convention (Arts. 5 & 6)
- 1995 Mekong River Agreement (Art. 9)
- 2000 Revised Protocol on Shared Watercourses in SADC (Arts. 2 & 3)
- 2004 Zambezi Watercourse Commission Agreement (Arts. 5, 8, 11 & 13)
- 2018 Volta Basin Water Charter (Arts. 12 & 13)

- 1997 ICJ Decision in the Gabčíkovo-Nagymaros Case (Hungary v. Slovakia)

Non-Navigational Rules

Modern Non-navigational Substantive Rules: No Significant Harm

- *sic utere tuo ut alienam non laedas* = “use your property in such a manner so as to not injure another”
- Threshold = “significant harm”
 - public health
 - economy
 - environment
- Arguable favored by lower riparians

Non-Navigational Rules

Modern Non-navigational Substantive Rules: No Significant Harm

- 1992 UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Arts. 2 & 3)
- 1997 UN Watercourses Convention (Arts. 7)
- 2000 Revised Protocol on Shared Watercourses in SADC (Art. 3)
- 2011 Lake Chad Basin Water Charter (Arts. 42 & 45)
- 1941 Trail Smelter Arbitration (U.S. v. Canada)
- 1957 Lake Lanoux Arbitration (France v. Spain)
- 2010 ICJ Decision in the Pulp Mills Case (Argentina v. Uruguay)

Non-Navigational Rules

Modern Non-navigational Procedural Rules: Prior Notification of Planned Measures and Consultation

- A state embarking on a water project that may have a transboundary impact is obligated to provide prior timely notice to all potentially affected states.
- Time period
 - “timely” prior notification
 - response
- Provision of Data – to allow the impacted state to make an informed decision on how to respond
- Consultation to address possible impact
- 1997 UN Watercourses Convention (Arts. 11-19)
- 2022 ICJ Decision in the Silala Case (Chile v. Bolivia)

Non-Navigational Rules

Modern Non-navigational Procedural Rules: Exchange of Data and Information

– Type of data

- **Scientific data – hydrological, meteorological, hydrogeological and ecological**
- **Water quality**
- **Current and projected uses and volumes**

– Format of data

– Limitations on dissemination or exchange

- **National security**
- **Cost**

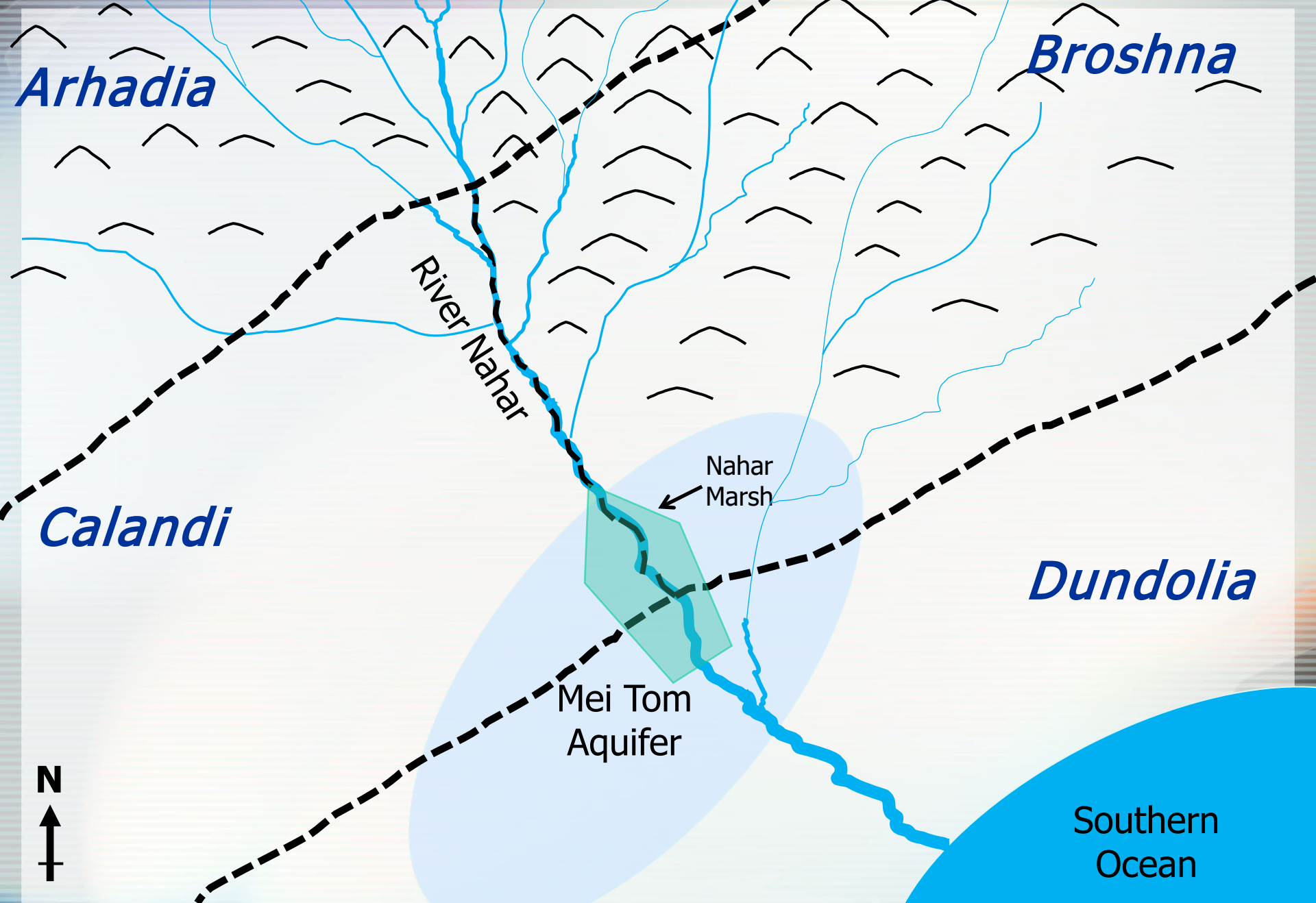
- 1997 UN Watercourses Convention (Art. 9)

Non-Navigational Rules

Modern Non-navigational Rules: Additional Rules

- **General obligation to cooperate**
- **Cross-border pollution**
- **Creation and duties of a joint institutional mechanism (e.g., river commission)**
- **Maintenance of facilities**
- **Emergency exceptions**
- **Dispute resolution mechanism**

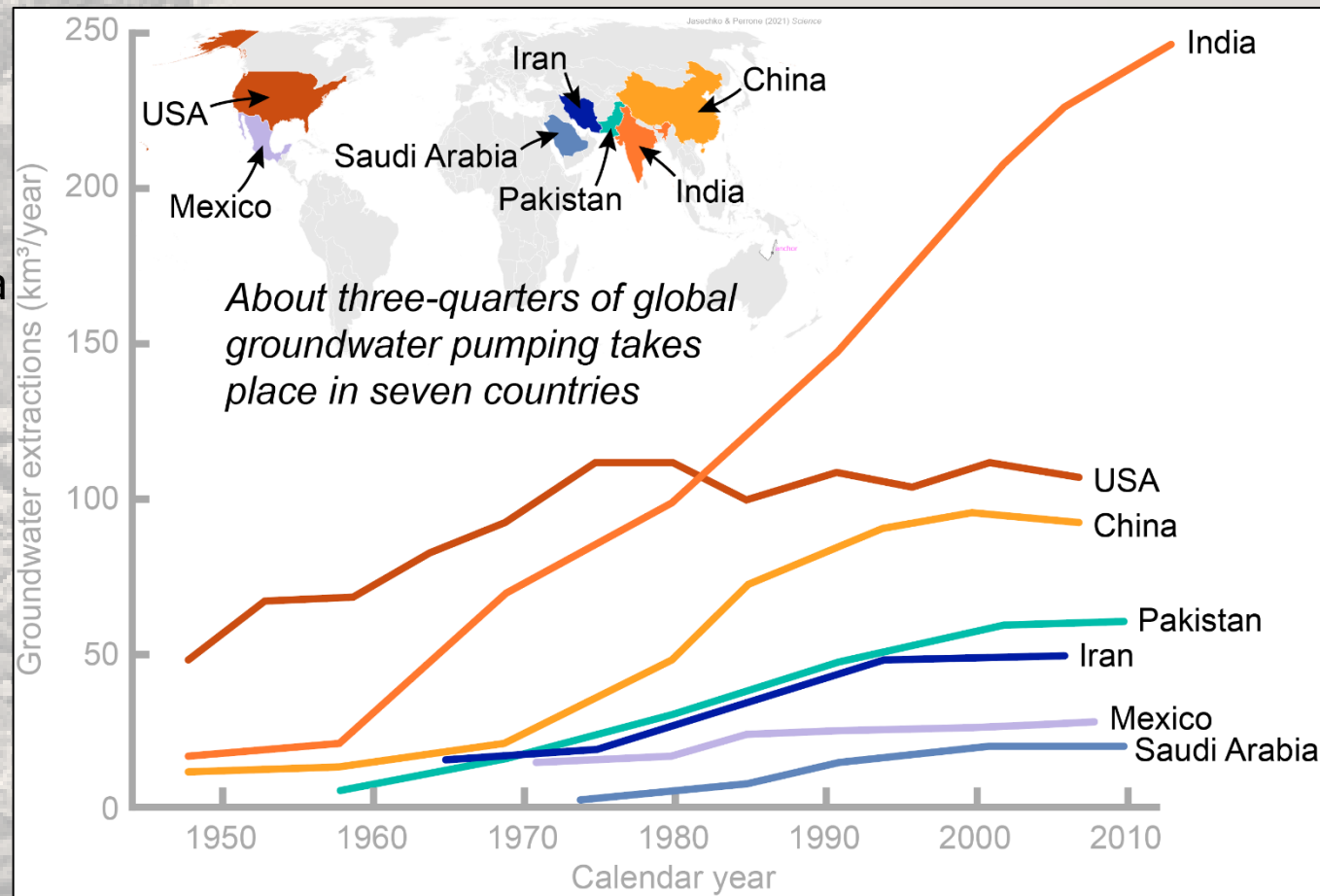
Transboundary Groundwater Resources



Transboundary Groundwater Resources

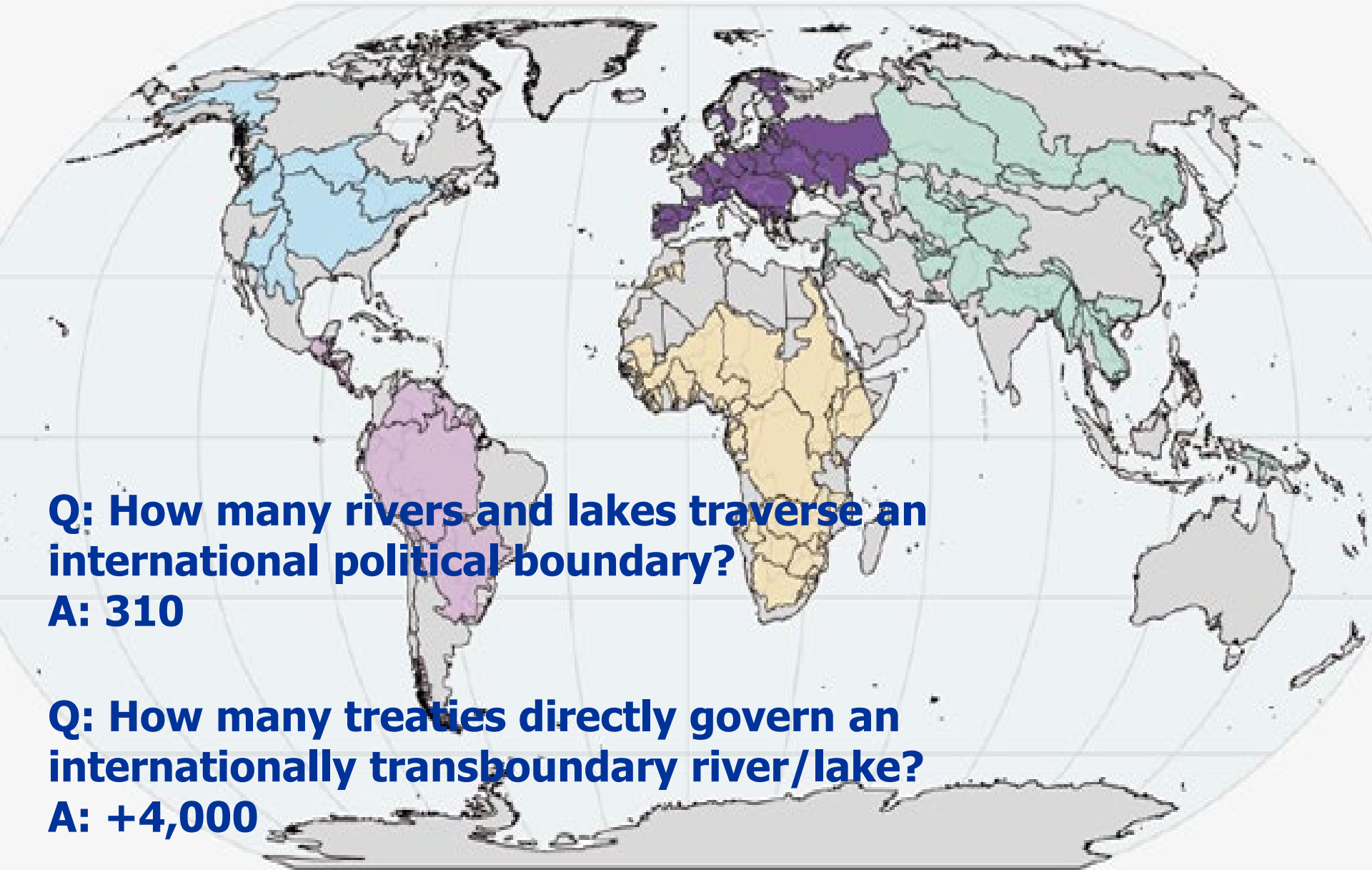
Global groundwater use:

- 50% of all drinking water
 - 40% to 85% in India
 - 50% to 97% in US
 - 60% to 99% in Europe
- 45% of everyday human needs for freshwater, s.a. drinking, cooking and hygiene
- 40% of water used by industry globally
- 20% of water used in irrigated agriculture globally (90% in India)



"The most extracted natural resource in the world"
(~1,000 k³ in 2014)

Transboundary Groundwater Resources



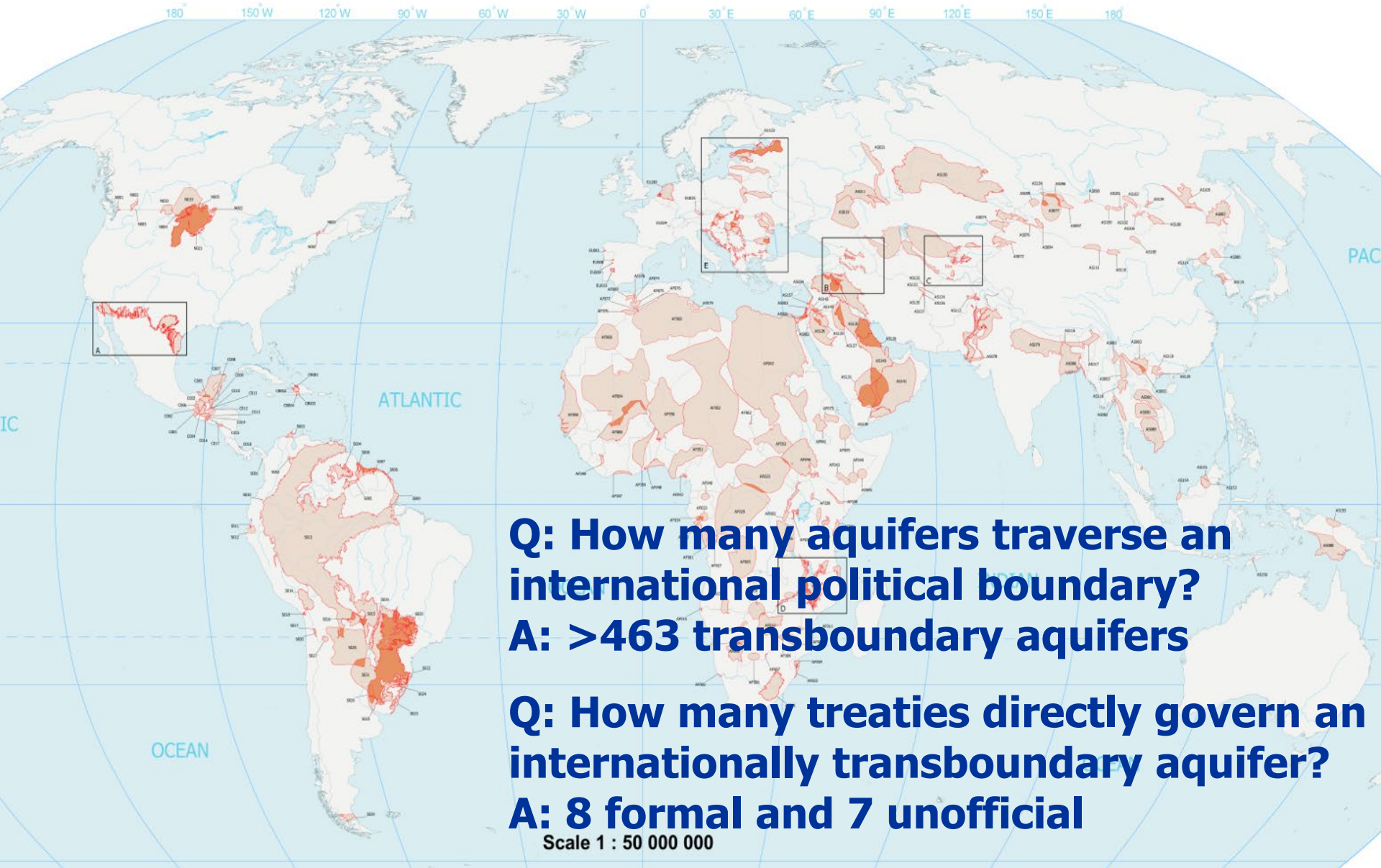
Q: How many rivers and lakes traverse an international political boundary?

A: 310

Q: How many treaties directly govern an internationally transboundary river/lake?

A: +4,000

Transboundary Groundwater Resources



Transboundary Groundwater Resources

Basis for emerging legal trends

- **Non-binding global guidance documents**
 - **2008 UN Draft Articles on the Law of Transboundary Aquifers**
 - **2012 UNECE Model Provisions on Transboundary Groundwaters**
- **Binding global agreements that somewhat address transboundary groundwater (secondary to surface waters)**
 - **1992 UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes**
 - **1997 United Nations Convention on the Law of the Non-navigational Uses of International Watercourses**

Transboundary Groundwater Resources

Basis for emerging legal trends

Official Transboundary Groundwater Agreements

2017 Carboniferous Limestone Aquifer Agreement (Belgium & France)

2015 Al-Sag/ Al-Disi Aquifer Agreement (Jordan & Saudi Arabia)

2010 Guarani Aquifer Agreement (Argentina, Brazil, Paraguay & Uruguay)

2009 Series of documents for aquifers on the Mexico-USA border

2008 Genevese Aquifer Convention (France & Switzerland)

2002 Series of documents for the Northwestern Sahara Aquifer System (Algeria, Libya & Tunisia)

1992/2000/2002 Series of documents for the Nubian Sandstone Aquifer (Chad, Egypt, Libya & Sudan)

Unofficial Transboundary Groundwater Arrangements

2014 Iullemeden, Taoudeni / Tanezrouft Aquifer System MoA (Algeria, Benin, Burkina Faso, Mali, Mauritania, Niger, and Nigeria)*

2019 Senegalo-Mauritanian Aquifer Basin

2017 Ocotepeque–Citalá Aquifer (El Salvador & Honduras)

2017 Stampriet Transboundary Aquifer System (Botswana, Namibia & South Africa)

2017 Concordia-Salto MoU on the Guarani Aquifer (Argentina & Uruguay)

2016 Lithuania/Latvia Agreement no. 16-28

1999 Juárez-El Paso MoU for the Hueco Bolson (Mexico & United States)

1996 Washington State – British Columbia MoA (Abbotsford-Sumas Aquifer) (Canada & United States)

** Not in force, thus, regarded as an unofficial arrangement*

Transboundary Groundwater Resources

Trending Procedural Rules

– Regular Exchange of Data & Information

- Scientific data – hydrological, meteorological, hydrogeological and ecological
- Water availability and quality
- Current and planned uses and volumes

– Monitoring of Cross-Border Aquifers

- [*same as above*]
- Ongoing development of new data and information

- 2008 UN Draft Articles on the Law of Transboundary Aquifers (Arts. 8 & 13)

Transboundary Groundwater Resources

Trending Procedural Rules

- **Prior Notification of Planned Measures**
 - **Notify all potentially affected states.**
 - **Provide relevant data and information**
 - **Engage in good faith consultation**
 - **Creation of Institutional Mechanism**
 - **Implement other procedural obligations**
 - **Coordinate with aquifer riparians**
 - **General Obligation to Cooperate**
- 2008 UN Draft Articles on the Law of Transboundary Aquifers (Arts. 14 & 15)

The Future

- **Navigational Uses:** no significant changes
- **Non-navigational Uses of Surface Water:**
 - development and population
 - environmental concerns
 - water scarcity and human needs
- **Transboundary Groundwater Resources:**
 - similar pressures as for surface waters
 - gaps in the law (e.g., sovereignty, metadata, recharge/discharge zones, fossil aquifers, etc.)
- **New Sources of (Transboundary) Freshwater:**
 - desalination
 - wastewater recycling
 - cross-border bulk water transfers
 - glaciers, permafrost, icebergs

A city skyline at dusk or dawn, featuring several tall glass skyscrapers. In the foreground, there are lower buildings, including one with a decorative facade. On the right side, a vertical banner for Texas A&M University School of Law is visible.

Thank You!

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