Regulating What You Can’t See: International Law and Transboundary Aquifers

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IBWC Binational Summit on Groundwater at the US-Mexico Border
April 10, 2019
• Globally ground water supply comprises:
  – 30% of all fresh water resources
  – 98% of liquid fresh water resources

• Global ground water use:
  – Provides ~1/2 of humanity with freshwater for everyday uses such as drinking, cooking and hygiene
    • 60% to 99% of drinking water for Europeans
    • 50% to 97% of drinking water for Americans
  – 40% of water used by industry
  – 20% of water used in irrigated agriculture

The most extracted natural resource in the world
(982 k$^3$ in 2015)

From: Comprehensive Assessment of Water Management in Agriculture.
Issues for Transboundary Groundwater

• How can you manage, allocate, or regulate something you cannot see?

• What rights do neighboring countries overlying a shared aquifer have to the groundwater?

• What obligations do neighboring countries overlying a shared aquifer have to each other?

• How should we treat transboundary groundwater resources for legal purposes – like surface water, like oil/gas, something else?

• What about interconnected rivers/lakes and the hydrologic cycle?

• Are there any international norms that apply to transboundary aquifers?
Basis for Developing Int’l Law for TBAs

- **Knowledge base upon which to act**
  - Aquifer characteristics (e.g., hydrogeology, chemistry, flow, etc.)
  - Environmental surroundings (e.g., precipitation and climate, etc.)
  - Geography (e.g., geographic extent, location, etc.)
  - Recharge/discharge (e.g., natural and artificial, rates, locations, etc.)
  - Surface water / groundwater interactions
  - Human uses and dependencies
  - Environmental/ecosystem reliance
From: Eckstein, Gabriel & Eckstein, Yoram, A
http://internationalwaterlaw.org/bibliography/articles/igw-models/index.html
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• State practice
  – Actions spurred by needs
  – Actions based on interests
  – Cooperation
  – Trust among neighboring states
~273 transboundary watercourses
3,600 watercourse treaties since ~800AD
(~450+ since 1820AD)
2 Global Treaties
~600 transboundary aquifers and aquifer bodies

- 2 management agreements
- 2 extraction restriction agreements
- 2 data sharing agreements
- 1 framework management agreement (almost in force)
- 4 informal arrangements
Int’l Law for TBAs: Brief History

• Reference to springs or wells – *as secondary or tertiary issue* – in treaties from 1800s and early 1900s

• Interrelated groundwater recognized in watercourse agreements – *as secondary issue*
  – in European treaties since mid-1900s
  – UNECE Water Convention (1992)
  – UNILC’s Resolution on Confined Transboundary Groundwater (1994)
  – UN Watercourses Convention (1997)
Genevese Aquifer

Formal (treaty) recognition of transboundary groundwater resources directly or as primary issue
Other Formal Arrangements

Formal (treaty) recognition of transboundary groundwater resources directly or as primary issue
Int’l Law for TBAs: Brief History

Formal (treaty) recognition of transboundary groundwater resources directly or as primary issue

- Minute 242 between Mexico/U.S. (1973)
- Convention on the protection, utilisation, recharge, and monitoring of the Franko-Swiss Genevois Aquifer (1978/2008)
- Nubian Sandstone Aquifer System monitoring and information exchange agreement (2000)
- Northwestern Sahara Aquifer System consultation mechanism agreement (2002)

* not in force
Int’l Law for TBAs: Brief History

Informal (arrangements) recognition of transboundary groundwater resources directly or as primary issue

- MoA Related to Referral of Water Right Applications related to the transboundary Abbotsford-Sumas Aquifer (1996)
- MoU between City of Juárez, Mexico Utilities and the El Paso Water Utilities Public Services Board of the City of El Paso, Texas (1999)
- Multi-Country Cooperation Mechanism for the joint governance and management of the Stampriet Aquifer System (2017)
- Ocotepeque-Citalá Aquifer governance mechanism (2019)
Int’l Law for TBAs: Brief History

- 2002 UNILC tasked with the “codification and progressive development of international law”
- 2002–2008 Five Reports
- 2008 UNILC submitted to UNGA 19 draft articles on the law of transboundary aquifers

### Draft Articles on the Law of Transboundary Aquifers

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2. (2013), art. 49.
Status of Int’l Law for TBAs: Trends

Structure = aquifer-specific agreements/arrangements

Procedural rules
- Prior notification of planned measures
- Exchange of information
- Monitoring

Substantive rules
- Sovereignty over natural resources
- General obligation to cooperate
- “No significant harm”
- “Equitable & reasonable utilization”

Basis
- Very little experience (state practice)
- Small number of formal and informal instruments; some have not been tested or implemented; some have few enforceable obligations
Gaps in Int’l Legal Trends for TBAs

- Protection of the Functioning of A Transboundary Aquifer
- Protection of Recharge and Discharge Zones
- Prevention of Transboundary Aquifer Pollution
- Protection of Transboundary Aquifer-Dependent Ecosystems
- Harmonization of Metadata and Methodologies
- Exploitation of Non-Recharging Transboundary Aquifers
- Joint Institutional Mechanisms
- Cross-Border Public Participation
- Extent of Sovereignty Over Transboundary Aquifers
• https://bit.ly/2KrRL0j
• 20% Discount Code: FLR40
International Association of Hydrogeologists
Commission on Transboundary Aquifers
Workshop on the Future of Transboundary Aquifers: Research, Management, and Policy Directions
22nd Sept 2019

To be held as a pre-conference event at the IAH 46th Congress, Malaga, Spain
Centre of Hydrogeology, University of Malaga

TransboundaryAquifers@gmail.com
Established in 1971
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Science-policy interface

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www.worldwatercongress.com