

Faculty of Law, University of Sao Paulo

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The Guarani Aquifer System and the emerging International Law on transboundary aquifers

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Outline

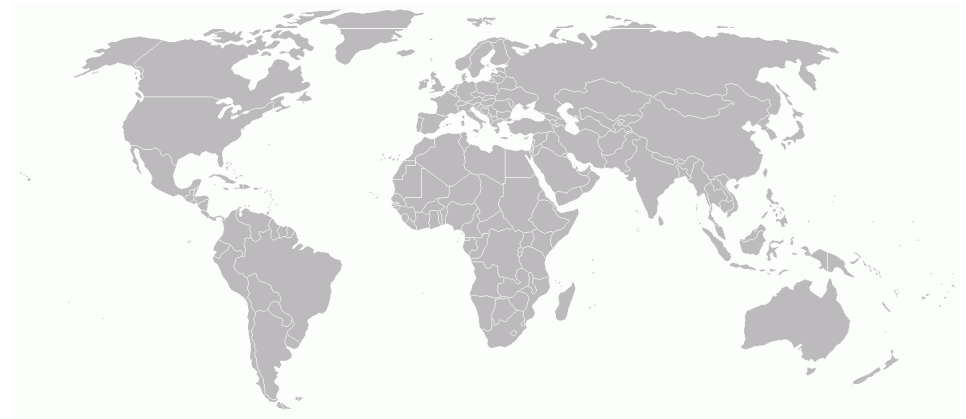


- Framework and background to the University of Surrey visit to the University of São Paulo
- The Sustainable Management of the Guarani Aquifer System
- The emerging international law on transboundary aquifers
- The Environmental Regulatory Research Group project on the Guarani Aquifer System



1. Surrey visit to University of São Paulo

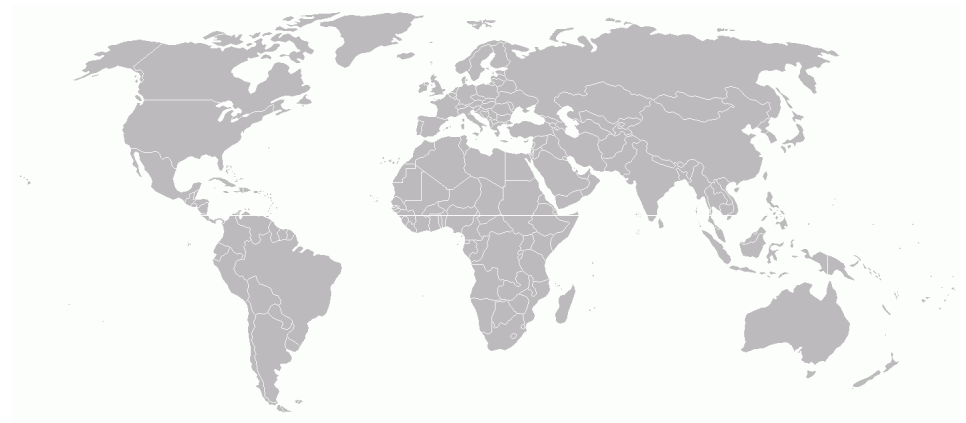
- Collaboration with the University of São Paulo is part of Surrey's Global Partnership Network (GPN)
- North Carolina State University
- Seoul National University
- Nanjing University, China
- University of Cape Town



1. Surrey visit to University of São Paulo



- The partnership with the University of São Paulo is supported by Banco Santander
- PhD students research stay
- Visiting Professors



Future possible areas of collaboration

- Joint research proposals
- Joint post graduate programmes



1. Surrey visit to University of São Paulo



- **The University of Surrey**
- Guildford (30 minutes from downtown London)
- 13000 students
- 7 Schools and 4 faculties



1. Surrey visit to University of São Paulo



- The School of Law at the University of Surrey
(<http://www2.surrey.ac.uk/law/>)

- Research

*Combating Corruption in
International Business*

Surrey International Law Centre

Surrey European Law Unit

*Environmental Regulatory Research
Group*

- Post graduate teaching
- PhD programmes



1. Surrey visit to University of São Paulo



- The Environmental Regulatory Research Group
(<http://www2.surrey.ac.uk/errg/>)
- Climate Change
- Environmental and Public Health
- Natural Resources
- Water



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2. The Sustainable Management of the Guarani Aquifer System (GAS)



- Groundwater, global water security and transboundary aquifers
- The Guarani Aquifer System (I): Past and current regional cooperation
- The Guarani Aquifer System (I): Future regional cooperation



Sustainable Management of the GAS



■ Groundwater and global water security



■ Freshwater

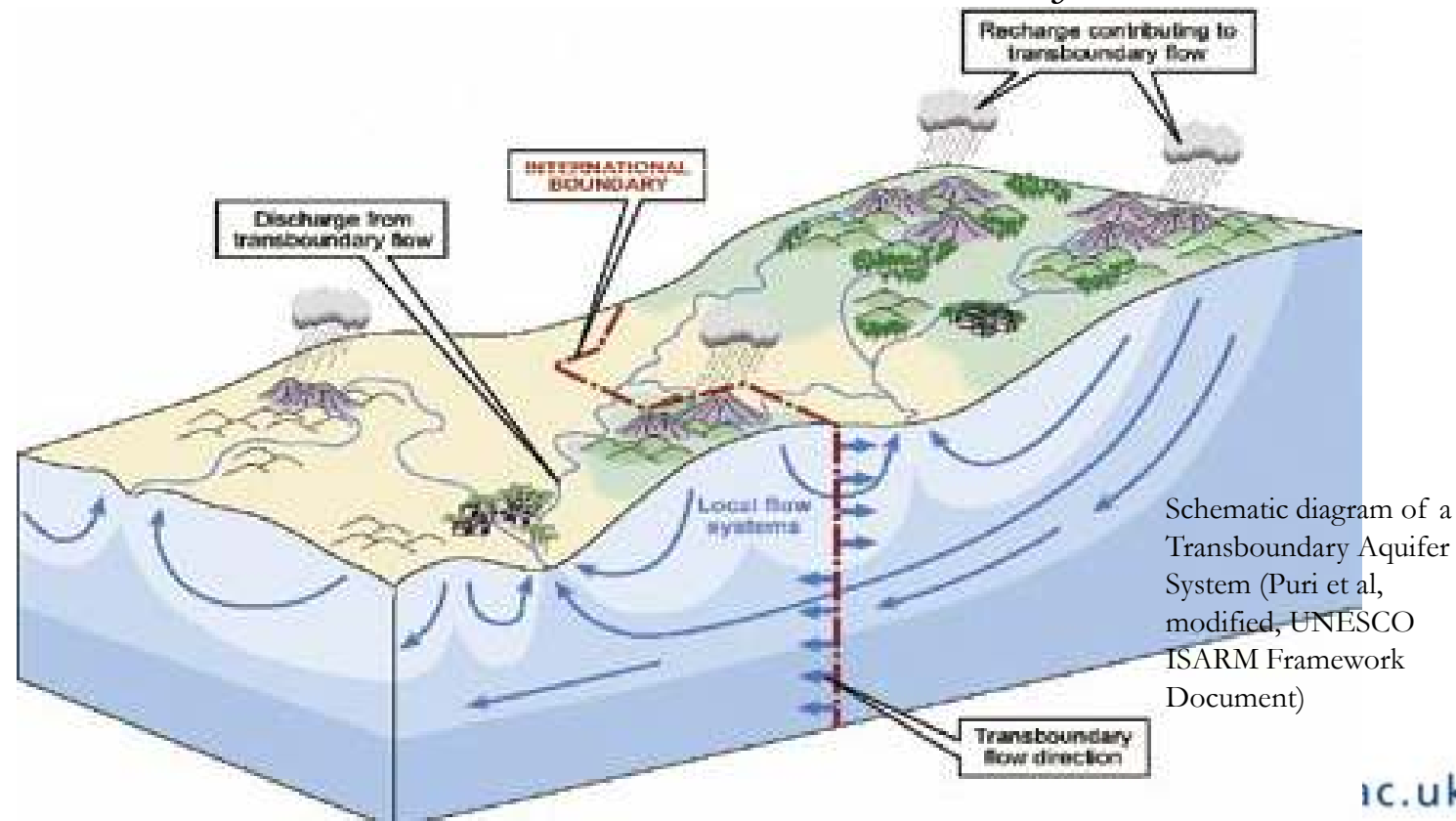
97% of global available freshwater is stored underground

50% of global current drinking water supplies relies on groundwater

2. Sustainable Management of the GAS

■ Transboundary aquifers

■ **Aquifers:** “a permeable water bearing geological formation underlain by a less permeable layer and the water contained in the saturated zone of the formation”, *UN ILC Draft Articles*, art. 2a).



2. Sustainable Management of the GAS

- **Transboundary aquifers**

- **An aquifer consists of two elements:**

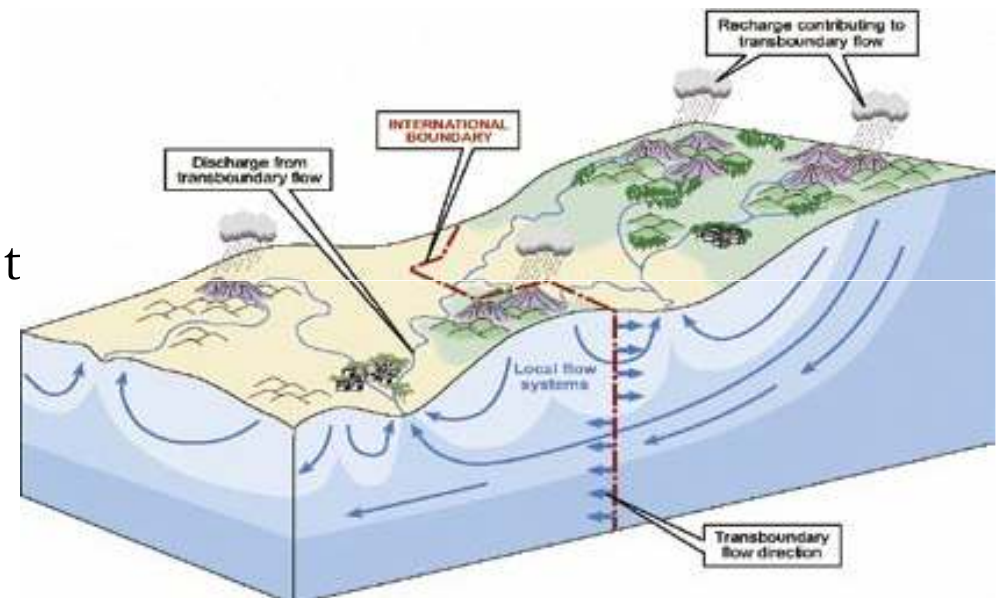
Underground geological formation (container)

Water stored underground in the container

- **Recharging and non-recharging aquifers:**

Recharge zone, *UN ILC Draft Articles*, art. 1(g)

Discharge zone, *UN ILC Draft Articles*, art. 1(h)



2. Sustainable Management of the GAS



■ Transboundary aquifers

■ Aquifer uses

Extraction of water

Extraction of heat
(energy)

Extraction of
minerals

Storage and disposal
of any substance
(CCS)



■ Challenges to Aquifers

Overexploitation

Competition over
different uses

Pollution

2. Sustainable Management of the GAS



- **GAS (I): Past and current regional cooperation**
- **The Project for Environmental Protection and Sustainable Development of the Guarani Aquifer System (PGAS)**

Argentina

Brazil

Paraguay

Uruguay

World Bank (Implementing Agency)

OAS (Executing Agency)

GEF (Financial Support)

Guarani Aquifer Strategic Action Program



.uk

2. Sustainable Management of the GAS



■ GAS (I): Past and current regional cooperation

■ An introduction to the GAS

- Argentina 20.98% of the total (8.1% in relation to the country)

Brazil 61.65% (8.7%)

Paraguay 8.05% (21.5%)

Uruguay 3.32% (19.5%)

- 92 million people live over the GAS (80 million in Brazil)
- Limited pollution and overexploitation

Land use

Climate change



2. Sustainable Management of the GAS



- **GAS (I): Past and current regional cooperation**

- **The GAS and water security**

Water security in the region is guaranteed also by the GAS

“Water resource scarcity can be achieved, provided the countries,

- while exercising sovereignty over the aquifer
- adopt common management principles and policies...”

2. Sustainable Management of the GAS



- **GAS (I): Past and current regional cooperation**

- **Groundwater regulation in the GAS region I**

Adequate normative structures

Common management principles

- Public jurisdiction over groundwater
- Environmental protection
- Ensure availability of water of adequate quality for current and future generations
- Regional, integrated and sustainable use
- Priority for human water supply

2. Sustainable Management of the GAS



- **GAS (I): Past and current regional cooperation**

- **Groundwater regulation in the GAS region II**

Adequate normative structures

Instruments in common

- Systems for granting licences for water use and discharges
- Environmental licensing
- Basin committees or advisory boards
- Possibility of deploying water-use charges
- Control and penalties for noncompliance

2. Sustainable Management of the GAS



- **GAS (II): Future regional cooperation**
- **The legacy of the Project for Environmental Protection and Sustainable Development of the Guarani Aquifer System (PGAS)**

Immediate Implementation Stage (2009-2010)

Future Implementation Stage (2010-??)

“...any threat to water-resource scarcity in any of the four countries of the GAS region would result in a regional imbalance.

The only adequate response to such a challenge is strengthening of intra-regional cooperation in the field of groundwater management, and especially of the GAS”

2. Sustainable Management of the GAS



- **GAS (II): Future regional cooperation**
- **Options for future intra-regional cooperation**
- La Plata Basin Treaty
- “in view of the strategic importance of the GAS for national development and of the transboundary nature of some of its waters, they [the countries] appreciate that it requires special attention.”
- *Future GAS treaty?*
- *Future independent GAS regional management and coordination mechanism?*
- Agreement within the scope of MERCOSUR

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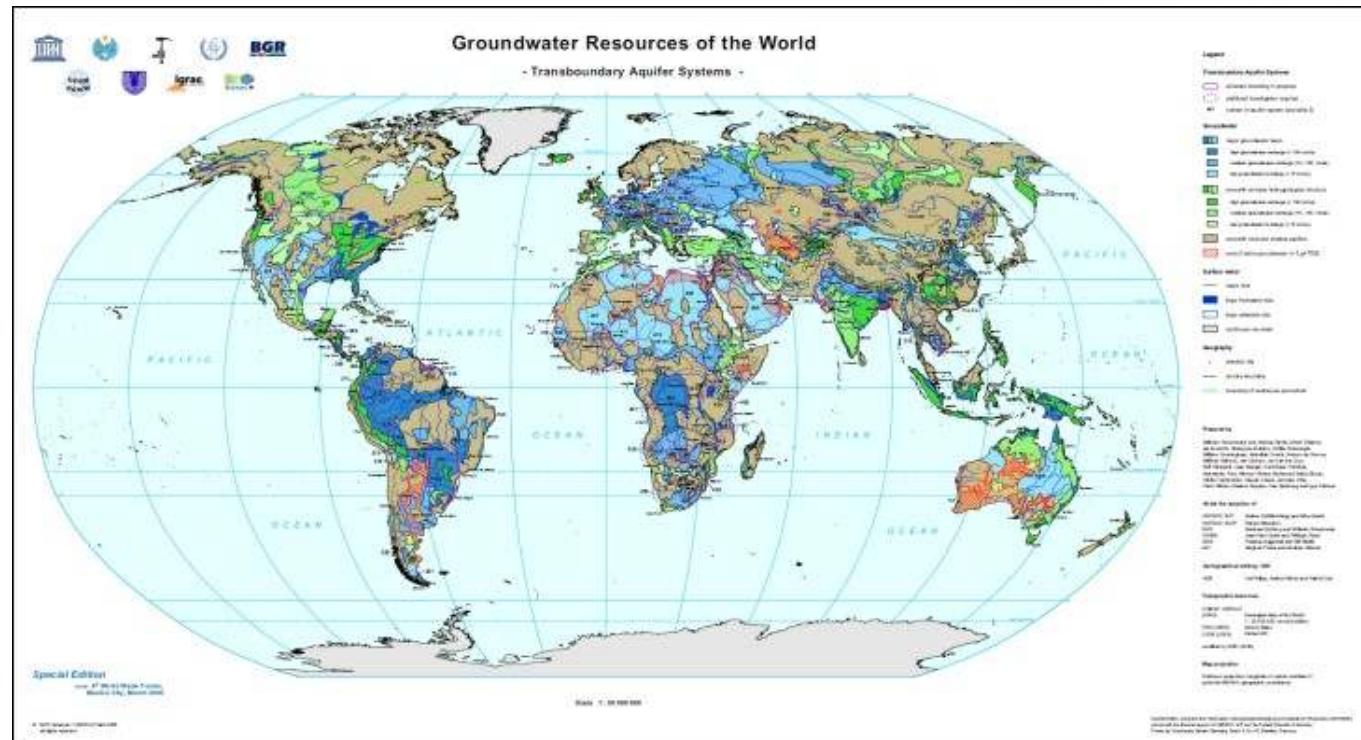


3. International Law of Transboundary Aquifers



- **Transboundary surface watersheds**
more than 400 worldwide (international rivers, lakes, etc...)
similar number of bilateral and multilateral treaties
overarching UN Watercourses Convention
- **Transboundary Aquifers:**
how many?
are they regulated?

3. International Law of Transboundary Aquifers



■ **UNESCO ISARM** (<http://www.isarm.net/>):

Atlas of Transboundary Aquifers (more than 200)

ISARM of the Americas (68), ISARM Africa (38),

ISARM South-Eastern Europe (65), ISARM Asia (12),

ISARM Europe (90)

3. International Law of Transboundary Aquifers



- **Very few have been “partly” regulated**
 - Nubian Sandstone Aquifer System (Chad, Egypt, Libya and Sudan)
 - North Western Sahara Aquifer System (Algeria, Libya and Tunisia)
 - French-Swiss Geneva Aquifer
- **No general binding legal framework**

3. International Law of Transboundary Aquifers



- Why does the international community need specific rules for transboundary aquifers?

1997 UN Convention on the Law of Non-Navigational Uses of International Watercourses, art 2(a):

A watercourse is: “a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus.”

- Limited scope
- Provisions are tailored for surface water

3. International Law of Transboundary Aquifers



- **2002: UN ILC decides to include the topic “Shared Natural Resources”**
 - Confined transboundary groundwaters
 - Oil
 - Gas

- **2009: Draft articles on the law of transboundary aquifers are annexed to UNGA Res. 63/124**
 - 2006 First reading
 - 2008 Second reading: preamble, 19 articles and commentaries thereto

3. International Law of Transboundary Aquifers



A/RES/62/154

2. Expresses its deep concern about the negative stereotyping of religions and manifestations of intolerance and discrimination in matters of religion or belief still in evidence in the world;

3. Strongly deplores physical attacks and assaults on businesses, cultural centres and places of worship of all religions as well as targeting of religious symbols;

4. Expresses its deep concern about programmes and agendas pursued by extremist organizations and groups aimed at the defamation of religions and incitement to religious hatred, in particular when condoned by Governments;

5. Also expresses its deep concern that Islam is frequently and wrongly associated with human rights violations and terrorism;

6. Notes with deep concern the intensification of the campaign of defamation of religions and the ethnic and religious profiling of Muslim minorities in the aftermath of the tragic events of 11 September 2001;

7. Recognizes that, in the context of the fight against terrorism and the reaction to counter-terrorism measures, defamation of religions and incitement to religious hatred becomes an aggravating factor that contributes to the denial of fundamental rights and freedoms of members of target groups, as well as their economic and social exclusion;

8. Deplores the use of the print, audio-visual and electronic media, including the Internet, and any other means to incite acts of violence, xenophobia or related intolerance and discrimination against Islam or any other religion, as well as targeting of religious symbols;

9. Stresses the need to effectively combat defamation of all religions and incitement to religious hatred, against Islam and Muslims in particular;

10. Emphasizes that everyone has the right to hold opinions without interference and the right to freedom of expression, and that the exercise of these rights carries with it special duties and responsibilities and may therefore be subject to limitations as are provided for by law and are necessary for respect of the rights or reputations of others, protection of national security or of public order, public health or morals and respect for religions and beliefs;

11. Urges States to take action to prohibit the advocacy of national, racial or religious hatred that constitutes incitement to discrimination, hostility or violence;

12. Also urges States to provide, within their respective legal and constitutional systems, adequate protection against acts of hatred, discrimination, intimidation and coercion resulting from defamation of religions, to take all possible measures to promote tolerance and respect for all religions and beliefs and the understanding of their value systems and to complement legal systems with intellectual and moral strategies to combat religious hatred and intolerance;

13. Urges all States to ensure that all public officials, including members of law enforcement bodies, the military, civil servants and educators, in the course of their official duties, respect people regardless of their different religions and beliefs and do not discriminate against persons on the grounds of their religion or belief, and that any necessary and appropriate education or training is provided;

14. Underscores the need to combat defamation of religions and incitement to religious hatred by strategizing and harmonizing actions at the local, national, regional and international levels through education and awareness-raising;

3

- Preamble
- Part I: Introduction
- Part II: General Principles
- Part III: Protection, Preservation and Management
- Part IV: Miscellaneous provisions

- Mechlem, *LJIL* (2009) and Eckstein, *CJIEL* (2007)



3. International Law of Transboundary Aquifers



- **Commonalities between the UN-ILC Draft articles and regional groundwater principles and instruments**
- National sovereignty (art. 3)
- Equitable and reasonable utilization (art. 4)
- Special regard for vital human needs (art. 5.2) vs priority for human needs
- Pollution and overexploitation will be avoided through cooperation (art. 7)
- Bilateral and regional agreements and arrangements (art. 9)

3. International Law of Transboundary Aquifers



UNGA RES 63/124

- “Takes note of the draft articles on the law of transboundary aquifers...and commends them to the attention of Governments without prejudice to the question of their future adoption or other appropriate action”
- “Encourages the States concerned to make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers, taking into account the provisions of these draft articles”
- “Decides to include in the provisional agenda of its sixty-sixth session an item entitled “The law of transboundary aquifers” with a view to examining, inter alia, the question of the form that might be given to the draft articles.”

3. International Law of Transboundary Aquifers

- Form that might be given to the draft articles
- Legally binding framework convention
- Protocol to the UN Watercourses Convention
- ILC Articles annexed to a UNGA



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4. ERRG project on the Guarani Aquifer System



■ Goal of the project

- Learn more about the sustainable management of the GAS
- Discuss the extent to which the emerging international law of transboundary aquifers can play a role in the future management of the GAS (future intra regional coordination)



■ Policy relevance of the project

- Provide input to the debate on the future form of the ILC Draft Articles through the GAS case study
- Project contributes to the UNESCO ISARM programme

3. The future of the UN ILC Draft Articles and the ERRG project on the Guarani Aquifer System



■ **Activities**

- 31 August 2010 @ the University of Surrey
“Transboundary Aquifers and International Law: The Experience of the Guarani Aquifer Study”

■ **Outcomes**

- Special issue of a leading international law journal
- Policy report
- Edited book in Spanish/Portuguese

www.surrey.ac.uk/errg

3. The future of the UN ILC Draft Articles and the ERRG project on the Guarani Aquifer System



■ First step

Surrey Centre on the Regulation of Transboundary Aquifers (SCERTA)



Conclusions



- **Groundwater sustainable management key for global water security**
- Transboundary management
- **The UN ILC Draft Articles provides a general framework**
- Could they provide a blueprint for intra regional coordination for the GAS?
- **The future of the UN ILC Draft Articles becomes the real question now**
- Scope for a legally binding framework convention?

Thank you!



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