Global Groundwater Policy & Governance

The GEF Project on Groundwater Governance and Other Observations

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Capacity for Water Cooperation Workshop on
Legal, Institutional & Technical Aspects of Managing Transboundary Groundwaters

Almaty, Kazakhstan
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United Nations Economic Commission for Europe

Today's Talk

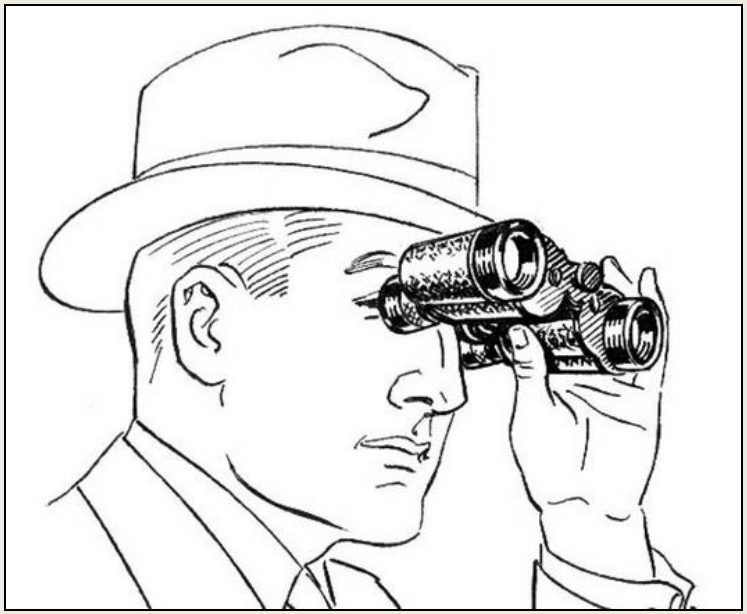
1. Significance, observations, objectives, questions
2. The GEF project
3. GEF Thematic Paper 5
4. Preliminary answers, challenges, and transboundary aquifers
5. Epilogue: A U.S.-Mexico case study

Significance of Topic

- Limited volumes of freshwater
- In arid and semiarid regions, *especially*, quantity of freshwater is likely to diminish due to changes in climate, population growth, economic development
- Groundwater (largest of the world's available freshwater) is an increasingly important source for populations and for agriculture

Some Observations

- Until recently, few attempts to view groundwater-management phenomenon globally
- Instead—to the extent that groundwater management was studied—it was through prism of unique, basin-specific forms of governance
- Frequently, groundwater has been exploited unilaterally by agricultural, industrial, or other interests—without institutional arrangements to promote cooperation and equity



Some Further Observations

- ISARM: "Groundwater management units, when they exist, are often sidelined and nonvisible in surface-water dominated water administrations."
- "Groundwater is not explicitly addressed in national water legislation."
- Applegren: "There has not been enough work on institutions."

- **Global Environment Facility**

In partnership with

UN Food and Agriculture Organization (FAO)

UNESCO-International Hydrological Programme (IHP)

World Bank

International Association of Hydrogeologists

GEF project ID: 3726

Groundwater Governance:

A Global Framework for Action

GEF Project Aims

<u>Objective</u>: To slow or reverse trends in [illegible] depletion & degradation through [illegible] governance

<u>Focus</u>: Human behaviors that impact groundwater quantity & quality

<u>Target</u>: Resource-management processes & institutions that affect millions of users & polluters

Basic Water Governance Principles

- Sustainability
- Transparency
- Participation
- Accountability/responsibility
- Integration with water policy

GEF Project Thematic Papers

1. Trends in groundwater pollution
2. Conjunctive use & mgt.
3. Urban-rural co-mgt.
4. Mgt. of recharge/discharge
5. **Groundwater policy and governance**
6. Legal frameworks for groundwater governance
7. Trends in local groundwater management
8. Social adoption of technology
9. Macro-economic trends
10. Governance of subsurface space
11. Water & climate change: Impacts & adaptation options

Thematic Paper 5

<u>Goal</u>: Define and develop a set of practices for "Responsible Groundwater Use"

Some Questions

- Prevailing modes of governing aquifers?
- Do nations have instruments to address groundwater governance equitably & effectively while minimizing conflict?
- What geographic, social, political, economic characteristics are most conducive to effective groundwater governance?
- What are key criteria for such practices?

Thematic Report No. 5:

Working definition of (groundwater) governance

The process through which groundwater is managed through the application of responsibility, participation, information availability, transparency, custom and the rule of law. It is the art of coordinating administrative actions and decision making between and among different jurisdictional levels—one of which may be global.

— GEF project 2012

Thematic Report No. 5
Highlights

Policy framework & context

Lessons from case studies

Constraints, barriers, knowledge gaps

Successful/unsuccessful paradigms, models, instruments, methodologies

Criteria for effective governance

Applying practical principles

Way forward—practices for “responsible groundwater use”

Potential Answers May Lie In . . .

- Adapting successful models
- Using flexible, adapted, localized/regionalized tools
- Better access to information
- Recognition of human dimensions
- More public participation
- Robust institutions at all levels

Remaining Challenges

Groundwater governance remains:

- Frequently multinational because of transboundary conditions
- Largely uncharted
- Incompletely assessed
- Complex
- A “fuzzy” concept
- Exceptionally uncertain

For Transboundary Aquifers (TBA) . . .

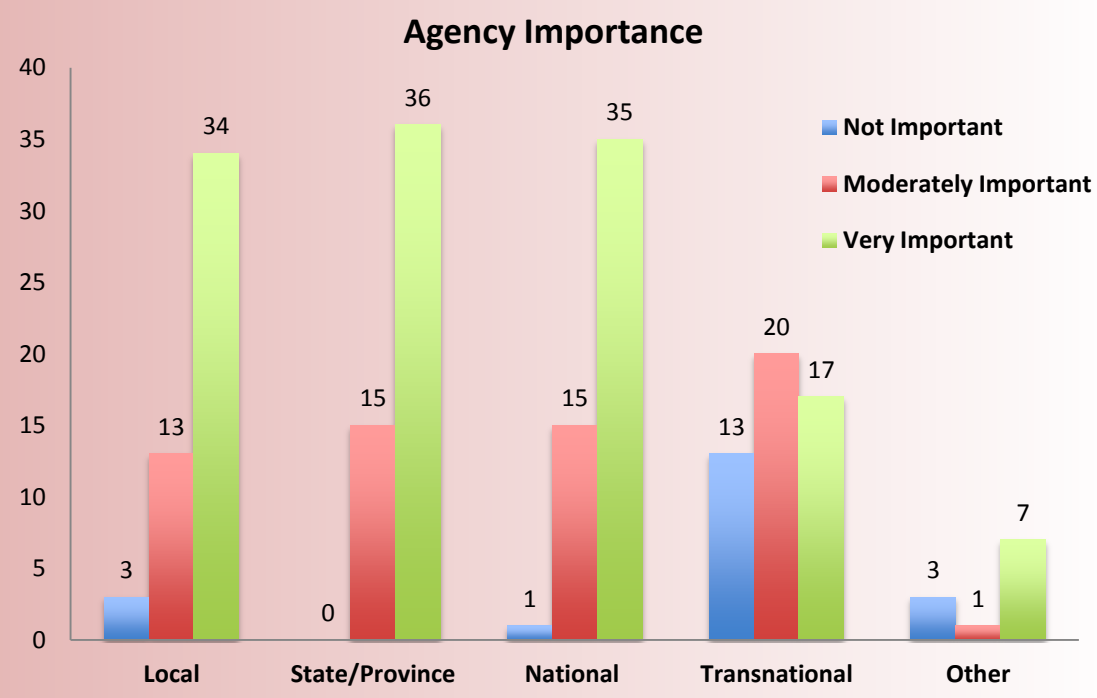
- Technical info. devel. & exchange is the low-hanging fruit and remains the main TBA activity. *But at least info. is being used!*
- TBA governance still often segregated from other transboundary water issues—notable exceptions incl. Eur. Water Framework Directive and SADC integration of TBA with river basin mgt.
- TBA mgt. is sensitive because of sovereignty issues, thus politicizing groundwater governance
- Very complex examples of TBA issues exist, which are simultaneously domestic & international, and usually related to land & ethnic issues (e.g., Kenya-Somalia)

Preliminary Findings from 2012 Varady Transboundary Groundwater Governance Survey

(1) Respondents emphatically view groundwater as a *shared resource* rather than private property:
78% agree or strongly agree (n = 147)

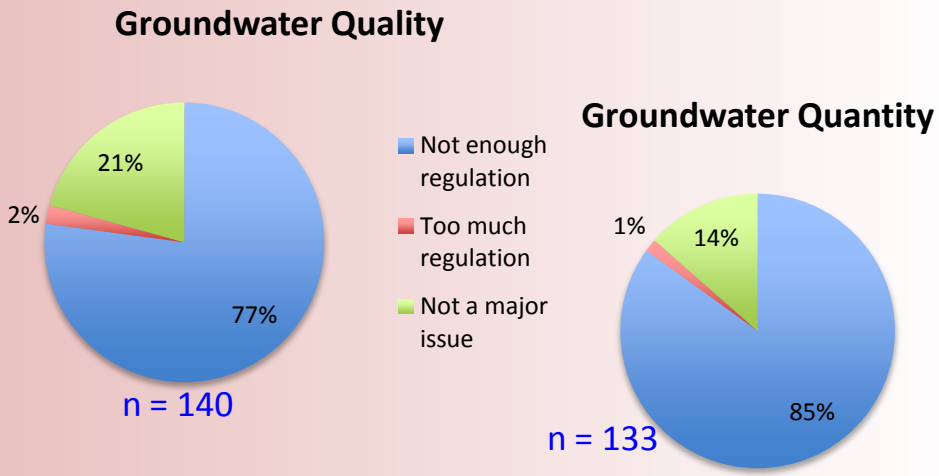
(2) Agencies at all levels are considered very important for regulating groundwater quality and use (n = 52)

(3) Where they exist, trans-national agencies are more frequently viewed as *not important* or *moderately important* (n = 52)

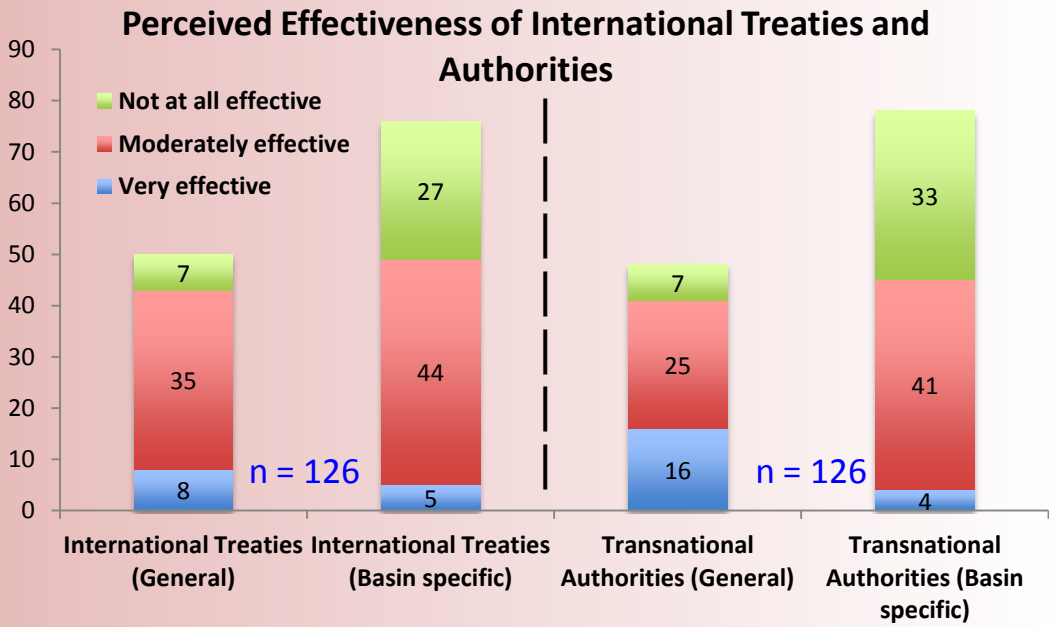


Preliminary Findings from Varady Survey (2)

(4) Respondents agree overwhelmingly that *more groundwater regulation is needed for both quality and quantity*.



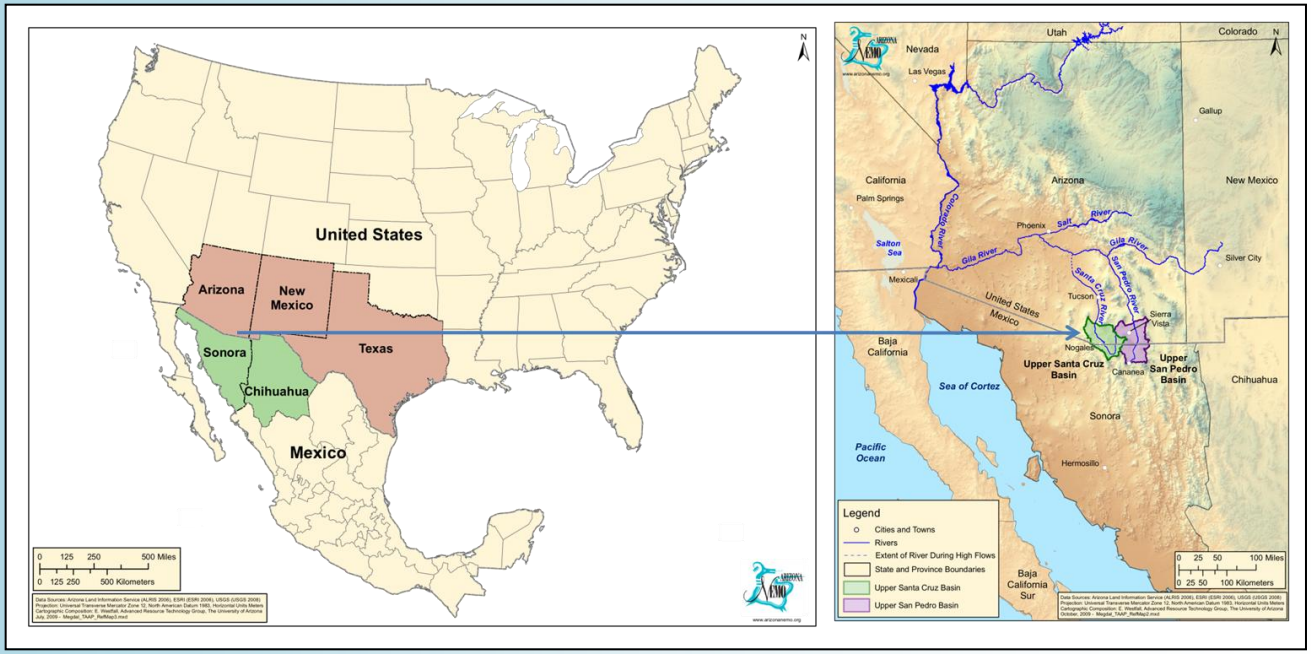
(5) Basin-specific respondents are *pessimistic about the effectiveness of transnational treaties and authorities* for managing disagreements over groundwater (*more so than general experts*).



Transboundary Aquifer Assessment (TAA) along United States-Mexico border

An Opportunity for Water Cooperation

- Growing levels of water use & water-quality degradation, from rapid urban growth and climate change & variability
- US Public Law 109-448 (U.S.- Mexico TAA Act) approved in 2006
- TAA Program provides scientific information useful to policymakers & water managers



U.S.-Mexico
International Boundary & Water Commission (IBWC)
Joint Cooperative Framework

- Facilitates official binational effort & data sharing
- IBWC cooperative framework:
  - Assures binational concurrence on aquifer-assessment activities
  - Facilitates jointly-evaluated agreements
  - Establishes binational tech. advisory committees & studies
- Consistent with Law of Transboundary Aquifers (on info. sharing & collab.) of UNGA Resol. 63/124
- Innovation:
  - Nature of coop. framework, where IBWC facilitates cross-border assessment
  - Strong federal/university partnerships through legislation

Progress and Challenges

Much progress with very limited budget during first 5 years

- Studies, articles, bilingual factsheets, binational workshop, field trips
- Compilation of all work to date, binationally
- Framework for future binational modeling & other analyses

However…

- U.S. Congress has not budgeted funds in recent years ➔ difficulty for U.S. Geol. Survey (responsible federal agency) to dedicate resources, and univ. partners to carry out intent of law
- At same time, Mexican partner agency is prepared to continue its support

Key Lessons from this Innovative Solution

- Time spent on developing Joint Cooperative Framework bore fruit: *a framework for true collaboration.*
- Those who make funding decisions should recognize that *assessment requires multi-year commitment*.
- Work is *not only hydrogeological*. Need to understand aquifer-reliant communities and legal/institutional framework for managing groundwater.
- Assessment is prerequisite to proper management of shared aquifers, but even then *transboundary management requires extra policymakers at multiple levels*.

Caveat

"Prescriptions for sustainability and good governance should be accompanied by a healthy measure of modesty by observers whose intended panaceas too often prove naïve in real-world settings."

— Elinor Ostrom (2009 Nobel Prize, Economics)