



REGIONAL STRATEGY FOR THE ASSESSMENT AND MANAGEMENT OF THE TRANSBOUNDARY AQUIFER SYSTEMS IN THE AMERICAS

Regional strategy for the assessment and management of the transboundary aquifer systems in the Americas



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Geological Survey of Canada

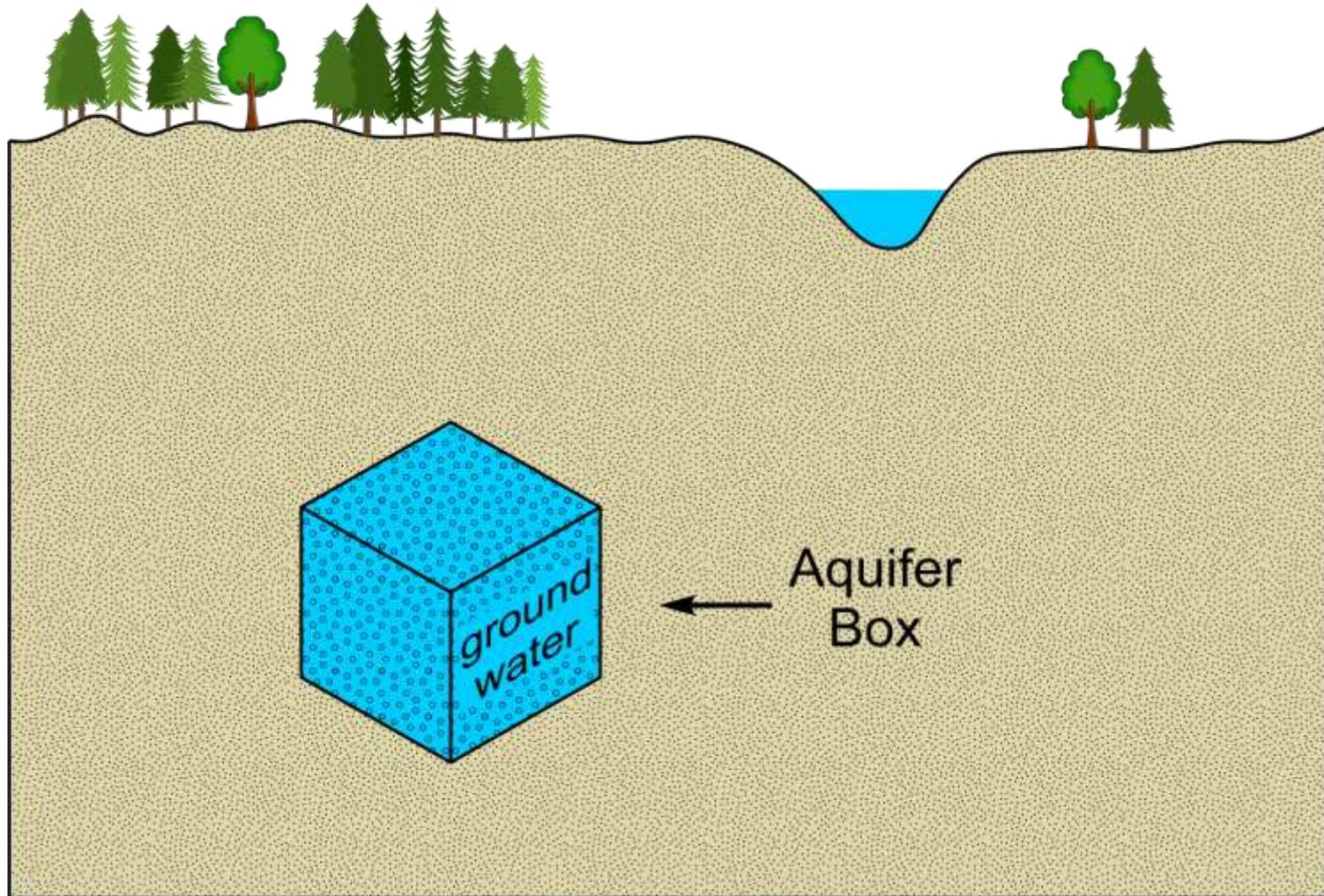
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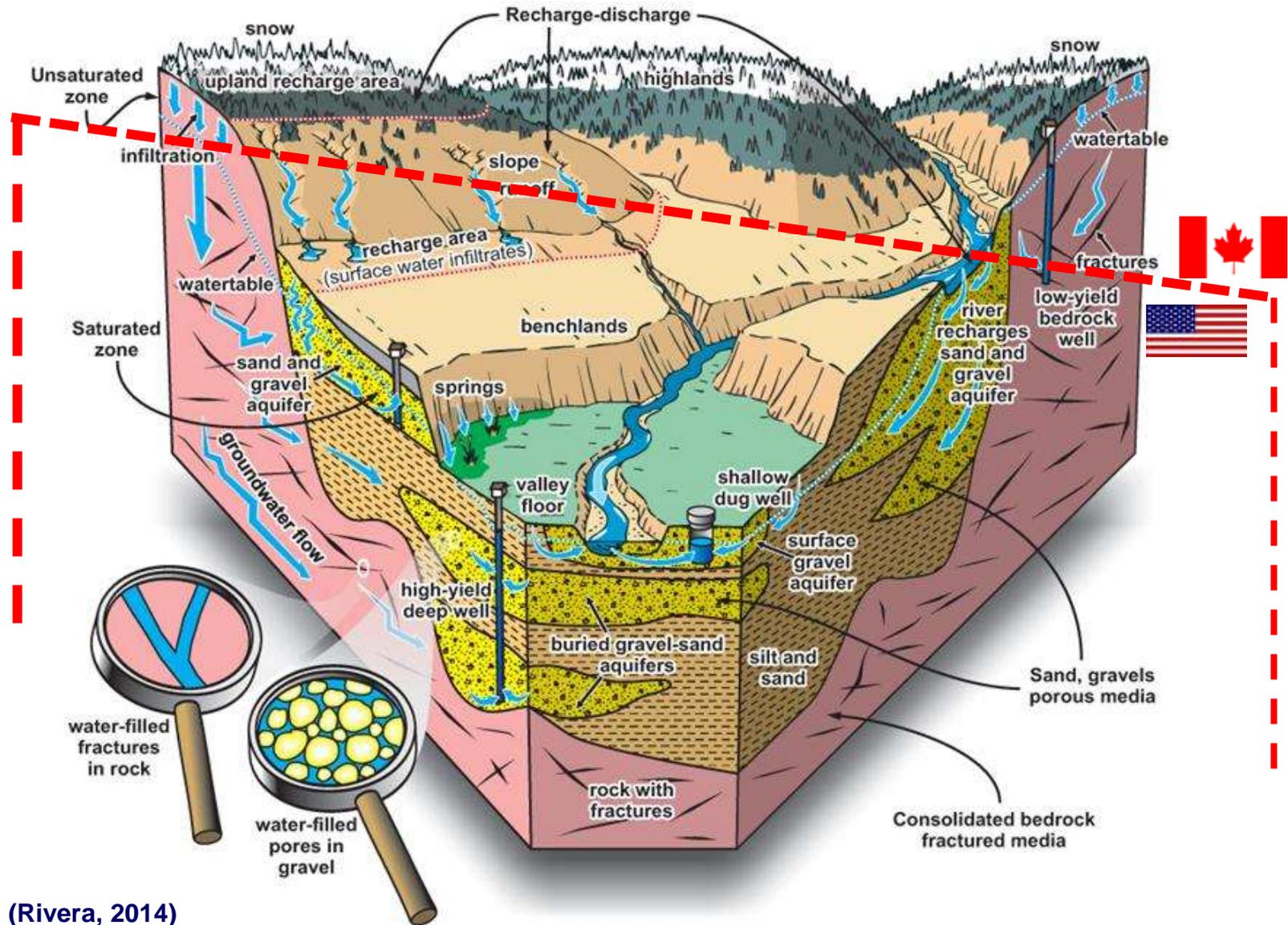
What is an "aquifer"?

¿Que es un "acuífero"?



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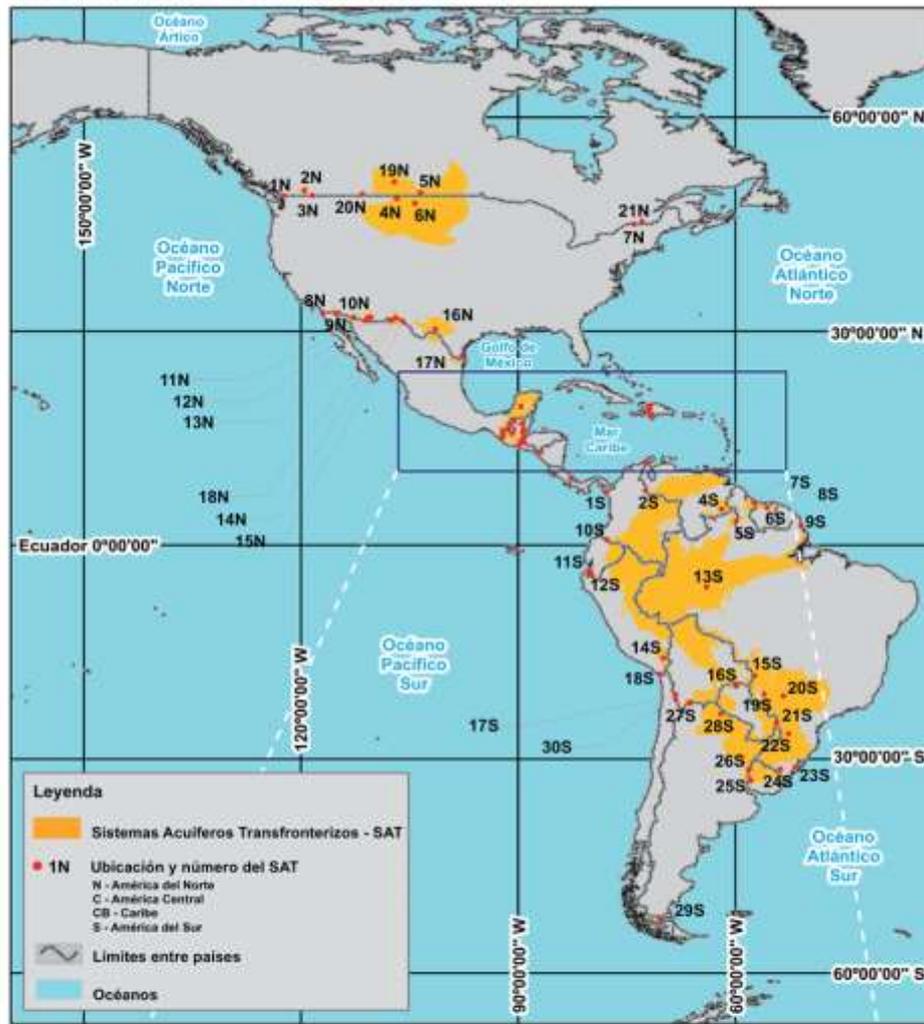
OUTLINE

- 1. Context and Content**
- 2. Vision, Mission & Objectives**
- 3. Knowledge needed for Assessment & Management of TAS**
- 4. Approaches to strategy implementation**
- 5. Conclusions & Recommendations**





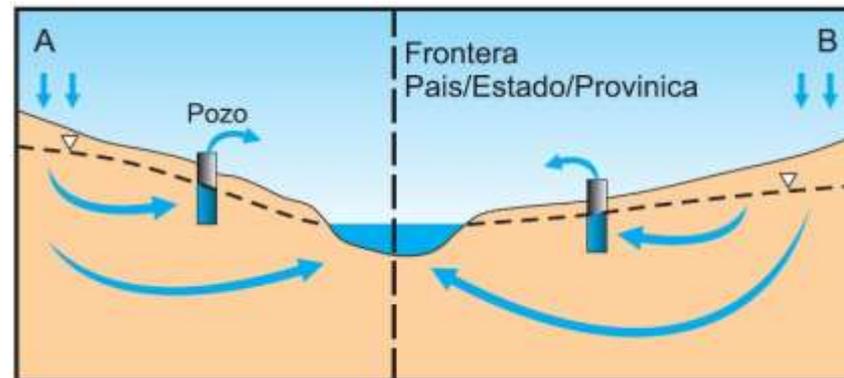
1/5 – Context and Content



CONTEXT

Data and information on the TAS-Americas:

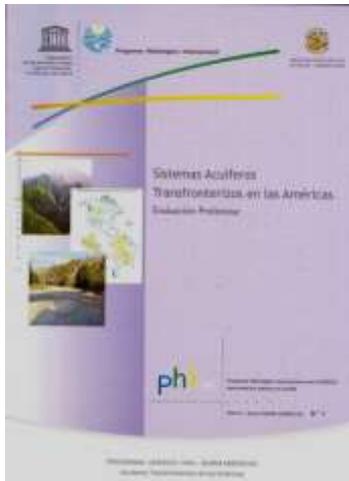
- Compiled over a period of seven years (2003-2009)
- 24 countries from Argentina/Chile to Canada
- Inventory of 73 TAS:
 - 21 TAS in North America
 - 22 in Central America and Caribbean
 - 30 in South America



Context ISARM-Americas

- Three books published

2007



2008

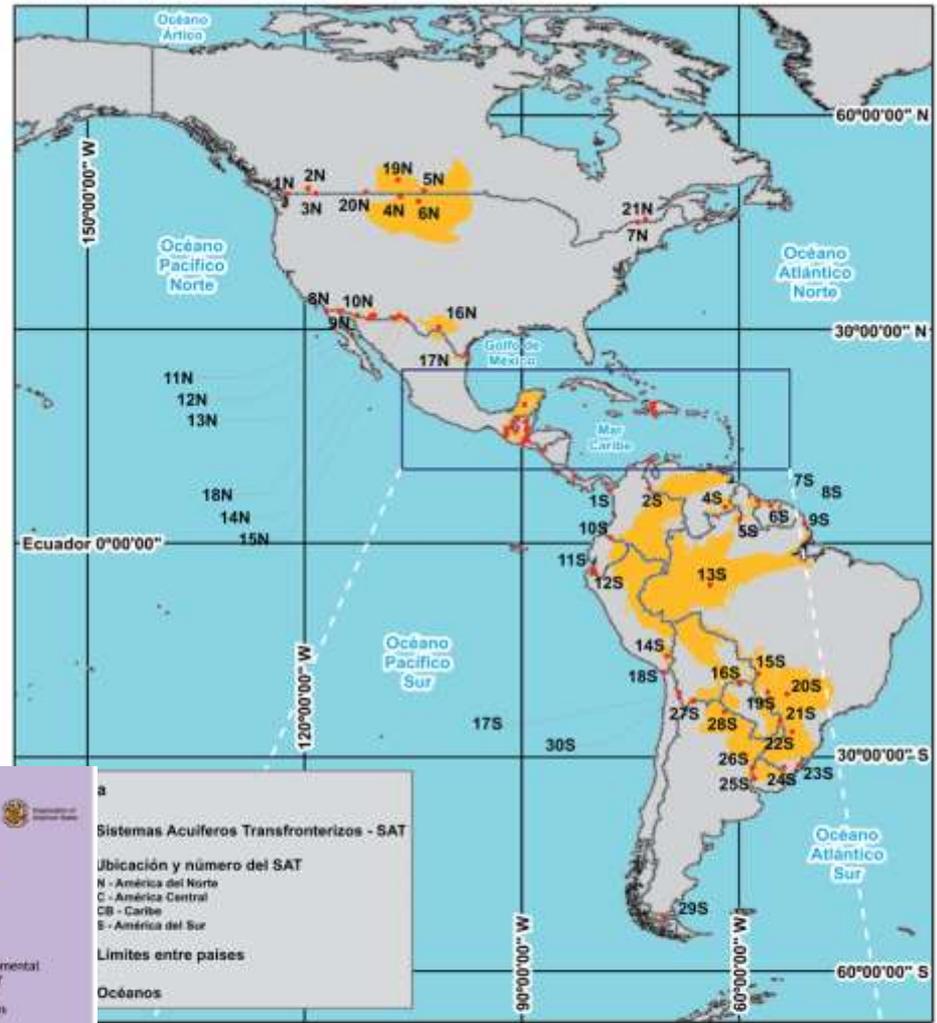


2010



Legal and Institutional Framework For Management

Socioeconomic, Environmental and Climatic Aspects of the American TAS



2015: Strategy for the Americas

- 24 countries of the Americas
- High level international cooperation
- Science contributing to decision-making
- Sustainable management of transboundary groundwater
- Strengthen water cooperation to ensure peace and development in the hemisphere reducing potential conflict
- A regional strategy agreed by consensus



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Estrategia regional para la evaluación y gestión de los Sistemas Acuíferos Transfronterizos en las Américas



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BOOK CONTENT

Preface

Chapter 2: Conclusions and Recommendations

Chapter 3: Background and scope of the Regional Strategy

Chapter 4: Level of knowledge of the TAS of the Americas

Chapter 5: Synopsys of the management of the TAS in the
Americas

Chapter 6: Basic scientific and technical knowledge needed for
the evaluation and management of the TAS

Chapter 7: Approaches to implement the regional strategy

References

Glossary



2/5 – Vision, Mission & Objectives

REGIONAL STRATEGY ISARM – AMERICAS

VISION

Achieving improved sustainable management and protection of transboundary aquifer systems that go beyond the boundaries of the participating ISARM Americas countries

MISION

Increase the generation and exchange of knowledge on transboundary aquifers, developing communication pathways, cooperation and joint work between participating ISARM Americas countries



OBJECTIVES

Main Objective:

Include knowledge and cooperation as the foundation of long-term GW sustainability of shared aquifers crossing two or more jurisdictions in the American hemisphere

Five long-term objectives with a 20-years horizon:

1. **Generate** knowledge on the state, protection, use and supply of the GW resources of the TAS.
2. **Ensure** generation of guidelines for GW management, including GW availability, sustainability and aquifer vulnerability, as well as connectivity with SW in transboundary basins.
3. **Contribute** to S&T knowledge base, information exchange, collaboration/cooperation, and communication among Member States sharing TAS to help foster innovation and development of sustainable GW strategies with partners.
4. **Intensify** the development of common standard rules and protocols related to data, information, parameters and procedures on GW management, promoting their adoption amongst Member States.
5. **Encourage** the development and establishment of *ad-hoc* legal and institutional frameworks related to GW management, drawing on international instruments where appropriate.



3/5 – Knowledge needed for Assessment & Management of TAS

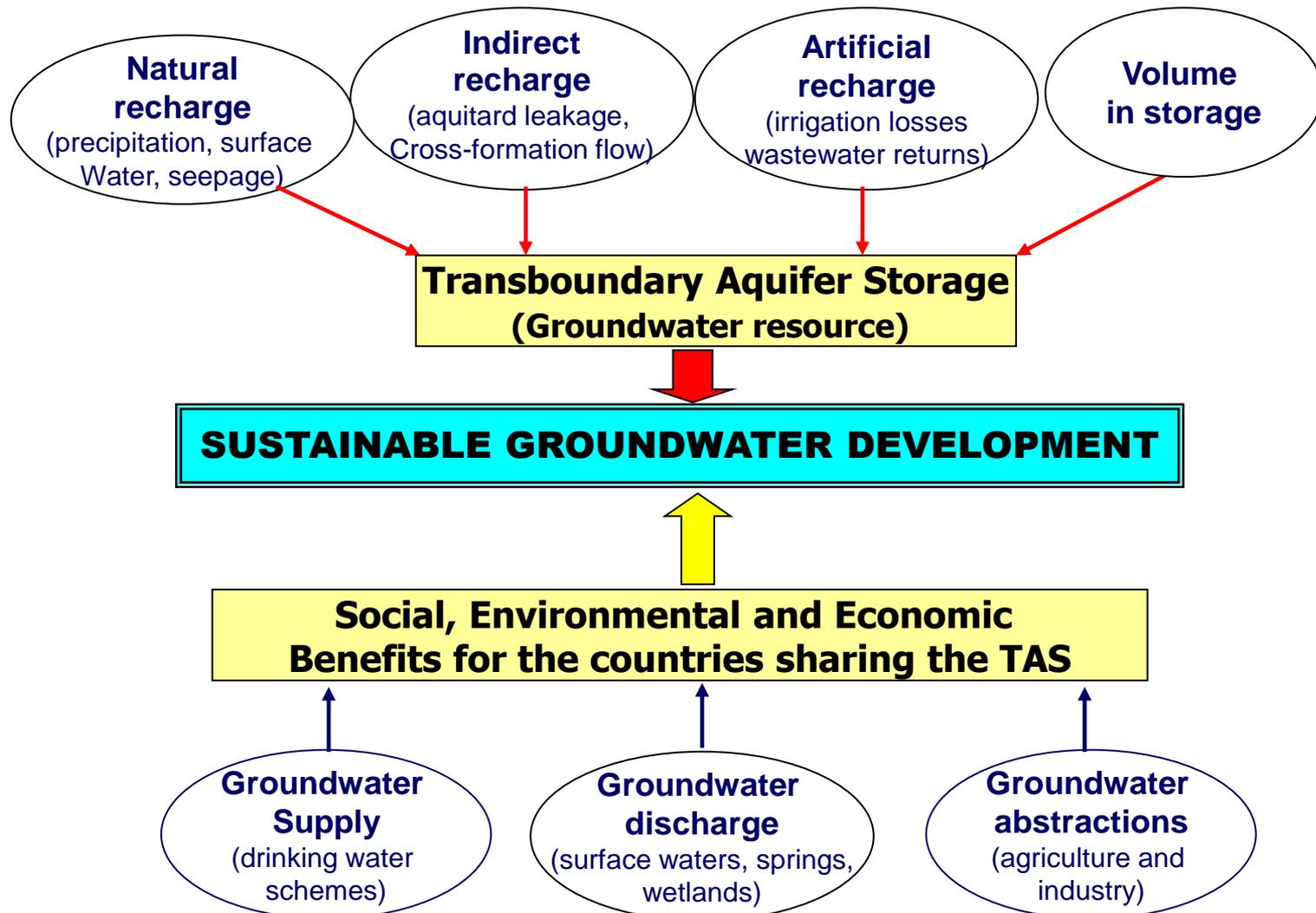


Basic Scientific & Technical knowledge needed for Assessment and Management of TAS

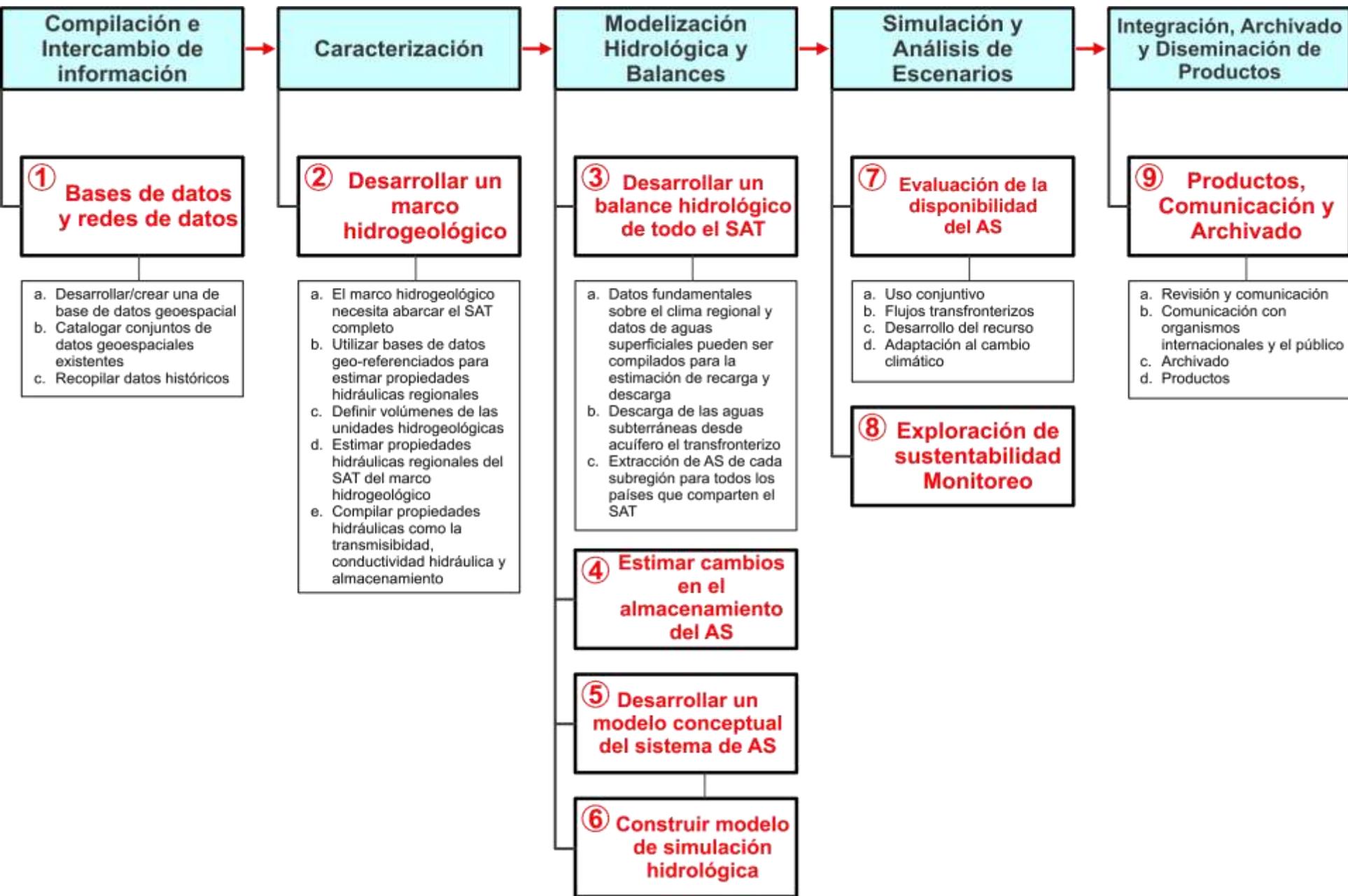
Principle: achieve sustainable GW and protection of the GW resource while **balancing** economic, environmental and human (social) requirements of the countries sharing the aquifer. This principle could ensure the accomplishments of the five following components:

1. The protection of groundwater supplies from depletion;
2. The protection of groundwater quality from contamination;
3. The protection of ecosystems health;
4. The application of good governance practices through close collaboration and monitoring; and
5. Conflict resolution.

Conceptual Model and Framework of Sustainable GW development within a Transboundary Aquifer



Stages in the assessment of groundwater availability in a TAS





4/5 – Approaches to strategy implementation

Approaches to strategy implementation

- Success in implementing *strategy* will **depend on actions** by and within the countries sharing the TAS
- Need to **cooperate** and **share** information
- Data compiled and scientific studies must be **made available** for the success of aquifer development, management and sustainability
- Some developing countries have little **capacity for public investment**, a challenge
- Participation of **multilateral development agencies** and international donors (e.g., GEF, UNESCO, OAS) have proven very successful combined with local NGOs
- Communication and **social participation** within and between countries are necessary
- Success of the strategy will strongly depend on **capacity building** (HR development)
- Implementation should take into account results of other successful GW management practices around the world

Synopsis of the Management of the TAS-Americas

The strategy includes analysis of:

- Institutional,
- Socioeconomic,
- Cultural, and
- Environmental and climatic aspects.

Legal-institutional: Revealed disparate levels of tools for the development and management of TAS

Socio-economic: Potential benefits of shared development and management of TAS

Environmental and climatic: Change in GW-recharge patterns; increased demand for domestic supply and GW for agriculture; localised depletion of GW; GW quality

Main challenge:

Lack of information →

- affects the way in which politicians and the public perceive this valuable underground resource;
- prevents and limits full comprehension of GW →
- translates into fragmented policies and absence of strategies for integrated management of GW



5/5 – Conclusions & Recommendations

Conclusions and Recommendations

- The **trust** between countries sharing TAS is essential to promote effective cooperation and **exchange of information** for a shared management.
- The international **legal instruments** in the Americas are still very incipient. Only one agreement on TAS exists: the Guarani Aquifer System in South America.
- In most American countries, GW does not have a **clearly defined legal framework**.
- The implementation of actions on TAS is not the responsibility of central government agencies **only**, but also local and regional agencies (provincial, state, municipal), and society as a whole.
- Detailed studies of TAS have **high costs**. Most developing countries face other basic priorities of their society having **little capacity for public investment**.

Conclusions and Recommendations

- In general, **no conflicts** between countries sharing the TAS have been registered. However, some conflicts have arisen, and could increase in the TAS of North America where **competition** for groundwater resources is much more obvious and prominent (e.g., Mexico-USA).
- Cooperation and exchange of knowledge has been **crucial in preventing conflicts**.
- Policy responses reflect the times of global change and uncertainties, which depend on: a) **good information**; b) a good **dissemination** of information; and c) a good **understanding** of that information.
- Where institutional mechanisms for the assessment of TAS already do not exist, considerable **efforts** will be **needed to create them**.

Conclusions and Recommendations

- The strategy is designed to **build links** between science and policy and the instruments for the management of TAS. So the main message is: **"a strong science-based strategy that can be the backbone for making well-informed decisions."**
- **Challenges remain:** how to combine S&T recommendations of the strategy with legal and institutional instruments of the 24 countries and the UN's convention on TAS.
- It is recognized that a **single global convention** will be **difficult to relate** to the wide variations in the TAS-Americas.



In a nutshell – En pocas palabras

The ISARM-Americas Strategy represents a source of knowledge readily available to others confronted with scientific, social or political analyses and/or studies. The studies aim at strengthen transboundary groundwater management by facilitating information sharing and knowledge management.

La estrategia de ISARM-Américas representa una fuente de conocimiento fácilmente disponible a aquellos que confrontan análisis científicos, sociales o políticos, y estudios. Estos tienen como objetivo de fortalecer la gestión de aguas subterráneas transfronterizas facilitando el intercambio de información y la gestión del conocimiento compartido.

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