The Agreement on the Guarani Aquifer: Cooperation without conflict

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The Guarani Aquifer System (GAS) is a transboundary aquifer that extends through Argentina, Brazil, Paraguay and Uruguay. In August 2010, these countries signed the Agreement on the Guarani Aquifer, which is the first agreement signed in Latin America for a transboundary aquifer. This paper analyzes the legal and geopolitical contexts that prompted the signature of the Agreement and evaluates its potential for preventing future conflicts and deepening cooperation among the countries that share the Guarani Aquifer.

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The Guarani Aquifer System (GAS) is a transboundary aquifer that encompasses Argentina, Brazil, Paraguay and Uruguay (Figure 1). It covers an area of 1,100,000 km² within the Paraná Sedimentary Basin. In August 2010, the four states signed the Agreement on the Guarani Aquifer, which is the first shared-management agreement for a transboundary aquifer in Latin America.

The Agreement on the Guarani Aquifer is unique in many ways: (i) it was the first signed under the influence of the United Nations (UN) Resolution 63/124: the Law of Transboundary Aquifers[1]; (ii) there are no regional conflicts over the use of its waters because the aquifer has been the subject of many cooperation initiatives since the 1990s; and, (iii) a range of actors have participated in these initiatives, including regional academic research

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networks, governments, international organizations, and private companies.

This paper analyzes the legal and geopolitical context that prompted the signing of the Agreement on the Guarani Aquifer and evaluates its potential for preventing future conflicts and deepening cooperation between states. The research was performed through qualitative analyses of the Guarani Aquifer System Project results[2]; MERCOSUR documents[3,4,5]; international rules related to water resources[1,6]; the Agreement on the Guarani Aquifer[7]; and relevant literature[8,9,10,11,12,13,14,15].

The construction of the Guarani Aquifer System cooperation process

Science played an important role in the cooperation process. The regional research community was responsible for recognizing the transboundary character of the aquifer and the need to promote awareness regarding the matter. Indeed, academic researchers organized the first international meetings and projects concerning the aquifer. These efforts to gather funds for more ambitious projects attracted the involvement of national governments and a range of international organizations, such as the World Bank and the Organization of American States.

The alliance of these actors enabled the Environmental Protection and Sustainable Development of the Guarani Aquifer System Project (also known as the Guarani Aquifer System Project). This project was the most ambitious initiative in South America for groundwater. The six-year project (2003-2009) increased awareness of the GAS's characteristics and stimulated debate on groundwater management within the four countries at national, provincial, and community levels.

Parallel to the execution of this project, the Southern Common Market, MERCOSUR, included the Guarani Aquifer in its agenda. An Ad-Hoc High-Level Group was created in 2004 with the objective of drafting a shared aquifer-management agreement between the Parties.[15] The MERCOSUR Parliament also proposed: (i) the formation of a commission to study, analyze and compare each country's water-resource legislation; (ii) an agreement for the common management of the GAS and a transitional project assuring the continuity of the GAS Project structure; and, (iii) the establishment of a regional Research and Development Institute for the Guarani aquifer and other aquifers shared by the states[17].

Unfortunately, none of the MERCOSUR proposals turned into reality. Many factors contributed to this: the institutional fragility

of the Mercosur Parliament; constant tensions within the bloc over trade relations; disagreements over the acceptance of new members; and the failure of the regional trade architecture to address conflicts over the construction of pulp mills on the Uruguay River. In this context, States decided to follow a more traditional approach and establish an international agreement.

The Agreement on the Guarani Aquifer

The Agreement on the Guarani Aquifer[18,19,20] follows the main guidelines of the United Nations Law of Transboundary Aquifers, especially in relation to the following principles: sovereignty, the equitable and reasonable use of water resources, the obligation not to cause harm, cooperation, and the exchange of data and information.

Mention of the sovereignty principle in the UN Law and the subsequent emphasis in the Guarani Agreement (preamble and articles 1, 2 and 3) were much criticized. McCaffrey[14,21] and McIntyre[22]point out that the reaffirmation of this principle is inconsistent with the spirit of cooperation and equitable use, since States can appeal to sovereignty as a protective shield for imprudent, inadequate or illegal actions. However, to improve cooperation it is necessary to promote a dialogue between sovereign states. And an important starting point is for all parties to feel secure in their rights. As Laborde[12] explains, the sovereignty principle merely restates the well-established principles of international law and ensures safeguards for the aquifers, thus preventing the aquifer from being considered a "common good of mankind".

Equitable and reasonable use of water was included in article 4 of the Guarani Agreement which determines that States:

"shall promote the conservation and environmental protection of the Guarani Aquifer System so as to ensure multiple, reasonable, sustainable, and equitable use of its water resources."

The obligation not to cause harm was stated in article 6:

"Parties that perform activities or work for utilizing the water resources of the Guarani Aquifer System, in their respective territories, shall adopt all the necessary measures to avoid causing significant harm to the other Parties or the environment."

By these means the Agreement reaffirms the two major principles of international water law (i.e. equitable and reasonable use, and the obligation not to cause harm).

Cooperation is one of the strong points of the Agreement and appears in many Articles, such as 8, 9, 10, 12, 13 and 14. These statements foresee the need to exchange information on water resources and the right to seek additional information. Notably, Articles 8 and 12 seek to build on the foundation provided by the Guarani Aquifer System project:

"The Parties shall proceed to adequately exchange technical information about studies, activities and works that contemplate the sustainable utilization of the Guarani Aquifer System water resources." (Article 8)

"The Parties shall establish cooperation programs with the purpose of extending the technical and scientific knowledge on the Guarani Aquifer System [...]." (Article 12)

Article 12 also reaffirms the obligation to provide information in the case of activities or works which could have transboundary impacts. Articles 9 and 10 further codify this issue:

"[...] information shall be accompanied with technical data available, including results from an evaluation of environmental effects; so that, the Parties receiving the information could evaluate the potential effects of the activities and work." (Article 9)

"Each Party shall provide the appropriate data and information required by other Party, or Parties with respect to the projected activities and work in their respective territory that may have effects beyond their boundaries." (Article 10, 2)

To full comply with the above principles, states are required to implement environmental impact assessments and invest in groundwater management and monitoring.

Finally, Article 15 states that a dedicated multilateral Commission will oversee the cooperation process. Unfortunately, the countries have yet to establish it and determine its statutes, competences, members and budget. Desirable objectives for the Commission would be: leadership in disseminating and producing knowledge about the aquifer; harmonization of legal instruments such as wellhead protection areas and groundwater permits; establishment of methodological guidelines for a groundwater database; and coordination of a common groundwater informational system.

As the agreement didn´t mention the recharge areas of the aquifer with higher natural vulnerability that are more likely to create conflicts, the Commission could take the lead in designing a common strategy to manage

these areas, especially the ones within or very near the frontier zone.

In case of conflicts over the use of the Guarani Aquifer, the Commission would be in a position to present recommendations. Article 17 affirms:

"If through direct negotiations an agreement is not reached within a reasonable period, or if the dispute is only partially resolved, the Parties in the controversy shall, through mutual agreement, solicit the Commission related in Article 15 to, upon a presentation of the respective positions, evaluate the situation and, if appropriate, formulate recommendations."

According to this article, however, the Commission will still have a restricted role because its participation has to be evoked by the Parties through mutual consent and its intervention has no binding consequences. If the countries can't reach an agreement after this procedure, Article 19 mentions the possibility of an arbitration procedure which would be defined by a future protocol.

Despite the progress in developing the Guarani Agreement, its power remains limited and further action is required. At the international level, states have to yet ratify the agreement, establish the Commission and its powers, and propose an additional Protocol setting the dispute resolution mechanism. At the national level, all Parties need to improve groundwater management and monitoring.

Although much work remains, and considering the absence of conflicts over the GAS, the fact that four countries managed to structure a common base for groundwater management is a considerable achievement. As Delli, Priscoli and Wolf[23] explained, preventive diplomacy is usually considered the best way to prevent disputes but it is hard to prove this statement due to the lack of practical initiatives. Without tensions it is hard to mobilize actors, interests, and resources.

Literature highlights the value of conflicts to create cooperation. But the GAS case calls attention to the role of scientific and international organizations in promoting conditions to create common arrangements based on a precautionary approach, since there are no transboundary conflicts over the use of the aquifer or water scarcity. The mobilization of different stakeholders over the Guarani Aquifer, the end of the GAS Project, and the approval of the United Nations Law of Transboundary Aquifers created positive pressure to deepen the cooperation process over the GAS and sign this unique regional agreement. The challenge now is to continue

this process beyond this initial momentum and ratify and implement the treaty, particularly with regards to creating an effective and empowered Guarani Aquifer Commission.

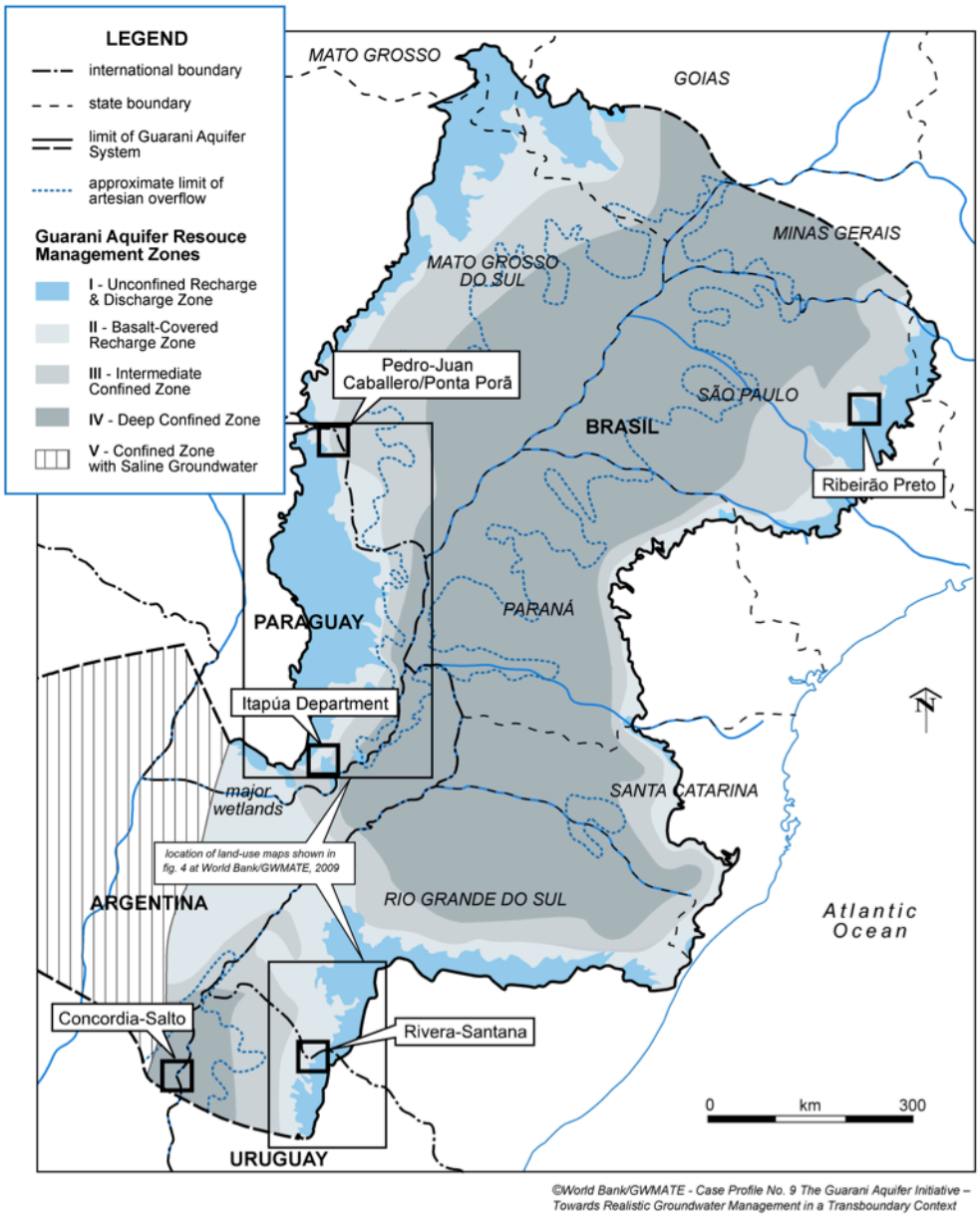

Figure 1. Guarani Aquifer. Source: World Bank/GMATE[16].

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