



IMPACT STORY

Towards a Water Information System in Paraguay



**Global
Partnership**
for Sustainable
Development Data



Instituto
NACIONAL de
ESTADÍSTICA

Author

Carmen Armoa

Jr. Consultant - Water Information System in Paraguay Project

Acknowledgements

Since 2019, Paraguay through the National Institute of Statistics (INE) has been part of the Global Partnership for Sustainable Development Data, which was established in conjunction with the launch of the Sustainable Development Goals (SDGs) in 2015 to help countries harness the data revolution for sustainable development. Within this framework and in order to explore partnerships and solutions to improve the quality and coverage of data for monitoring the SDGs, the Global Partnership helped launch the Data for Now (D4N) initiative in Kigali, Rwanda in 2019. INE-Paraguay joined the launch event and identified the use of data to improve water management as a national priority in 2019.

We appreciate INE's leadership in implementing actions towards the realization of a water information system that integrates different components of governance and centralized dissemination of water data in Paraguay.

This project was managed by Fredy Rodriguez, Senior Regional Manager for Latin America and the Caribbean of the Global Partnership for Sustainable Development Data. Muthoni Mugo, Fredy Rodriguez, and Janet McLaren contributed to the writing of this report.

Paraguay is a landlocked country with enormous water resources—from rivers with dams that generate hydroelectric power to sharing the world’s largest freshwater aquifer with Brazil and Bolivia. But persistent challenges in managing these resources have resulted in lost economic opportunities for the country, and unmet water and sanitation needs among Paraguayans.

In this context, Paraguay launched a multi-year process in 2019 to develop a system for sharing data to manage the country’s water resources more effectively. The result of this process, a new Water Information System (WIS), launched in March 2023, providing data publicly to be used to improve water resource management and access to safe drinking water and sanitation services across the country.

Developing a systematic approach to sharing data

In 2019, as part of the launch of the [Data4Now](#) program which focuses on timely data, Paraguay’s National Institute of Statistics (INE) identified the need to work on water issues in the country as a national priority. Up to that point, water resource management in Paraguay had been carried out in a fragmented manner, with the uncoordinated participation of numerous institutions with overlapping functions in some areas, while in some aspects there were institutional gaps that contributed to inefficient use of resources.

“We must begin with the premise that you cannot properly manage a resource if you do not understand it. To understand it, you must conduct research, systematize the information obtained through these investigations, and then, based on this information, work scientifically. If we add the will and the political decision to science, we can say that we are making justified public policy.”

Eng. José Silvero, General Director of Protection and Conservation of Water Resources of the Ministry of Environment and Sustainable Development

Country leaders identified the need for a centralized data system. It would serve as a permanent digital platform and live database to provide useful information to sectoral actors engaged in steering and planning activities, integrated management, service provision, regulation, and supervision.

“Natural resource management in Paraguay has always been biased by a lack of information or by unavailable information,” explained José Silvero, General Director of Water Resources Protection and Conservation of the Ministry of Environment and Sustainable Development. The centralized data system was the first step in a national effort to share information.

Creating the WIS presented an enormous challenge considering that the culture of generating and sharing information on a continuous basis was and is still a developing approach among the main sectoral actors. This would be the first platform in the country to share integrated information on water resources management and on the provision of water and sanitation services to the population. With support from the Global Partnership for Sustainable Development Data (Global Partnership), actors from government, non-profits, academia and other stakeholder groups came together to build a new system for sharing data, starting from the ground up.

“With the Paraguay Water Information System we are laying the foundations for efficient, coordinated and online information management, which will translate into public policies with a greater impact on the well-being of current and future generations, because data has the power to be an engine of positive change in people's lives.”

Iván Ojeda, INE Paraguay National Director

Understanding Paraguay's landscape of water management

As part of the Data4Now initiative, INE in coordination with the Center for International Strategic Thinking (Cepei), organized a multi-stakeholder workshop on the use of non-traditional sources of data to strengthen Paraguay's WIS. The workshop explored ways that non-traditional data can contribute to the measurement of water resources, as well as to gain in-depth knowledge of stakeholders' priorities, projects, and interests.



Launch workshop in May 2022. Credit: INE Paraguay.

As a result, two reports produced by Cepei formed the basis for advancing the design of the implementation of the Water Information System in Paraguay. The first report covered the evaluation of Paraguay's existing Water Sector Information System, and the second laid out a roadmap towards a new national Water Information System. Subsequently INE, in cooperation with the Global Partnership, promoted the development of activities to enhance the commitment of key actors in the sector to building a new system, with the objective of consolidating the sector's information through a single data platform.

For the WIS in Paraguay, two sectors were identified as data sources for construction of water resource management indicators: the Environmental Sector and the Services Sector. Work began with six institutions, including INE, which is responsible for reporting on indicators linked to the UN's Sustainable Development Goals, SDG 6, "Clean water and sanitation for all," and the Ministry of the Environment and Sustainable Development, Itaipu Binacional, Directorate of Meteorology and Hydrology, Yacyreta Binational Entity and the Sanitary Services Regulatory Entity.

Starting from scratch: building systems to share data



Credit: INE Paraguay.

“I believe that the WIS platform will consolidate or make data and indicators that are of importance to everyone available in one location, enabling all the institutions in the sector to collaborate on decisions and speak the same language in terms of standardized and predetermined criteria.”

Activities began with the environmental sector and then with the services sector, with which systematic technical meetings have been held, programmed and aligned with the work methodology implemented by INE for the indicator construction process. The main activities included:

- Preparing a list of possible indicators for the initial phase of the WIS from identified data sources
- Analyzing the information available from the WIS 2020 Evaluation Report in Paraguay and from meetings with WIS agencies, in collaboration with the delegates, to calculate the indicators
- Definition of criteria for the prioritization of indicators in the water sector.
- Development of a proposal of mandatory fields for the methodological sheets for the elaboration of metadata

Constructing indicators

During the indicator construction process, the availability of data and information was established and indicators were prioritized according to the defined criteria, and an analysis of data sources on their availability and data quality was carried out. Following this, indicators were constructed through the drafting of metadata sheets, proposal of tabulation tables and calculation of indicators. Finally, the validation of indicators through the review and adjustment of metadata sheets, verification of the calculation and validation with institutions. Issues addressed in the construction of indicators included:

- Flow, average level of the Tebicuary River
- Average height of the Paraguay and Paraná rivers (min., max.)
- Total precipitation
- Canadian Water Quality Index (CCME)
- Coverage of drinking water service with pipe networks and sanitary sewerage service with sewer networks
- Population with access to improved water and sanitation

Designing governance mechanisms to serve all stakeholders

In order for the WIS to have access to all the relevant information that the sector's institutions may generate and to achieve a fluid and continuous exchange to facilitate the planning and integral management of the sector, stakeholders agreed on a two-level governance scheme:

1. Strategic level: supported by a legal regulation (Executive Decree) emanating from the scope of the National SDG Committee, the High-Level Steering Council, and the Monitoring Committee. Host the WIS under the scope of high-level or strategic coordination in the SDGs Committee.
2. Operational level: under the Decree or regulations issued by the Executive Branch, it is suggested that Inter-institutional Cooperation Agreements be signed with the institutions responsible for providing the information, establishing specific guidelines on the exchange of information, quality requirements and periodicity, among other aspects.

This proposal is for the consideration of all stakeholders in the water sector, such as sector authorities, the SDG Commission of the Ministry of Foreign Affairs (MRE), other institutions of interest such as the Ministry of Finance, specifically the Directorate of Public Investment, Cooperation Agencies, institutions that generate and consume information, including users from civil society and academia.

Launching the platform

“The Water Information System in Paraguay is the result of an inter-institutional collaboration that involves different sectors of the country. The first steps, led by the INE, will mark a milestone in the consolidation of different data sources, understanding the way in which the indicators are calculated, establishing a governance mechanism and making water data available. The Global Partnership has supported the process and highlighted the advances to date. The implementation and use of the platform are important to consolidate a water information system and develop practical cases of evidence-based use.”

Fredy Rodriguez Galvis, Senior Latin America & the Caribbean Regional Manager, Global Partnership for Sustainable Development Data

In this context, the web platform of the Water Information System in Paraguay officially launched and became publicly available at the end of March 2023. The system will host all the information related to water, governance, and institutional aspects, and from the environmental and services point of view.

The WIS is expected to serve as an input to generate efficient and sustainable management of water resources in the country. It is also expected to enable the implementation of the country’s regulatory and institutional framework (the Executive Decree and INE's Cooperation Agreements with information providers) that makes the exchange of information mandatory and permanent over time.

The final achievement that will allow the WIS to be sustainable over time is that it is widely used and becomes the backbone of integrated water resources management, based on relevant and timely data.



**Global
Partnership**
for Sustainable
Development Data

data4sdgs.org