Netherlands Water Partnership

Opportunities in the Water Sector
São Paulo, Brazil

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Water. Driven. Future.

Introduction:

This report is the result of a close collaboration between the Netherlands Water Partnership and the Consulate of the Kingdom of the Netherlands in São Paulo to provide you with a concise overview of the challenges and opportunities in the Brazilian water sector. Particular attention is dedicated to the water market in the State of São Paulo, which generates a third of the country's national GDP. Firstly, we aim to provide the general context in which the Brazilian water market operates. This includes governmental institutions, significant stakeholders, best practices, and regulations which shape the water sector in Brazil and more specifically in São Paulo. Secondly, as a concluding part of the context framework, we provide an overview of the most apparent challenges in the water market. Thirdly, we present three projects (recently completed and actively ongoing) that address the identified challenges to reiterate the actions that are being taken in the water sector. Lastly, we highlight the future trends that are to be expected in the coming years for improving the functioning of Brazil's water sector and contributing to the country's economic growth.

Context:

Brazil is the largest country on the South American continent and, while it is rich in natural resources, its struggle with water management has been a persistent issue for decades. In the past 20 years, Brazil's water resources have decreased in quantity and quality, while the sector has been undergoing administrative changes: shifting from centralised to decentralised management model. However, national institutions are still active in the decision-making process on water-related issues, which complicates the implementation of water policies in Brazil. Therefore, paying attention to the upcoming Brazilian elections in October 2022 is crucial. It has been observed that the political alignment of the local mayors with the national Government has led to reduced funding in the water and sanitation sector. The federation is composed of 26 states and the Federal District, of which São Paulo is the most densely populated with approximately 40 million people in 645 municipalities. As a C40 city[1], São Paulo has committed to actively promoting infrastructure, programs, and policies that work to mitigate climate change as well as preparing their population for the inevitable impacts it will have/has already had. São Paulo is a signatory to the Urban Nature Declaration which promotes nature-based solutions. Still, the city was listed under the CDP's Cities Water Risk in 2017, indicating a need for continued climate action in the region. Following the Water Act of 1991, São Paulo has established 22 river basin units and their management authorities: the State Water Council and the river basin committees. On a national level, the Water and Energy Agency and the Environmental Agency regulate the water sector of Brazil. Some of the key implementation problems include weak

[1] C40 is a network of mayors of nearly 100 world-leading cities collaborating to deliver the urgent action needed right now to confront the climate crisis.

connection between the river basin committees and governmental strategy towards the water sector; lack of understanding of the exact roles and responsibilities; gap between the old and the new governance system; lack of commitment on behalf of the governmental bodies; lack of technical qualifications among all parties involved in the process of policy implementation; and lack of funds. A compilation of the aforementioned issues on administrative level have amounted to the following challenges in the water sector of São Paulo:

- **Some metropolitan areas of São Paulo are experiencing severe water shortage;**
- **Investment in sewage collection and treatment services is insufficient to keep up with the urban levels of water pollution and river degradation;**
- **Urban functions remain fragmented in the water sector and beyond**
    - Basic sanitation policies and interventions have not been successfully integrated with other urban functions, such as drainage; land-use control; social housing; and river landscape recovery;

Active Projects and Stakeholders

In this section we aim to introduce the most recent projects which have directly addressed and/or continue to address the challenges of the water sector in São Paulo. In addition to highlighting the type of projects that have been initiated recently, we also identify some of the biggest stakeholders involved in the design, approval, financing and implementation of these projects.

1. **Project:** São Paulo Water Recovery Project - REAGUA

Sector	Implementing agency	Financed by	Contact: LCSUW
General water Flood protection Sanitation	State Secretary for Water, Sanitation, and Energy	International Bank for Reconstruction and Development (US$130 million)	Carlos Velez, Lead Economist Martin Gambrill, Senior Water Engineer

Status: Complete

Stakeholders: SABESP, GESP, municipal governments

- The State Water Company of São Paulo (SABESP): provides Water Supply & Sanitation (WSS) in 367 out of 645 municipalities, which compose the Metropolitan Region of São Paulo (MRSP).

- The State Government of São Paulo (GESP): identified and defined key challenges for Water Supply and Sanitation (WSS). including universal wastewater collection, efficient coverage to potable water, wastewater treatment, etc. GESP and International Bank for Reconstruction and Development have committed to a plan for 10 to 15 year engagement in the WSS sector.
- Other municipal governments and water supply and sanitation operators which were actively engaged: CODEN (Nova Odessa), SAAE (Indaiatuba), SANASA (Campinas), SAAE (Guarulhos), DAEV (Valinhos), and SAAE (Sorocaba).

Development objectives: to increase water availability in the State's critical watersheds through: (i) improving water demand management and water consumption efficiency, controlling and reducing water losses, and reusing wastewater; (ii) building new and optimising existing sewerage systems, and cleaning selected water streams; and (iii) improving the WSS sector's legal, institutional, and regulatory framework in the State, and supporting the project beneficiaries (municipalities and WSS providers) in the design, operation, and maintenance of the programmes and facilities.

Structure: the project focused on three aspects, increasing the quantity of accessible water, improving the quality of available water, and improving the institutional and technical capacities of the water sector in São Paulo. Interestingly, the funds were distributed directly between the water services providers, instead of the government of the State.

Results: project closing took place in May 2017, where REAGUA was pronounced a success. Overall, about 47 million cubic meters of water per year were recovered, which exceeded the initial target by about 50%. Estimations show that this amount of water is close to yearly water supply for a city with about 800,000 people.

2. **Project:** Improving Water Service Access and Security in The Metropolitan Region of São Paulo Project

Sector	Implementing agency	Financed by	Contact
Civil Engineering Sanitation	State Water Company of São Paulo (SABESP)	The World Bank (US$250 million)	Fernanda Strobeli fstrobeli@sabesp.com.br

Status: Ongoing; approved by the World Bank's Board of Executive Directors on December 18th, 2018

Development objectives: to increase access of vulnerable people to water services and to contribute to the reduction of water losses and pollution loads in the Metropolitan Region of São Paulo.

Structure: these objectives are to be achieved by diminishing the discharge of sewage into the Guarapiranga reservoir and improving the reliability of the sewerage system – through the reparation of sewerage lines, collectors, pumping stations, and connections to transport the water waste to the existing Barueri Wastewater Treatment Plant (WWTP).

Results: Unavailable yet

3. **Project:** Depollution and Revitalisation Project Novo Rio Pinheiros

Sector	Implementing agency	Financed by	Contact
Sanitation Maintenance Revitalization	Secretariat for Infrastructure and Environment State Government of São Paulo	State Government of São Paulo (EUR 235 million)	Not available yet

Status: Ongoing

Development objective: to revitalise the New Pinheiros River. The goal is to reduce the sewage discharged into its tributaries, improve water quality and fully integrate it into the city by the end of 2022. As it is an urban river, the water will not be drinkable, however, with the depollution project concluded, there will be an improvement in the existing odour, aquatic biodiversity, and the environmental and landscape recovery of the river and its surroundings.

Structure: The 16 contracting packages for the execution of sanitary sewage works are already in progress. Contracts have also been signed for the start of implementation of Water Quality Recovery Units, which will treat the tributaries directly in the streams. In these locations, Recovery Units will be installed in five sub-basins that are irregularly occupied and where sanitation infrastructure cannot be technically implemented. These units will remove the remaining sewage from these areas present in the water body, so that it is cleaned up before it flows into the Pinheiros River. With this work front, the prevision is the creation of 4,100 jobs.

Results: So far, more than 398,000 properties have been connected to the sewage treatment. By 2022, it is estimated that more than 500,000 connections will be made within the project. The expansion of the sanitation

service promoted by SABESP will benefit more than 3 million people and prevent all organic waste from these locations from reaching the river.

Expected Future Trends

The private sector can provide substantial assistance in São Paulo's ability to achieve SDG 6 in the 2030 Sustainable Agenda. This can be achieved through several avenues:

- **Green technology and sustainable growth.** With a limited water supply in urban areas coupled with the growing demands of treatment and repurposing wastewater, there is an abundant—and still growing—landscape of opportunity for investment. São Paulo is eagerly seeking out and initiating new projects, emphasizing the need for green and grey infrastructure to work in tandem. There is therefore an emerging network of existing environmentally friendly companies in the state, with businesses who promote sustainable practices having a competitive edge.

- **São Paulo's rapidly rising presence in the world economy.** The municipality is currently the 22nd largest market in the world, the 4th largest in Latin America, and the largest in Brazil. With a growing market, population, and urban sprawl, there are plentiful specialised spaces within the water sector to be filled.

- **Water treatment and recycling.** Almost 47% of Brazil's population lives with treatable diseases and health problems related to water and sanitation. Projected to be the thirteenth largest city globally by 2050, Brazil's already over-burdened water sector will require even more investment. The nexus of water and health in has enormous potential for both São Paulo's problem of overpopulation and opportunities for growth in the private sector.

- **Resources provided by the State for incoming investors**:
  With over 20 organisations dedicated to programs in professional education, infrastructure and services, business environment and de-bureaucratisation, tax and regulatory simplification, competitive financing, research and development, and technology, there are ample resources to assist new investors get acquainted with Brazilian water sector. Additionally, the Consulate of the Netherlands in São Paulo is a friendly ally in the Brazilian market for incoming Dutch water interest and is equipped with relevant knowledge and network partners to tackle some of the water challenges mentioned in this report.

- **The water sector of Brazil is actively going through privatisation.** This will likely create direct collaboration opportunities for Dutch water technology companies with Brazilian water utilities, which used to be state-run. For example, the national Government of Brazil agreed to privatise Rio de Janeiro's water and sewage treatment, which means that private companies such as Aegea and Igua (sanitation companies) are now responsible for conducting water sanitation operations and providing the technology to improve the water quality.

- **Sustainable energy production.** One of the most promising sustainable energy sectors in Brazil and São Paulo is green hydrogen production. Recently, the São Paulo and New York German Centers for Research and Innovation (DWIH) have hosted an event where extensive research and production strategies with regards to green hydrogen were presented. Hydrogen is considered "green" when it is produced from renewable sources, which gives Brazil a strategic advantage due to its energy matrix. It is expected that there will be an increased number of opportunities in this area for various foreign stakeholders. Germany, Brazil and the U.S. are set on becoming partners in initiating green hydrogen projects in the near future. This future trend has been brought by the urgent need for decarbonization and various threats which the global climate change poses.

- **Agriculture, sustainability, and water management.** Brazil is one of the most significant actors in the global agricultural sector, though water available for agricultural purposes is unevenly distributed across the country. Brazil faces urgent climate-related challenges, such as more frequent and increasingly impactful droughts. The agricultural sector of Brazil is vast and very diverse, which is why innovative, cross-sectoral and sustainable solutions are required to boost and maintain the efficiency of food production in the country. With regards to potential future opportunities for foreign companies, water efficiency, water management and sustainability in the agricultural sector are key.

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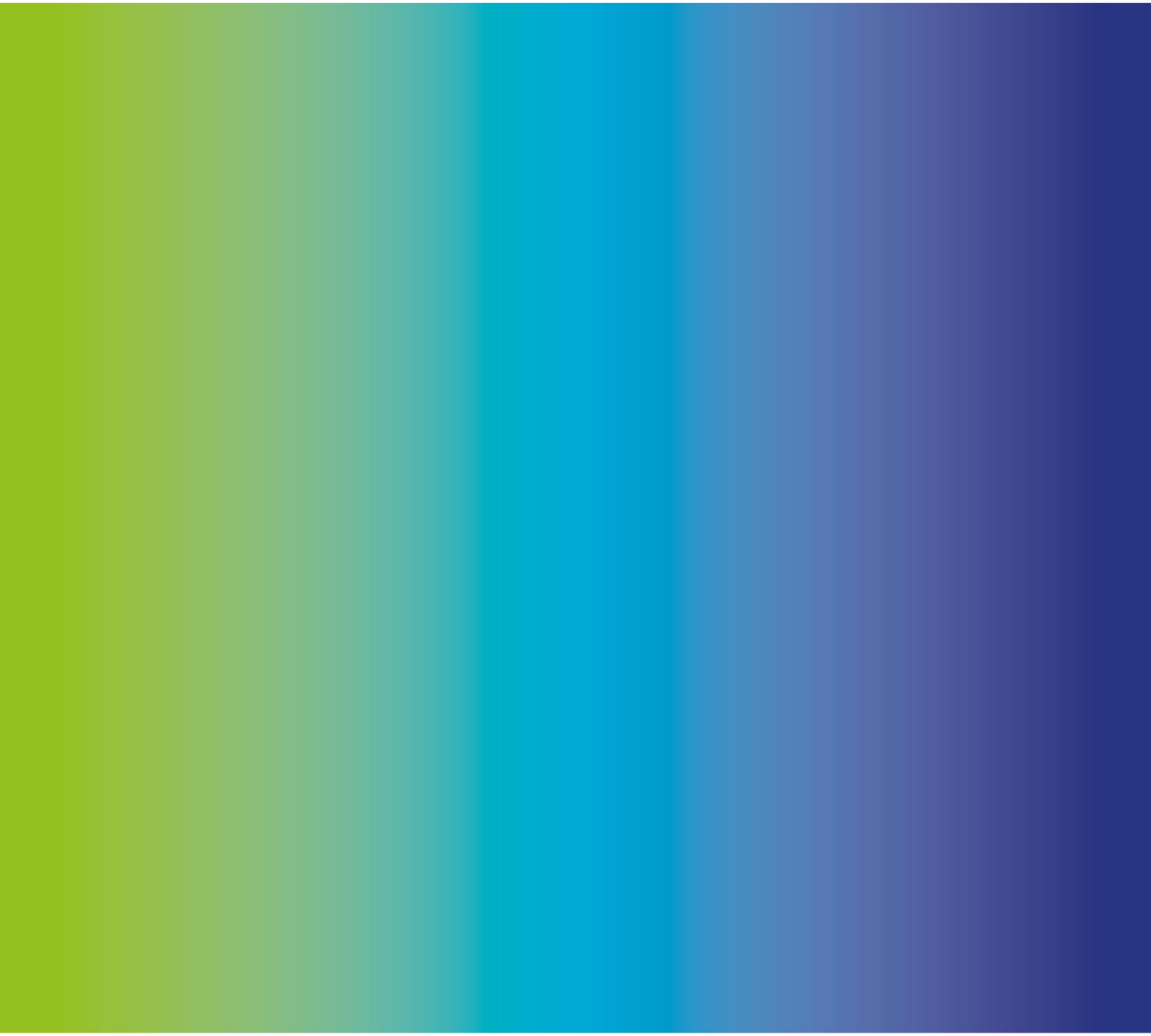

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