Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 21-Jun-2022 | Report No: PIDISDSC33662

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Senegal	P178673		Senegal: Water Security and Sanitation Program (P178673)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
WESTERN AND CENTRAL AFRICA	Nov 01, 2023	Mar 29, 2024	Water
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Cellule de Planification MEA	ONAS	

Proposed Development Objective(s)

The project development objective is to increase the quantity and the quality of water resources for various uses (drinking water, irrigation, ecosystems) and improve access to improved sanitation services in priority water security hotspots of Senegal.

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	250.00
Total Financing	250.00
of which IBRD/IDA	250.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	250.00
IDA Credit	250.00

Environmental and Social Risk Classification	Concept Review Decision

Substantial	Track II-The review did authorize the preparation to continue

B. Introduction and Context

Country Context

1. **Senegal's strong economic performance over the last decade has been disrupted by the Covid-19 pandemic.** Senegal, strategically located at the edge of the continent on the Atlantic Ocean, has been one of West Africa's key economic hubs. The country's economic growth was among the highest in Africa between 2014 and 2018, averaging around 6 percent annually. Most of the foreign exchange came from fisheries, phosphates, groundnuts, tourism, and services. The Covid-19 pandemic disrupted this upward trend: economic growth contracted to 4.4 percent in 2019 and 1.5 percent in 2020, as the pandemic set back services like tourism and transport and key export markets shut down. The recovery will likely be gradual, even though Senegal is projected to reverse swiftly to a positive economic trajectory. Due to an increase in exports, the resumption of major extractive projects, and the rebound of the services sector as businesses adapt to the new Covid-19 environment, growth reached 5 percent in 2021,[1] and is expected to average 7.3 percent over 2022-23.[2]

2. **The COVID-19 pandemic has severely affected Senegal's economy and is reinforcing vulnerability related to climate shocks**. According to the 2014 World Bank Policy Paper on poverty dynamics in Senegal, households affected by a natural disaster were 25 percent more likely to fall into poverty during 2006–2011 and surveys conducted in affected areas following the 2009 floods showed that households lost 14 percent of their average income. The COVID-19 crisis halted years of strong economic performance and threatens to reverse half of the last decade's poverty reduction. Services and export growth are declining, tourism and transport are suffering a standstill and key markets have shut down. Household incomes have been squeezed, with disruptions to economic activity hitting the informal sector particularly hard. Lower remittances and labor income loss subdue private consumption. Because of supply disruptions, prices increased by 2.5 percent in 2020 compared to an average 0.7 percent during the previous five years. Senegal's statistics agency (*Agence Nationale de la Statistique et de la Démographie*, ANSD) estimated that 85 percent of households saw their incomes drop over the first three months of the pandemic. Projected increased temperatures, decreased annual rainfall, increases in the intensity and frequency of heavy rainfall events, and a rise in sea level, will significantly affect the socio-economic and environmental resources of Senegal.[3]

3. **The country's vision for recovery and socio-economic development goals are centralized in the Emerging Senegal Plan.** In 2012, Senegal adopted the Emerging Senegal Plan (*Plan Sénégal Emergent*, PSE). This program, rooted in the vision to achieve economic emergence by 2035, aims to improve infrastructure, achieve economic reforms, increase investment in strategic sectors, and strengthen the competitiveness of the private sector. In response to the Covid-19 crisis, the Government of Senegal issued a new version of the Priority Action Plan 2 - Adjusted and Accelerated (PAP2-AA) in September 2020 to mitigate the negative effects of the crisis, relaunch socio-economic activities and put the country back on the path towards emergence. While it recognizes the importance of water access to the recovery of

[1] https://www.imf.org/en/Countries/SEN
[2] World Bank (2021). *Sub-Saharan Africa – Macro Poverty Outlook: Country-by-Country Analysis and Projections for the Developing World.* Washington, DC
[3] USAID. 2012. Climate Change Adaptation in SENEGAL. < https://www.climatelinks.org/sites/default/files/asset/document/senegal_adaptation_fact_sheet_jan2012.pdf>

many sectors, this revised action plan, like the original PSE, leaves a gap with respect to reforms specific to improving water resources management.

Sectoral and Institutional Context

4. **Water security[4] is the bedrock of Senegal's development, but it is threatened by climate change and poor water resource management**. The recent Water Security Study financed by the World Bank shows that the steadily decreasing renewable water availability per capita already falls below the 1,700 m^3 /capita/day threshold defined by the Food and Agriculture Organization (FAO), under which a country experiences periodic water stress. This average situation of water resources in Senegal masks very significant geographic and temporal variations, meaning that water availability does not necessarily coincide with demand and makes meeting growing water needs sometimes complex, difficult and expensive. This situation is compounded by the degradation of water quality, significant spatiotemporal variability, limited exploitability linked to the largely transboundary nature of water resources, and climate change trends. As a result, water resources availability is straining to meet current demand. Current water withdrawals are projected to increase by 30 to 60 percent by 2035, further exacerbating water stress and straining the country's ability to meet the water demand of a quickly urbanizing population and achieve its socio-economic development goals.

5. **The existing institutional framework for water resources management (WRM) needs to be strengthened to face growing challenges and support the country's economic growth.** Today, the cost of the water resources management status quo already impacts more than 10 percent of Senegal's GDP, due to water-related extreme events and pollution. Supply-focused water source development has driven the marginal cost of water to triple since the late 1990s. The Government has spent millions on emergency measures to meet demand gaps for water supply and to remedy flood damages to people, infrastructure and the environment. Given the essential role of access to water and sanitation in responding to pandemics like COVID-19 and the role of agricultural livelihoods in economic recovery and self-sufficiency in Senegal, water security is essential to the achievement of PSE objectives and a building block of building back better for the country. The current legal and organizational framework for WRM deserves an in-depth overhaul if the country wants to establish a modern WRM policy and achieve its water security objective in the medium and long term. At the national level, water security requires a combination of institutional measures and investments focusing on the eight major hotspots where socio-economic importance and water security risks are most critical. These are: the Niayes and Littoral Nord, Greater Dakar, the Horst de Diass, the salted and fluorinated central band, the lower Casamance valley, the gold panning area, the recession crops area, and Lac de Guiers and the Senegal River delta.

6. **Water security issues are most prevalent in the four north-western hotspots, which comprise more than a third of the Senegalese population and a half of economic activity.** Concentrating more than half of Senegal's GDP production and boasting a growth rate of four percent per year over the last decade, the Dakar-Mbour-Thies (DMT) triangle faces key water security risks, including overexploited and polluted aquifers and endangered wetlands and ecosystems. The Lac de Guiers provides about 40 percent of the area's water supply and is threatened with regard to both quality and security of access[5]. The share of the Lac de Guiers in DMT water supply is projected to increase to 60 percent, with serious implications were the transfer infrastructure to be damaged or the lake water irreversibly polluted, especially given growing conflicts around land and water use on its shores. Competition is growing between different uses for the development of space and the use of water resources, especially along the Niayes and Littoral Nord areas, where horticultural production and industry compete for land and water availability. The urbanization of agricultural land drives land prices up while urban development invades the beds of intermittent streams, worsening flooding with dire consequences (damages of US$67 million in 2009 in Dakar alone[6]). As demand for drinking water and irrigation already

[4] Water security is "the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies." Grey and Sadoff 2007.
[5] For example, regarding the aquatic plants' expansion, 26% of the area of the Guiers lake is colonized by Typha, representing nearly 10,000 ha in 2021.
[6] USAID. 2017. Climate Change Risk Profile – Senegal.

exceeds the available resources, it is essential that water sources diversification be explored, including loss reduction and efficiency measures, fit-for-purpose source allocation and the development of non-conventional resources such as desalination and wastewater reuse or recycling.

7. **Water and sanitation services suffer from water scarcity, low demand management and underdevelopment of wastewater reuse.** With 48 percent of the population of Senegal living in urban areas in 2021, the provision of water supply and sanitation (WSS) services is a core element of improved living conditions and economic growth. Senegal's water sector is among the top performers in the region, with access to water at 98.8 percent in urban areas, and 96.5 percent in rural areas.[7] Service continuity varies in urban areas with some vulnerable neighborhoods still receiving intermittent supply (between 6 and 24h of service in a day). Fecal contamination is an issue in rural areas while the central regions of the countries face high fluoride concentrations in their drinking water and the western part of the country contends with high salinity. Access to improved sanitation is lagging with 74 percent in urban areas and 50.7 percent in rural areas, access to safely managed sanitation services falls even further (24.4 percent in urban areas and 23.9 percent in rural areas). The low quality of water for domestic use, the lack of wastewater treatment, and the poor management of stagnant waters lead to a high prevalence of waterborne diseases, with serious consequences for human capital and economic development. For example, in 2017, diarrhea led to the death of nearly 40,000 children under five years old.

8. **Although the main urban centers in Greater Dakar (Dakar, Rufisque, Thiès, Mbour, Saly) have collective sewage networks individual sanitation systems remain most widely used.** Only a small portion of the population enjoys safely managed sanitation services. Significant gaps in sewered sanitation must be overcome with regards to wastewater evacuation, transfer, and treatment. Only 25 percent of the wastewater collected (126,000 m^3/day) is treated. The rest pollutes the environment as it is released into the sea or seeps into the water table untreated. In short, in terms of onsite sanitation, public services are essentially non-existent, and when it comes to collective sanitation, service quality remains insufficient. Further, the quality of the treated wastewater currently does not allow for its reuse for agricultural purposes, which represents a significant missed opportunity. The volumes receiving tertiary treatment are estimated at 9,500 m^3/day, and only 1,800 m^3/day are reused. Conditions for disposing treated wastewater into the environment must comply with Senegal's current standards, namely those provided in the Environment Code and Standard NS 05-061. However, since the regulations are not being followed, the receiving environment is being polluted. Reuse in agriculture could help significantly reduce withdrawals from Greater Dakar's overexploited groundwater. Moreover, reusing treated wastewater could be a way for the agricultural sector to adapt to climate change. The establishment of an institutional and regulatory framework for the reuse of treated wastewater is becoming urgent to oversee the necessary investments in this segment of sanitation, which can strongly contribute to the establishment of a circular economy and much more resilience in water sector investments.

9. **The main driver for the country's high performance in terms of WSS access has been the comprehensive institutional, legal and regulatory framework established by the Government.** This process started in 1996 with the creation of the National Water Company (*Société Nationale des Eaux du Sénégal*, SONES) to develop urban water infrastructure under a concession agreement with the Government and the first performance-based lease agreement with a private operator for the urban water services. The National Sanitation Agency (*Office National de l'Assainissement du Sénégal*, ONAS) was created to develop and manage the urban sanitation sub-sector. In 2005, sector strategy and implementation coordination were further strengthened by the Water and Sanitation Policy Letter, to achieve the MDGs by 2015, and by establishing the Millenium Potable Water and Sanitation Program (*Programme d'Eau Potable et d'Assainissement du Millénaire*, PEPAM) as the steering and coordination instrument for all activities in the sector. In 2008 the responsibilities and principles for the management of the urban and rural WSS sector were defined in the Water and Sanitation Law (Loi SPEPA).

[7] Source: Sector Annual Review RAC 2021

Relationship to CPF

10. **The proposed project is aligned with the World Bank Group (WBG) Country Partnership Framework (CPF) for Senegal for FY20-24. (Report No. 143333-SN, March 5, 2020),** which reflects a commitment to ensure access to water and sanitation in the most vulnerable areas and acknowledges it as key to achieving the twin goals of the World Bank Group (WBG). The CPF FY2020-2024 was guided by the second Priority Action Plan (2019–2023) of the government's Emerging Senegal Plan and the 2018 Systematic Country Diagnostic and supported three main pillars: (i) Building human capital to enhance productivity and generate the demographic dividend; (ii) boosting competitiveness and job creation through private sector-led growth; and (iii) Increasing resilience and sustainability in the context of growing risks. Under the third Pillar, the Project directly contributes to the higher-level outcomes defined in the CPF:

- Pillar 3.1: Promote and protect resilient livelihoods, ecosystems, and infrastructures in the face of climate change
- Pillar 3.2: Ensure access to water and sanitation in the most vulnerable areas
- Pillar 3.3: Improve Government's overall effectiveness, efficiency and transparency

11. The Project contributes to Pillar 3.1 by aiming at long-term water security and resilience through investments on protection of lac de Guiers, groundwater and promoting wastewater reuse and rehabilitation of wetlands. This new approach is more resilient to climate-induced water shortage, as it can distribute water supply from multiple and geographically dispersed water production facilities across the service area, and production shortages at one location can now be alleviated with water supply from alternative facilities.

12. Pillar 3.2 in the CPF identifies the vulnerable areas for access to water and sanitation primarily as rural areas (vulnerable in terms of access to sanitation and water), and urban areas for access to sanitation. This agenda will be supported by the Project through investments in urban sanitation and water supply in villages situated around the Lac de Guiers and along the pipelines conveying water to Dakar area. In addition, the Project will provide improved sanitation services in the poorest outskirts of Dakar situated in the Eastern part of Dakar.

13. The WRM and sanitation sector reforms supported by the Project will contribute to achievement of Pillar 3.3, as improved performance of SONES, ONAS and DGPRE as well as the affermage contracts with the private operator s will greatly enhance the effectiveness, efficiency and transparency of the Government to ensure access to affordable water and sanitation services by the population.

14. **The Project will help meet the WBG twin goals of poverty reduction and boosting shared prosperity and support Senegal in meeting its commitments under the Sustainable Development Goals (SDGs).** By focusing its interventions in the most vulnerable hotspots of Senegal, the Project will use water and sanitation infrastructure and services as a means of alleviating poverty in these regions. Moreover, promoting the sustainability of water resources will ensure that water is available for all users and that all corners of Senegal's economy and society, including posterity, can benefit. A more secure and diverse portfolio of water sources for thirsty areas like Greater Dakar will help improve service quality and delivery, in turn bringing Senegal closer to meeting its commitments under the SDGs. Similarly, the development of WSS services in the areas close to the water transfer in the target hotspots will raise access levels. Finally, improvements related to WRM will also contribute to the corresponding goals on improved coordination and management and water quality.

C. Proposed Development Objective(s)

15. The project development objective is to increase the quantity and the quality of water resources for various uses (drinking water, irrigation, ecosystems) and improve access to improved sanitation services in priority water security hotspots of Senegal.

Key Results (From PCN)

16. The following PDO indicators are under consideration for the Project:

a. Quality of Lac de Guiers improved
b. New WRM institutional framework functional (PBC)
c. Increased volumes of reused water and rainwater for groundwater recharge
d. Increased number of hectares irrigated with wastewater reuse and rainwater
e. Percentage of Non Revenue Water reduced in the Project area (PBC)
f. Number of sanitation systems completed and functional
g. Increased financial resources mobilized to cover the O&M costs of sewer and drainage systems (PBC)
h. New organization set up to manage irrigation in Niayes area (PBC)
i. Increased number of people satisfied with the WASH services provided in Project area

D. Concept Description

17. The World Bank Project will finance a portion (US$250 million) of the government's program whose investments are estimated at US$1.5 billion. Both the government program and proposed World Bank Project are anchored in the overall Emerging Senegal Plan that aims to reduce poverty and boost Senegal's economic, social and environmental wellbeing.

18. **The Project (US$250 million) will focus on the most water insecure part of the country**. This region corresponds to four out of the eight hotspots identified in the NWSP, which are especially vulnerable to water-related shocks and therefore where project interventions can have the most notable impact for the country. These hotspots are the Lac de Guiers and the Senegal River delta, the Niayes and Littoral Nord area, the Greater Dakar area and the Horst de Diass. The Project aims to address this cycle of periodic water scarcity by supporting the diversification of the water sources portfolio for the most water-demanding uses. The Project would also address the needs of the population in this region, by ensuring that water resources development benefits all neighboring villages and communities and does not solely focus on large users. Finally, the Project will strengthen the sectoral framework through the improvement of water management at the national level, benefiting both urban and rural areas. It will do so by strengthening key water institutions; supporting the reforms to the service delivery model and putting in place systems to ensure sustainable water resources management, infrastructure operations and maintenance, and quality water and sanitation service provision into the future.

Component 1: Diversification and development of water resources (US$ 97 million of which US$ 35 million PBC)

19. This component aims to promote urban water security through IWRM in the four hotspots for all uses by 2050. To achieve this, the following principles direct the choice of activities: (i) diversification of water resources and the protection or restoration of existing sources; (ii) better adaptation of the water allocation to existing and planned needs; (iii) application of a circular economy approach; (iv) the use of green infrastructure/nature-based solutions and the promotion of green cities; and (v) improved management of water demand efficiency of water use. Specifically, the Project interventions under component 1 will include a) the reinforcement of the transit of the Taouey and protection of Lac de Guiers; b) the rehabilitation of wetlands in the Project area: in coordination with OLAC, establish the Lac de Guiers freshwater reserve development scheme to satisfy socio-economic and environmental water demands, and propose protection and safeguard measures for the Lac de Guiers, including through the use of nature-based solutions; c) a pilot project for the recharge of the Diass and Littoral Nord water tables; d) the reduction of Non-Revenue Water (NRW) in the Project area; and e) the development of new water sources.

Component 2: Improving the provision of sanitation services and wastewater reuse (US$ 87 million)

20. This component focuses on the development of sanitation services within a vision of circular economy for the sector, by promoting tertiary treatment and the location of Wastewater Treatment Plants (WWTP) close to irrigation areas to enable the reuse of treated wastewater. The following investments will be financed through this component: a) improving access to adequate sanitation systems with a focus on the Dakar Eastern sanitation system and villages around Lac de Guiers, with a view to promote circular economy approaches within the sanitation value chain; and b) treated wastewater transfer to irrigation areas in the Niayes.

Component 3: Improving the provision of irrigation in the four hotspots (US$ 33 million)

21. This component will finance the development and improvement of irrigation services in the Niayes area. The following investments will be financed through this component: a) a program to support the modernization of irrigation through capacity building and the rehabilitation and extension of existing irrigation; b) the implementation of high priority investments by mobilizing other water sources (treated wastewater and stormwater runoff) for the irrigation needs of the area; and c) the mobilization of raw water for agricultural and other productive uses (industry, fish farming).

Component 4: Strengthening citizen engagement, sector reforms and project management (US$ 33 million of which US$ 8 million PBC)

22. This component focuses on strengthening existing structures for the participation and consultation of citizens in the realization of water security objectives, reinforcing the legal, regulatory and institutional framework to promote water security in the Project area and beyond through key reforms aiming to support the implementation of IWRM, improve the regulation and financing of water and sanitation services and developing institutional capacity in important irrigation areas. This component also supports the management of the project by the Project Coordination Unit.

23. The table below proposes a list of PBCs to be included in the Project and associated amounts:

No	PBC	Unit of measure	Allocated amount (USD)
1	Reform of WRM governance under conditions satisfactory to the World Bank	Yes/ No	3,000,000
2	ONAS is established as an asset holding company and successfully delegates O&M of sanitation services to the private sector	Yes/No	2,000,000
3	Specific agency established to manage irrigation in the Niayes area	Yes/ No	3,000,000
4	Reduction of Non-Revenue Water in the project area	m3 (scalable)	40,000,000
TOTAL			**48,000,000**

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

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APPROVAL

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