INTRODUCTION. To reach universal access to sanitation by 2030, national and municipal governments, development partners, local financial institutions, and other stakeholders must work together to close the financing gap between the current government budget and the total investment needed, and support urban private water and sanitation service providers to access capital for sustainable, climate-resilient, and critical infrastructure. This financing complements funding from traditional sources such as transfers, taxes, and tariffs (user fees), and supports the WASH sector on its shift towards relying on a spectrum of both public and private resources. This brief provides a summary of the technical assistance, key progress, and results thus far, and lessons learned and recommendations for scaling up access to finance for urban sanitation in Senegal.

Key Takeaways

- Government commitment and public procurements for sanitation services drives market creation;
- Government-created markets are important but do not address financial shortfalls;
- Corporate governance and financial management are common barriers for SSPs to access finance;
- Bringing capital-intensive infrastructure innovations to market requires significant and sustained support; and
- Designing new government-led funds requires ongoing expertise in utility operations and management, financial input from external actors, and government political will.
**CONTEXT.** Senegal is among the few African countries with a WASH institutional framework that has been successful in extending services by embracing private sector participation. It is frequently cited as a success story for sub-Saharan Africa, where access to sanitation services remains low in many countries.¹ UNICEF estimated that access to safely managed sanitation increased from 16 percent to 20 percent between 2005 and 2015, and, by 2019, a combined 51 percent of the population had access to safely managed and basic sanitation services.² Senegal’s framework represents a successful model of water sector reform, particularly in urban areas where one of the few viable public private partnerships (PPPs) for WASH exists on the continent. Currently, the government is working to expand this model, but the expansion is at risk due to financial concerns. As of 2019, UNICEF estimated that the government budget gap for WASH is $756 million per year, of which $329 million is needed for safely managed sanitation.³ There is a clear need to expand sources of funding, but traditional banks and microfinance institutions are not ready to finance the sector at scale. Nor are service providers sufficiently prepared to engage in private sector transactions to finance their plans.

In 1996, Dakar’s two million residents faced a severe water shortage. At that time, the Government of Senegal (GoS) committed to significant, controversial reforms and contracted a private operator to manage urban water supply.⁴ Although water shortages continue to be a challenge in urban areas, Senegal has made considerable progress expanding this model to provide urban and rural water supply and sanitation services. Key to these successes has been the government’s ongoing commitment to issue tenders for sanitation services, driving market competition and leading efforts to expand opportunities for private sector participation. The following steps exemplify the government’s private sector commitment:

**Public-private partnerships in water service delivery.** At the time of the crisis, ten-year *affermage* contracts⁵ were signed for monopoly operation of the Dakar water supply system, and to operate water systems in other cities. This arrangement has successfully delivered urban drinking water in Senegal for over 20 years. This also led the newer Rural Boreholes Agency (OFOR, *Office des Forages Ruraux*) to initiate similar ten-year concessions to private operators to manage rural water networks.⁶

**Private sector participation in sanitation service delivery.** Since 1996, the National Sanitation Agency of Senegal (ONAS, *Office National de l’Assainissement du Sénégal*) has been issuing and funding contracts for private sector provision of urban fecal sludge management (FSM), including treatment plant operation and management of sewerage networks. In rural areas, the Directorate of Sanitation within the Ministry of Water and Sanitation promotes Community Led Total Sanitation (CLTS) linked with commercial marketing of sanitation products and services.

**Coordination and monitoring of private sector efforts.** To ensure coordination of these efforts and those of donors, the GoS created the *Cellule de Planification, de Coordination et de Suivi des* 

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⁵ An *affermage* is a type of public-private partnership contract in which the operator is responsible for operations and maintenance.
⁶ While the WASH-FIN program is focused on urban water and sanitation challenges, further information about rural concessions may be found at the OFOR website: [http://www.forages-ruraux.sn/documents-utiles/etudes](http://www.forages-ruraux.sn/documents-utiles/etudes)
Programmes (CPCSP) (Division for Planning, Coordination, and Program Monitoring) within the Ministry of Hydraulics and Sanitation (MHA, Ministère de l’Hydraulique et de l’Assainissement).

These critical events resulted in the following changes in Senegal:

1. The Government of Senegal (GoS) assumed leadership for developing sector markets;
2. Both the water supply and sanitation sectors were organized into distinct sub-sectors, with clear institutional arrangements for service delivery and coordination; and
3. The GoS developed a deep understanding of the sub-sectors and committed to issue tenders to encourage private sector service provision nationally.

It was against this backdrop that USAID initiated its technical assistance (TA) program focused on increasing access to finance for urban sanitation.

DEVELOPMENT CHALLENGE. Given their successful structuring of public service delivery markets, the GoS has recently focused on expanding urban sanitation services. Despite the government’s efforts to develop the urban sanitation market, several key challenges still need to be addressed to further unlock both public and private sources of finance.

Institutional challenges. The GoS first led the way by creating the regulatory and contractual elements of the market that enabled sanitation service providers (SSPs) to grow their businesses through government contracts. However, this expansion of services did not address underlying institutional challenges, such as weak relationships between ONAS and SSPs, a lack of comprehensive training for those in the sector, and inefficient government management systems. SSPs engage in a wide range of sanitation services, including everything from pit emptying for households or commercial enterprises to management of fecal sludge treatment plants, adding additional complexity to their oversight.

Low level of financial expertise among SSPs. Based on a WASH-FIN program assessment of sanitation operators, many SSPs lack financial expertise and do not keep consistent financial records. This contributes to challenges with business growth, and the lack of record-keeping limits their ability to access commercial finance for capital investments. The financial sector has also shown a limited understanding of investment opportunities in the urban sanitation sub-sector, and it has viewed sanitation projects as risky endeavors from a business perspective.

Need for more market investments and blended finance mechanisms. Out of necessity, development partners continue to provide the bulk of funding for urban sanitation service delivery in Senegal through grants and concessionary loans. A World Water Council report showed that from 2005-2015, 74 percent of the 1.3 billion CFA mobilized for water and sanitation in Senegal was borrowed from donors and 15 percent was from subsidies (grants). These significant non-market investments typically decrease the financial sector’s appetite for structuring commercial transactions with sub-sector actors, further hindering progress towards closing the gap for long-term financial resources in the WASH sector. In lieu of relying heavily on donor funds, blended finance mechanisms could make efficient use of donor support while supporting sector expansion. When donor and government investment are blended through well-structured programs that combine lower-cost

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publicly-managed repayable loans with higher-cost private capital, commercial investments can be de-risked, and therefore made more attractive to private investors.

In order to contribute to addressing these sector challenges, USAID mobilized its Water, Sanitation and Hygiene Finance (WASH-FIN) program to provide technical assistance to close financing gaps that support universal access to water supply and sanitation services through sustainable and creditworthy business models, increased public funding, and expanded market finance for infrastructure investment and service delivery.

The program’s objective in Senegal is to help close the WASH financing gap by expanding access to sanitation finance for individual operators. To this end, the program is mobilizing local commercial finance by providing transaction facilitation for private SSPs and engaging commercial financiers, strengthening the government’s pursuit of a national marketplace for urban sanitation, and supporting government’s design of its proposed centralized financing facility.

I. Linking Strengthened Service Providers with Local Commercial Finance for Increased Investments

1.1 Improving Sanitation Service Providers’ Financial Management and Capacity for Expansion

The WASH-FIN Senegal program’s core work is to provide technical assistance to help improve sanitation service providers’ creditworthiness and to assist them with the process of obtaining financing to expand urban service delivery.

In order to design targeted interventions, the program first needed to understand the urban sanitation market. In 2018, the program undertook a survey of 105 SSPs registered with the Association of Emptiers (AAAS). This survey found that the urban sanitation market is comprised of four large players and over 100 smaller ones of varying technical and financial capabilities. The smaller SSPs are primarily focused on pit emptying as opposed to waste treatment. While all of the SSPs had difficulty obtaining financing for capital improvements due to a variety of factors, the smaller SSPs were perceived by banks as especially uncreditworthy; only 25 percent had previously borrowed from a bank even though 75 percent had assets that could be used as collateral. In many cases, SSPs did not maintain the long-term financial records that they would have needed in order to be approved for financing, a factor which would have disqualified them regardless of the financial health of their businesses.

<table>
<thead>
<tr>
<th>Sample Breakdown of WASH-FIN Program Supported SSPs</th>
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<tbody>
<tr>
<td><strong>Large Operators (Cohort 1)</strong></td>
</tr>
<tr>
<td><strong>No. of people served</strong></td>
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<tr>
<td><strong>No. of staff</strong></td>
</tr>
<tr>
<td><strong>No. of trucks</strong></td>
</tr>
<tr>
<td><strong>Average annual revenue</strong></td>
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<td><strong>Average annual revenue</strong></td>
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9 See footnote 7.
The program’s technical assistance work focused on three of the largest SSPs in Senegal and 22 smaller SSPs. A breakdown of the selected SSPs is shown in the table above.

To meet the stringent credit requirements of commercial lenders (see Section 1.2), the technical assistance was aimed at improving SSPs’ corporate governance and financial management, as well as helping them strategically leverage grant and concessionary funds to mobilize local commercial finance under the best possible terms (i.e., interest rate and loan tenor). The technical assistance was designed to meet the different needs and skill sets of the large vs. small SSPs, but all assistance was ultimately focused on increasing access to finance. The core assistance for SSPs consists of the following:

**Assessing creditworthiness.** The program first assesses each SSP’s financial records in order to determine what information is available and whether any additional records are needed. Banks typically require three years of financial statements as part of a loan application package. Once all records have been compiled, the program uses the information to assess the SSP’s historical financial performance based on factors such as revenue, profitability, assets and liabilities, history of on-time payments from customers, etc. These are similar to the factors that banks use when assessing the financial health of prospective borrowers.

**Refining technical proposals.** The program also examines technical proposals for the projects that SSPs wish to pursue, exploring the benefits (expansion of sanitation services, increased revenue for the company) and challenges (cost of the project, risk of being unable to pay back loans, lack of sufficient staff or necessary skill sets), and works with SSPs to ensure that their final proposals are appropriate and advantageous for their businesses.

**Preparing financial models.** Based on historical financial information and proposed projects, the program develops financial models to help SSPs understand their capacity for business growth and for expansion of service delivery. The SSPs can use these models to support loan applications, but can also use them independently as financial planning tools.

**Matching SSPs with suitable financing institutions.** When appropriate, the program provides support in preparing materials to present to banks, including comprehensive business plans and brief “teasers” to summarize investment opportunities.

The assistance is intended to be tailored to each service provider’s unique situation. For example, working with one large SSP, Vicas, the program provided support to refine its business plan to meet banking requirements. This resulted in its receipt of a $1 million financial package from Banque de Dakar.

The program also supported another SSP, Delvic, as a local partner in the commercialization of the Janicki Omni Processor (J-OP), a new waste-to-energy sanitation technology that is being piloted outside of Dakar. The goal of this work was envisioned to result in raising capital to scale up the technology throughout Senegal. To help Delvic move the piloted J-OP to a commercially viable scale, the program prepared a market-based financial model financed with debt and equity. To date, grant capital has funded pilot operations. As the technology is refined, the program has been working with Delvic, the

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While the J-OP has retained its name, Janicki became Sedron Technologies as of 2018.
concessionaire (ONAS), and the entity that retains intellectual property of the J-OP (Bill and Melinda Gates Foundation) to raise capital by:

- Refining and modeling the total capital needed and mix of debt vs. equity;
- Analyzing revenue potential from resource recovery sales and conducting product profitability studies;
- Revising a business plan and preparing an investor pitch; and
- Developing a targeted investor list.

In this type of capital raise involving early stage technology, angel or other forms of risk capital are typically raised, and once the technology is proven, other sources could be mobilized to enter the local market.

The program supported another SSP by aligning its Strategic Plan first with the International Finance Corporation’s (IFC) financing conditions and later with those of Investisseurs & Partenaires Senegal, a subsidiary of a French Investment Fund, resulting in their commitment to make a $1.8 million equity investment in the SSP pending complementary donor support.

Looking forward, the program is working to better understand the financial history, capacity, and interest of smaller SSPs in accessing finance. The program is assisting them by partnering with ONAS, the Association des Acteurs de l’Assainissement au Sénégal (Association of Sanitation Operators), and targeted financial institutions to establish a Fleet Renewal Program that would help replace aging sanitation trucks under affordable financing conditions. This multimillion dollar, multi-contributor fund is currently under negotiation, and, once finalized, will expand and increase efficiency of service delivery.

1.2 Engaging Domestic Financial Institutions to Grow Demand for Investments

The program also works with the local commercial banking sector to increase its understanding of sanitation investment opportunities, and to grow the evidence-base that documents such opportunities. To achieve this, the program has hosted knowledge-sharing events and led a landscape review to explore a broad array of financing opportunities and any potential for blended finance that can help crowd in commercial investments. Thus far, the program has hosted six key events with SSPs and other stakeholders, hosted regular meetings with up to 18 financial stakeholders, and developed ongoing strategic relationships with nine of the 18 financial institutions.

The program’s events have included workshops and presentations to equip SSPs to expand their businesses and to enable them to understand the opportunities that may be available to them. For example, some of the events were arranged as business-to-business meetings in which SSPs present their companies and projects in order to receive feedback. In other cases, banks and SSPs met together, and banks presented their financial terms and conditions so that SSPs could learn about the requirements.

The program’s work has spurred banks to explore opportunities in a previously unknown market. The SSPs’ willingness to open themselves to scrutiny, document their business operations, and improve their creditworthiness also makes these new investment opportunities possible. In many cases, creative approaches to fulfilling collateral requirements were employed, such as leveraging cash flow from government contracts (see box below).
As a result of continuous engagement with the potential pool of financiers, 15 Senegalese banks and three multinational banks or investment funds have openly expressed interest in the urban sanitation sector. In addition to the $1 million in financing that Vicas received, **new transactions exceeding $6 million are currently under negotiation** with other institutions. Throughout these discussions, the program has supported the SSPs with documentation, financial advisory support, and facilitation of technical meetings as described in Section 1.1.

## 2. Expanding Urban Sanitation Markets

Although urban sanitation services have improved since the 1990s—increasing coverage to 43 percent for basic services and 22 percent for safely managed services as of 2017**—much of the improvements have been focused on Dakar, and have not addressed the national need for additional fecal sludge treatment plants or larger-scale implementation of household sanitation services. To improve the delivery of urban sanitation services, ONAS is finalizing a market-structuring strategy to identify private sector SSP opportunities in urban areas outside Dakar. In support of this strategy, the program undertook a study of best practices in public-service market structuring** and analyzed the potential market size that would be necessary to establish a profitable sub-sector. The study examined challenges caused by the decentralization of services, methods of attracting or incentivizing supply of services in underserved areas, and the need for clarity regarding government oversight. The document also examined market sector reform efforts in other countries to showcase examples that could be relevant to Senegal. This effort has assisted ONAS as it continues to develop a nationwide strategy.

In addition to the study, the WASH-FIN program has directly advised on the *Programme National de Développment Durable de l’Assainissement Autonome*, and its recommendations for the increased role of the private sector were included in the Results Framework for the strategy. Although the final GoS documents are still under discussion, the strategy is intended to take advantage of the expanded interest and vitality of SSPs, donors, and financiers in recent years. Using findings from a series of FSM market studies, the strategy positions the private sector—both SSPs and financial institutions—as a key actor in service delivery under ONAS’ leadership.

The GoS is taking an incremental and flexible approach to implementing its strategy for sanitation market structuring across separate national zones. The details of these zones, and of the private sector companies that would manage services, are likely to remain under discussion until additional sanitation

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11 See footnote 2.
12 USAID (2018 – Draft). Evaluating Potential Market Structures for Senegal’s Sanitation Sector. WASH-FIN program. Please note that this document is still in draft form because the GoS is still defining certain key features of the market structure.
3. Rationalizing Sector Financing: The Blue Fund

In 2015, the GoS declared its intention to create a sustainable water supply and sanitation infrastructure fund. The program is working with UNICEF and the GoS to develop a vision for this pooled investment vehicle, named the Blue Fund. Its goals are to establish financial sustainability of the WASH sector nationally, flexibly target needs, incorporate both social and private funding windows, improve transparency, facilitate interest and payback lending, incorporate on-budget funding, and demonstrate strong internal auditing.

The UNICEF-led feasibility study\textsuperscript{13} proposed a set of legal and financial mechanisms for the government’s Blue Fund. It suggested that a public limited company capitalized with a 50/50 split between private sector and Senegalese government capital would be the most appropriate structure. The public limited company was deemed the best structure given the agreement of the Senegalese sovereign wealth fund, FONSIS, to house the Fund for the first five years, and the proposed capitalization was intended to help crowd in private capital.

Financial inflows were to include grants from donors and corporate social responsibility (CSR) allocations, repayable private capital, government transfer, taxes, funds from bond issuances, and low-risk/high-return real estate investments. The proposed breakdown is shown in the chart on the left.

In response to these findings, the program shared recommendations to guide the GoS and USAID in refining needed funding, strengthening the study’s financial model, budgeting for staffing, analyzing financial inflows in more detail, and completing due diligence across public and private sectors.\textsuperscript{14} Next steps are with the GoS, which is in the process of launching the Fund from within FONSIS in partnership with the Ministry of WASH. Following this launch, the program expects to continue providing advisory assistance on the Blue Fund.

LESSONS LEARNED

1. Government Commitment and Public Procurements for Sanitation Services Drives Market Creation

The GoS’ ongoing reforms in the sector laid essential groundwork for the SSPs to mobilize local commercial finance. By taking actions to create markets for water supply and sanitation services, it has


\textsuperscript{14} USAID (2019). Senegal: Blue Fund policy note. WASH-FIN program.
provided incentives for SSPs to grow, and made it viable to link them with commercial sources of finance.

Specifically, the GoS has released tenders for urban sanitation services transparently and within a defined regulatory and governance structure. Consequently, SSPs have taken increasingly large and profitable roles collecting and hauling fecal sludge and operating fecal sludge treatment plants. This is an increasingly common way to engage the private sector in large-scale sanitation services and has been implemented in India\textsuperscript{15} and other countries as well.

2. Government-Created Markets are Important but Do Not Address Financial Shortfalls

The GoS has established a strong enabling environment that effectively supports private participation in the provision of water supply and sanitation services. However, there continue to be shortfalls in water availability and gaps in wastewater management. On the financial side, the government is often slow to pay SSPs that it contracts with, though financing—such as the $1 million that Vicas received—can serve as a buffer for SSPs. Further, over the past decades of progress, there remains a considerable gap between need and available governmental resources in the WASH sector. The gap in financing can only be closed through a combination of government support for strong sector regulations, innovative financial mechanisms that are accessible to small-scale providers, and prioritization of WASH services as a necessary public good.

3. Corporate Governance and Financial Management are Common Barriers for SSPs to Access Finance

At the same time that the WASH-FIN program improved financial institutions’ understanding of opportunities in the Senegalese sanitation market, the program facilitated discussions between interested financial institutions and targeted SSPs to discuss areas of collaboration and structure financial transactions. However, in order to close on these transaction opportunities, the corporate governance structures—particularly financial management—of the SSPs needed improvement. Since SSPs are stereotypically viewed as risky business opportunities, they need to be able to demonstrate the business case for expansion (despite sanitation services being essential).

The program has clearly identified the foundational role played by good corporate governance as a platform for establishing SSP creditworthiness and the ability to successfully pursue commercial and public finance. Commercial financiers see the investment opportunity when sector practitioners step up to meet standard lending requirements, including formalized structures, transparent financials, defensible business models, and adequate collateral. While the program has worked with a subset of the 105 SSPs that were identified through AAAS, there is still more work to be done. It will be important for ONAS and AAAS to continue supporting SSPs by offering training on business management, helping them negotiate with banks for reasonable terms and conditions, and also continuing crucial outreach to financial institutions to form partnerships that benefit the WASH sector.

4. Bringing Capital-Intensive Infrastructure Innovations to Market Requires Significant and Sustained Support

The program’s support to Delvic as a local partner in the commercialization of the Janicki Omni Processor (J-OP) was envisioned to raise capital to deploy a sanitation technology innovation at scale. As

\textsuperscript{15} For examples, see the Indian Department of Social Welfare, which offers sanitation services tenders: https://socialwelfare.delhigovt.nic.in/content/e-procurement-tender-sanitation-services
an SME end-user of the technology, Delvic had limited options to raise the required capital itself, and the program explored debt and equity sources. Government or development partners can support innovation or technology adoption via grants—and indeed the Bill and Melinda Gates Foundation played this role to pilot the J-OP. But even when available, grants alone are often insufficient to get a technology across the so-called innovation “Valley of Death.” Public funding may be better placed in setting the criteria and providing incentives for a marketplace of solutions to be brought to bear.

The financial modeling and advisory support the program provided was valuable in understanding the underlying economics of a sophisticated technology and developing a complex business model. Higher tech treatment options that recover outputs and sell resources like the J-OP may have a place in Senegal, once the technology is proven, and there is a clear and well-funded pathway to enter the local market. Moreover, the Senegalese enabling environment is strong due to the existing government PPP programs under ONAS that provide revenue opportunities, a structured way for market entry, and the basis for competition. The near-term funding for the J-OP will likely come from a combination of government or development partner grants, with equity from current participants eventually supplemented by angel or venture capital. This is the pathway for most capital-intensive infrastructure innovations in developed markets that have well-worn (albeit long) pathways to go from R&D to commercial viability, and multiple opportunities along the way for risk capital as well.

The J-OP technology continues to evolve and will require further controlled field tests to validate the changes, and the business model, to satisfy investors. This means that for the near term, simpler local technologies like sludge drying beds will continue to provide the bulk of the utility-scale treatment. The question is, are these temporary or will they become locked-in as the best long-term solution?


Defining the nature and functionality of the Senegalese Blue Fund has proven to be highly complex, from an institutional and investment prioritization perspective. After first suggesting the Fund in 2015 and hosting its launch in 2019, the GoS has been working to develop the precise modalities of capitalization, management and oversight, and investment priorities. What has become clear from this effort is the vital importance to Fund development of balancing expertise in utility operations and management, financial input from external actors, and governmental financial commitment and political will. Without firm commitments for support from all of these areas, delays and unanticipated challenges have arisen without a clear line of authority for resolution and institutionalization. This lack of authority for resolution has further resulted in delays regarding formalizing Blue Fund procedures and mandates, which in turn affects progress on capitalization. Once this balance is in place and clear with realistic objectives, then alternatives can be developed and analyzed for this type of multi-actor mechanism.

ABOUT THE WASH-FIN PROGRAM. USAID’s WASH-FIN program works in collaboration with national governments, development partners, financial institutions, service providers, and local stakeholders in eight countries. The program’s Country Briefs summarize the development challenges, activity design, and results to date for each country of operation. The briefs focus on the lessons learned and their applicability in each country, as well as for USAID, and the broader water and sanitation sector.