WATER PPPs
in Africa

WORLD BANK GROUP
Public-Private Partnerships

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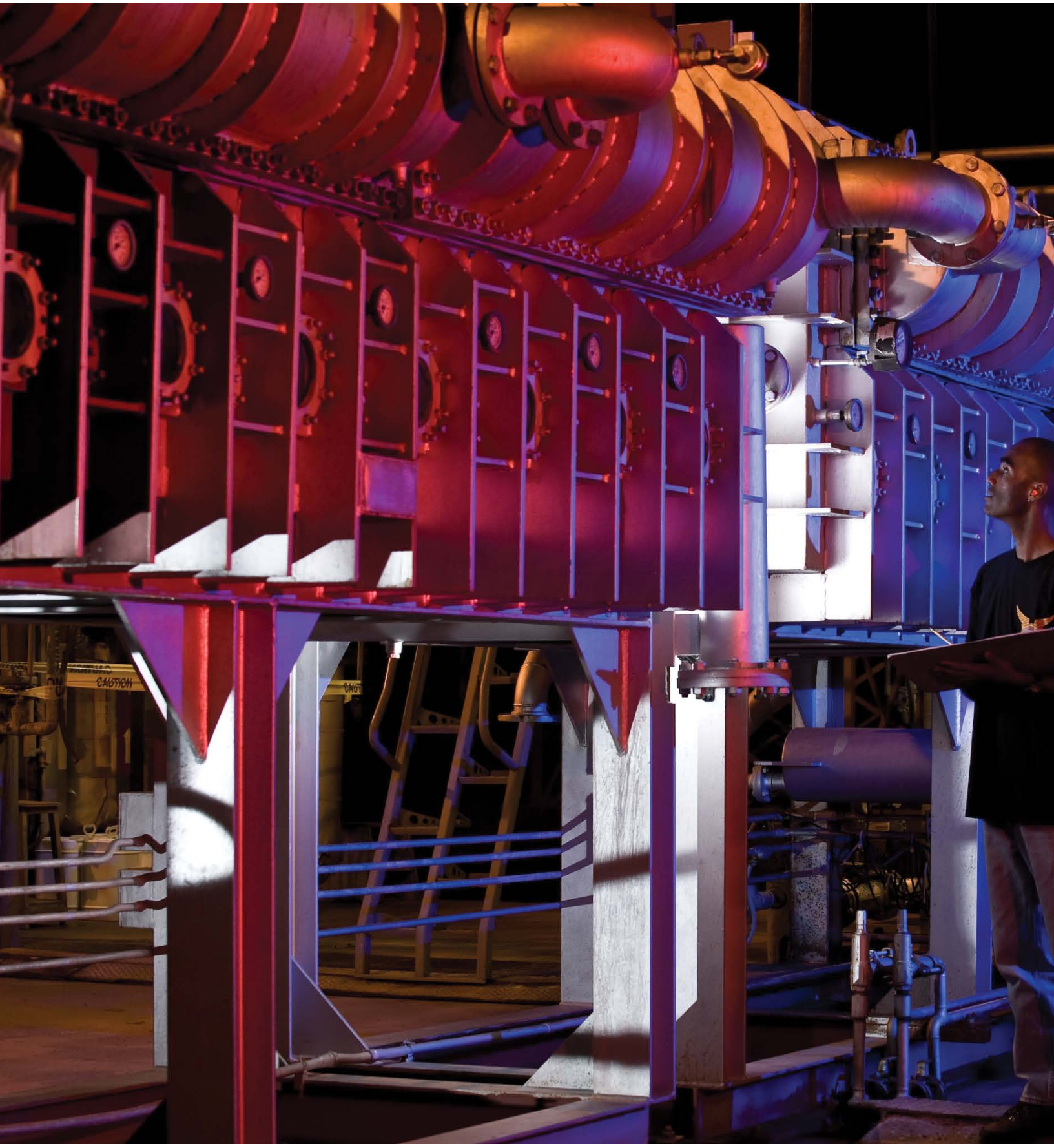
Water

wsp
water and
sanitation program

OVERVIEW

Public-private partnerships (PPPs) in Africa's water sector date back to 1959, with the implementation of the Côte d'Ivoire urban water affermage—a successful operation that continues to provide water to over 7 million people today. In the many decades since that first PPP was launched, creativity, technology, and political realities have changed the face as well as the function of PPPs.

PPPs have proved to be an important tool in improving utility performance, leveraging finance, and stimulating a much-needed sense of competition and accountability in an otherwise monopolistic water and sanitation sector. However, several water PPPs in Africa have faced challenges and not lived up to expectations. Much has been learned from success and failure alike. As a result, there is now a rich body of knowledge about PPPs—wisdom drawn from direct experience. Consolidating this information and making it available more widely makes it possible for others to learn from this experience as well, informing future generations of successful water PPPs in Africa.



PPP MODELS
across the African continent

PPPs are about partnership—and in Africa's water sector, partnership models are fluid. The ability to tailor unique solutions to individual national situations has resulted in a wide range of PPP models across the continent. However, experience proves that certain criteria—strong political support and a long-term commitment from both partners—are non-negotiable. Since PPPs are a complex undertaking with risks and uncertainties, this critical focus can mean the difference between success and failure.

In North Africa, the more capital-intensive Build-Operate-Transfer (BOT) form of concession has been used to develop new infrastructure assets, such as water and wastewater treatment facilities. This model has the advantage of allocating to the private sector the risk of delivering new infrastructure assets on time and on budget. It can also mobilize new sources of capital to accelerate the development of projects, and introduce innovation and technology transfer from the private sector.

Whole utility partnerships have focused less on mobilizing private capital, most notably with the lease/affermage arrangements in West and Central Africa. Operational efficiency is the most consistent contribution of PPPs to utility performance, resulting in the reduction of non-revenue water, improvement in bill collection, and better labor productivity. In Sub-Saharan Africa, many PPPs have increased access so significantly that government avoided massive layoffs, despite major gains in labor productivity.

PPPs for the management and operation of small towns and rural piped water systems through lease and management contracts are the latest iteration of the partnership model. This model has the main advantage of allocating the risk of operations, revenue, and collection to local private companies, while keeping the costs of service affordable with public funding for capital development.

FUNDING COMES FIRST

For developing countries, dependable funding from the public partner is key to promoting the expansion of access. Maintaining an affordable tariff and keeping overall risk levels acceptable for the private sector are equally necessary.

Tellingly, successful water PPPs are usually designed around a mix of funding sources. Therefore, the focus should be on building a partnership that layers a degree of public sector financing on top of private sector skills and expertise. This can improve the sustainability of systems, strengthen financial viability, and boost quality of service.

The exact structure and risk allocation of a PPP will depend on the specific transaction. An overview of the main features of water PPPs seen in Africa in the last two decades is presented in the Forms of PPPs table at the end of this booklet.

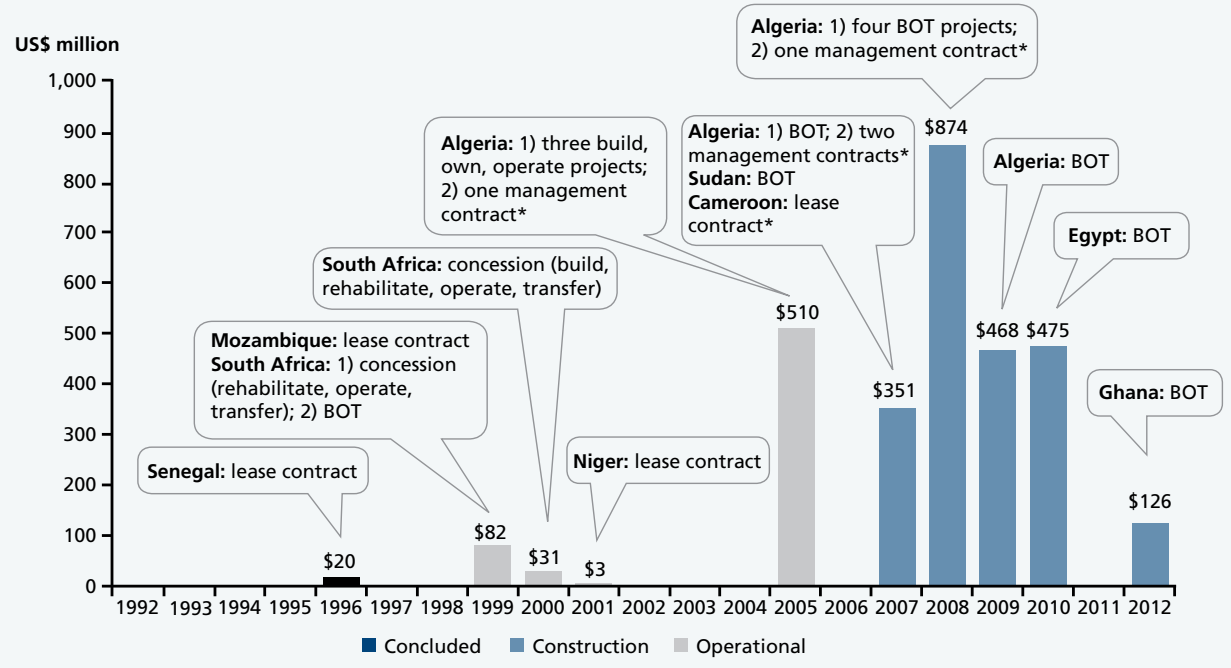
The FACTS

During the last 20 years there have been a limited number of PPP projects in the water and sewerage sector in Africa. According to the World Bank and the Public-Private Infrastructure Advisory Facility (PPIAF), which collect data on PPPs in the PPI Project Database (http://ppi.worldbank.org), from 1992 to 2012 there were a total of 51 PPPs in the water and sewerage (including desalination) sector in Africa. Criteria included projects that have concluded, are operational, or are still under construction. This number also includes projects with various degrees of private sector participation (management contracts, concessions, and lease) throughout the whole continent. The bulk of the total investment went to North African countries, with a total investment during this period of just over $3 billion.

The majority of projects in Sub-Saharan Africa during the same period leverage private sector management skills and efficiencies rather than investments. These were handled through models such as the lease/affermage arrangements and management contracts.

Official PPP statistics fail to capture the extent of the role played by local entrepreneurs and companies in managing small piped water systems in Africa. A number of governments have explicit policies that move the management of systems away from community-based organizations to private operators, such as in Benin, Burkina Faso, Mali, Mauritania, Mozambique, Niger, Rwanda, Senegal, and Uganda. In these countries, an estimated one-third of small piped water schemes are under the management of private operators.

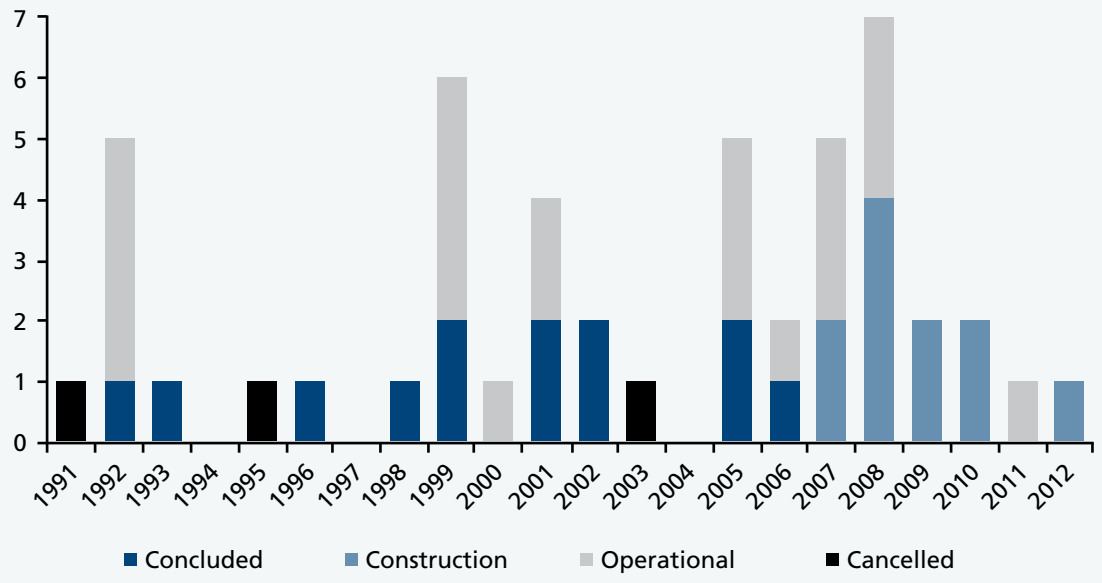
TOTAL INVESTMENTS IN PPPs FROM PRIVATE SOURCES IN AFRICA'S WATER AND SEWERAGE SECTOR



*In the database amounts of the total investment for these lease/management contracts are zero

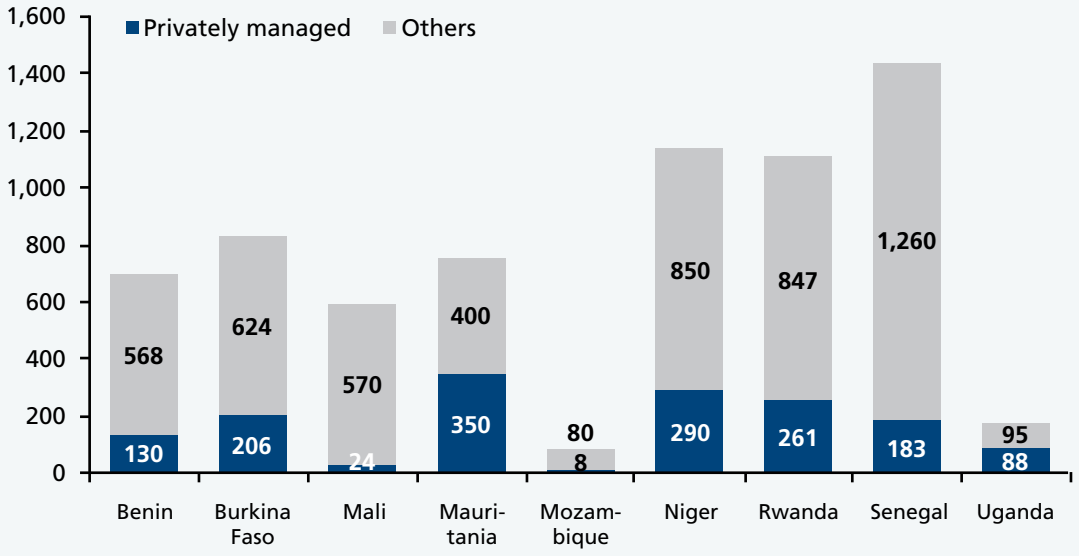
Source: PPI Database

NUMBER OF PPPs IN WATER AND SEWERAGE SECTOR IN AFRICA



Source: PPI Database

NUMBER OF SMALL WATER SCHEMES UNDER PRIVATE MANAGEMENT IN AFRICA



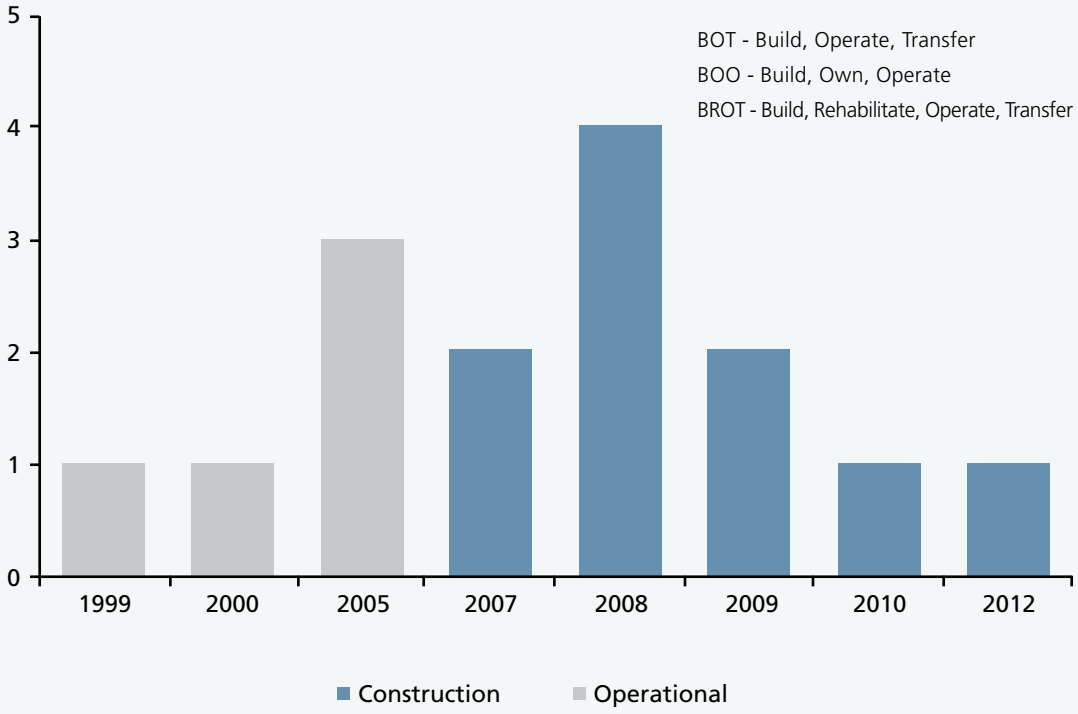
Source: Various WSP reports, 2009-2011

Lessons LEARNED

Leveraging private finance for new infrastructure development is important.

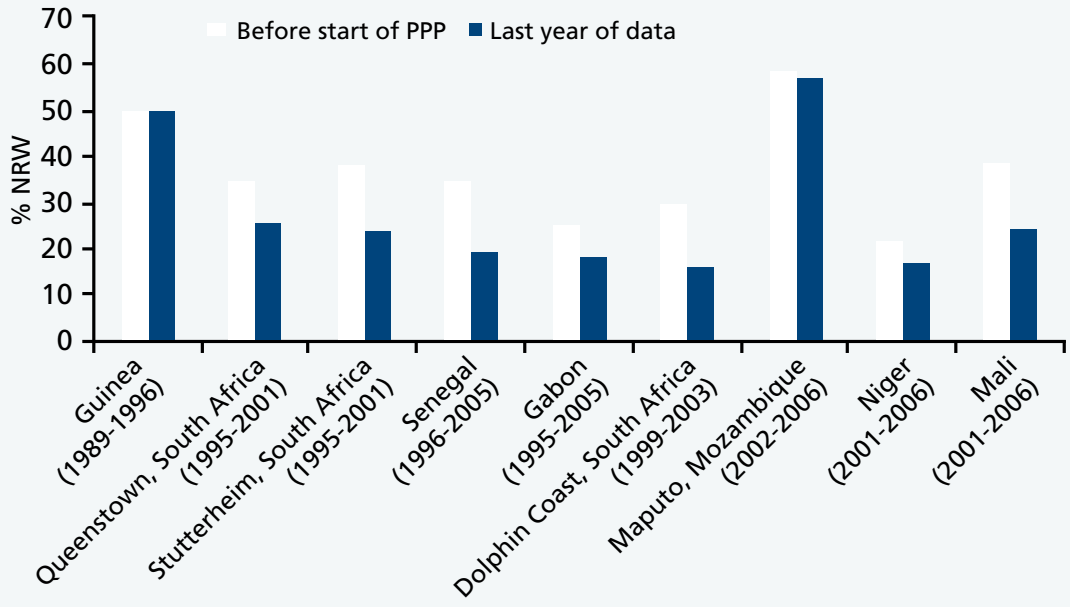
The history of the build and operate concession model for the development of new infrastructure assets began in Africa in 1999 with the Wastewater Treatment Plant in Durban (South Africa). Since then, there has been only one other wastewater treatment project in New Cairo (Egypt). The bulk of other projects were for potable water treatment, including a number of desalination plants. These types of concessions for new assets were proven to help improve efficiency of project delivery. This is done by bundling construction (or rehabilitation) and ongoing operation and maintenance into a single PPP contract, which encourages the private company to build a high quality asset up front to minimize the maintenance later. This model has the advantages of allocating delivery-related risks (i.e., time and budget) to the private sector. It can also mobilize new sources of capital to accelerate the development of projects and introduce innovation and technology transfer from the private sector.

NUMBER OF BOT / BOO / BROT PPPs IN WATER AND SEWERAGE SECTOR IN AFRICA



Source: PPI

UTILITY PERFORMANCE: NON-REVENUE WATER



Source: Marin, 2009, PPP for urban water utilities

Involving the private sector has proven worthwhile even if the private party isn't bringing much money in.

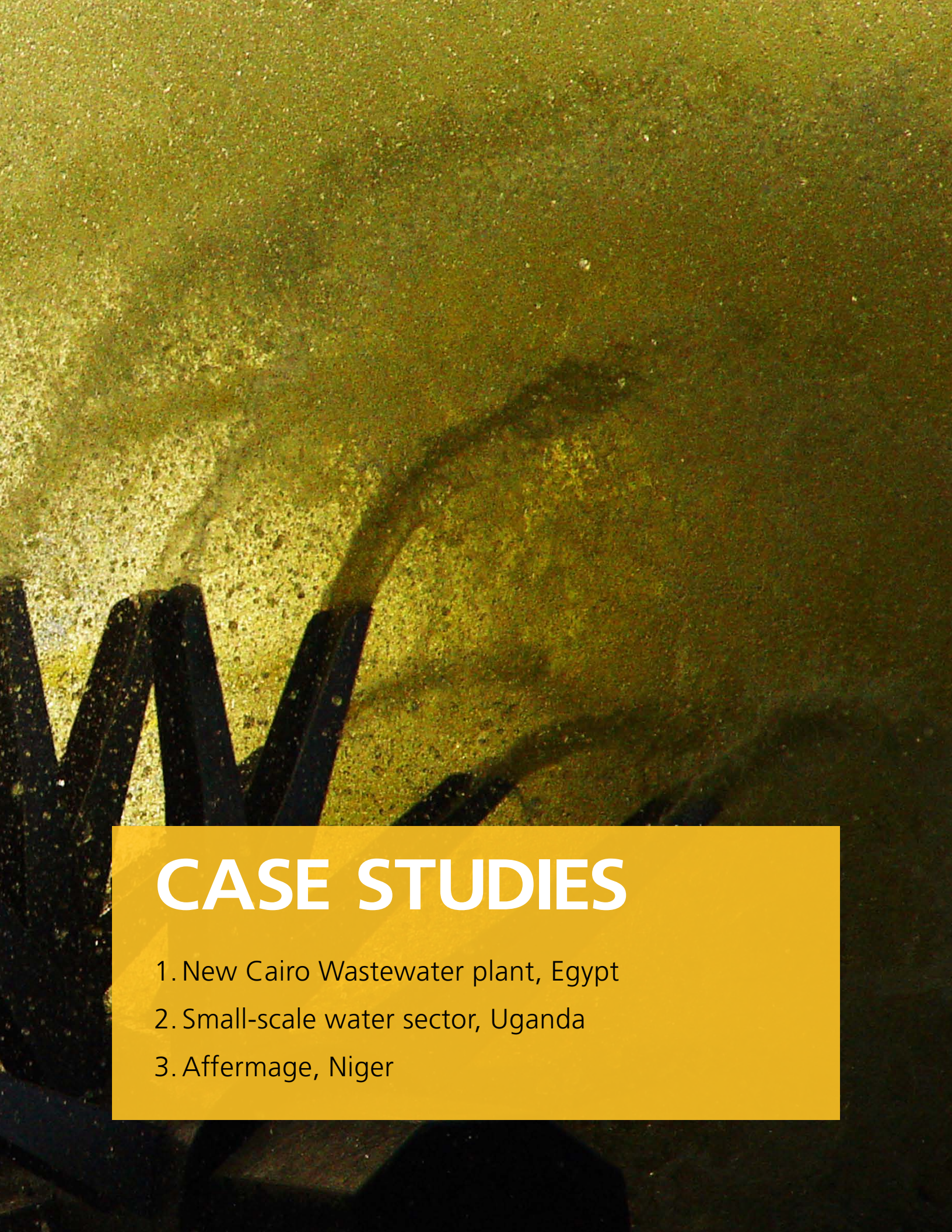
Several studies have found that the private sector is more efficient at management of construction, service delivery, and asset maintenance. PPPs were found to reduce construction time and cost overruns—unlike government-managed construction, which often runs over budget and falls behind schedule. This is because PPPs usually do not allow adjustment of contract price for cost changes. Return for the private party depends on bringing the project in on time and budget, which means that private companies formulate more careful and conservative cost estimates from the start.

Some studies of PPPs in urban water utilities have found significant efficiency gains achieved through involvement of the private party, including reduced water losses, increased staff efficiency, coverage, and daily hours of service. Service delivery by government entities is often poor because limited capacity and lack of management incentives increase the cost. Furthermore, some types of PPPs reward improved utility service quality directly through performance-based contracts.

Small-scale PPPs have a significant role in reaching the poor.

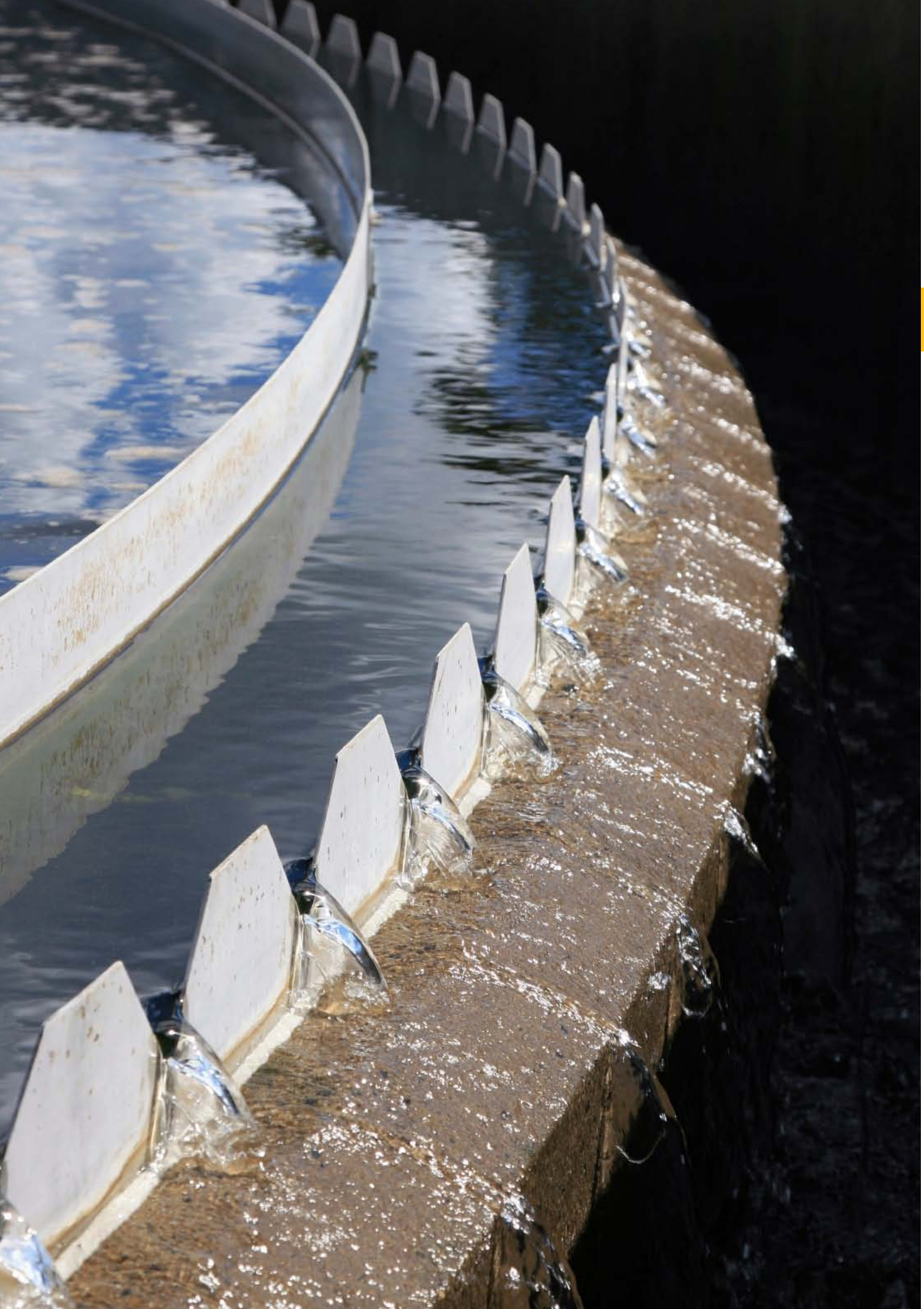
In small towns and villages with few customers, poor populations, and distribution systems ranging from a few hundred to several thousand connections, small local private providers are meeting peoples' basic water needs. Small-scale PPPs usually work with local operators who need a capacity-building component to help create the private market. Such projects often rely heavily on subsidies and donor funds.

In small piped systems, there is a strong correlation between PPPs and increases in connections and collection efficiency. This in turn enhances sustainability of these systems. Primarily, these PPPs allow an affordable average tariff to be maintained for households. A recent review of Uganda's 10-year experience in small town water PPPs finds that connections have almost tripled since PPPs' introduction in 2002. Over 1.5 million people are now served through PPPs in small towns, and tariffs have risen by less than inflation.



CASE STUDIES

1. New Cairo Wastewater plant, Egypt
2. Small-scale water sector, Uganda
3. Affermage, Niger



New Cairo wastewater plant, Egypt

Project concept

The project consisted of the design, finance, construction, operation, and maintenance of a new wastewater treatment plant with a capacity of 250,000m^3 per day in New Cairo City, a satellite town of greater Cairo. The city is being promoted as a new destination to alleviate overcrowding in the center of Cairo. New Cairo's population of 550,000 is expected to increase to approximately three million by 2029. The transaction structuring was supported by IFC.

Procurement details

The selection process included an initial prequalification of prospective bidders based on financial and technical criteria, such as minimum net worth and experience with build-operate-transfer projects, especially with similar wastewater treatment plants. The government received 10 applications and seven bidders were prequalified. The project attracted five bids from consortia comprised of local, regional, and international firms.

Bidding was organized in two steps: a technical bid, which was evaluated on a pass/fail basis; and a commercial bid, which was limited to those bidders whose technical offers had been accepted. The winning bidder was selected on the basis of the lowest net present value of the overall sewage treatment charge throughout the concession period. Since electricity costs are a pass-through item, bidders were asked to quote their projected electricity consumption levels to ensure energy conservation. The estimated electricity costs were added to the sewage treatment charge to select the winning bidder. A consortium of Egyptian firm Orascom Construction Industries (OCI) and Spanish firm Aqualia submitted the lowest financial bid and was awarded the contract in June 2009.

Details of sponsor/company

OCI is a leading international fertilizer producer and construction contractor based in Cairo, Egypt. It is one of the region's largest corporations, with projects and investments across Europe, the Middle East, North America, and North Africa. Aqualia, founded in 2002 and based in Madrid, is a water management company providing services to a population of more than 27 million people worldwide.

Financing & funding structure

Orasqualia, as the consortium is known, financed the project fully; they are investors themselves with 30 percent equity and 70 percent debt. They also have the building and maintenance contract with its member companies. A total of four banks are lenders to the project. Orasqualia is also responsible for the transfer of the ownership back to government at the expiry date or early termination date. The government is to pay a sewage treatment charge that includes a fixed portion to cover the investor's fixed costs (such as debt servicing and return on equity) and a variable portion based on the actual volume of treated sewage, to cover the investor's variable costs. In addition, electricity costs will be paid by the New Urban Communities Authority (the off-taker) as a pass-through item. The credit of the New Urban Communities Authority is underpinned by the Ministry of Finance.

Review of the outcome of the project

This was the first successful transaction under the government's PPP program and a model for future PPPs. The deal mobilized $150 to $200 million in private investment. The new plant, completed in March 2012, is now operational.

Small-scale water sector, Uganda

The development of small-scale water PPPs in Uganda is a good example of how sector reform implemented by the Ministry of Water can facilitate growth of a domestic water market. This reform process was supported by the Water and Sanitation Program (WSP), which provided advisory and stakeholder coordination support during the upstream reform period, while the World Bank financed the development of small town water infrastructure. In small towns, the government began by introducing one-year area performance contracts (APCs) that remunerated local managers based on results. Bonuses and penalties (of up to 25 percent of basic salary) were tied to targets.

Under the APCs, the operational performance of the largest utility that implemented APCs in secondary towns improved strongly: non-revenue water decreased from 32 percent to 22 percent in fewer than three years, and bill collection improved dramatically. The introduction of APCs in small towns attracted private operators in the operation and management of water supply, improved service quality, and raised customer satisfaction levels. In 2008, the government also started signing output-based aid contracts with these private operators to design, build, and operate water systems. Under this scheme, 961 connections have been completed (out of 2,000 planned), along with 450 verified yard taps benefiting 8,100 people.

As of 2010, 18 private operators were running 95 water systems in small towns. The number of towns being serviced increased from 15 in 2001-02 to over 90 in 2010-11. Since the launch of private sector participation sector reform, private operators in small towns improved tariff collection and achieved almost universal metering, while maintaining affordable tariffs. One example is the town of Busembatia.

Project concept

The Busembatia PPP aimed to attract the private sector in construction, operation, and management of drinking water distribution networks in small towns and rural growth centers. IFC provided support for three program components: transaction advice, public sector capacity, and access to finance. WSP provided technical assistance to national and local sector stakeholders, which was needed to prepare the project and gain acceptance for the innovations introduced. Due diligence identified contracts of short duration and varying performance. To address these shortcomings and ensure ease of management and administration, a generic contract with a minimum term of five years was proposed to both private operators and lenders.

Procurement details

Following a prequalification process, three local companies were invited to submit a bid for a five-year management contract in Busembatia. The contract was awarded to Trandint Limited, which satisfied the technical requirement, secured a financing arrangement with lenders, and offered the lowest total bid price of $270,000. The new operator agreed to install 400 new connections during the first two years and avoid increasing tariffs for the duration of the five-year management contract.

Details of sponsor/company

The winning bidder was Trandint Limited, one of the largest local private operators in Uganda, which currently manages 12 small town water systems.

Financing and funding structure

The majority of the capital investment is funded by the Global Partnership on Output-Based Aid (GPOBA). However, the new Operator needed to pre-finance the investment in order to access this output-based grant. The grant was released upon certification of commissioning and verification of output. The tariff level and the tariff adjustment procedures are predefined and included in the contracts with the private operators. For pre-financing, DFCU Bank, a Ugandan commercial bank, loaned approximately $100,000 to the winning bidder for the Busembatia contract.

Review of the outcome of the project

During the first year of the project, the residents of Busembatia have seen a dramatic improvement in the quality and level of water services. A total of 430 connections have been installed, water production has increased from eight to 21 m^3/hr and collection rates have increased from 70 percent to 85 percent.

A significant achievement of the project was the access to finance component. This was the first time that a local bank had provided finance against water supply operations. Previously, private operators in Uganda raised financing by using overdraft facilities provided by the banks or secured loans using other existing business. With this example, other local banks have now begun to offer financing for water operations.

Affermage, Niger

Project Concept

In 1999, as part of sector reform, Niger opted for the affermage model to address the poor performance of the water sector. The Société de Patrimoine des Eaux du Niger (SPEN), was created as a state-owned asset holding company, which took over asset ownership, infrastructure development, service of debt, monitoring of the service quality, and development of public awareness about the sector reform on behalf of government. Government retained policy, tariff setting, and water resource management responsibilities.

In turn, SPEN entered into a 10-year affermage with Société d'Exploitation des Eaux du Niger (SEEN), a professional operator, giving the latter the exclusive right to provide water services in SPEN's service area (an arrangement inspired by Senegal's experience). A 10-year performance contract between SPEN and SEEN complemented the affermage contract and confirmed SEEN's technical and commercial performance obligations, financial incentives or penalties, and responsibilities regarding the rehabilitation of water systems. A special multi-sector regulatory agency was created to oversee the contract, a major departure from the Senegal affermage model.

Procurement Details

A two-stage bidding process was launched in June 2000 to select the operator. Four companies submitted a technical bid but only two qualified to submit a financial bid on the operator tariff. The process was completed in January 2001 with the selection of the French operator Veolia Water, which offered the lowest operator tariff of CFA190/m^3, or 96 percent of the average customer tariff then in force.

Details of sponsor/company

Veolia Water (formerly Vivendi Water, originally Generale des Eaux) is the water division of the French company Veolia Environment and the world's largest

supplier of water services. Veolia has water operations in 66 countries across the globe, employing over 95,000 workers worldwide. It serves roughly 64 metropolitan areas and over 139 million customers. Its operations are strongest in Europe, particularly in its native France.

Financing and funding structure

SEEN was incorporated in March 2001 with initial capital of $2 million equivalent. Fifty-two percent is owned by the international operator, 34 percent by local private investors, 9 percent by SEEN's staff, and 5 percent by the government. The reform and successful mobilization of the professional operator attracted a positive response from external financiers, including the World Bank, AFD, BOAD, and Chinese investors, who agreed to contribute 85 percent of the total $103 million cost of the initial investment program.

Review of the outcome of the project

Between 2001 and 2013, the performance of the system in SPEN's service area improved significantly in terms of access to piped water, reliability of the service, Non-Revenue Water (NRW), bill collection ratio, operational efficiency, financial viability, labor productivity, and affordability. For example, the proportion of people with direct access through a residential connection increased from 31 percent to 59 percent, and the number of residential connections increased threefold (from 56,300 to 171,750 units). Since 2006, water has been available on a continuous basis in most urban centers and areas of Niamey. Ninety-eight percent of water samples now comply with bacteriological standards. NRW has declined from 22 percent to about 17 percent. The bill collection ratio of private consumers has increased by 6 percentage points, from 91 percent to 97 percent. Staff productivity improved from 8.6 to 3.6 staff per 1,000 connections, without any layoff program, and a 20 percent increase in salary was instituted. Only five years after the beginning of the reform, the sector was able to recover its O&M costs, service its debt, and contribute to its CAPEX from the user charges. Since then it has become financially autonomous, and no longer relies on government subsidies.

FORMS OF PPPs

type of arrangement	definition of operator duties	selected responsibilities of the operator	typical profit/ payment mechanism for operator	level of risk transfer to the private sector and risks typically borne by the operator	investment responsibility	ownership of infrastructure assets
Management Contract	Supplies management services to the utility in return for a fee.	Provides management services to a utility.	Fixed fee + bonus usually covers managers' salaries and related expenses.	Low: Bonus usually linked to improvement in performance indicators.	Infrastructure and operating assets investment from the Contracting Authority.	Contracting Authority.
Affermage	Runs the business, retains a fee (generally not equal to the customer tariff) based on the volume of water sold. No infrastructure asset investments responsibility.	Employs staff, operates and maintains utility.	Affermage fee x volume of water sold.	Significant: Operating, commercial and shared demand risks.	Infrastructure assets from Contracting Authority. Operating assets investment from the Operator.	Contracting Authority.
Lease	Runs the business, retains revenue from customer tariffs, and pays a lease fee to the contracting authority. No infrastructure asset investment responsibility.	Employs staff, operates and maintains utility.	Revenue from customers less lease fee.	Significant: Operating, commercial and demand risk.	Infrastructure assets from Contracting Authority. Operating assets investment from the Operator.	Contracting Authority.
Concession	Runs the business, finances investment, and can own the infrastructure assets depending on transaction.	Employs staff, operates and maintains utility, and finances investment.	Revenue from customers less any concession fee.	Major: Operating, commercial, demand, and financing risk.	Infrastructure and operating assets investment from the Operator.	Contracting Authority or Operator.
Build Operate Transfer Concession	Designs, builds (or rehabilitates), finances, and operates asset for the period of the concession.	Employs staff, operates and maintains utility, and finances investment.	Availability and volumetric payment from the Contracting Authority or end users.	Major: Operating, commercial, and financing risk.	Infrastructure and operating assets investment from the Operator.	Operator. (Transferred to the Contracting Authority at the end of the concession.)

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