Levers of Change in Senegal's Rural Water Sector

Oumar Diallo

June 2015

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Acronyms and abbreviations

AfDB	African Development Bank
APIX	*Agence de promotion des investissements et des grands travaux* (Agency for the Promotion of Investments and Major Works)
ARMP	*Agence de régulation des marchés publics* (Public Procurement Regulation Agency)
ASER	*Agence sénégalaise d'électrification rurale* (Senegal Rural Electrification Agency)
ASUFOR	*Association d'usagers de forages* (Borehole Users' Association)
ASUREP	*Association d'usagers de réseaux d'eau potable* (Association of Clean Water Supply Networks Users)
BNDE	*Banque nationale pour le développement économique* (National Economic Development Bank)
CIRE	*Comité inter-régional de l'eau* (Inter-Regional Water Committee)
CLE	*Comité local de l'eau* (Local Water Committee)
CFAF	Franc of the Financial Community of Africa
DCMP	*Direction centrale des marchés publics* (Central Public Procurement Directorate)
DEM	*Direction de l'exploitation et de la maintenance* (Directorate of Operations and Maintenance)
DH	*Direction de l'hydraulique* (Directorate of Water)
ERIL	*Electrification Rurale d'Initiative Locale*
FONGIP	*Fonds de garantie des investissements prioritaires* (Priority Investment Guarantee Fund)
FONSIS	*Fonds souverain d'investissements stratégiques* (Strategic Sovereign Investment Fund)
GL	Gorom Lampsar
ICT	Information and Communication Technology
IDA	International Development Association, member of the World Bank Group
IDWSSD	International Drinking Water Supply and Sanitation Decade
KPI	Key Performance Indicator
MDG	Millennium Development Goal
MEM	Ministry of Energy and Mining
MoWS	Ministry of Water and Sanitation
MVS	Multi-Village System
NDP	Notto Diosmone Palmarin
NRW	Non-Revenue Water
OFOR	*Office des forages ruraux* (Office of Rural Borehole Management)
ONE	*Office National de l'Electricité* (subsidiary of National Electricity Office, Moroco)
PAQPUD	*Programme d'assainissement autonome des quartiers péri urbains de Dakar* (Autonomous Sanitation Program for Dakar's Peri-Urban Areas)
PEPAM- IDA	*Programme eau potable et assainissement pour le millénaire- Financement IDA* (Millennium Water and Sanitation Program-IDA Funding)
PEPAM	*Programme eau potable et assainissement pour le millénaire* (Millennium Water and Sanitation Program)
PSD	Public Service Delegation
REGEFOR	*Réforme de la gestion des forages ruraux* (Reform in the Management of Rural Boreholes)
RFP	Request for Proposal
RGPHAE	*Recensement général de la population de l'habitat de l'agriculture et de l'élevage* (General Population, Housing, Agriculture and Livestock Census)
SAP	*Services d'appui professionnels* (Business Support Services)
SEOH	*Société d'exploitation des ouvrages hydrauliques* (Water Systems Operations Company)

SONES	*Société nationale des eaux du Sénégal* (Senegal's National Water Utility)
SPEPA	*Service public de l'eau potable et de l'assainissement* (Drinking Water and Sanitation Public Service)
ToR	Terms of Reference
TA	Technical Assistance
UPT	*Unité de potabilisation et de traitement* (Water Purification and Treatment Unit)
USD	United States Dollar
WS	Water Supply
WSP	Water and Sanitation Program

I. Background

Senegal has been engaged in rural water sector reforms for more than a decade, with the aim of improving the quality of services. In the last ten years, the country has made significant strides through progressive and effective local private sector engagement.

During the International Drinking Water Supply and Sanitation Decade (IDWSSD) in the 1980s, the Government of Senegal invested in motorized boreholes in rural areas and established the Directorate of Operations and Maintenance (DEM) within the Ministry of Water and Sanitation (MoWS) to be responsible for their overall management. The Government also gradually introduced community-based management committees to run rural water systems on a day-to-day basis, with financial contributions from users, while DEM focused its support on the more technical maintenance tasks.

In the following decade, through the Reform of the Management of Rural Boreholes (REGEFOR) Project (1999-2005), the Government tested a new approach to professionalizing the management of rural water services. It involved replacing community-based management committees with users' associations, known as ASUFORs (Motorized Rural Borehole Users' Associations); using meters to promote the sale of water by volume and ring-fencing revenues into dedicated bank accounts; as well as outsourcing maintenance to local contractors. Under this framework, ASUFORs were licensed by DEM to carry out O&M activities, but were required to hire network managers to operate their water facilities. The contracting of small private operators by ASUFORs was scaled up; and additional reforms were introduced in 2008, when the Government, through DEM, piloted the outsourcing of borehole maintenance contracts to serve groups of ASUFORs. However, this scheme was short-lived. Towards the end of REGEFOR in 2004, access to improved water supply in rural areas stood at 64 percent, representing a modest improvement over the 60 percent rate when this approach was introduced.

While, on the one hand, REGEFOR brought more skilled managers into the sector and improved the reliability of water services, it left many challenges in the rural water sector unaddressed, on the other hand, namely:

- Absence of a long-term strategy for asset management;
- Dependence on Government funds for the renewal of assets and maintenance costs; the Government was spending about USD 4 million a year of scarce public funds to support O&M and the rehabilitation of rural water infrastructure, with little improvement in the quality of rural water services;
- Weak managerial and technical capacity of ASUFORs; community management was not strong and did not handle important issues such as the recovery of operating costs, appropriate tariffs and pricing, and renewal of infrastructure; and
- Non-compliance by ASUFORs with sound governance principles (separation of functions between users' representation, governance and operations), which contributed to a culture of inefficiency and jeopardized the sustainability of water services.

In 2005, the Government launched the National Millennium Water and Sanitation Program (PEPAM) to meet the Millennium Development Goals (MDGs) relating to the water and sanitation sector. PEPAM set out the Government's vision to increase the access rate to 82 percent in rural areas by 2015. The program also recognized that in order to maintain progress, it would be important to ensure the sustainability of Government investments. In light of the foregoing, PEPAM called for deeper private sector engagement in this process.

This led, in 2012, to the integration of all O&M functions into more complex, larger clusters of rural water systems through the introduction of public-private partnerships (PPPs) in the form of lease contracts. Beginning with three pilots, and through assistance from the World Bank's Water and Sanitation Program (WSP), the new contracts expanded

the role of private operators from simply providing O&M services to also taking on the commercial risks of running water systems. In addition, the new system strengthened the public sector's role through the creation of a national-level asset-holding agency to replace ASUFORs as the contracting authority.

As a result, by 2013, the country's inventory of rural water facilities included 1,505 motorized boreholes, 2,093 hand pumps, and approximately 8,000 modern wells that provided access to drinking water for 6.3 million out of a rural population of 7.5 million.

II. Objectives

This note describes the potentially far-reaching reforms in rural water sector management carried out by the Government of Senegal, and provides an overview of the process that led to the establishment of a new institutional framework for the sector. An important part of the process was the earlier urban water sector reform that created a model for the rural water sector reform. The urban water sector reform split the functions and financial obligations between two entities: SONES, as asset-owner responsible for financing the development, rehabilitation and renewal of assets; and a contracted private operator (SDE) responsible for infrastructure, O&M and management of water supply services. This design allowed for optimal capital allocation and improved financial viability of the urban water sector.

Although the rural reform has used this model to some extent, challenges still persist. More specifically, the existing rural water institutional framework is inadequate to sustainably finance and support rural PPPs at the scale necessary to achieve the program's targets.

Women collecting water in rural Senegal. (Photo: PSEAU)

III. Interventions and results

Senegal has a long history of private sector participation in its water and sanitation sector. Figure 1 highlights some of the legal and programmatic aspects. The experience with urban water PPPs, and the emphasis on private sector participation in rural water as far back as the REGEFOR project, paved the way for private actors to enter Senegal's water and sanitation markets.

A. Zoning of the rural water supply market

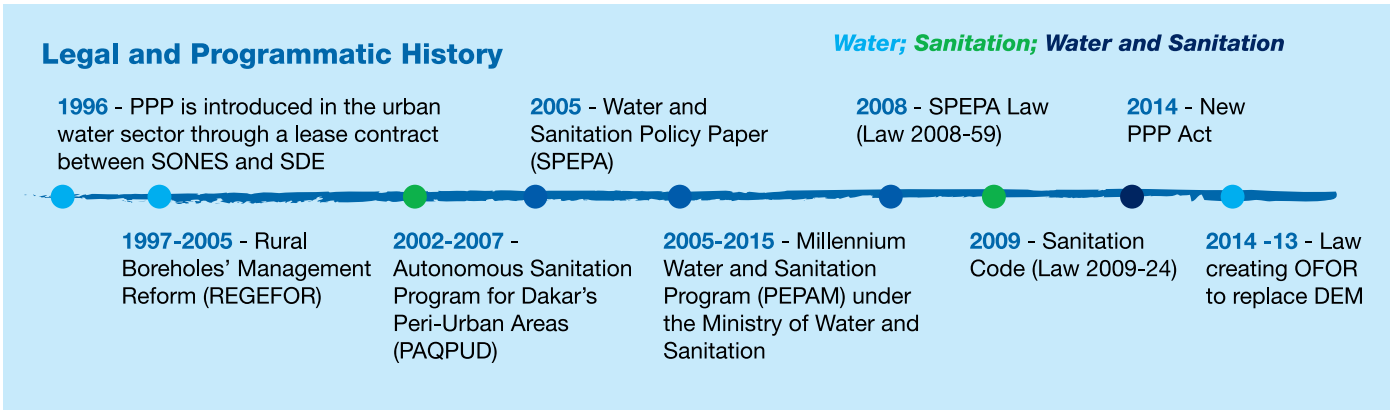
In 2009, prior to the current set of interventions, the WSP supported the Government in conceptualizing and developing a foundational strategy which comprised of dividing the country into three zones or intervention areas, in order to create sufficiently large water markets within each of the zones. Zoning was introduced to attract larger, more capable local private operators, and at the same time establish competition benchmarks. Clusters were organized around groups of 100 to 150 water systems, similar to groupings presently supervised by regional DEM Brigades. Initially, the Government transferred only the maintenance of rural boreholes and networks to the private sector. In 2012, the private sector interventions were expanded to include water production.

B. Development of the strategy and financing framework for a new rural water asset-holding agency (OFOR)

A new public corporation, the Office of Rural Borehole Management (OFOR), was established in 2014 to own, manage, rehabilitate and delegate rural water supply assets across the country on behalf of the Government. The management and rehabilitation of rural water infrastructure were separated from the functions of DEMs.

While the Government was clear about its decision to involve the private sector in the O&M of rural water infrastructure through PPPs, several options were considered in the designation of a public contracting authority. These included: (i) transfer of small towns to the perimeter of the existing urban asset holding company, SONES; (ii)creation of a rural asset holding company separate from urban holding company; and (iii) involvement of municipalities in asset management through the Decentralization Act and the creation of regional companies. Unlike many of its neighbors that opted for decentralization and the transfer of rural asset management to local communes, Senegal chose to replicate its successful urban water sector experience in

FIGURE 1 : SENEGAL'S LEGACY OF PRIVATE SECTOR ENGAGEMENT IN THE WATER SECTOR



the rural sector. Senegal's political decentralization[1] has not been as extensive as in other Sub-Saharan countries, which offered the opportunity to develop and cluster systems across political boundaries in order to take advantage of: (i) scale in the operating and revenue base of schemes; (ii) manageable monitoring and administration of fewer, larger groups of schemes; and (iii) the ability to engage a higher caliber of private operators who could provide efficient and reliable service. Box 1 gives an example of a different approach used in Niger.

The decision to establish OFOR was also driven by a desire to draw lessons from the successful experience in urban water, in the context of rural poverty. In order to safeguard the sub-sector's financial stability without overburdening rural households with rapid increases in tariffs, it was necessary to establish an institution with the ability to manage costs using Government grants. OFOR was created as a replica of the urban water asset-holding company (SONES) for the rural areas, with similarities and differences in the investment function:

- ***Similarities:*** They are both asset-holding agencies and contracting authorities on behalf the State. They follow a Government-approved financial model to forecast the development of their business and perimeter expansion. The goal of the financial model and business plans is to maintain an optimal financial balance in the short to medium term, and achieve self-sufficiency in the long term. Private operators, in both cases, are hired to manage O&M tasks and the renewal of small infrastructure equipment.
- ***Differences:*** SONES works in an urban perimeter with one big private operator (SDE) for 66 centers (6 million people), while OFOR will contract several operators to manage 1,500 schemes split into different rural areas/perimeters (7.5 million people). SONES is responsible for the implementation of its investment program, whereas for OFOR, this is the responsibility of the Directorate of Water (DH) in the Ministry.

[1] In Senegal, the decentralization process was progressive. It began in 1972 with the establishment of rural communes that had limited responsibilities. Then in 1996, the second decentralization Act was introduced with the creation of regional entities as local governments, in addition to urban and rural communes. Parliament approved the new Law on Decentralization No. 2013-10 of December 28, 2013 pertaining to the General Code of Local Government, commonly known in Senegal as Act 3 on decentralization. It is articulated around three main elements: i) all rural communities and county boroughs are transformed into communes, ii) the department becomes a local government and at the same time, remains an administrative division of the central government, iii) the region loses its status of local government and economic development centers (regional clusters) are created. Water and sanitation assets remain the responsibility of the Government.

BOX 1. DECENTRALIZATION AND RURAL WATER: THE CASE OF NIGER

In the rural areas of Niger, the reference document is the Public Service Guide for Rural Water Services (SPE), which defines the organization and management models of drinking water facilities to rural populations. The rural water infrastructure includes puncture water points (boreholes and wells with mini-networks), and more or less complex systems. The quality of service and coverage rate are generally low, and water tariffs are two to eight times higher compared to the urban water sector. The SPE Guide assigns roles and responsibilities to all actors: municipalities, technical services, delegates, user associations, and the advisory support structure. In 2013, the scope of rural water infrastructure was about 1,064 rural water schemes. Nearly 75 percent of these systems are under delegated management.

Management of rural water supply assets is the responsibility of municipalities. However, there is a lack of technical and managerial skills at the municipal level. A pilot project is currently underway to support municipal services in charge of rural water supply, by building capacity based on SAP (Business Support Services). SAP enables the standardization of management (production, distribution and finance) and a better quality of reporting (internal to the municipality or to the Regional Service of the Ministry of Water), with technical and accounting professionals using simple ICT applications to pool information and efforts. For example, the mWater™ platform, currently being piloted, transmits production and management systems data via the mobile phone network. This platform currently exists in Benin, Senegal and recently, Niger deployed a pilot phase to test the technology.

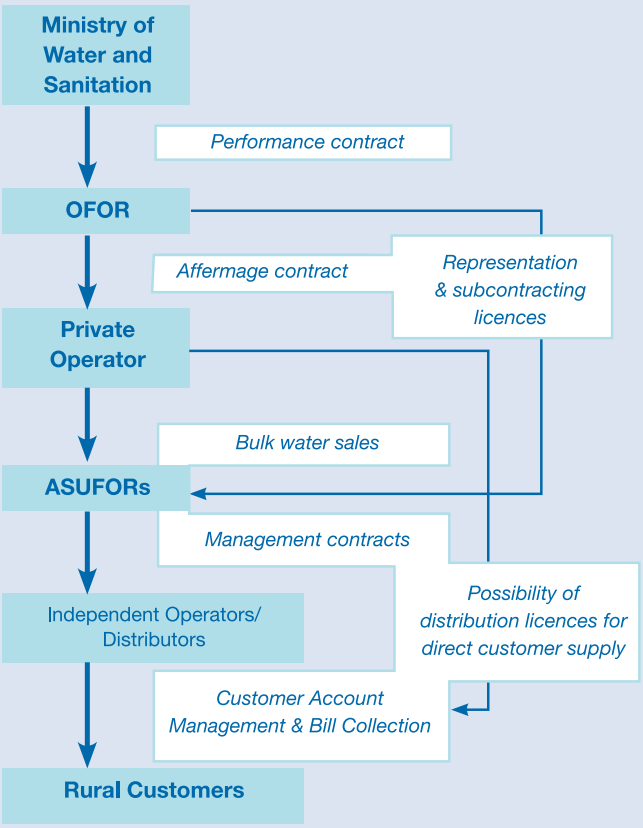
Law No. 2014-13, which establishes OFOR and paves the way for private sector involvement in the management of rural water schemes, was passed on 28 February 2014. With the creation of OFOR, the main functions of rural water management were distributed as follows: The Ministry of Water and Sanitation (MHA) will be responsible for sector policy, water resources allocation, development investment through the Directorate of Water (DH) and regulation issues. It will sign a performance contract with OFOR, whose mission covers asset management, infrastructure renewal and extension, and control and monitoring of the quality of operations. Private operators through delegated public service contracts (leases) will be in charge of operation and maintenance, and bill collection. The role of user associations (ASUFORs) will shift from operation to consumer representation.

As part of the technical assistance provided by the WSP for the establishment of OFOR, a comprehensive assessment, business planning and institutional and organizational design were conducted. This included an inventory of the asset condition; quantification of asset requirements for repair, rehabilitation, and expansion; development of investment and financial projections; and an assessment of existing staffing and capacity in the rural water sector, including those of DEM, OFOR, and private operators. Presently, DEM has 344 staff, whereas OFOR will only need 67. With the exception of a few senior managers, OFOR will be primarily staffed from redeployed DEM staff. Other DEM staff will either return to the public service agency to which they belong, be redeployed to other functions not carried out by OFOR, used by incoming private operators, or offered financial assistance for voluntary separation. In addition, a capacity building plan was designed to reskill the existing DEM staff in view of their new role within OFOR.

OFOR is in its infancy. The new agency is designed to work at the national level, with the possibility of regional offices in future (Figure 2). However, lessons from electricity sector reforms in Senegal suggest that establishing a new agency to oversee ongoing reforms is undesirable, as it could result in the ballooning of bureaucracy and the wage bill (Box 2).

Therefore, the current strategy consists of OFOR leveraging technology, such as the use of electronic platforms to oversee the cluster of schemes and engaging consultant firms to audit the performance of lease contracts, rather than hiring more staff.

FIGURE 2: AN IMPROVED INSTITUTIONAL FRAMEWORK FOR RURAL WATER SUPPLY MANAGEMENT



The GoS plans to sign *affermage* contracts with private operators. In this arrangement, the operators will generate revenue from supplying water, in partnership with ASUFORs. In turn, ASUFORs will have a new customer advocacy role and will contract with local small operators for water distribution.

To develop a business and financing model for OFOR, an inventory of existing assets was conducted and the costs of O&M and rehabilitation were quantified. The financing model involves the collection of lease fees from private operators, supplemented by a declining Government grant to ensure the financial equilibrium of the sector within five years.

BOX 2. CHALLENGES IN THE IMPLEMENTATION OF THE SENEGALESE RURAL ELECTRICITY AGENCY (ASER)

Recognizing the electricity access challenges and limited financing, the Government of Senegal (GoS) pursued reforms to promote private sector participation. The foundation of these reforms is the 1998 Electricity Law (98-29), which defined the sector's legal, regulatory, and institutional framework. The law promotes private sector involvement in electricity generation and supply through delivery of concessions and licenses under the oversight of an independent electricity sector regulator, later established as the Electricity Sector Regulatory Commission (CRSE). The law also calls for scaling up rural electrification by transferring responsibility to service rural areas from SENELEC - the national power utility that used to have a monopoly in electricity generation, transmission, and supply - to a dedicated rural electrification agency, set up in 1999 and known as the Senegal Rural Electrification Agency (ASER).

The implementation of the Government-funded emergency rural electrification program distracted ASER from its concession approach, and contributed to the deterioration of its financial health and institutional efficiency. From 2002 to 2009, ASER had been receiving Government funding through agreements to electrify about 560 villages, under the emergency rural electrification program. Mismanagement occurred in the use of Government funds for the emergency rural electrification program (Bank financing was not affected).

A number of villages were electrified without the appropriate Government budget and without due regard for national procurement guidelines, leading to ASER's annual operating expenses surpassing Government funding. This led to ASER's debts amounting to CFAF 1.3 billion (about USD 2.6 million). On the organizational side, since the Agency began its operations, its staff more than doubled - from 30 to 82 staff members – with recruitment not related to the achievement of its mission. ASER's management changed three times. Beyond the negative financial, organizational, and reputational impact, implementing the emergency rural electrification program shifted ASER's focus from concession activities.

The recent management changes at ASER and MEM have brought about positive developments in project implementation. Following the March 2012 elections, new management teams were appointed at ASER and MEM. The new Government reiterated that rural electrification is one of the top priorities of the energy sector. MEM has, since, demonstrated strong leadership. It set up timelines for stakeholders to reach agreements, thus speeding up implementation. For instance, under MEM's oversight, CRSE and ONE, the first concessionaire, agreed on the service regulation terms, initiated in 2011. MEM also approved and issued the ERIL procedures and guidelines, prepared by ASER and CRSE. MEM requested the review of the number of years that private operators should guarantee their investments and the request was addressed in 3 weeks. It has been proactive in addressing requests from ASER to accelerate implementation, and is closely monitoring progress by holding regular meetings with concerned stakeholders, which facilitates collaboration and problem solving. ASER's new management is making efforts to improve the agency's financial health and efficiency. A financial recovery and internal re-organization plan, developed by an independent consulting firm, is being finalized.

The funding of operating and capital costs are based on the following principles: (i) water tariffs will cover the management costs of private operators: O&M costs, and the replacement cost of equipment with a life cycle of less than 10 years; (ii) the renewal of infrastructure with a lifecycle of more than 10 years will be covered in part by water tariffs and in part by State loans and grants; and (iii) the expansion and development of infrastructure will be covered by Government loans and grants.

C. Testing the delegation of schemes to the private sector and developing a PPP strategy based on lessons learned

Government authorities wanted to pilot the new public service delegation model in the newly defined zones. They decided to start with different configurations of clustering schemes, such as a large network covering multiple villages as well as independent network systems clustered through a contract. As part of the testing, they considered both ground and surface water systems.

The Government prioritized the early transactions that it planned to take to the market based on both the commercial opportunity and the technical complexity of the systems that would need more professional management. It looked at complex systems that had water treatment facilities or were large multi-village networks that would serve a minimum of 100,000 inhabitants.

On the basis of these guidelines, the Government, with the WSP's assistance, is in the process of conducting the tenders for rural water service delegation in three areas. The three operations underway are: Notto Diosmone Palmarin and Gorom Lampsar (NDP-GL), the Central zone, and the combined areas of River Region (UPTs) and Faboli. The operations include two small pilots of multi-village rural water infrastructure, with customer bases of 350,000 and 82,000, respectively, for which the Government is testing PPP arrangements. The Central zone operation, which covers a population of 3 million, includes 600 boreholes in 5 regions (Table 1).

For the NDP-GL perimeter, an operator has been recruited and the contract signed on December 4, 2014. Private operations will start in June 2015. The central zone tender is at the stage of financial request for proposal (RFP). The schedule foresees the institution of private operators by July 2015. For the UPT area and Faboli, the private operator is expected to be on board by January 2016. Based on this experience, the Government will define its national PPP strategy for the rural water sector with a roadmap for its implementation.

The transaction design for these operations is based on lessons from the urban water sector: the remuneration formula is similar to the one in the urban lease contract, including adding targets for non-revenue water (NRW) and bill collection, with rewards/penalties depending on achievement of targets. In addition to O&M and management, private operators are also responsible for investing in the renewal of assets with lifecycles of up to 10 years, the cost of which is to be included in bid proposals. For assets with greater than a 10-year lifecycle, renewal is the responsibility of OFOR. Network extension is also the obligation of OFOR, but as reflected in its business strategy and financial model, OFOR will be supported by the Government to reach financial equilibrium for a period of five years.

TABLE 1. SUMMARY DESCRIPTION OF CLUSTERS OF SCHEMES FOR PPP TESTING

Particulars	NDP-GL	Central Zone	River Region & Faboli
Size & Scheme	**NDP:** 1 large system: 585 standpipes & 335 private connections GL:13 systems: 218 standpipes & 443 private connections	600 borehole schemes with 10,160 standpipes & 70,468 private connections	13 water treatment plants with 250 standpipes & 2,548 private connections + 1 borehole scheme w/ multi-village system
Capacity	**NDP:** 18,000 m^3/day **GL:** 5,000 m^3/day	75,000 m^3/ day	6,000 m^3/ day
Customer Base	**NDP:** Supplies 175 villages with a total population of 260,000 **GL:** Supplies 56 villages with a total population of 90,000	Supplies a population of 3 million	Supplies a population of 82,000

Emerging lessons from these transactions are highlighted below:

i. Public policy objectives considered in the transaction design

To increase the chances of sustainability, the transactions aimed at attracting a new class of private sector operators that have the resources and capability to operate complex rural water supply production and distribution networks. Such operations would introduce stronger technical and management capacity than was available under the old delegation model.

The transactions differed by water source (surface or groundwater), the scope of the delegation (production/distribution), and the production capacity of the system and size of the network. All of these factors had an impact on the economy of the management contracts.

As a matter of public policy, it was important that the financial viability of operations came with minimum tariff increases. Thus, the transactions were designed to take advantage economies of scale by featuring a clustering of schemes over a sufficiently large customer base. With these objectives in mind, the three transactions featured the following key design structures (Table 2):

In this kind of contractual arrangement (lease contract), the risks are shared between the public and private sectors. The public sector deals with risks relating to infrastructure construction and facilitating an enabling environment, while the private sector manages commercial and operational risks (Table 3). Some key performance indicators (KPIs) within the lease contract, such as NRW or the bill recovery ratio, have financial impacts on the operator's income through bonuses/penalties, depending on whether or not KPI targets are met.

TABLE 3. RISK ALLOCATION

Particulars	Allocation
Financing and Construction Risk	Primarily public sector: All investments financed and developed by the public sector with support from multilateral donors.
Market and Collection Risk	Primarily private sector: Operator revenues are linked to the volume of water billed and collected.
Operations and Maintenance Risk	Primarily private sector: Operator bids on the basis of an 'operator's tariffs' per m^3 of water sold which will fund its O&M costs Operators are responsible for the renewal/depreciation of assets that have a lifecycle of less than 10 years.
Stakeholder Risk: Managing ASUFOR	Both parties: Public sector endeavors to train and regulate ASUFOR distribution performance; private operators will bill ASUFORs up to the trunk meter.

TABLE 2. KEY DESIGN FEATURES OF THE PPP CONTRACTS

Particulars	NDP-GL	Central Zone	River Region & Faboli
Term	10 years	10 years	10 years
Type of contract	Lease	Lease	Lease
Water resources	Surface water (GL) Ground water (NDP)	Ground water	Surface water (UPTs) Ground water (Faboli)
Production capacity	23,000 m^3/ day	75,000 m^3/ day	6,000 m^3/ day
Grouping of schemes	1 perimeter	5 perimeters	1 perimeter
Type of delegation	Production & distribution	Production	Production & distribution
Obligations of operator	O & M Asset renewal for lifetime under 10 years	O & M Asset renewal for lifetime under 10 years	O & M Renewal asset for lifetime under 10 years
Fees paid by	ASUFORs if operator acts as bulk supplier In five (5) districts / cases, direct from customers with operator acting as distributor	ASUFORs if operator acts as bulk supplier	In four (4) districts / cases, direct from customers with operator acting as distributor

ii. Managing stakeholders: existing ASUFORs

For new infrastructure, the PPP arrangement allows the private operator to sell water directly to consumers. The private operator in this case manages all the segments of the business, as well as bills and collects payments directly from end consumers.

However, for pre-existing systems where there is an operational ASUFOR, the agreed interim arrangement is that the private company will sell water in bulk to the ASUFOR, which will in turn manage the distribution, billing and collection. Within this framework, a performance contract is concluded between the ASUFOR and the private operator under the regulation of OFOR, which ensures that key performance indicators are adhered to by both parties. The manager of the distribution systems under ASUFOR will be sub-contracted by the private operator; as he collects payments from customers, he transmits them to the private operator/bulk water supplier.

Whether as bulk supplier or concessionaire, the private operator pays a lease contract fee to OFOR, which allocates the fees to different funds for renewal, extension, audit, and ASUFOR support.

It is envisaged that in future, ASUFORs will transition to a new role within the PPP arrangement. They will be involved in the governance of water services in the locality, represent consumers in policy and operational decisions, and advise the operator on issues relating to the community.

iii. Lessons on increasing market interest

The three PPP transactions will be supported under this TA, along with two additional transactions in the Ministry's pipeline. The tender process comprises pre-qualification and two stages (technical and financial proposals). The pre-qualification criteria are experience with equipment or O&M, and the average annual revenue during the past three years.

The summary of the bidding status of the three transactions is as follows:

Transaction #1, NDP-GL: The transaction has been completed and award given to a Senegalese, Dutch and Rwandan consortium, GEAUR/AQUANET/AQUAVIRUNGA, which created the company SEOH. The consortium bid a price of CFAF 250/m^3, compared to the public sector estimate of CFAF 258/m^3, an important value-for-money outcome considering the limited capacity of rural residents to pay.

For this transaction, five firms collected the bid documents, three submitted a proposal, and two were pre-qualified (GEAUR and SDE) and submitted a proposal. The new private operator (SEOH) signed the lease contract with OFOR on December 4, 2014, and operations are scheduled to commence in June 2015.

Transaction #2, the Central zone: This transaction is at the stage of financial RFP after the technical evaluation clearance by the DCMP, the central procurement body within the Ministry of Economy and Finance. As shown in Figure 3, twenty firms collected the bid documents, sixteen submitted a proposal, and eight were pre-qualified and submitted their technical and financial proposals. The bidding process is scheduled to close in July 2015.

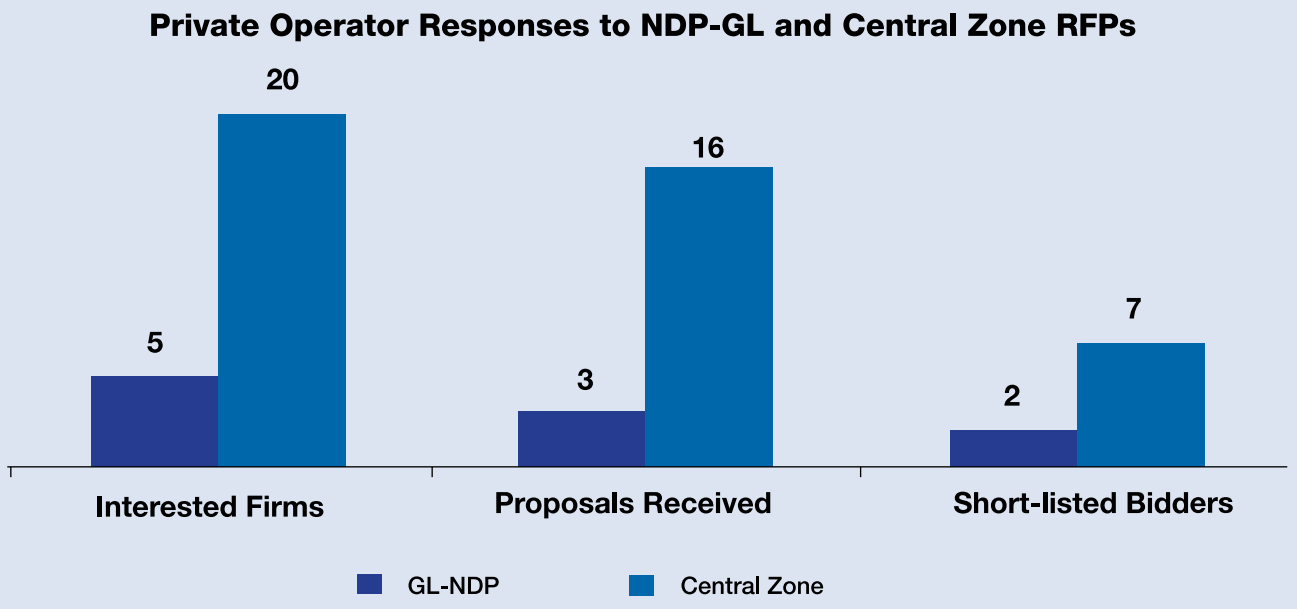
Transaction #3, the River region: The River region treatment plants and Faboli multi-village schemes are at the stage of pre-qualification; nine proposals have been received and the DCMP has given its approval to qualify the nine firms. The next stage is the technical proposal submission, which is scheduled for June 25, 2015.

Learning from the experience of the initial transaction put to the market, significantly more interest was expressed for the second transaction (Figure 3). The Government also wanted to increase the participation of capable Senegalese companies.

Three factors contributed to better market reception:

- **Better market sounding:** The Ministry of Water and Sanitation actively reached out and marketed the tender. It hosted an official launch and used a communication campaign to spread awareness about the opportunity.
- **More realistic requirements:** Tenders following the pilot were further clustered into smaller lots to allow more competition from local companies which could then qualify in terms of the minimum required capitalization.

FIGURE 3. COMPARISON OF RESPONSES FROM THE MARKET TO THE FIRST AND SECOND TRANSACTIONS



The eligibility requirements under the first transaction were found to be overly stringent (i.e. unrealistic financial requirements), and some bidders were disqualified for insignificant reasons such as documentation. For subsequent transactions, the selection criteria were adjusted (see Table 4) to give more weight to the experience of team members rather than to company revenues.

- **Government's credibility:** It is likely that the actions taken by Government in establishing OFOR and successfully tendering a first transaction sent out a positive signal to potential participants.

TABLE 4. COMPARISON OF ELIGIBILITY CRITERIA FOR NDP-GL AND THE CENTRAL ZONE RFP CRITERIA GL-NDP CENTRAL ZONE

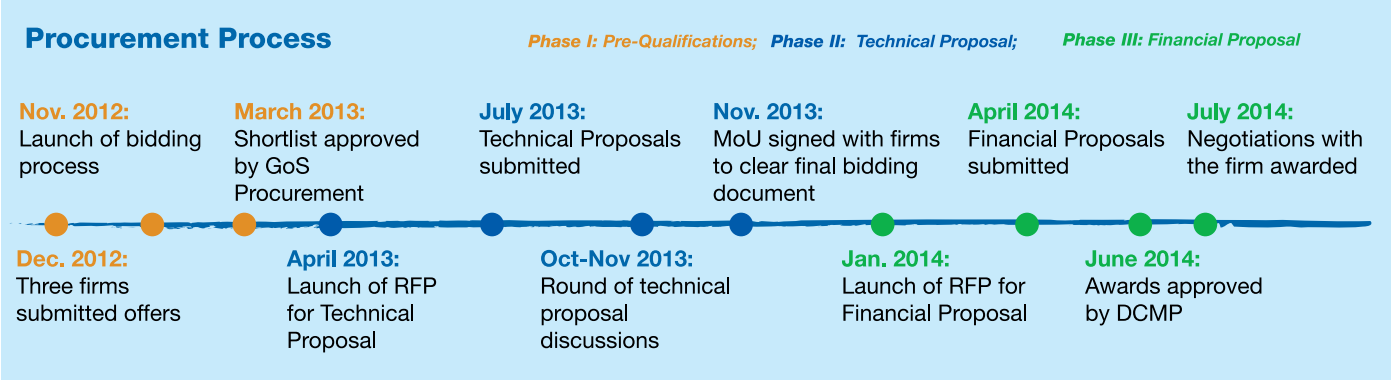
RFP Criteria	NDP-GL	Central Zone
Equipment or O&M Experience	2 References	1 Reference
Annual Revenue (previous 3 years)	At least CFAF 500 million	At least CFAF 100 million

iv. Need to streamline and improve the procurement process

The procurement process for NDP-GL was officially launched in November 2012 and took more than a year from the launch to the financial RFP in January 2014 (Figure 4). Such a lengthy process increases transaction costs and can constitute a barrier to interested parties.

Senegal's Procurement Code defines all procurement transactions for consultancy, purchase of goods, civil works and public services delivery, including PPP arrangements. DCMP supervises all tasks conducted by public contracting authorities at the national, local and parastatal entity levels. The Procurement Code determines the process and timeline. In the case of NDP-GL, delays were due largely to the MoWS procurement unit's lack of experience with PPP transactions, which were distinct from a standard contract of outsourcing a service. Although the urban water sector's PPP had already been completed, the rural PPP was much smaller, and so much time was spent reviewing and adjusting criteria to meet the sector's needs and reflect the realities of the private operators' market.

FIGURE 4. TIMELINE FOR NDP-GL



The introduction of the 2014 PPP Law is not expected to improve this situation, since it facilitates PPP arrangements in non-traditional sectors such as health, education, agriculture, and other sectors where finance is mobilized from the private sector. This law does not apply to PPPs being tendered by OFOR, which are funded by the Government and customers. However, as more transactions come to the market, DCMP's expertise in lease tenders is expected to improve.

D. Monitoring Rural Water Supply Systems

In support of the reform, WSP has been assisting the Government to establish an electronic platform for rural water sector governance (Box 3). This platform, known as **mWater,** was piloted in 2008 to monitor small-scale water supply networks and has since grown organically in a number of features, services and clients. The first pilot, in 2008, used basic mWater software to monitor about 70 water schemes; the second pilot, in 2013, used a new version, mWater+, to monitor 14 water schemes, including billing and accounting functions. Today, nearly 30,000 water points (85 percent of the total) are geo-referenced using the mWater system, which tracks the following functions on a monthly basis: water meter index, cash balance, SMS alerts on water network breakdown. mWater has also been adapted for use in Benin, Mali and Niger.

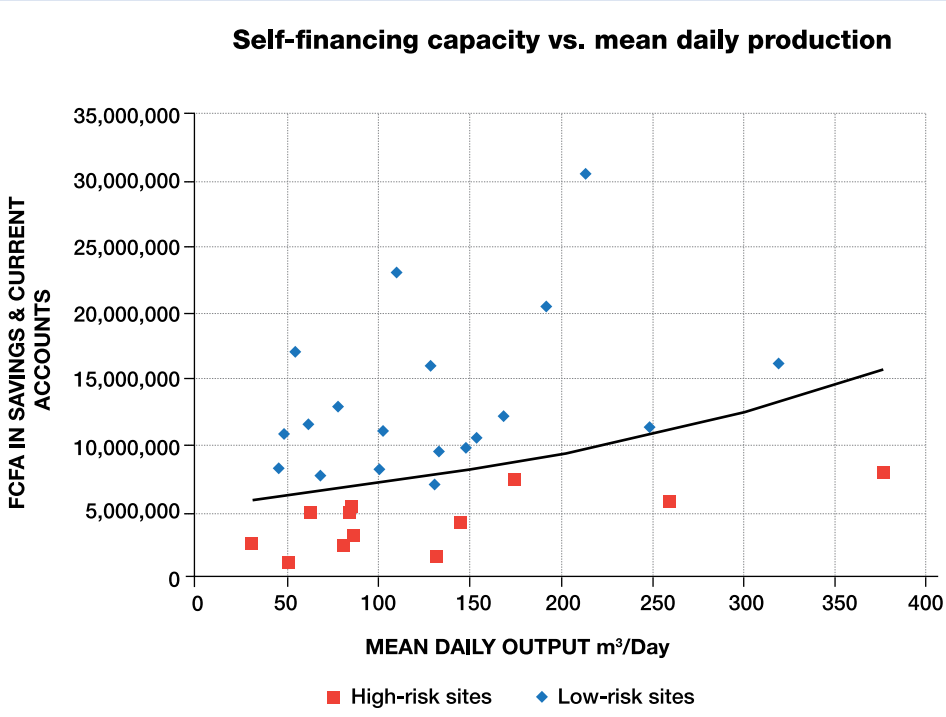
BOX 3. HOW MWATER SUPPORTS BETTER RURAL WATER GOVERNANCE

The introduction of mWater in Senegal allowed for better information to become available to municipalities and other Government entities for the first time. By the end of the pilot in 2009, the project had established that the available cash for 51 water operators that used the service was about CFAF 435 million (USD 910,000). In terms of technical data, the WS operators distributed on average 130 m^3 of water/day and about twenty outages of the water supply networks were properly identified and resolved.

The findings enabled benchmarking between the water operators using the system. Average reference values on daily output and current available cash were used to classify schemes in line with agreed performance standards (Figure 5).

At the same time, the information made it possible to target technical assistance and incentives to water service providers (water user associations or private operators) to improve their operational efficiency.

FIGURE 5. RESULTS FROM BENCHMARKING mWATER DATA



IV. Lessons learned

The far-reaching reforms in Senegal's rural water sector over the last decade have resulted in better than expected results in 2013, surpassing its target coverage of 82 percent. Senegal has undergone a number of policy experiments, from pre-2004, when the REGEFOR project replaced community management committees with user associations, to the current establishment of a rural asset holding company and the entry of larger private sector enterprises.

The recent reforms have put Senegal on a path of sustainability. Rural water supply assets are now in the care of private sector operators with a high level of technical and financial capacity, and the asset-holding company aims to achieve financial equilibrium (fully covering its rehabilitation and administration costs through revenues) by 2019.

These reforms have produced a number of lessons, including the identification of critical success factors and barriers to success.

4.1 Critical Success Factors

a. Market Opportunity

A key success factor is the existence of a large market of an unserved or poorly served population (7.5 million) with a willingness and capacity to pay. This includes around 2.3 million people who still do not have access to improved water sources in rural areas, as well as 5.2 million who are served by community-based user organizations that have low performance capacity. The preparatory studies conducted under the TA confirmed that there is growing demand in rural areas, as average consumption per capita is still low (less than 10 l/c/d at standpipe versus 20 l/c/d at household connection).The annual revenue from the rural water market is projected to grow to almost USD 23 million over the next 7 years.

b. Business Environment

The reform path required consistent political will over a period of ten years. The Government of Senegal was clear in its desire to involve the private sector to professionalize management of rural water services and improve efficiency of delivery. The Government did not hesitate to spearhead the reforms, starting with more modest participation from private sector (as sub-contractors to community organizations), and ending with the lease arrangements in place today.

At the beginning of the process, the private sector was reluctant to engage in business in the rural water sector due to risks such as ASUFORs' resistance to transitioning to their new role, the huge needs of rehabilitation of water schemes, and the lack of a central mechanism for tracking and executing funding commitments by the Government and donors.

In response to these concerns, the Government took proactive measures to ease the burden of market entry for private sector actors. The Government agreed to support network extensions and OFOR's renewal plan to upgrade the rural water schemes for five years. Further, the PEPAM Coordination Unit has become the central entity to track and report financial commitments, mobilization, and execution of funds from donors and the public sector. In addition, OFOR will oversee training of ASUFORs; encourage private operators to contract with ASUFORs to distribute water to customers; and regulate ASUFORs by revoking licenses, when necessary.

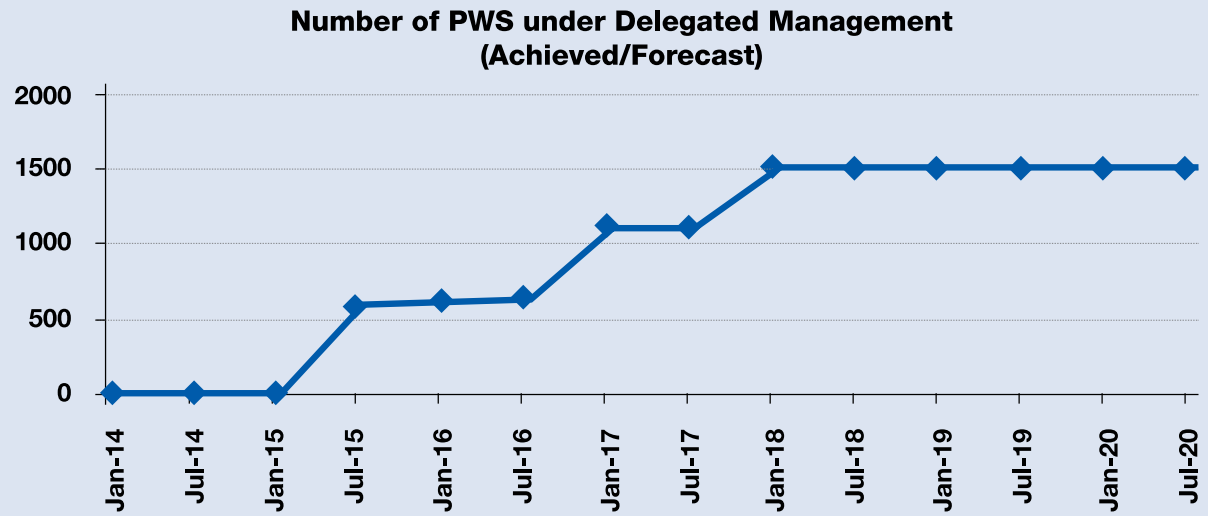
Under the PPP framework, private operators will be hired for O&M and some renewal tasks. The proactive measures by the Government seek to increase network expansion and reduce the cost of renewing aging assets. These measures are aimed at facilitating private sector entrance in the rural water market, which was relatively unknown before the reforms.

Table 5 and Figure 6 show the timeline for the achieved/ forecasted implementation of piped water systems under delegated management.

TABLE 5. TIMETABLE FOR DELEGATION UNDER NEW FRAMEWORK

Delegated Management Area	Population	Number of piped water systems	%	Date of kick off operation by private operator
NDP – GL Perimeter	350,000	14	1%	June 2015
Central Zone	3,000,000	600	40%	October 2015
River Region Perimeter (13 UPTs + Faboli)	82,500	14	1%	January 2016
Northern Zone	1,625,000	503	33%	January 2017
Southern Zone	1,780,000	377	25%	January 2018

FIGURE 6. PROJECTED NUMBER OF PUBLIC WATER POINTS UNDER DELEGATED MANAGEMENT



In order to build a conducive business environment for private participation, the following measures were put in place:

- A leadership team at the Government level through a Steering Committee led by the Permanent Secretary of the MoWS and composed of ministerial representatives that took a multi-sectorial and collegial approach to important policy decisions throughout the reform and transaction process.
- A unified framework of interventions by donors through the Millennium Water and Sanitation Program (PEPAM), which rationalized financing and financing rules in the sector.
- An institutional, legislative and regulatory framework recently adapted and strengthened by the adoption of the 2014 Law on PPPs.

Another key factor in fostering a conducive business environment was the participatory and inclusive approach used to engage all stakeholders in different stages of the reform. DEM operational staff at national and regional levels, ASUFORs, potential private operators, local governments' representatives are the main partners; each partner has a concern about the manner in which the reform will impact its career or business. The decision makers at the ministerial level have to take all these interests into account and try to find a way to build consensus among stakeholders in the water sector.

The critical stages in the engagement process were:

- An OFOR study that included regular consultations with rural water stakeholders through regional and national-level workshops, with the aim of ensuring that partners understood the key challenges and stages of the reform.
- Consultation meetings organized by the Government to update the private sector on the progress of the reform and the ongoing selection process to hire private operators for management of rural water perimeters. These meetings targeted potential private operators such as small and middle-size entrepreneurs, managers of water schemes, suppliers of equipment and materials, providers of business development services, civil works contractors, and other interested actors.
- Government consultations with social partners to explain the impact of the reform on staffing and the social plan linked to the process in terms of job creation, compensation, and staff redistribution in the new rural water institutional framework. These consultations targeted actors working on rural water activities in each of the 14 regions, namely ASUFOR representatives and their umbrella associations, DEM operational staff, and the confederation of trade unions active in the water and sanitation sector.

c. Public Sector Capacity

The MoWS was fully engaged in the supervision of PPPs in urban areas, and therefore had an experienced team and institutional memory capable of addressing the challenges involved in the rural water reform effort. However, the Ministry recognized that given the number of schemes in rural areas and the absence of a State utility (unlike in the urban water sector), there was a need to strengthen the public sector's contract management authority to handle the delegation of rural water systems. The Government was decisive in establishing the rural asset-holding company, OFOR, with the appropriate organizational, business and financial strategies and plans. Based on the three pilot transactions, decision support tools for defining transaction models with private operators are being developed for use by OFOR. These include a business plan template developed for each delegated perimeter; and a business plan developed for OFOR that includes tools for determining the impact of the regional or local delegation of public service perimeters.

d. Viable Business Models

The PPP design focused on a *viable business model* for operation, and on the transfer to OFOR of a portion of the water tariff to finance its business activities.

The clustering of water schemes was used to create a viable revenue base that would cover operating costs and lease fees. Through this exercise, a perimeter at the regional level comprising 100 to 150 boreholes was determined to be adequate to engage a class of higher quality of local private operators.

The policy of engaging the private sector was aimed at professionalizing rural water management. Although rural water supply was not as great a commercial opportunity as was the case in the urban water sector where PPPs were first introduced, the market sounding process revealed that capable local and regional private sector actors were interested, provided that the customer base could be scaled up enough to guarantee a return on investment. The transaction structures developed under the TA sought to balance the risks between the public and the private sector; take advantage of economies of scale through clustering; and ensure that the scope of work, qualifications and performance requirements could be met by capable local private companies. An encouraging result from the first tender was that the bidders' tariffs (CFAF 250/m^3) were lower than the Government's estimate (CFAF 268/m^3), representing savings for the Government and therefore, value for money for the public sector.

The identification of risks and implementation of risk mitigation were addressed in the transaction designs. In addition, the Government introduced proactive mechanisms to promote the participation of the private sector: a Renewal Fund and a Development Fund managed by OFOR, and support from financial institutions such as BNDE, FONSIS, FONGIP and APIX.

Another mechanism that enhanced the viability of the business model was the introduction of the reliable monitoring system mWater, which made it possible to collect data from remote rural areas using mobile phones, and provided a web platform with real time data that can be used to improve the management of piped systems.

4.2. Lessons on Continuing Challenges

a. Institutional Level

A key driver of the current reforms was the underperformance of community-based user groups (ASUFORs) in managing their rural water systems. Some ASUFORs were successful in maintaining their systems in an optimal condition, while the majority were unable to do so. The solution was to reposition ASUFORs back to their originally intended role of representing users in the service delivery process.

The transition was to be gradual; ASUFORs would continue to have responsibility over the distribution network, whereas the more complicated water production and bulk transportation functions would be the responsibility of the private operators. ASUFORs would be allowed to transfer their responsibility to the private operator, or in case of poor performance, the Government could initiate the transfer. WSP would continue to support OFOR in its role of monitoring and supervising ASUFORs in their new role of representing users and collaborating with private operators. The TA also supported OFOR in conducting capacity-building activities to guide ASUFORs in their new role.

b. Regulation

There is no separate regulatory agency in Senegal that oversees the water sector. Regulation is carried out by the Ministry of Water and Sanitation (MoWS), through the Government's Inter-Ministerial Steering Committee.

For SONES and now OFOR, financial models are the primary tools for determining tariffs. The main risk this poses, based on experience in the urban sector, however, is the lack of a politically arms-length process in the definition of tariffs. In the urban sector, there are signs that since the Government has been reluctant to allow tariffs to rise over time as assets increase, the financial equilibrium of the asset holding company is being eroded. For the rural sector, since tariffs are set based on recently concluded or concluding tenders, this does not present an immediate challenge, but could do so in the future.

Another risk posed by the lack of an independent regulatory authority is that the resolution of conflicts, for example, concerning the verification of key performance indicators might be more challenging. OFOR, like SONES, will monitor the performance of the operators and report to Ministry for decisions to be taken through an Inter-Ministerial Steering Committee. In the absence of an independent regulator, however, there are other contractual-based mechanisms that have been used successfully in other countries, including independent mediators or arbitrators.

Senegal is soon going to undertake a political reform that includes decentralizing rural water supply responsibilities. Therefore, regulating the performance by local governments in service provision will be an indispensable function of regulation.

The question of whether a regulatory agency for the sector needs to be established will soon be addressed as part of a Government study of second-generation reforms in the urban sector. These findings will feed into regulatory decisions for the rural sector.

c. Implementation Period

Transparency and competition are two issues that the Government must take into account in the procurement of professional private operators. However, with the risk of having an overly long selection process, it is important to keep delays to a minimum so that all stakeholders continue to be motivated. The two-stage tender (technical bid and financial bid) preceded by pre-selection has been significantly contributed to delays. Consequently, the tender procedure is being revised, in collaboration with DCMP, to achieve a reasonable implementation period.

Clarifying the fiscal/ tax issue is also a challenge for rural water sector transactions. Lack of information on the tax treatment of the first transaction (NDP-GL) led to the private operator postponing service startup by six months, while waiting for approval of the tax regime by the Ministry of Economy and Finance.

d. Information System

Lack of reliable databases and their non-integration across different networks has often delayed technical and financial studies. OFOR will unify the network databases, using large-scale ICT for the collection and processing of operating data and for monitoring the performance of operators and distribution managers on behalf of ASUFORs.

V. Recommendations

Based on the lessons learned and in particular, the outstanding challenges discussed above, the following tasks are necessary to complete the reform process over the next period:

a. Strengthen OFOR's Response Capabilities

As the holder and manager of rural water assets, and contracting authority for transactions to delegate their management to private operators, OFOR is still a young organization that needs support for its growth. Priority areas of support for OFOR will be in the implementation and fulfillment of its contracting authority, including supervision of PPP transactions, asset management and development, the establishment of a monitoring system for delegated rural water schemes, quality control of operations, and setting up the system for supervising ASUFORs in their new role. These sovereign functions of OFOR should be documented and simplified for use by OFOR's units responsible for implementation. It is also important for OFOR to remain a small structure with technical competence and financial viability. It must maintain a lean staff complement in order to manage its costs and reach financial equilibrium within five years, as forecasted.

One of OFOR's critical tasks is to reorient ASUFORs to their new role as entities that look after the interests of rural water users. OFOR must supervise ASUFOR managers responsible for the distribution of water. Subsequently, OFOR must also monitor the execution of the performance contracts between ASUFORs and private operators in charge of bulk production. Therefore, OFOR will require support to strengthen and build the governance capacity of ASUFORs in relation to other stakeholders such as local communities, local government, producer groups, and social sector actors.

b. Adopt a Rural Water PPP Strategy

In 2014, the Ministry in charge of Rural Water launched a study to define a public-private partnership strategy for rural water. The study aimed to draw lessons from the various PPP pilot projects in the sector, make recommendations for replication of the best practices, and prepare a roadmap for future interventions to manage rural water networks, including water facilities in remote sites. Given the central role that OFOR will play in the rural water sector, the Ministry needs to complete the study and develop a rural water strategy, stimulate dialogue and reflection, and quickly decide on practical solutions to be implemented as part of next PPP initiatives to be launched in the North and South zones of the country.

c. Work on Regulation Issues

Regulation is becoming more relevant with the advent of new players in the management of rural water, the reclassification of ASUFORs' role, and the ongoing decentralization process. More broadly, performance regulation and tariff setting are becoming important across urban and rural water and sanitation services, as there are implications for setting public funding priorities. Therefore, it is appropriate to revisit the regulatory framework for better water governance in both rural and urban areas. Urban service delivery is also the subject of second-generation reforms, which reflect the changing urban environment since 1996, when the first reform was implemented in the urban water sector.

VI. Conclusion

Senegal's rural water supply sub-sector is changing the way it delivers services. The importance of this paradigm shift cannot be underestimated. The PPP transaction model for rural water in Senegal has not only been successful in rapidly increasing coverage in the country's rural areas, but also in putting Senegal on a trajectory for sustaining these achievements.

The establishment of OFOR has opened market opportunities for the private sector in rural water and has created confidence among market actors. Furthermore, the PPP option (leasing concession) allows the Government to control the water price, since the main investments are funded by the public sector; while giving more flexibility to operators in the renewal of strategic equipment. In addition to the three pilot transactions supported under this TA, the following are expected to be managed by OFOR with support from other development agencies:

- Transaction preparation for the Northern Zone (3 regions; 1.6 million people);
- Transaction preparation for the Southern and Eastern Zone (5 regions; 1.8 million people).

The three PPP projects supported by WSP will be completed by end 2015, and will represent about 50 percent of rural population service delivery. This percentage is expected to rise to74 and 100 percent, respectively, after the completion of the two remaining PPP transactions in the North and Southern zones by the end of 2016 and 2017.

The establishment of OFOR has provided an opportunity to address some of the sustainability and governance issues that were present at the beginning of the reform process, such as asset management, regulation of water tariffs, and the monitoring and evaluation of operators' performance.

The success of the reform has been driven by the determination and leadership of the Government of Senegal, supported by advisory work that drew on local as well as international expertise. The reform modality was experiential, in other words, it was gradual over a long period of time, and promoted a sequence of steps and pilots that built on each other. This approach has proven successful in introducing new approaches, and allowed stakeholders to become engaged in the process, thereby increasing their buy-in.

It now remains the primary responsibility of Government to continue to lead in implementing measures needed to finalize the national PPP strategy and the reform program to ensure that the achievements of the reform are sustained over time.

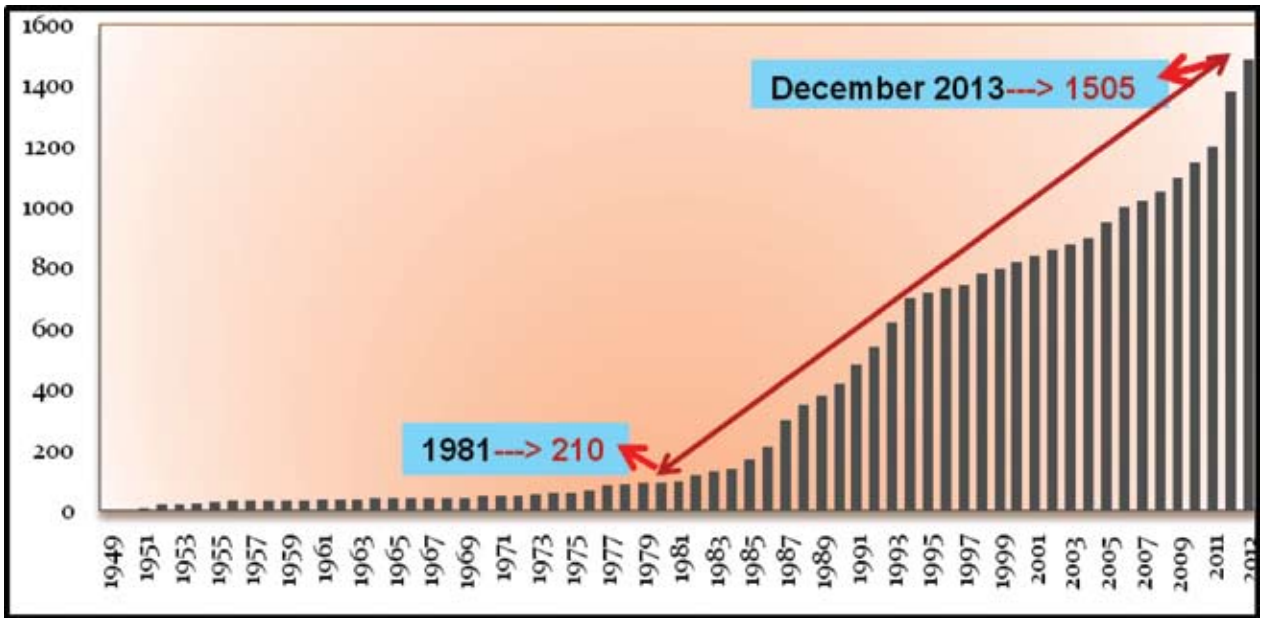
List of Annexes

Annex 1: Summary of TA Results

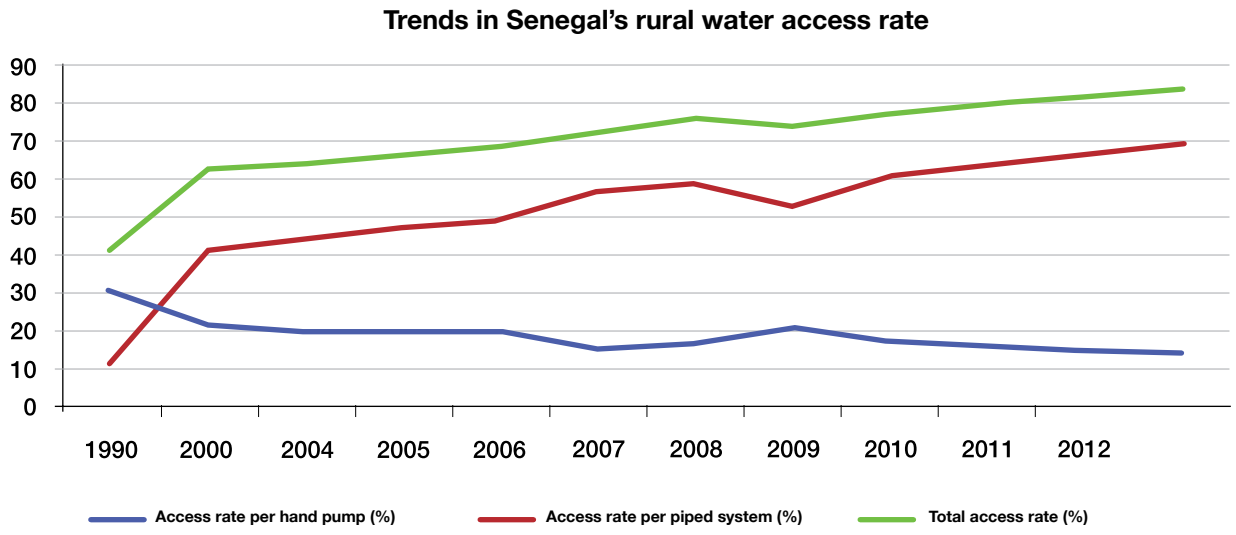
The main results of this continued rural water reform process are the establishment of the rural water asset-holding agency (OFOR) and the growing share of water schemes operated by private operators. It is envisaged that as of December 2015, 46% of people living in rural areas will be served by utilities managed by the private sector. According to the Government plan, this percentage could increase to 90% by end of 2017.

Indicators	Target 2015	Baseline 2012	Progress to Dec. 2014	% Achieved	Observations
1. # of people with access to improved rural water supply from the private sector					Private operator (SEOH) contracted on Dec 4, 2014
- NDP – GL	350,000	-	350,000	100 %	
- River region area / Faboli	82,500	-	-	-	Operator expected for Jan. 2016
- Central zone	3,000,000	-	-	-	Operator expected for Oct. 2015
2. Establish the rural asset holding company	1	0	1	100%	Law 2014-13 passed on February 28, 2014 establishing OFOR
3. Three (3) pilot transactions completed					NDP-GL transaction completed, two (2) transactions are in the bidding process (Central zone and River region / Faboli area)
Preparation & due diligence	3	1	3	100%	
Evaluation completed	3	0	1	33%	
Award and mobilization	3	0	1	33%	
Policy Footprint of Pilot					
# of departments covered	15	-	3*	20%	* Partially covered by NDP-GL water schemes
# of HHs covered	318,250	-	35,000	11%	
Estimated % of population covered that is poor	63.5%	-	62.9% *	-	* Only for NDP-GL water schemes
4. Establish an electronic platform for monitoring schemes	1	0	-	-	* The scaling up of the mWater monitoring system with OFOR is envisaged in the Central Zone
# of schemes with regular reports	614	-	14*	2%	* 1 pilot of 14 ASUFOR is operational in the Thiès region with mWater + since June 2013

Annex 2: Graph 1: Trends in borehole piped systems in Senegal's rural water sector

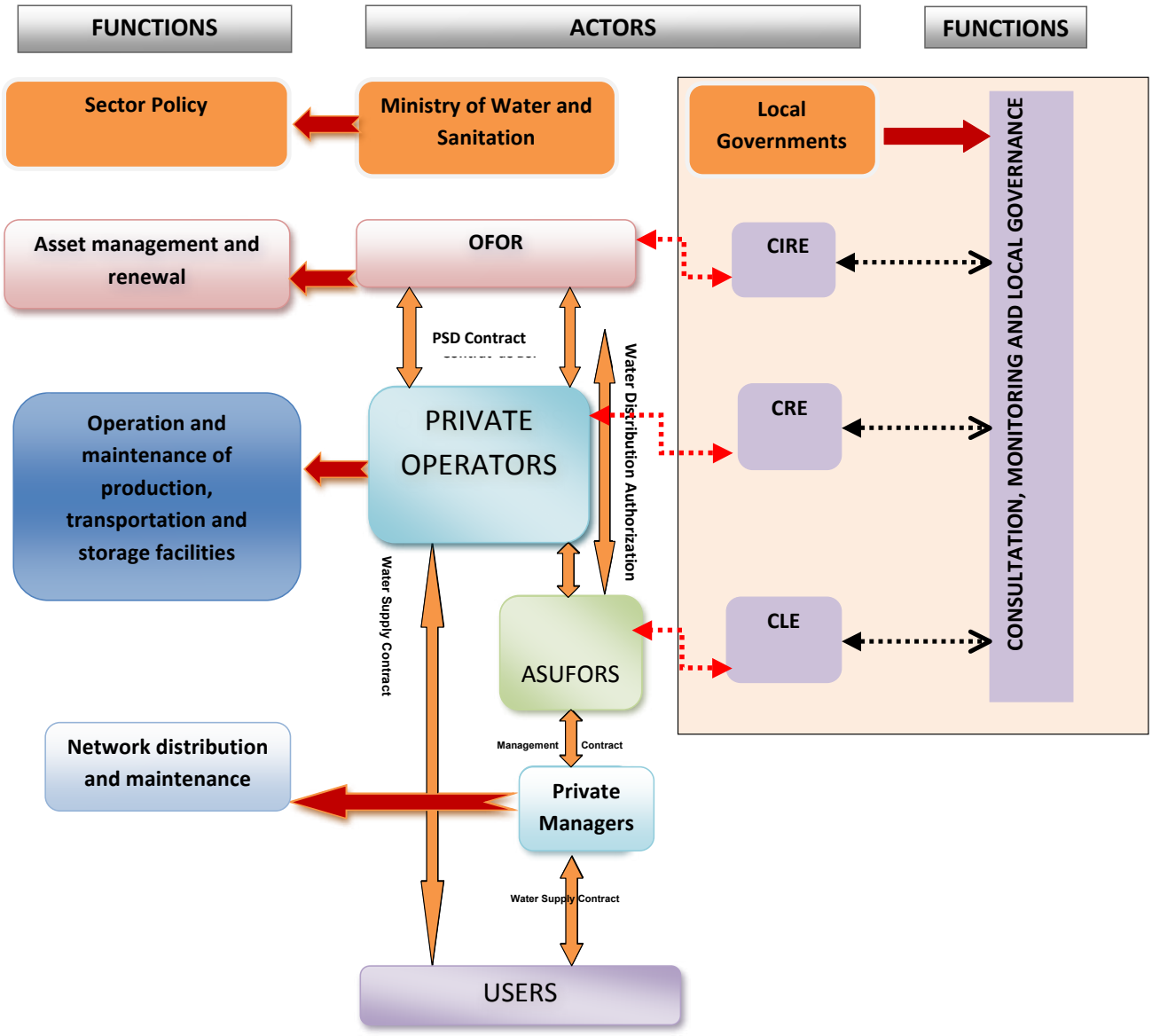


Annex 3: Graph 2: Trends in Senegal's rural water access rate



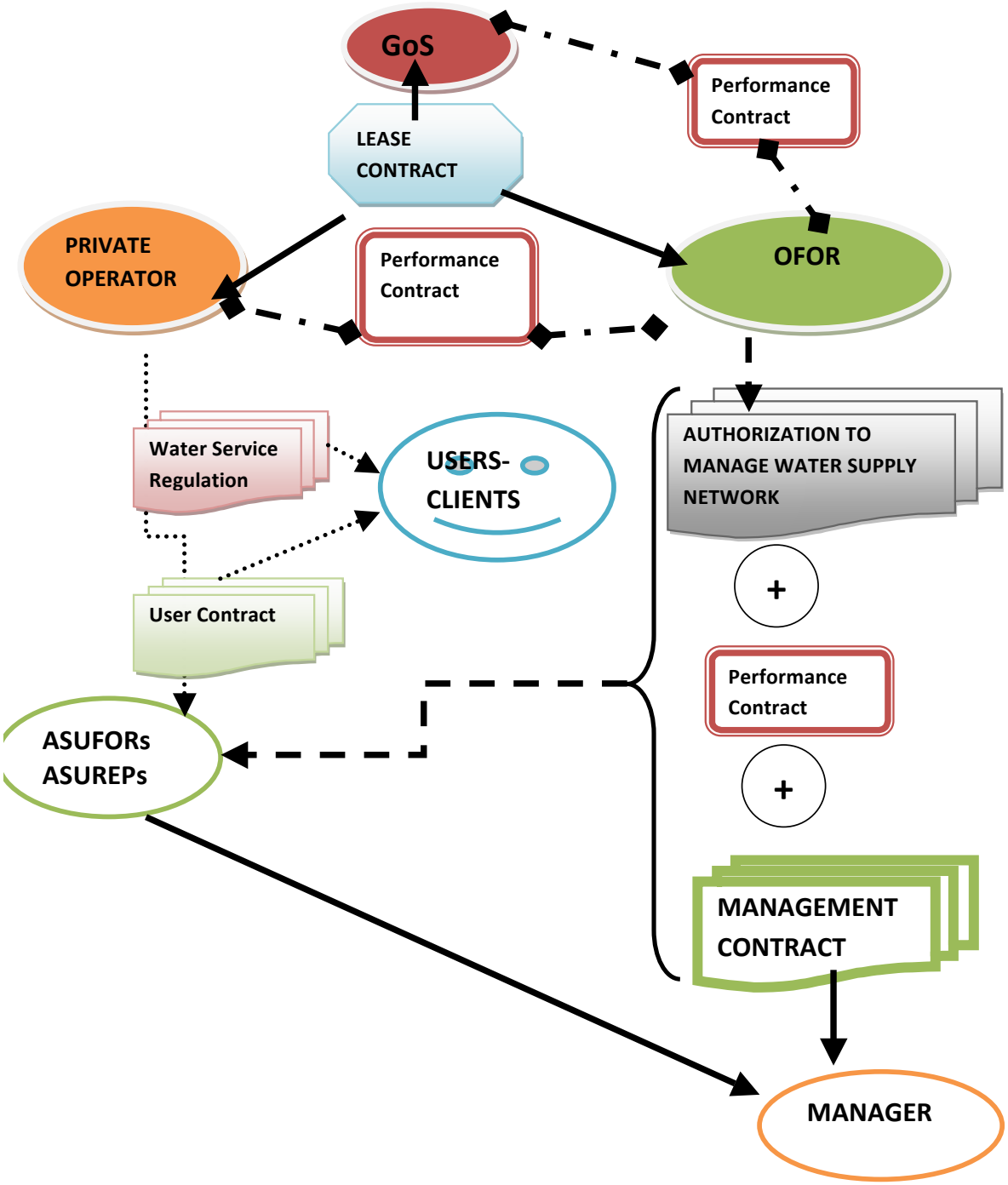
Annex 4: New Rural Water Institutional Framework

The new institutional framework proposed to manage Senegal's rural water sector brings together various actors whose roles and responsibilities are defined below:

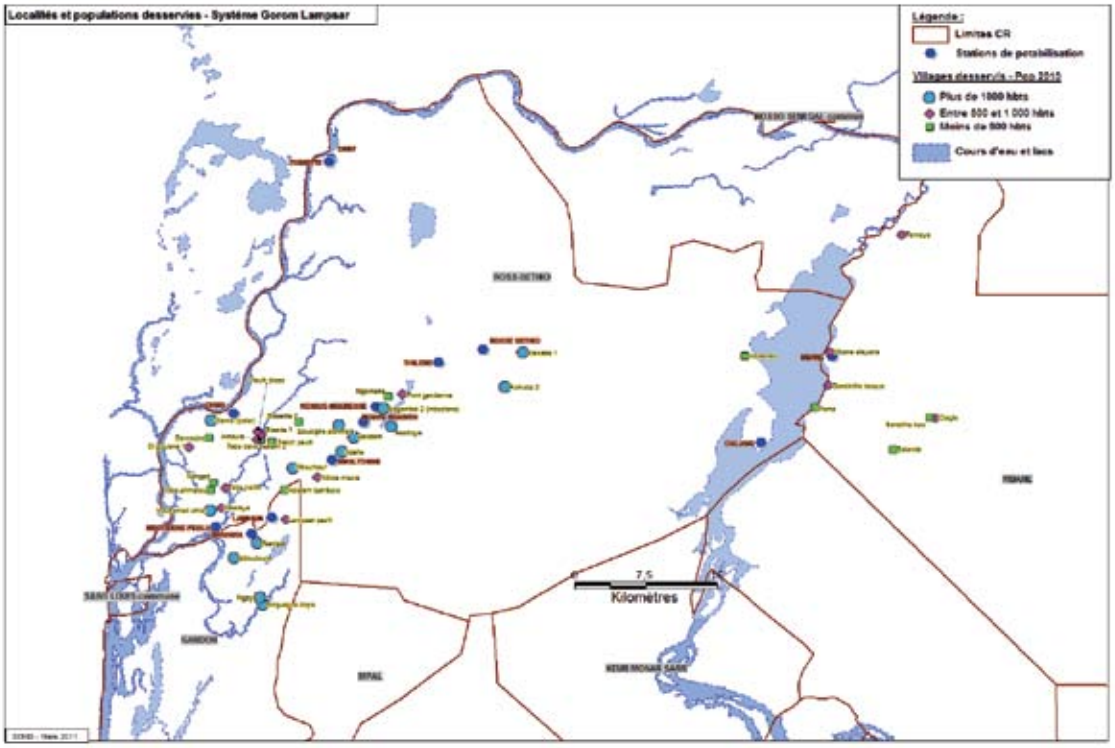


Annex 5: Contractual Framework for Rural Water Actors

Contractual Framework of Rural Water Actors



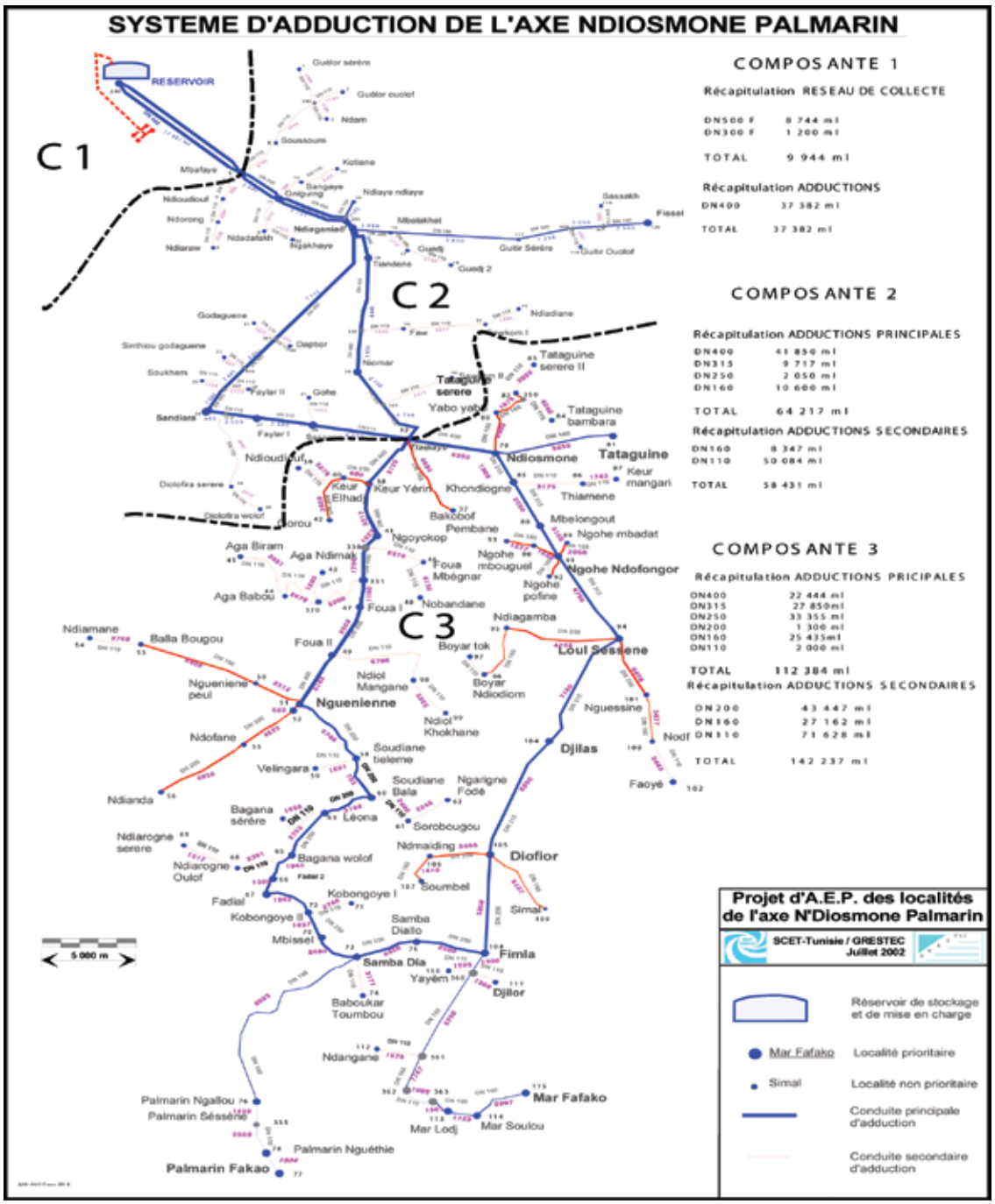
Annex 6: Map1: 13 Rural Water Piped Systems in Gorom Lampsar (GL) Area



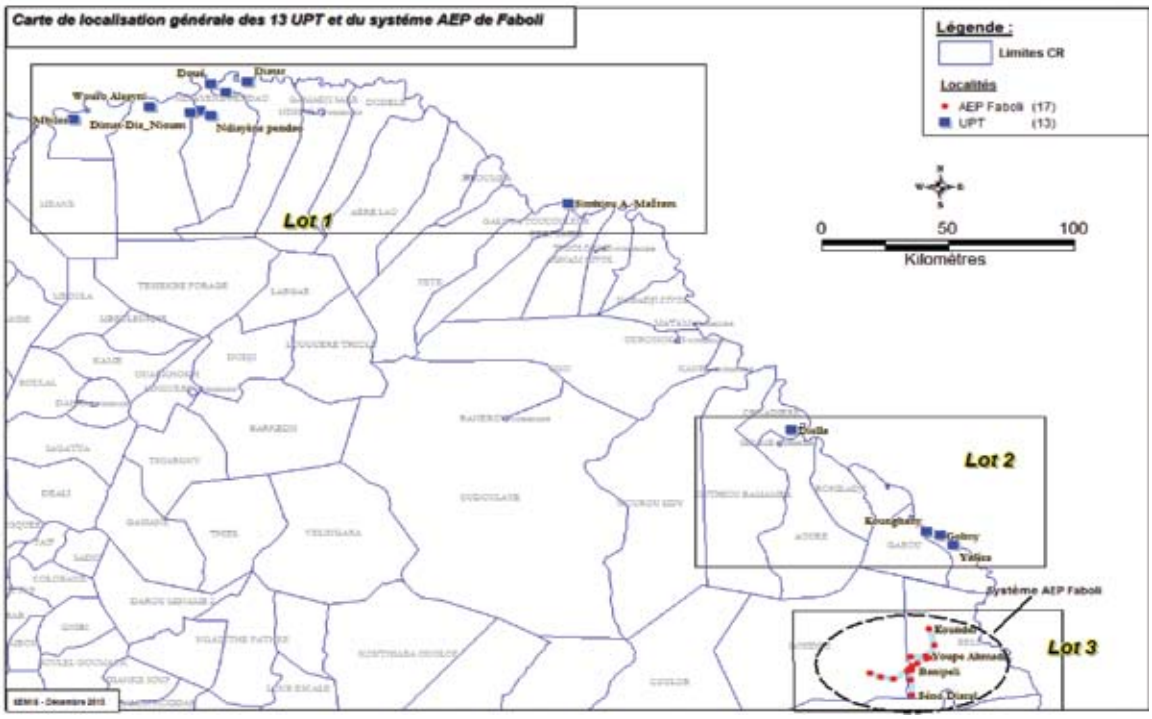
Production Capacity of RWS Piped Systems: NDP (18,000 m^3/day) and GL (5,000 m^3/day)

Name	Gorom- Lampsar (GL)	Notto-Diosmone- Palmarin (NDP)
Size of Scheme	13 systems: 218 standpipes & 443 private connections	1 large system: 585 standpipes & 335 private connections
Capacity	5,000 m^3/day	18,000 m^3/day
Customer Base	Supplies 56 villages with a total population of 90,000	Supplies 175 villages with a total population of 260,000
Initial Investment	USD15 million	USD35 million
High Poverty Departments Covered*	0 out of 2	3 out of 3
**Defined as more than national rural average of 61.7% poverty rate*		

Annex 7: Map 2: Supply from 4 Boreholes to the Multi-Village System of Notto Diosmone Palmarin (NDP)



Annex 8: Map 3: Location of piped systems in 13 UPTs and Faboli Area

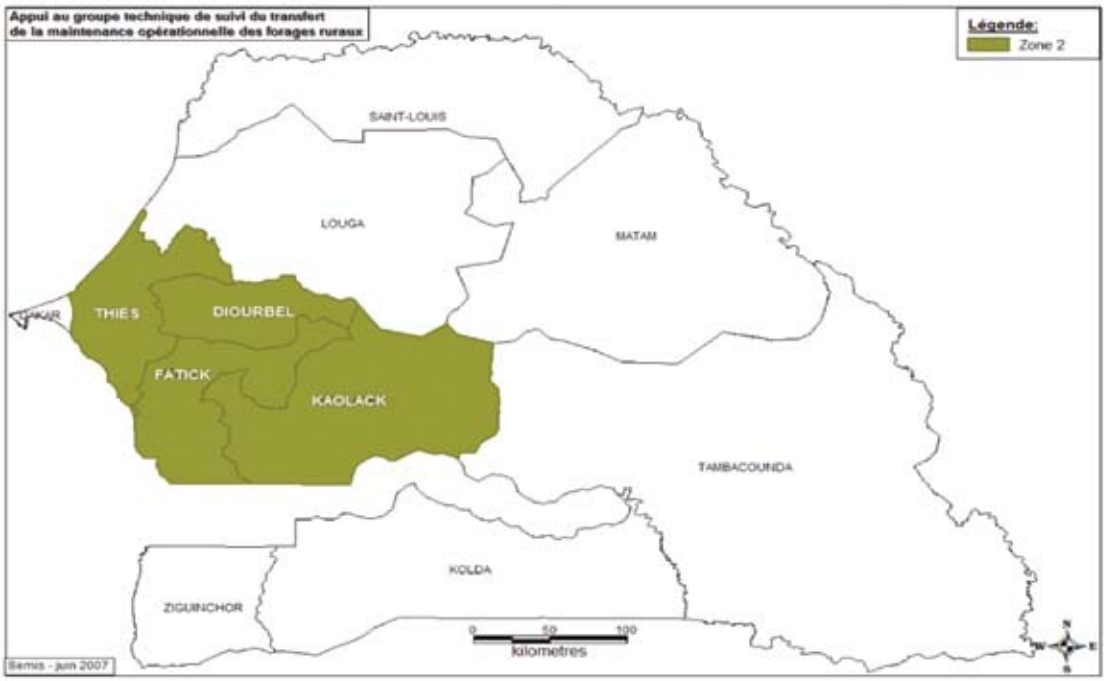


The production capacity in the perimeter area is 6,000 m^3/day for 82,500 people.

Name	Zone 1	Zone 2	Zone 3
Size of Scheme	9 treatment plants: 159 standpipes 1,508 private connections	4 treatment plants: 49 standpipes 587 private connections	2 boreholes + MVS: 42 standpipes 453 private connections
Capacity	3,600 m^3/day	1,200 m^3/day	1,200 m^3/day
Customer Base	Supplies 34 villages Total population: 56,000	Supplies 6 villages Total population: 16,000	Supplies 18 villages Total population: 10,500
Initial Investment	USD12 million	USD3 million	USD5 million
High Poverty Departments Covered*	0 out of 2	1 out of 2	1 out of 1

**Defined as more than national rural average of 61.7% poverty rate*

Annex 9: Map 4: Central Zone Perimeter (600 boreholes)

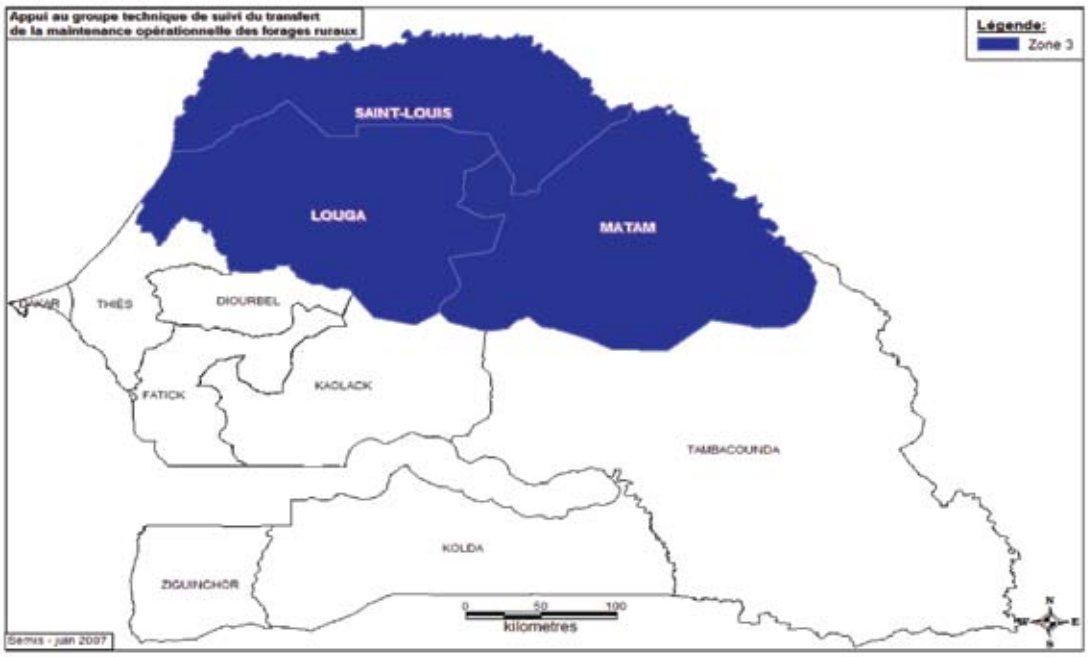


The global capacity of the 600 boreholes in the central zone is estimated at 75,000 m^3/day. These piped systems are managed by ASUFORs; some have hired local managers under one year renewable contract.

Size of Scheme	600 borehole schemes with 10,160 standpipes and 70,468 private connections
Capacity	75,000 m^3/day
Customer Base	Supplies population of 3 million
Initial Investment	USD 150 million
High Poverty Departments Covered*	6 out of 15

**Defined as more than national rural average of 61.7% poverty rate*

Annex 10: Map 5: Northern Zone Perimeter (503 boreholes)



Annex 11: Map 6: Southern Zone Perimeter (377 boreholes)

Annex 12: Summary Tab of Public Service Delegation Perimeters in Senegal's Rural Water Sector

PSD Area	Regions	Population	Infrastructure /Production Capacity	Infrastructure Cost	Annual Production (m^3)	Annuel Turnover	Lease Fee OFOR	Date of Bidding Process launch	Operation Kick off	Observations
NDP / GL	St-Louis Thiès Fatick	350,000	GL: 13 RWS 5,000 m^3/day NDP: 1 MVS 18,000 m^3/day	USD15 million USD35 million	1,561,000	USD830,000	USD186,000	12 Nov. 2012	June 2015	Contract signed on Dec 4, 2014 with SEOH
13 UPTs + Faboli	St-Louis Matam Tambacounda	82,500	13 UPTs: 4,800 m^3/day Faboli: 1 MVS 1,200 m^3/day	USD20 million	401,000	USD214,000	USD48,000	1st Dec. 2014	January 2016	Bidding process launched in Dec 2014 9 firms short-listed RFP launched on April 2015
Central Zone	Fatick Kaolack Kaffrine Diourbel Thiès	3,000,000	600 boreholes 75,000 m^3/day	USD150 million	27,235,000	USD13,889,700	USD6,352,000	28 Nov. 2013	October 2015	Technical bids approved in March 2015 Financial proposals opened on May 2015
Northern Zone	Louga St-Louis Matam	1,625,000	503 boreholes 145,000 m^3/day	USD125 million	52,827,000	USD22,451,600	USD5,708,000	1st Dec. 2015	January 2017	Transaction process will be supported by Lux Dev ToR for due diligence under discussion
Southern Zone	Ziguinchor Sedhiou Kolda Kédougou Tambacounda	1,780,000	377 boreholes 35,000 m^3/day	USD95 million	12,851,000	USD6,554,200	USD692,000	1st Dec. 2016	January 2018	Transaction process will be supported by AfDB
TOTAL COUNTRY		**6,837,500**	**26 UPTs 2 MVS 1,480 boreholes**	**USD440 million**	**94,875,000**	**USD43,939,500**	**USD12,986,000**	-	-	-

June 2015

Water and Sanitation Program

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