

Private Sector Participation in Water Supply: Prospects and Challenges in Developing Economies

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ABSTRACT

Lagos State Water Corporation (LSWC), a Government agency since 1981 took over the responsibility of providing potable water to the people of Lagos State. However, the challenges facing the corporation continue to mount in the face of increasing demand, expendable water sources and need for injection of funds.

In the recent past most developing countries embarked on large-scale infrastructure through public sector financing and control. Reliance on such public sector financing and management however has not proved effective or sustainable while the successes of projects are not guaranteed. Adduced reasons are not far fetched and these ranged from deteriorating fiscal conditions, operational inefficiency, excessive bureaucracy and corruption. Consequently, the need for the private sector participation in public sectors enterprises therefore becomes inevitable in the provision of investment and control. Lagos State Water Corporation programme for Private Sector Participation in potable water supply commenced about thirteen years back. In order to realize this objective a complete due diligence of the corporation was carried out. The technical baseline findings showed that raw water sources yield far exceeded present LSWC capacity, while production capacity is utilized at less than 50% of installed capacity. Inadequate distribution network system and One North-South transmission route, also characterized the system. It also identified new assets close to physical collapse, primary pipelines at the risk of rupture, and problematic energy supply.

Commercial performance is very low, 30% while non-revenue water was 96%. Financial due diligence reveals depressed revenues and inflated expenses resulting in increasing operating losses pointing to an unrecoverable fall while deficit has grown to bankruptcy level. The gloomy picture made the consideration of alternative finance and management structure inevitable. Privatization therefore becomes the veritable alternative since it promises among others improved standard and level of service, profitability, and attraction of investment funds as the case was in similar water corporation like SODECI in Cote d' Ivoire, Aguas Argentina and SONEG in Guinea after privatization.

The corporation preferred options, consist of two different concession contracts covering the eyebrow areas of the metropolis made up of Lagos Mainland at Lagos West and Lekki and the Islands at the eastern end as a case study. Despite the anticipated promises of privatization, genuine stakeholder concerns necessitate adequate legal and regulatory framework that will protect all interest.

Key words: water supply, private sector, privatization, and stakeholders.

INTRODUCTION

Several millions of people worldwide lack access to safe and affordable water, in both urban and rural areas. Most water facilities are old and need either replacement and or expansion. In most cases, providing new services and significantly improving existing systems could require major investments in new works, rehabilitation and extension of supply systems and inefficient operation of water utilities. Water resources management has for many years focused almost exclusively on water supply, flood control and navigation. However, environmental protection, safe and affordable drinking water equally compete for the allocation of water resources in budgetary allocation to water development and management. An environmental conscious public even though presses for improved water resource management practices in the face of fewer structural components to solving the nation's water problems. The water supply problem is one of balancing supply and demand, availability of water resource, geographically and temporally, its quality, rates of replenishment or depletion as well as demands from end users is major determining factors in any water management strategy.

The continued influx of people from different parts of the country into Lagos State especially the mega city has directly affected potable water supply and management in one hand, coupled with increasing commercial and industrial activities are major factors responsible for the current inadequate supply and poor service coverage. Hence, the current investment level by the government in the sector appears inadequate.

The trends in constrain of public expenditure however, have reduced the availability of public sector financing. The need to seek for further assistance became apparent if infrastructure services such as water, which requires a large financial outlay, are to be available. Hence, from 1980 to date more than US \$500 million has been expended on LSWC principally through loans and grants.

The present water demand of estimated population of 9 million people of Lagos State is 1821 ml/d by the year 2010 when the population is expected to rise to 12.68 million at a growth of 45% per annum. At the present service level, a shortfall of 1500 ml/d exists. Safe Water would bring about a healthy and clean environment. Water quality deserves special attention because of its implication for affecting the public health and the quality of life. The private sector participation in potable and affordable water delivery is therefore seen as one alternative in bridging the existing gap, through greater efficiency and increased financial resources. Even though, this idea may not be the final solution as there are other school of thought that believes that profit making enterprises will neglect the poor and therefore deny them of the basic and essential services(de Waal, 2003; Howard, 2005; Prasad, 2007)

The present work centered on investigating the prospect and challenges of private sector participation in public water supply in Lagos State. Generally, the private sector participation programme is aimed at protecting all stakeholders' interest. The interest of the private business is to have the enabling environment to do business, to recover its cost and maximize its profits. The customer likewise must not be left at the mercy of a private monopoly because of exploitation.

Definition of Private Sector Participation

The term private sector is used to refer to formal, profit-making enterprises, but can also denote an organization not public that is government owned or managed (Howard, 2005). Privatization therefore can be defined as transfer of ownership and management of an asset or investment from the government to the general public made up of private investors, corporate investors, communication and foreign technical partners and investors. It covers a range of actual policies on intervention and ownership aimed at strengthening the market against the state. Privatization offers infrastructure development with increased efficiency in investment, management and operation. The focus of private sector participation in the water sector has traditionally been formal water companies, which are usually large, commercial and multinational. Today however, small scale including informal operators are increasingly being recognized and described as private sector (Howard, 2005).

LAGOS STATE WATER CORPORATION CASE STUDY

In 1999, the state government appointed International Funding Corporation (IFC) of the World Bank as the advisor to the State government for the privatization of the state water sector. Earlier in 1996, a report on the feasibility study on Lagos water supply expansion project had been carried out (Tahal, 1996). The LSWC considered its water supply facilities by a new intake on Oshun River at Odo Mola in Epe Local Government area. This was planned to supply potable water to Lagos Island corridor consisting of Victoria Island, newly developing areas on Lekki Peninsula and Epe town that would require huge financial outlay.

The IFC in its report recommended a privatization process that would see to the establishment of a state based Privatization Committee, to be headed by a coordinator. The Privatization committee was made up of the following Government functionaries: the commissioners of Budget and planning, finance, and environment. Others are the Chief Executive officer of LSWC, its General Manager and an official from the Government secretariat.

The IFC under phase one of the Privatization process pulled together seven international consultants to carry out due diligence on LSWC management and facilities. Highlights of findings necessary for an effective take of the PSP participation in water supply are summarized thus.

Technical Issues

The findings included the evaluation of water resources management, environmental consideration, production and distribution system. Table 1 shows the existing water resources and usage in Lagos State.

Table 1: Water resources availability and usage in Lagos State

Surface Water Resource				Groundwater Resource		
	Safe Yield	LSWC Capacity	LSWC Usage	Installed Capacity	Usage	
Developed				LSWC	140	21
Ogun river	1,636	520	289	Others	60	60
Owo river	54	18	7	Total	200	81
<i>Sub- Total</i>	1,690	538	298		(3 times reserve)	
Undeveloped		Existing Capacity = (5 Times reserve)				
Oshun river	260			Potentials	450	
Yelwa river	250			Total	650	
Oworu						
Soloro river	180					
Aye river	110					
SUB TOTAL	800					
Total Reserve	2,500					

Current Water Resources Management

The principal surface water resources for Lagos State are derived from the catchments of the River Ogun in the Ogun-Oshun River Basin. River Ogun is located in the north central part of the State; it is the main abstraction source for Lagos City and empties into the Lagos Lagoon. The Ogun River catchments extend over 23,700 sq. km. The watershed contains a number of smaller tributaries including the rivers Oyan, and Opeki.

The Owo River is located at the west of Lagos state, midway between the Lagoon in the East and Badagry in the West. It has a catchments area of 1,210sq km., which is entirely alluvial and empties into Ologe Lagoon and thence into Badagry Creek.

The untapped surface resources include Yelwa River which is situated in the west and empties into Badagry Creek. It has a catchments area of 3,360 sq. km. (Parkman 1995). Estimated safe yield is put at 250 MI/d. The Oshun River is equally untapped but has been earmarked for future development. Its estimated yield is in the region of 260 MI/d and it is a potential future source of supply for Lagos and Victoria Islands and developments on the Lekki Peninsula. The Oworu and Aye Rivers have estimated yields of 180 and 110 MI/d respectively.

Groundwater

Groundwater resource have for a long time been exploited for both public and private (domestic and industrial) purposes. A comprehensive hydrogeological study of Lagos Metropolis was carried out by Longe et al., 1987. Recent investigations put groundwater aquifer yield at 650,000 m³/day. Metropolitan Lagos and environs are underlain by several aquifer systems. The confined aquifer system is of high yield (Longe et al., 1987) More than ten mini-water works exploit groundwater resource throughout the entire state. The unplanned and unregulated exploitation of the aquifers has lowered the piezometric level with the attendant saltwater intrusion.

Production System

Surface water abstraction works

There are three main surface abstraction works in Lagos state namely: The Adiyen-Akute intake, located at Akute on the Ogun River in Ogun State, about 7 km north of the Lagos state border. The Iju intake is adjacent to the Adiyen intake on the Ogun River; and the Ishasi intake, located on the Owo River service the Ishasi plant. These abstraction works, pump raw water directly to the inlet works of each of the individual treatment works. An anti-salinity weir downstream of the Adiyen and Iju intakes is located on the Ogun River was constructed in 1995. Table 3 shows the capacity and utilization of each of the water treatment work.

Table 3: Capacity and capacity utilization of all treatment plants.

Type of Work	Location	Capacity(Ml/d)	Production Capacity(Ml/d)	Capacity Utilization %
Main Water Works				
	Adiyan	315	170.1	54
	Iju	205	118.9	58
	Ishasi	18	7.4	41
	Sub-total	538	296.4	55
Mini-Water Works				
	Ikoyi	10.8	2.5	23
	Saka Tinubu	10.8	3.7	34
	Apapa	10.8	2.3	21
	Surulere	10.8	0.6	6
	Shasha	10.8	0.4	4
	Shomolu	10.8	1.8	17
	Isolo-Mushin	13.5	2.0	15
	Ota-Ona/Ikorodu	13.5	2.4	18
	Epe	13.5	2.8	21
	Badagry	10.8	1.8	17
	Victoria Island	4.5	0.5	11
	Ajgunle	4.5	0.0	0
	Lekki	4.5	0.7	15
	Alausa	4.5	1.1	25
	Idimu	4.5	0.0	0
	Eredo	4.5	0.9	21
	Sub-total	143.1	21.8	15
	Total	681.1	318.3	47

Table 4: Summary of Efficiency of Lagos State Water Corporation

Nominal capacity	681 ml/d
Produced in 1997	384 ml/d
Supplied	192 ml/d
Billable	156 ml/d
Invoiced	52 ml/d
Customer served with Bills	32 ml/d
Collected	16 ml/d

From tables 3 and 4 the LSWC net works cover the entire state, but the network system unfortunately is limited to some parts of Lagos metropolis. Currently, there exists minimum infrastructure, one north –south transmission route with no distribution into high density areas. There is no bulk water storage facility; water metering is non-existent for bulk water and practically none for retail. Low water supply coverage exist current LSWC coverage ratio is below 35%. Noted is rapid deterioration and degradation of some new assets, while the long overused primary pipelines are at risk of rupture in the face of old age and lack of maintenance. In addition, the existence of empty distribution pipes mostly result in negative pressure and contamination.

Another major problem is the erratic power supply by the Power Holding Company of Nigeria, which has thrown the entire nation into darkness due to gross inefficiency. To this end, constant use of generating set with repeated breakdowns, lack of maintenance and funds for repairs lower the efficiency and performance of the water works. Table 3 summarizes the production estimates of the water works. Table 4 present a summary of the efficiency of LSWC production capacity.

Financial Performance

Financial analysis of LSWC shows depressed revenue and inflated expenses have resulted in increasing operational losses pointing to an unrecoverable fall unless otherwise a drastic action is taken. Even though LSWC's net worth appears to be positive, net assets are depleted and the accumulated deficit has grown to bankruptcy level. A massive financial support would be needed to salvage the situation.

Market Coverage

The network is limited a part of Lagos metropolis. The service area includes approximately 6 million people, half of whom have direct access to piped borne water through house connections, yard pipes and standpipes. The other half in the service area i.e. 3million and another 3 million people outside the service area obtain their water from private wells and intermediaries. Non-revenue water is exceptionally high, estimated to be 5%, due to heavy technical losses and to major commercial inefficiencies. The billing and collection system are faulty. Only 66% of the water distributed is billed due to illegal connections and poor invoicing. The real collection rate relative to customers that are properly served is estimated at only 55%.

Majority of the domestic customers are charged the monthly flat rate, as only 2% of them have meters while half of the meters are out of order. Two types of tariff rates are charged on a monthly basis, the flat rate by category of customers and a volumetric rate. The general use of flat tariff rate grossly underestimates consumption.

Legal and Administrative frame work

For an effective transfer of ownership of LSWC and its assets from the state government, the PSP activity in the state must be backed up with adequate legal and regulatory frame work. In this vein, there must be the establishment of a regulatory commission whose duty would be to regulate tariff, service standards and quality. A new Lagos State Water Law (The 'PSP' Law) on restructuring the Lagos water sector becomes imperative, while the LSWC Edict would have to be repealed. The promulgation of the PSP Law was therefore a condition precedent to the effectiveness to PSP contracts. Legal issue would therefore arise at two levels, first, at the systematic level through enabling laws, regulations and institutions, and secondly at transaction level. The legal structure was to seek to resolve the following issues lacking in the country: Concession law, Contract law and Crosscutting Systematic Legal impacts emanating from the broad legal and regulatory reforms at the federal level, particularly the abstraction law.

Lagos State Regulatory Commission

This is an independent statutory body to be saddled with the responsibility of regulating both the technical and economic regulation of the water sector. The Regulatory Commission would be funded through a Regulatory charge to be added to the water tariffs.

The Contract Structure

Two investors will operate side by side; the two new companies which shall subsume the functions of the LSWC. The first company would produce, transmit, and distribute water and collect revenue in the mainland, Lagos West; while the second, would produce, transmit and distribute water and collect revenue in Lagos East, made up of Lekki, Lagos Island, Victoria Island, Ikoyi and Epe. With this proposal there would only be limited but comparative competition.

However, it is believed that this limited competition may equally lead to monopoly of the water sector. Following what was in the plan, the Lagos East contract was supposed to be a full scale concession of 25 years, while the West zone would have a short concession contract or a hybrid contract of only 7 to 10 years. Hence the operator would then assume commercial and limited risks.

Key Players in the Lagos State Water Sector

Before 1999, the State Government was the major player in the water sector through the Lagos State Water Corporation. The LSWC is solely responsible for the abstraction, treatment, as well as distribution of water in the mega-city. The Ministry of Rural Development and Infrastructure compliments the effort of the LSWC in the provision of potable water to semi-urban and rural areas. The private sector involvement in the water sector is mainly limited to contractors, consultants, suppliers and artisans. In the new dispensation, all parties directly involved in the financing, regulation, management of resources, production and consumption of water shall be stakeholders. Aside, to be noted here are the Federal/State Governments, Consumers, Private investors, World Bank and the State Regulatory Commission.

The Federal Government (FG) has the exclusive right of exploitation of all natural and water resources in the country. It exercises various controls on the sector through its various agencies and line ministries. The major roles of the FG among others are to:-

- Control Exploitation of the natural resources i.e. raw water abstraction for water supply, irrigation and hydroelectric power generation.
- Put in place fiscal policies that will attract foreign investors.
- Supervises the release of water from surface sources for abstraction through its agencies: Federal Ministry of Water Resource and River Basin Development Authority.

The private investor or operator could be foreign or local. The fact is that most investment requiring large funding and high level of technology as well as foreign exchange favours or attracts foreign investors. The role of the investor is to provide safe and affordable water to the consumers. High level standard of service is expected while reasonable tariffs are charged as agreed with the regulatory authority. The consumers are expected to determine the viability of the privatization option. Availability of markets and willingness to pay economic rates are major concern of investors too. In the new dispensation, effort should be made to sensitize the consumers on the following issues.

- That water is an economic good that must be paid for;
- Treated water guarantees healthy living;
- Privatization will bring efficient water supply;
- Pipe born water should not be wasted;
- Prompt payments of bill keep water flowing.

The World Bank is to provide loan in form of Project Preparatory Fund (PPF) to cater for emergence rehabilitation works, institutional development, training, severance pay to staff that may be affected by the Privatization exercise especially with the problem of overstaffing. The World Bank is expected to provide funds for restructuring and rehabilitation water and waste water facilities through IDA. It is also expected to be responsible for the mobilization of fund to the State Regulatory body for provision of Technical assistance and for labour issue. The Regulatory Commission would be saddled with the responsibility of regulating all operators by ensuring that tariffs, water quality, service level; labour and legal issues are complied with.

Constraints to Private Sector Involvement

The water sector development programme as put forward by the Lagos State Government is laudable but not without constraints. Despite the beautiful prospects privatization offers, some challenges that may crop up ahead the

process and hence constitute serious obstacles. The following have been identified as areas of major challenges:

- i. Concerns over market vis a vis, affordability and payment risk;
- ii. Establishing adequate legal and regulatory frame work
- iii. Dealing with non-commercial risks; and
- iv. Mobilizing local finance.

There are numerous questions to be asked and answer. Will the pricing be affordable in a society that sees provision of water supply as a social service by the government even though majority could pay for it? There must therefore sensitization and re-orientation of the society.

Aside, privatization can be administratively challenging, and it may be hard to assume transparency in countries with weak legal and bureaucratic institutions and where corruption is endemic. Private sector actors may not be able to withstand issues of excessive bureaucracy and unnecessary delays.

Financial constraints are another major issue especially for local investors when one considers the huge investment and financial outlay that may be involved. The major challenge here is that local investors may be shut out of business in the absence of meeting contractual requirements such as collateral, bidding and or insurance bonds.

Other areas of concern are the fear of exploitation by the emerging profit oriented monopolist. The staff transfer issue is equally primordial, which could see the investors turning existing staff into the labour market. In an unstable political terrain, prospects of political crisis could increase the non-commercial risks involved in investment. While the neglect of the people in the blighted area may occur. The above grey areas show some risk and danger signals to the privatization option. These are major reasons why privatization should be domesticated to ensure those fears are allayed. Competition should be seen as the only way to break monopolistic tendencies, and it should be seen as an effective instrument that could be used in forestalling exploitation and inefficiency.

The Key Factors to Privatization Success

Listed below are key factors primordial for a successful privatization process

- The option must give due credence to the local condition.
- The option must make sense technically, financially and politically.
- The identified problems in the sector must be addressed by the option considered.
- There is a need for a strong political commitment. Careful attention must be given to the concerns to stakeholders and transparency and fairness.

CONCLUSION

The use of water varies from city to city, depending on the population, climatic conditions, industrialization and other factors. Since the government alone cannot meet the capital outlay required in order meeting the increasing demand of water by Lagosians, it becomes essential the participation of private sector in the delivery of safe and affordable water supply so as to complement its own effort in order to improve her services and efficiency. The general public should not see water supply as mere pumping of water to houses and industries but should rather be seen as providing services with value to the people. The increasing pressure on the government from challenges emanating from the water sector has made private sector participation inevitable just as it has brought improved performance to some few developing nations where it has been practiced. More importantly, meeting the Millennium Development Goals (MDGs) on water and sanitation by 2015 will require a dramatic scaling up of efforts, both in terms of the extent of action required and the speed with which these actions must be undertaken. Investment in the water sector is one of the prerequisites to meet the 2015 MDGs. Sustainable service delivery is also of paramount importance, in addition to constructing additional facilities.

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