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WATER, SANITATION AND HYGIENE: CHALLENGES OF THE MILLENNIUM

Improving urban water services: public-private partnerships

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AS A CONSEQUENCE of urbanisation and rapid growth of cities in developing countries, urban water utilities face enormous challenges in meeting the water requirements of urban dwellers in a financially sustainable manner.

Malindi case study is presented to demonstrate the lessons learnt by a public water utility through sequential use of a service and management contract, initially for billing and revenue collection and later including management of operations and maintenance. The public water utility awarded a service contract to a private operator with the objective of improving billing and revenue collection. Based on lessons learnt from the service contract, the water utility later transferred additional management responsibility to the private operator through a management contract. The objective was to improve management of operations and maintenance of water services. Among the important lessons learnt were that public-private partnerships should be preceded by commercialisation, the private operator should have autonomy over staff and the PPP contract should be self financed and based on a win-win situation for all stakeholders. The Malindi experience supported the view that public-private partnerships (PPP) have great potential to improve the management and financial sustainability of urban water services in developing countries.[1]

Introduction

The municipality of Malindi has a population of about 140,000 and encompasses an area of about 360km^2. Malindi is the twelfth largest urban centre in Kenya and is located along the central part of the Kenyan coast some 130 km north of Mombasa. As well as its rural hinterland, it comprises the urban coastal centres of Malindi and Watamu. Malindi is a district headquarters, a commercial centre serving its hinterland and the sparsely populated areas to the north, and together with Watamu is a major tourist destination for visitors to Kenya.

Malindi water supply system is one of 42 water systems managed by the National Water Conservation and Pipeline Corporation (NWCPC) in Kenya. NWCPC is a state owned water utility set up in 1989 to develop, manage and operate new and existing water supply projects in Kenya. Malindi water project is part of the complex Mombasa and coastal regional water system that serves a large part of the eastern coast of Kenya. Malindi water project serves Malindi town and Watamu urban centre as well as the hinterland through which the water transmission pipeline traverses. The project has a capacity of 10,000m3 per day and serves about 5,700 water connections.

Preparations for public-private partnership in Malindi

In the recent past, there has been enormous investment in Malindi water supply infrastructure (consisting of source works, treatment facilities, bulk transmission pipelines and balancing storage). The existing infrastructure is adequate to supply Malindi with water well beyond the year 2010 design horizon. The town has adequate bulk capacity to ensure that it will continue to receive an adequate supply of water in the near future.

Malindi area is, therefore, the only part of the coastal regional water system (and one of only a few water projects in Kenya) with an adequate water production, transmission and storage capacity that meets current and future demand, and where water shortages should not occur. Various management and organisational improvements can, therefore, be tried and tested without infrastructure constraints. In line with the policy of the Kenya government for increased private sector involvement in the former public sector, NWCPC intends to introduce private sector involvement in the operation and maintenance of its water systems. Due to uncertainty as to the best way forward, NWCPC, decided to use Malindi as a 'pilot' area for a variety of inter-related activities and objectives that can first be tried, proven and refined there, and then introduced into its other areas at the appropriate time.

Malindi area is fully metered, NWCPC having carried out an extensive meter replacement programme that was completed in early 1995. In this programme, approximately $^1/_3$rd of all customer water meters were replaced and an area zoning and bulk metering system installed.

Public-Private Partnership (PPP) Objectives

NWCPC's objectives were to:

- Improve efficiency in billing and revenue collection through metering and meter reading and hence reduce commercial losses.
- Reduce physical water losses by zonal bulk metering, leak detection and leak repair.
- Improve customer services
- Improve overall operational efficiency of the water supply system
- Reduce the cost of maintenance of the water system.

NWCPC commissioned a private operator through a service contract to supervise the management of the water services. The firm was required to utilise existing NWCPC staff. The service contract period was 8 months.

Scope of the service contract

The scope of services to be carried out by the private operator included supervision of:

- Meter reading
- Billing
- Revenue collection
- Operation and maintenance

Reported constraints to achievement of objectives

After the first 8 months of the contract, the client's general objectives had not been satisfactorily achieved. The private operator had identified several constraints that were impediments to achievement of the objectives. These were:

- Lack of trained and motivated staff to carry out financial management and customer relations functions.
- Lack of trained and honest meter readers.
- Large number of outstanding bills, many of which were disputed by the customers.
- The centralised computer billing system in use at the regional office in Mombasa was found to be inappropriate for the improvements earmarked for Malindi.
- Frequent stalling of many customers meters in the distribution network.

Solutions to constraints

In order to address and overcome the above constraints, NWCPC extended the service contract by a further six months. NWCPC further agreed to implement the following measures as recommended by the private operator:

- Recruitment and training of Malindi based staff in financial management and consumer relations,
- Recruitment and training of meter readers to replace existing ones
- Detailed review of all customer accounts to ascertain the erroneous values of debt or credit
- Introduction of new user friendly modern billing software with appropriate reporting and archiving capability, training of Malindi based personnel in the use of computers in order to make Malindi area self sufficient in water billing, accounting and financial control.
- To provide the new billing system with a reasonably accurate opening balance, and
- Refurbishment of section valves and washouts as well as flushing of the distribution system so as to reduce the rate of stalling of both consumer and bulk meters.

NWCPC aimed to attain the previous and the new objectives as well as the reduction of administrative losses towards the targeted 19%, and the efficient day to day operation and maintenance of the system. The service contract was extended on adhoc basis and it lasted 3.5 years.

Reported improvements in the Management of Malindi water system

The following improvements were made:

- Management and staffing levels were reviewed and detailed recommendations made for a revised staffing arrangement complete with job descriptions.
- Meter reading was reorganised to form a routine programme so that each meter reading zone could be walked by the meter readers and read in a single day.
- Meter reading trainees were recruited and made conversant with several areas so that absence (such as due to illness) of an individual does not prevent regular meter reading.
- Meter readers were assigned different areas to read in successive months thereby reducing the likelihood of reporting of artificial readings, collaboration between a meter reader and customers to defraud NWCPC by falsifying meter readings, construction of unregistered connections, etc.
- Re-designations of NWCPC staff and modalities for payment of incentive bonuses to staff were recommended to NWCPC and implemented.
- Recommendations for an in-house Malindi based billing system were made and accepted by NWCPC.

A computerised billing system was developed and used to compile monthly meter reading data for actual billing. The program was producing numeric data on both an individual and meter reading zone basis to enable comparison with issued bills, thus providing a basis for detection of major errors and anomalies in billing, combined with debt control.

Reported achievements of the stated objectives

The following was achieved:

- The percentage of billing based on operational meters and actual monthly meter readings rose from 21% at the commencement to 89% at the end of the initial period with estimated readings dropping overall from 66% to 13%. This means that customer meters were being read and used for billing purposes.
- Revenue collection improved from 50% to 62% of that billed, with cash received rising from approximately KSh1,500,000 to KSh2,100,000 monthly
- Physical losses were reduced from an estimated figure of 44% to 41% through a leak detection and repair programme.

Client's review of the service contract

The service contract resulted in some improvements in the commercial activities of NWCPC in Malindi (indicated by the increase in revenue collection) and to a lesser extent, in the day to day operation and maintenance of the system (low response time to leakage). The service contract was initially financed through a grant from a bilateral donor with the latter extensions of the service contract being financed through a credit from a multi-lateral financier (18 months) while the last extension (6 months) was financed by NWCPC. NWCPC was eventually unable to sustain the financing of the service contract from the revenue collected in Malindi, and the contract was let to expire in June 1998. With the expiry of the service contract, supervision of the entire operations of the water system reverted back to NWCPC. Revenue collection soon deteriorated. NWCPC staff could not handle the new billing system that had been installed exclusively for Malindi. With reduced funding, there were no more generous allowances to staff that the contractor was offering earlier. Staff morale was low as remuneration was back to the way it was at the start of the service contract. In order to maintain the level of operations and maintenance and avoid further deterioration of customer service, NWCPC decided to urgently arrange for continued public-private partnership in Malindi.

Lessons learnt by NWCPC and the way forward: Move from service contract to management contract

In spite of the general improvement in the operations of the area, the client considered that the investment in the physical improvements in Malindi and the financing of the service contract was not adequately compensated by the achieved benefits, especially when compared with the revenue collected. The client found that the revenue generated could not meet all the costs of operations, maintenance, staff and also finance the service contract unless the current water tariffs were raised. The client also realised that insufficient management responsibility had been transferred to the operator. More over, the service contract lacked any agreed measurable performance indicators (apart from the general objectives stated by the client) which could be used to assess the performance of the private operator. The contract lacked appropriate success incentives and penalties. The client, therefore, decided not to carry on with a service contract but to experiment with a management contract that would transfer greater management responsibility for operations and maintenance to the private operator with agreed targets and specific performance indicators.

The client also realised that water tariffs in Malindi needed to be increased to cost-covering levels. In November 1999, new water tariffs were gazetted. In March 2000, NWCPC awarded a five year long management contract to a private operator. The management contract incorporated some of the lessons learnt from the earlier service contract. These measures were aimed at improving water services in Malindi through the public-private partnership.

Lessons learned from Malindi pilot project

The following key lessons were learned:

- A carefully prepared and competitively bid service or management contract has capability to substantially improve services to customers and hence improve revenue collection. In Malindi, the public-private partnership resulted to an improvement in customer services and revenue collection. The water utility's image among the customers improved greatly.
- Commercialisation policy must precede or accompany public-private partnerships (PPP).
- Cost-covering tariffs must be implemented hand-in-hand with service improvements to ensure sustainability.
- Selection of the appropriate contract type (whether service or management) is critical to success of PPP.
- It is important to specify objectives, and set measurable targets to be achieved by the private operator.
- A self-financed contract based on win-win situation between the client, contractor and customers is more likely to be successful than an externally financed contract as the later is unlikely to be sustainable in the long term.
- The private water operator ought to be given autonomy over staff.
- The client should transfer sufficient management responsibility to the private operator in order to reap potential benefits of private sector management.

Conclusion

Public-private partnerships have potential to improve the management and financial sustainability of urban water services. Selection of appropriate PPP options is crucial to attainment of objectives. PPP should, however, be preceded by commercialisation of water services. The private operator should be given sufficient management autonomy in order for customers and the water utility to reap potential benefits of private sector management.

References.

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