

Short-Term Initiatives to Improve Water Utility Performance in Uganda: The Case of the National Water and Sewerage Corporation

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Short-term improvement programs can yield significant performance turnaround if carefully planned and consistently implemented. This paper explores short-term initiatives involving private sector participation that have helped to improve performance of the National Water and Sewerage Corporation (NWSC) since 1998. The paper also highlights inter-university research collaboration between Makerere University and the Public Utility Research Center, University of Florida. The project is being carried out in NWSC to specify targets, monitor outcomes, and reward good performance. Informational problems are at the core of policy questions, so inducing managers to use their superior information and motivating them to solve local problems can greatly improve performance.

I. Historical Background

The National Water and Sewerage Corporation (NWSC) was established by Decree No. 34 of 1972, following an earlier study on the need for improved water and sanitation service delivery in the major urban centres of Uganda. NWSC was initially responsible for the three key towns of Kampala, Entebbe, and Jinja. During the political instability of the 1970s and early 1980s, the corporation, like other infrastructure enterprises in the country at the time, suffered substantial decline. Most of the assets were run down and service delivery was considerably reduced. From the mid-1980s, when the government was taken over by the National Resistance Movement, the water sector has begun to be revitalized.¹

Through the offices of the International Development Association and other donor agencies, the NWSC embarked on major rehabilitation and expansion of its water supply and sewerage systems. Consequently, the corporation was operating in nine towns as of June 1995: Kampala, Jinja/Njeru, Entebbe, Tororo, Mbale, Masaka, Mbarara, Gulu, and Lira. Currently, NWSC operates in fifteen towns, having added Gulu, Lira, Fort Portal, Kasese, Kabale, Arua, Bushenyi/Isahaka, and Soroti to its list of independent operations. These urban areas have a combined population of 2.1 million and account for 75 percent of the population in what are termed “large urban centres” (defined as having populations greater than 15,000). The water coverage in these towns is about 63 percent, while the sanitation coverage is about 10 percent.

¹Antonio Estache and Eugene Kouassi use a sample of 21 African water utilities to analyze the determinants of efficiency levels. They conclude that the institutional capacity of the country and governance contribute to higher levels of performance. They find that only five of the 21 utilities had higher rates of technical progress than NWSC for 1995-1997. “Sector Organization, Governance, and the Inefficiency of African Water Utilities” World Bank Policy Research Working Paper 2890, September 2002.

II. Improvement Initiatives since 1998

In a paper on “Improving Performance through Internal Reforms by the Public Sector – A Case of NWSC,” presented at the World Bank’s 2003 Water Week, Dr. William T. Muhairwe, CEO of NWSC, noted that by 1998, the World Bank and others had made significant investment (more than U.S. \$100 million) to rehabilitate NWSC infrastructure. However, quoting from a World Bank Report, he concurred that “these investments had not been matched with the necessary efficient commercial and financial management capacity that can ensure the delivery of sustainable services in the medium to long term.” NWSC faced the problem of developing a system for monitoring performance and giving managers incentives to reduce costs, improve service quality, and further reduce unaccounted-for water.

A number of short-term initiatives to improve performance have been undertaken since 1998, including a 100-days program (Feb.–May 1999) and the Service and Revenue Improvement Programme (August 1999–August 2000). To consolidate and improve performance further, the NWSC headquarters later entered into Area Performance Contracts (APCs) with its subsidiary utilities to increase managerial autonomy, introduce performance incentives and hold the subsidiary operators more accountable. These contracts with NWSC were one-year renewable contracts and have been in effect for three consecutive years (2000-2003).

In addition, NWSC has promoted some private sector participation, mainly in the form of management contracts in the Kampala Water Supply Area. As the capital city of Uganda, Kampala accounts for about 70 percent of NWSC operations in terms of revenue, water production and infrastructure. Kampala’s first management contract, called KRIP for Kampala Revenue Improvement Project, was for three years and ran 1997-2001 under JBG Gaulf, a German consulting firm based in Uganda. The second management contract was for two years, 2002-04, and has been under ONDEO Services Uganda Limited (OSUL), a French water firm registered in Uganda.

During the implementation of the above internal reforms, a “stretch out” program was introduced after it was realised that there were still some operational constraints that required improvements if contract objectives were to be achieved. The program was designed to encourage:

- *Simplification*: Reduction of bureaucracy
- *Motivation*: Increase in speed of work with clarity of expectations
- *Participation*: Increased worker involvement and self-confidence
- *Transformation*: Removal of organizational boundaries
- *Prioritization*: Setting appropriate performance targets and rewarding progress

NWSC is currently implementing Internally Delegated Area Management Contracts (IDAMCs) as part of its 2003-06 corporate plan. These contracts differ from the earlier Area Performance Contracts by assigning more operating risk to service providers. Also, payment of the core partners under IDAMCs is partly based on the achievement of key performance indicators, and the obligations of the contracting parties are more clearly defined to avoid ambiguity in the rights and responsibilities of each party. Furthermore,

the award of IDAMCs to service providers was subject to a degree of internal competition, which was never done under Area Performance Contracts. In addition, the key partners under the IDAMCs have more control over staff than in the past. IDAMCs have started in seven pilot towns, beginning from January 1, 2004.

The key feature distinguishing IDAMCs from a conventional management contract with a private service provider is that the IDAMC is a litigation-free partnership. The NWSC board is the final arbitrator in disputes. In addition, the NWSC headquarters performs the contract management roles of asset holding and performance monitoring.

The Incentive and Disincentive Systems

Earlier initiatives for improving short-term performance (100-days and the Service and Revenue Enhancement Programme) had reward systems that included cash prizes and trophies to encourage comparative competition among the subsidiary utilities. Trophies were awarded to those utilities that performed best in each of several key performance areas (e.g., water production and sewerage services, water distribution, revenue improvement, reduction in suppressed accounts, cost reduction, customer service). Trophies were also given to the best performing utility manager, the best performing utility, and any utility that made substantial progress toward financial sustainability. Runners-up were also recognized.

Comparable cash awards and trophies were and also a feature of the Area Performance Contracts, and the stretch out program also had a well-designed incentive mechanism related to performance goals (degree of target achievement plus the degree that stretched cash operating margin targets were met). The reward also considered the level of ambition among utilities in setting and achieving stretched goals. The IDAMCs also have a well defined incentive mechanism that relates to cash operating margin (COM), unaccounted-for water (UFW), working ratio (WR), days receivable ratio (DRR) and connection efficiency (CE) as follows:

Management Fee under IDAMC = Base (Fixed) Fee + Performance Fee + Incentive Fee;
where:

- Base Fee = All uncontrollable costs + 75% (key partners' pay + controllable costs).
- Performance Fee = 25% (key partners' pay + controllable costs) times (number of achieved weighted targets divided by total number of weighted targets)
- Incentive Fee = X% times COM ($m \text{ UFW}_a + n \text{ WR}_a + p \text{ DRR}_a + q \text{ CE}_a$); where X% the agreed percentage of the improvement in COM to be retained by the operator as bonus, m, n, p, q are weighting factors and subscript "a" denotes incremental achievement.

Thus, the performance fee gives appropriate weight to each target—in a pass/fail framework. The incentive fee does reward movements toward key targets. Apart from incentives, the Area Performance Contracts had a disincentive mechanism applicable to any Area showing persistent failure in achieving agreed performance levels (three consecutive months). The penalty system under IDAMCs involves withholding payment for key partners and part of the controllable costs if some key targets are not met as shown in the management fee formula above.

Outcomes of the Initiatives Taken in NWSC since 1998

According to Odonga² the implementation of initiatives to improve performance has resulted into a turnaround in the NWSC from June 1998 to June 2003. Among other improvements, staff productivity in terms of percentage of staff cost relative to total operating cost has increased, moving from 45 percent of cost to 26 percent. There has been a corresponding drop in number of staff per 1,000 service connections, from 36 to 11. Unaccounted-for water and collection efficiency have improved from 51 and 60 percent, respectively, to 39 and 95 percent. The customer base has grown from 50,000 to 93,000 connections, while metering efficiency has increased from 76 to 94 percent. Finally, operating profit and annual turnover have improved from Ushs 3,000 million (about U.S. \$1.5 million) and Ushs 21,000 million (about U.S. \$11.5M million), respectively, to about Ushs 8,000 million (U.S. \$4 million) and Ushs 37,000 million (U.S. \$18.5 million).

III. The Way Forward – Emphasis on Performance Monitoring

The NWSC continues to pursue innovative ways to improve performance. In collaboration with Makerere University of Uganda and the Public Utility Research Center of the University of Florida, NWSC has embarked on a research initiative aimed at strengthening performance monitoring. Although monitoring has been identified as a key factor for sustained performance improvement, it involves a number of unanswered policy questions.

Financial incentives are easily incorporated in lease and concession contracts, but performance/management contracts and monitoring are less straightforward. For example, concerning unaccounted-for water, should the performance monitor wait for the performance output from the operator or should the monitor, without undue interference, follow the operator's efforts to reduce leakages and illegal connections and ensure that meter readings and bills are accurate? In other words, should the monitoring be *output-oriented*, *process-oriented*, or a hybrid of both?

In addition, it is interesting to consider the different approaches to contracts in international law. In the Anglo-Saxon tradition, the contract stipulates all the relevant terms and conditions. French contracts have been viewed more like an agreement to marry—where the contract creates opportunities that might have been unanticipated initially. One lawyer characterized German contracts as emphasizing adherence to a particular set of principles. These different orientations can be applied to monitors like NWSC, which may have a *legalistic orientation* (following the contract to the letter and punishing the operator for non-compliance), a *partnering orientation* (taking a flexible approach and collaborating to solve problems as they arise), or a *principle-based approach* where disagreements are resolved on the basis of core values (reciprocity, transparency, predictability, and fairness).

The current research is exploring both output and process orientations to monitoring performance. The study is using qualitative and quantitative methods to investigate the effects of orientation on monitoring effectiveness and performance

² Mr. Charles Odonga, currently NWSC's chief manager of engineering services, presented a paper on "Performance Enhancement Programmes in NWSC" at the first meeting of the Ugandan Water Sector Reform Implementation Technical Committee in Kampala, January 2004.

improvement (service quality and production efficiency). The qualitative methods involve a questionnaire to be completed by all senior and middle utility managers who interact with the performance monitors during their work. The quantitative methods involve collection of hard data, which will be used for stochastic efficiency frontier analysis. The qualitative data will be analyzed partly with statistical correlation methods and partly with stochastic frontier analysis to assess the effect of monitoring orientation on qualitative performance and technical efficiency. In addition, the implications of performance/management contracts can depend on the legal tradition being applied.

Concluding Observations

The foundations for improving water/wastewater performance have been established in Uganda. In general, the approach utilized by NWSC is consistent with the ten guidelines (in italics) identified by Sappington³ for designing incentive regulation plans:

1. *Use incentive regulation to better employ the firm's superior information.* NWSC is effectively the “regulator” of a set of utilities, using performance/management contracts to promote cost-containment, service quality, and network expansion.
2. *Prioritize regulatory goals and design incentive regulation to achieve stated goals.* The weights placed on different objectives (like reductions in unaccounted-for water and increased connections) are specified in the incentive fee component of managerial compensation.
3. *Link the firm's compensation to sensitive measures of its unobserved activities.* Achieving performance targets determines the performance fee. However, NWSC is still monitoring inputs as a proxy for managerial effort.
4. *Avoid basing the firm's compensation on performance measures with excessive variability.* The three components of the management fee are designed to exclude elements that are volatile.
5. *Limit the firm's financial responsibility for factors beyond its control.* The base fee passes through uncontrollable costs. Of course, distinguishing what is controllable and uncontrollable requires a deep understanding of production processes and input markets—so NWSC needs to re-visit the division periodically.
6. *Adopt broad-based performance measures where possible, unless their variability is excessive.* The incentives incorporated in the management fee reflect a few key objectives.
7. *Choose exogenous performance benchmarks.* This criterion is yet to be fully implemented. Ideally, the managerial rewards should reflect the performance of specific utilities relative to a benchmarking group. This approach would

³ Sappington, David E. M. 1994. "Designing Incentive Regulation," *Review of Industrial Organization*, 9, 245-272.

require more comprehensive analysis of costs—so unique conditions facing each utility are accounted for. Currently, the incentive fee is for improved performance over time.

8. *Allow the firm to choose among regulatory options, while recognizing the interdependencies among the regulatory options that are offered to the firm.* At present, there are discussions between local managers and NWSC; however, NWSC still utilizes a one-size-fits-all approach to incentives. Still, both the performance fee and the incentive fee allow managers to focus on targets that can be achieved in the most cost-effective and timely manner.
9. *Promise only what can be delivered, and deliver whatever is promised.* NWSC adheres to the explicit contractual reward system, though the stretch-out system reflects a more flexible approach to meeting targets.
10. *Plan for the rare, unforeseen event, but minimize after-the-fact adjustments to the announced regulatory policy.* Contingency planning is one element of NWSC procedures. One advantage of the present system is that litigation is not an issue—but that does not mean that dispute resolution can be totally ignored, since local managers need to be convinced of the legitimacy of the incentive formula and fairness in the way reported outcomes are utilized for rewarding high performance.

No system is perfect, so NWSC continues to study the implications of alternative approaches to regulation. As Sappington points out, ". . . the design of sound, effective regulation in particular settings will require careful attention to the idiosyncratic features of the environment. The best incentive regulation plan in any given setting will vary according to regulatory goals, institutional and technological factors, the nature of the information asymmetry between regulatory and firm, and the commitment abilities of the regulator." (p. 269) NWSC is focusing on how designing a sound incentive system can improve sector performance and strengthen credibility with stakeholders. Without such credibility, people lose confidence in those responsible for shaping sector policy; they also lose hope for the future—perhaps the greatest tragedy of all.