


Improving efficiency of water utilities – the case of NWSC in Uganda

On the basis of the example of the National Water and Sewerage Corporation of Uganda (NWSC), this note shows how capacity development measures can have an impact on utility performance and finally on access to water.

Introduction

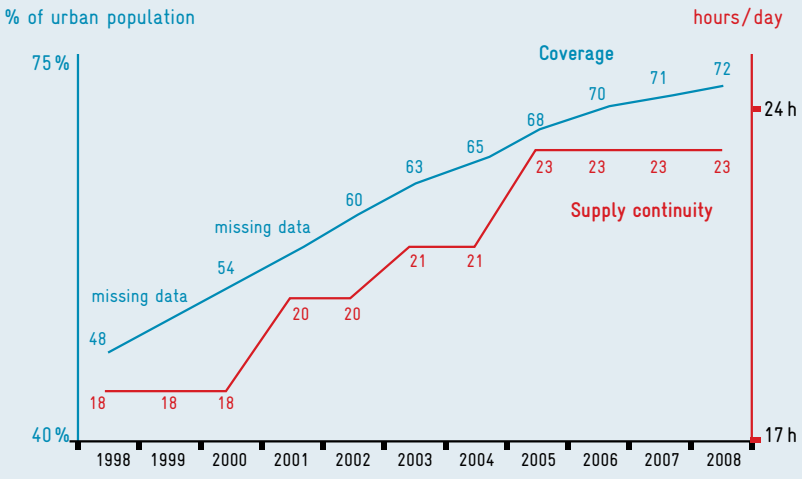
NWSC was established in 1972 as a parastatal owned by the government of Uganda. NWSC currently provides water and sewerage services for the 23 main towns in Uganda with € 34 million (84 Billion UGX) revenues and a target population of 2.7 million people. NWSC has managed to develop its service capacity considerably in the last 15 years. As Figure 1 shows, coverage of the urban population increased from 48 % in 1998 to 72 % in 2007 / 08. Supply continuity improved from 18 hours to 23 hours in the same period.

This significant performance improvement was made possible through a number of factors, including the introduction of a set of capacity development measures which focused on improving sector frameworks and utility management measures.

At sector level, the sector ministry and the utility developed a common understanding of their respective roles. In 2000 the government and NWSC entered into triennial performance contracts to monitor the investment programme, performance targets and tariff policy.

At utility level, improved corporate management measures were introduced. Among other things, these relate to making business planning more effective, strengthening the management information system, outsourcing service functions and developing human resources. Internal decentralisation was also a fundamental aspect of the new corporate management approach.

Figure 1 | Water coverage and supply continuity (NWSC)



Current trends suggest that Uganda may meet the target of halving the proportion of the population without access to safe drinking water in urban areas by 2015 (Millennium Development Goals), however one of the biggest challenges is the rapid population growth of 3.4 % p.a. in Uganda.
In urban centres, especially in Kampala, this increase is compounded with the rural urban migration and population increase is thought to be as high as 10–15 % p.a.

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With the introduction of Internal Delegated Area Management Contracts (IDAMC) in 2004, local area offices received considerable management autonomy but have yet to accept an improved performance monitoring and evaluation system. This innovative and context-sensitive solution facilitated the introduction of flexible, result and customer-oriented management at local level. Improving corporate management benefits all aspects and indicators of utility performance, for instance water loss reduction and supply continuity, as well as water connections and collection efficiency.

Capacity development measures were accompanied by financial investments in the fields of water production, network rehabilitation and expansion, water loss reduction and metering, in Kampala as well as in secondary towns. Capacity development and financial investments over the last 15 years were supported by the donor community (World Bank, Germany, Austria, Denmark, AfDB, BADEA, EU, etc.).

Improving revenue water

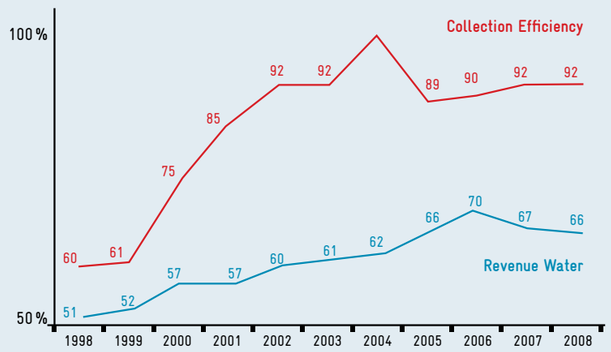
Average revenue water in towns supplied by NWSC reached a level of 51 % in 1998 (Figure 2). Kampala, where revenue water was as low as 24 % in 1995, was an example of particularly poor performance in this respect. The main causes were illegal connections, corruption, theft, low meter coverage, old pipes, insufficient maintenance and the fact that house connections were done by the home owner with no or very little quality control.

In 2007, revenue water reached a level of 67 % (Figure 2). Improved capacity for network management was a major driver of this positive development. For example, organisational initiatives were established to improve staff capacities and motivation in order to reduce water losses. These measures included individual accountability with clear revenue water targets (incentives/penalties), rotation of meter readers, publication of revenue water performance figures and the establishment of the Water Losses Control Department and the Illegal Use Reduction Unit.

As a result, NWSC was able to design and implement operational measures for better network management. Leak detection and management teams were established using modern detection equipment and routine programmes for locating non-visible leaks. The progressive implementation of pressure zoning, the installation of pressure reducing valves, material standardisation and the routine inspection of valves and fire hydrants contributed to the increase in revenue water.

At the same time, community awareness campaigns were launched, aimed at raising and mobilising public support to report visible leaks (call centre) and fighting illegal connection. In this respect, incentives were offered ($ 32 for a reported illegal commercial connection and $ 20 for an illegal domestic connection), penalties and compensations were imposed ($ 305 penalty and compensation for 2 years estimated consumption). Legal firms were commissioned to investigate and fight illegal connections.

Figure 2 | Revenue water and collection efficiency (NWSC)



Revenue water: billed consumption compared to system input volume. This indicator is related to network maintenance (leakage, metering) as well as unauthorised consumption and unbilled authorised consumption.

Collection efficiency: total cumulative collections compared to billings. This indicator monitors the effectiveness of the customer management system.

The conjunction of the two indicators monitors the ratio between water input volume into supply systems and sales revenues.

Collection efficiency

NWSC capacity for customer management was insufficient to manage an increasing number of customers. In 1998 the collection rate was only 60 %. In order to expand capacity, NWSC computerised invoicing and developed a detailed customer database (block mapping). The introduction of the new tools and processes was backed up by training courses and advice from long-term and short-term experts. Improved customer management enabled NWSC to increase metering coverage from 39 % to 99 % and to implement effective disconnection for non-payment. With an average collection rate of around 90 % since 2002, NWSC now appears to be performing rather well in the context of African public utilities (Figure 2).

Increasing water connections

Internal decentralisation, result-oriented staff management and training schemes improved the capacity of local management units to intensify marketing measures. For instance, aggressive marketing campaigns after infrastructure project completion had a visible effect on water connections.

Furthermore, a new connection policy was introduced in 2004, reducing connection fee: all customers within a radius of 50 meters from the nearest water supply mains received a connection against an administrative fee of about € 24. The new connection policy has led to the doubling of annual water connections, with two positive impacts: people who previously could not afford a connection can get a household / yard connection and NWSC benefits from economies of scale. Due to improved performance in invoicing, the multiplication of clients, even with low water consumption, had a positive impact on the operating result.

These measures led to a considerable increase in water connections, from around 50,000 in 1998 to around 202,559 in 2008 (Figure 3).

Financial sustainability

Since 1999, NWSC has been able to progressively improve its operating result, and since 2002 NWSC has ensured operational and depreciation cost recovery (Figure 4). The following factors have contributed to improving financial sustainability:

- Capital projects with low expected return on investment were financed through donor grants. Physical infrastructure design systematically took operation & maintenance costs into consideration.

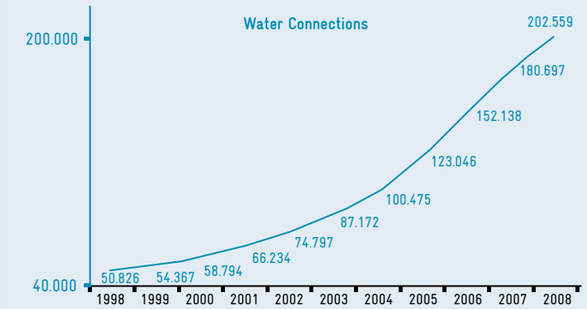
- In the field of capital project implementation, competent staff were able to avoid cost and time over-runs, which made an impact on depreciation costs.

- Improved operation & maintenance (Figure 2 – revenue water and collection efficiency) tend to mitigate the average unit cost of water and to increase revenue.

- Better trained staff (establishment of a training centre, university training courses) and simplified procedures lead to a significant improvement in the labour productivity ratio, from 35 staff per 1,000 connections in 1998 to 7 in 2008 (Figure 4). Staff reduction was necessary until 2002, but from then on, a rapid increase in staff was possible in the context of economies of scale.

- The NWSC tariff is relatively high in the regional context. After the tariff simplification in 2000, the

Figure 3 | Water connections (NWSC)






government approved the annual tariff indexation policy in 2004 to attain price stability in real terms. The financial sustainability of NWSC is thus protected against input price escalation resulting from inflation, foreign exchange costs and other external factors.

Conclusion

The case of Uganda shows how an appropriate instrument mix can support a utility to improve urban water supply in a favourable market environment.

Political will is a precondition, in particular no political interference in day-to-day running of the business together with the nomination of competent top management, combined with establishing effective performance monitoring and introduction of innovative management concepts.

Increase in demand for water (urban population growth, willingness and ability to pay) played a major role in improving economies of scale and collection efficiency, and, ultimately, financial and social sustainability.

At utility level, capacity development is a process through which a utility manages its own reform and leads donors to align with its own corporate vision.

Appropriate aid design is a key factor, with an instrument mix at three levels:

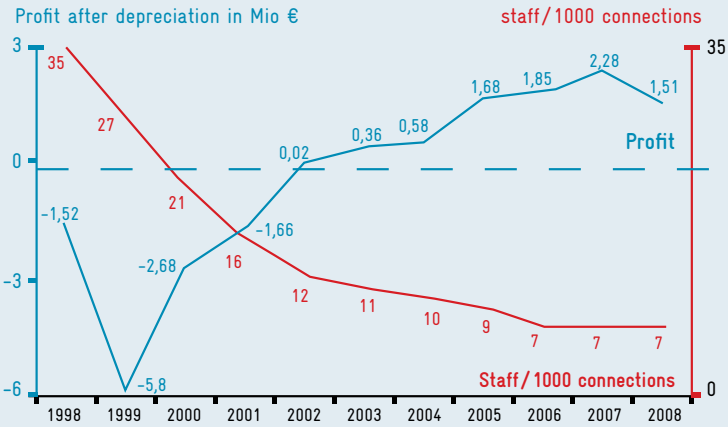
- Coordination between sector policy advice, internal technical support and investment design;
- Advice to top management to improve corporate governance and targeted technical measures to achieve monitored performance goals;
- Diversified inputs such as long-term internal advisor, short-term experts, short-term and academic training courses, equipment, technical studies, etc.

The successful development of NWSC was a 15-year process with constant support in capacity development. The effects of technical and policy advice on utility performance combined with financing of infrastructure projects became progressively more visible until NWSC appeared as one of the leading water utilities in East Africa.

Contact

International Water Policy and Infrastructure Programme
T +49 (0) 6196-79-2171
F +49 (0) 6196-79-80 2171
E wasserpolitik@gtz.de
I www.gtz.de/water

Figure 4 | Profit and labour efficiency (NWSC)



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Dag-Hammarskjöld-Weg 1-5
65760 Eschborn, Germany
T +49 6196 79-0
F +49 6196 79-1115
E info@gtz.de
I www.gtz.de

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