

# Improving water operator finances through better practices – *experiences from East Africa*

● The Fast Track Capacity Building programme implemented by the National Water and Sewerage Corporation (NWSC) in Uganda under UN-HABITAT's 'Water for African Cities' programme demonstrates that an integrated programme of training and capacity building, combined with investments in physical infrastructure, offers the best hope of improving institutional capacities to reduce non-revenue water, improve service delivery and increase the sustainability of investments in the long-term. **GRAHAM ALABASTER** discusses the programme's success in five towns in Kenya and Tanzania.



An official receives water pipes for the LVWSAN initiative in Homa Bay, Kenya. Credit: UN-HABITAT.

**I**t is only in recent years that countries in sub-Saharan Africa have started to emerge from the highly centralised water sectors supported by donor agencies, which have focused primarily on the main urban centres. This has left the infrastructure in many small towns neglected due to a lack of investment in rehabilitation and a lack of technical and managerial capacity within the organisations responsible for managing the assets. This has led to high rates of leakage and revenue losses, which have undermined the financial status of most small town operators.

At the same time, the Millennium Development Goals (MDGs) have

focused resources on increasing service coverage, with far less attention paid towards the ensuring the sustainability of these services or improving the operation and maintenance (O&M) of existing assets. This results in the situation shown in Figure 1, which shows the difference between the theoretical values of access to improved water facilities (measured as coverage as reported by the World Health Organisation (WHO) / UNICEF Joint Monitoring Program) and the actual access, taking into account the inadequacies of supply based upon data from five small towns in Kenya.

This situation invariably reduces customer's willingness to pay, which has knock-on consequences on utilities' revenue and undermines

institutional capacities to sustain the services. An evaluation undertaken by the World Bank's Independent Evaluation Group in 2009 concluded that most municipal development projects – including those with water supply components – paid little attention to O&M, leading to negative project results and significantly increasing the risk to development outcomes<sup>1</sup>. It is therefore clearly apparent that there is an imperative need to focus on the O&M requirements of water and sanitation infrastructure in order to improve service delivery on a sustainable basis.

## The UN-Habitat capacity building programme on utility management

A good example of an initiative that has been designed to systematically address the problems described above is the UN-HABITAT's Capacity Building Programme on Utility Management. The programme was carried out between June 2007 and August 2008 in the five towns of the Lake Victoria Region Water and Sanitation (LVWATSAN) Initiative: Muleba and Bukoba in Tanzania and Kisii, Gusii and Homa Bay in Kenya.

The overall objective was to support the financial and operational sustainability of the capital investments provided under the LVWATSAN

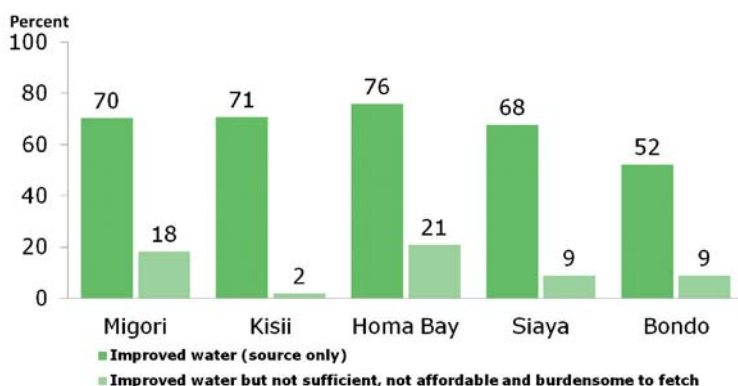


Figure 1: Access to water in Kenyan towns

**Table 1: Technical and managerial aspects of the Performance Improvement Programmes****Technical**

- Water production and water quality
- Transmission and leakage control
- Billing and revenue collection

**Managerial**

- Customer care service
- Finance and accounts
- Human resource and administration

Initiative. The main objectives were to develop more effective operational systems for water demand management to reduce NRW, carry out water audits and improve cost recovery systems, and expand the revenue base by establishing effective billing, accounting and revenue collection systems. An additional objective linked to the above was to establish good lines of communication and improve relations between customers and the utilities.

The National Water and Sewerage Corporation (NWSC) in Uganda was selected as the company with the relevant experience, competence and suitable expertise within the region to support these utilities through its External Services Unit. NWSC successes in this area are exemplary. The Managing Director recently received an award at the IWA World Water Congress in Montreal for leading a remarkable turnaround at NWSC over the last 12 years, during which time the utility was transformed from a fiscally and operationally dysfunctional organisation to a financially sustainable and efficient service provider.

**Performance improvement programmes**

With support of NWSC's External Services Unit, each utility prepared a performance improvement programme (PIP) based upon a technical assessment of assets and

consultation with operators and customers. These PIPs focused on improving the operational performance, covering technical and managerial aspects of operation and maintenance in six operational areas (see Table 1).

Concept papers on utility management defining the priority areas for improvement and draft implementation plan were prepared for each of the five towns. Key performance indicators were selected and targets set based on historical performance and upon the provision of funding within the annual budgets.

In each of the utilities, 'change agents' from the utilities' management teams, water board and local government were identified to act as champions to promote the turnaround of performance. To increase the commitment of the management and staff, the PIPs were signed by representatives from each party and witnessed by the Board Chairperson. These plans were shared with the clerk of works in each of the towns as well as the governmental advisors in Kenya and Tanzania.

**The capacity building process**

Although there was a need for expenditure for immediate rehabilitation of the system and procurement of supplies and equipment (e.g. water quality testing kits, bulk meters, computers, software) to support improved operation and maintenance,



Children queue at water kiosk in Muleba, Tanzania. Copyright: UN-HABITAT.

the main focus of the initiative was on capacity building.

The NWSC External Services Unit adopted a combination of methods and techniques for capacity building, which aimed at ensuring active participation from as many staff at all levels as possible. Comprehensive situational analyses and training needs assessments were carried out and stakeholder consultations identified key thematic areas which were used as the basis for preparation of a capacity building programme and training plan for each utility.

Management and staff analyzed their performance in each of the technical and managerial areas in the PIP through identification of their respective strengths and weaknesses. These self-assessments were used to formulate strategies to address identified bottlenecks and improve performance. Vocational training for staff from each utility was then carried out by NWSC. There were four key focal areas of activity:

- Water demand management: water audits, leak detection surveys, and identification of illegal connections to reduce non-revenue water (NRW).
- Block mapping: Practical demonstrations were also held on how to use the equipment for surveying and carrying out the block mapping exercise to provide baseline information with regard to the customers.
- Billing software development: A more robust computer database system was developed for the utilities, which was synchronized with block maps to allow for easy inclusion of new customers.
- Commercial and customer care: a logging system was introduced to the utilities for capturing customer

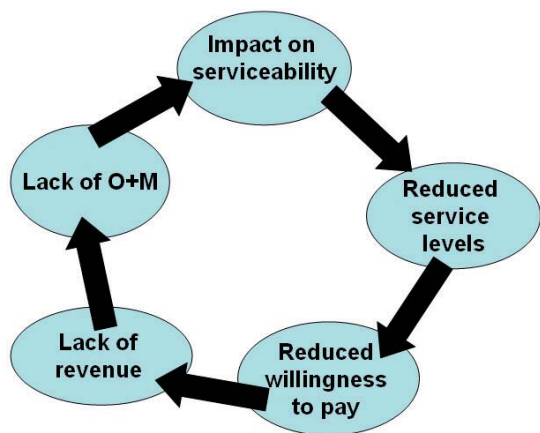
**The Operation and Maintenance Network: supporting sustainable water and sanitation services**

The Operation and Maintenance Network (OMN) aims to enhance the effectiveness and sustainability of capital investments in water infrastructure and ensure improved service delivery, with benefits for both consumers and the environment. The OMN plays a leading strategic role in promoting effective operation and maintenance, providing practical and authoritative advice to water and sanitation system managers and operators in low and middle-income countries. It is coordinated by the National Institute of Public Health in Japan and supported by IWA and WHO.

The network offers:

- Access to practical guidance material via the online OM toolbox
- Technical assistance from experts on O&M issues
- The chance to share knowledge, case studies and develop new guidance materials
- Access to regional events and workshops linked to wider capacity building activities

Any persons or organisations interested in receiving support or contributing to the network's activities can join by registering at [www.operationandmaintenance.net](http://www.operationandmaintenance.net). For further details, contact Kirsten de Vette: [Kirsten.deVette@iwahq.org](mailto:Kirsten.deVette@iwahq.org).



complaints and the actions taken. The aim was to improve the handling of customer complaints and provision of feed back to the customers.

**Figure 2:** Vicious cycle of poor service delivery exacerbated by poor O&M

### Key achievements and outcomes

As a result of the capacity building activities described above, the utilities were observed to develop a stronger feeling of ownership and a better understanding of the need to work as a team to overcome key constraints affecting the performance of the organisation. Divisions between management and staff were observed to decrease with the staff showing greater support for management decisions. This has also led to internal staff reorganization, improved management structures and a marked improvement in the ambience of both the offices and installations, which has improved their corporate image.

All the utilities have improved their documentation and reporting capabilities. With the monitoring and evaluation reporting templates developed during the execution of the programme, data and information is captured on a regular basis. Through the reporting templates, the utilities can now track their performance over time and produce comprehensive monthly and quarterly reports.

Table 2 summarizes the key outcomes in two of the utilities: Gusii Water and Sanitation Company (GWASCO) in Kisii, Kenya and Bukoba Water and Sewerage Authority (BUWASA) in Tanzania.

Pilot areas were block mapped in each of the towns which has enabled the utilities to easily identify their customers in these zones and to increase the efficiency of metering. For example, BUWASA increased metering efficiency from an average of 58% before the PIP to 95% in the period of nine months after the introduction of the PIP in September 2007. The new computer billing system has now been installed in all the towns and customized to suit each utility's circumstances. This has enabled

**Table 2: Key outcomes of the capacity building in two of the participating utilities**

Performance indicator	GWASCO		BUWASA	
	Sept 2007 (Before PIP)	June 2008	Sept 2007 (Before PIP)	June 2008
Water produced (m <sup>3</sup> /d)	-	2778	-	5695
Unaccounted for water (NRW)	62%	41%	59%	51%
Revenue collection (USD)	12,773	21,133	24,923	48,369
O&M expenditures (USD per month)	27,917	22,423	31,032	50,869
Working ratio (expenditure / revenues)	2.2	1.06	1.25	1.05
Number of metered connections	696	1,676	2,720	5,220
Metering efficiency (%)	15%	29%	58%	90%

computerized generation of bills that can easily be referenced to the customer data base and integrated with the block mapping.

GWASCO managed to reduce NRW from 62% before the programme to 41% in the period of nine months after the introduction of the PIP in September 2007. These improvements were as a result of implementation of better monitoring combined with an improved response to leaks and bursts. Examples of revenue collection improvements for BUWASA are shown in Figure 2. Improvements were noted in revenue collection in all the towns, although in some cases the targets set for each quarter in the PIP were not achieved.

### Institutionalization of improved operational and management practices

The reductions in NRW can be attributed to both the infrastructure developments and hardware components provided by UN-HABITAT combined with the skills acquired by the staff acquired during the Fast Track Capacity Building programme. The results that have been achieved demonstrate that an integrated programme of training and capacity building combined with investments in physical infrastructure offers the best hope of improving institutional capacities in the long-term.

The key to achieving the institutionalization of O&M practices is to ensure that there is a demand within the organization from all levels in staff from the director down to the technicians, who are responsible for

actually implementing changes in O&M practices. These changes need to be enshrined in the organization's strategic and policy and business plans. As well as changes in operational changes from a technical perspective, there is a need for specific tools that enable managers to make decisions related to operation and maintenance practices.

Training programmes must be relevant and 'hands on' and should be supported by assistance in systems development. The training provided by NWSC has been immensely beneficial to the utilities participating in the programme. However, the quality of the existing staff needs to be strengthened further through tailor-made training programmes. These may include asset management tools, standard operating procedures and / or performance monitoring indicators. UN-HABITAT is aiming to collaborate with IWA, WHO and the National Institute of Public Health in Japan under the umbrella of the Operation and Maintenance Network (see box) to meet these capacity building needs. ●

### References

NWSC (2008) *Fast Track Capacity Building Programme For Utilities. Final Project Report (September 2008)*. Lake Victoria Water and Sanitation Initiative, NWSC External Services, Uganda

### Note

<sup>1</sup>World Bank (2009) *Improving Municipal Management for Cities to Succeed: An IEG Special Study*. Independent Evaluation Group, Knowledge Programs and Evaluation, Capacity Development (IEGKE), Washington DC.

### About the author

Graham Alabaster is Chief of Section I of the Water Sanitation and Infrastructure Branch in the Human Settlements Financing Division of the United Nations Human Settlements Programme UN-Habitat, Nairobi, Kenya. Email: [Graham.Alabaster@unhabitat.org](mailto:Graham.Alabaster@unhabitat.org)

**Figure 3:** Revenue collection trends for BUWASA (July 2007 – June 2008)

