

Improving utility management: Case study from Kisumu, Kenya

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This paper highlights the main steps taken in the process of developing a Performance Improvement Plan (PIP) for Kisumu Water and Sewerage Company (KIWASCO), as part of the WUP capacity-building project funded by SIDA, which was facilitated by WEDC in partnership with Severn Trent International. As a departure from previous consultancies, the utility staff actually developed the PIP themselves, during which process they built their capacity in strategic planning processes. Although the project was implemented during a difficult period in which KIWASCO was in a transition, with several changes in senior management, it is felt that the involvement of middle managers in the PIP process ensured that maximum benefits were derived from the project.

Introduction

The water and sanitation targets are a prerequisite for achieving most Millennium Development Goals (MDGs) and halving global poverty by the year 2015. Keeping on track of set targets for water and sanitation services has been difficult for many low-income countries, particularly in sub-Saharan Africa. The challenge is higher in urban areas of some of these countries, where the number of people living in low income settlements of the urban centers is escalating. Service coverage may be improved through a combination of institutional, organisational and technological innovations. This paper highlights the experience and learning points from an initiative undertaken by management of Kisumu Water and Sewerage Company (KIWASCO). The initiative was undertaken as part of a project funded by Swedish International Development Agency (SIDA) through the Water utility Partnership (WUP). The initiative was facilitated by consultants from the Water, Engineering and Development Centre (WEDC) and Severn Trent Water International.

Background information

Kisumu is the third largest urban centre in Kenya, with an estimated population of 350,000 people at the end of 2004.

The Water Department of the Kisumu Municipal Council legally became autonomous in November 2001, but due to conflict of objectives, values and interests, it practically became operational as KIWASCO, a limited company wholly owned by the Municipal Council, in July 2004. Although KIWASCO is supposed to operate as an autonomous company in line with the agency agreement signed between the company and the Council, forces in the external environment have sometimes a very significant role in the strategic and tactical direction of the company.

Since its inception, KIWASCO has formulated guiding principles highlighted in Box 1.

Box 1. KIWASCO's mission statement, vision and core values

Vision: To be the best water and sewerage provider in the Lake Region

Mission: To expand, sustain and provide reliable, portable and high quality water and ensure collection and disposal of wastewater in an environmentally friendly manner and at optimum cost

Company Strap line: Water is Life; Sanitation is Dignity

KIWASCO has two conventional water treatment plants with a total throughput capacity of about 18,000 m³/day, and with a treated water storage capacity of only 7,200 m³. The water treatment plants and the reticulation network are aged and inadequately maintained. Furthermore, the two sewage treatment plants and the sewer network have a small catchment area, compared to the municipal area. Table 1 shows basic performance indicators at the start of Phase Two of the project in July 2003.

Purpose and scope of the project

The overall objective of the project was to improve the performance of KIWASCO, which would in turn result into reduction of unaccounted for water, and allow for expansion of services to low-income settlements of the towns. The project was facilitated by a team of WEDC/Severn Trent consultants through the following action program:

A visit by the consultants to KIWASCO in October 2003 to update the findings of the audit manual that was carried out in the first phase of the project more than two years earlier. The area for piloting action plans for reduction of UfW was also identified during this visit.

Table 1. Basic performance indicators for KIWASCO in July 2003

Description	Unit	Indicator
Water Production	M3/day	18,500
Monthly billing	Kenya Shs	18 million
Monthly Revenue Collection	Kenya Shs	10 million
Total accounts	Number	11,500
Active accounts	Number	5,300
Unaccounted For Water	Percentage	70%

- A two-weeks' long training course in aspects of modern utility managements techniques, which enabled participants to prepare effective Performance Improvement Plans (PIP) and Action Plans for reduction of UfW
- Continuous backstopping through on-line and telephone communication, during the PIP preparation
- A one-week seminar in which utilities presented their draft plans followed by peer discussions on the scope and content of the draft PIPs.
- Final visits by the consultants to KIWASCO in November 2004, during which focal personals were assisted in the finalization of the PIPs.

The Performance Improvement Plan for KIWASCO was developed by a team of staff in the Utility, with support from the consultants. The core focal persons of this project were:

- The Technical Manager
- The Commercial Manager
- The Chief Accountant
- Asst Technical Manager.

Other staff were co-opted during the process, as and when required. Therefore, the PIP document was developed through an overly participative process involving senior, middle and supervisory staff.

The process of developing a PIP

The consultants assisted KIWASCO utility managers to map out the existing situation in the utility. A SWOT analysis was carried out with all senior and middle management. Table 2 shows major issues that were highlighted by staff.

Through a participatory process, the perceived weaknesses and threats were clustered under three headings of management, technical and financial issues. It became clear from this exercise that most problems were management-based. Furthermore, many of the problems clustered under Technical and Financial categories were found to have roots concerned with the management capacity of the utility.

Table 2. An abridged series of the SWOT Analysis by KIWASCO senior and middle staff, October 2003

Strengths	Weaknesses
<ul style="list-style-type: none"> • Autonomy of Company from the Municipal Council • Going concern • Monopoly of operations • Experienced dedicated staff • Income from sewerage services billed with water services • Sufficient technical information on the network 	<ul style="list-style-type: none"> • High level of illegal connections • High level of UFW • Inadequate production capacity • Frequent breakdown of infrastructure • Frequent bursts in the reticulation network • Weak management procedures & systems • Weak HRD and management systems • Poor MIS
Opportunities	Threats
<ul style="list-style-type: none"> • Inexhaustible raw water • Inexhaustible market • Affordable labour • Legible to international loans/grants • Water policies being updated • Existence of a gravity raw water source 	<ul style="list-style-type: none"> • High lake water pollution rates due to high pop • Environmental threats e.g. water hyacinth • High UFW • High unwillingness of customers to pay for water • Unstable power supply • Corruption • Illegal connections • Political interference • High poverty levels among customers

Having clustered the problems into three issue areas of management, technical and finance as shown in Table 3 below, separate task forces were formed to deal with each of the issue areas.

With the help of the consultants, the utility task force developed strategies to address the challenges shown in Table 3. Through discussion and brainstorming, strategies were developed to address the following challenges:

- Optimisation of human resources of the company
- Improvement of information management in the company
- Reduction of unaccounted-for-water, both technical and commercial aspects
- Optimisation of the water production systems
- Optimisation of the water distribution systems
- Improvement of the wastewater collection, treatment and disposal systems
- Improvement of revenue collection, including carrying out customer surveys to validate customer records
- Improvement of customer services

The task forces came up with the following broad strategies to address the above challenges:

Table 3. Classification of key issues perceived as weakness and threats to KIWASCO

Management	Technical	Financial
<ul style="list-style-type: none"> • Poor org. structure • Lack of transport • Slow procurement system • Poor MIS • Poor PR • Lack of protective clothing • Staff is irrationally deployed • Poor comm.. • Staff attrition • Weak HR capacity development system • Lack of processes, procedures and guidelines • Lack of skilled manpower in key areas 	<ul style="list-style-type: none"> • Illegal connections • Low production levels • Inadequate infrastructure • Frequent bursts • Frequent pump breakdowns • High treatment costs • Poor O & M practice • High levels of breakdown of meters • Old network • Drawings of existing network not updated 	<ul style="list-style-type: none"> • Late payment of salaries • Low rate of debt collections • Poor cash flow • Inadequate tools and equipment • Poor stock management • Non-payment of internal and external liabilities • Filling of vacant positions • Non-remittance of statutory deductions • Disparity in salary scales

1. Operations and maintenance management strategy
2. The human resource development and information management strategy
3. Reduction of UFW strategy
4. Revenue enhancement strategy
5. Service expansion (both water and sewerage services) strategy
6. Informal settlements service enhancement strategy

With the assistance of consultants, the three task forces worked out goals, targets and accompanying activities for each of the identified strategies. For example, under the operations and maintenance management strategy, one of the corporate goals identified was to:

Increase the quantity and quality of potable water delivered to the distribution network from 19,000 m³/day to 20,000 by 2006/07 in a cost-effective manner.

In order to work towards this corporate goal, the target for one of the water treatment plants was to increase the production capacity at Dunga Waterworks from the present 16000 m³/day to 21,700 m³/day by end of FY 2007/8. The 'hardware'-based activities for Dunga Waterworks were

derived as:

- Procure and install 1 No Pumpset at Dunga Intake by end of FY 2004/05
- Procure and install 2 No. High lift pump sets for Old pump house and new pump house, Dunga WTP by end of FY 2005/06
- Clean 2 No water reservoirs annually
- Clean 12 No sedimentation tanks annually

A 'soft-ware'-based target contributing to the above corporate goal is to establish best practices in water production processes by end of 2004/05. The activities for this target are:

- Train water operators in O & M best practices
- Train water operators in occupational health and safety procedures
- Establish tailor-make plant operational manuals
- Establish routine and Planned Preventive Maintenance procedures

Each of the goals, targets and activities were compiled in form of a matrix showing the projected progress against each item for the period up to the Financial Year 2008/09, together with identified officer(s) responsible for spearheading the actions, and the budgetary implications.

The financial model

The costs for each of the activities were estimated and compiled as part of the expenditure budget. These were then inputted into an Excel-based financial model that was tailor-designed by the consultants to enable the financial implications of the PIP to be quantified. The model deals with:

- Policy issues, in particular the impact of additional water production capacity and UfW improvements on the availability of water and the resultant need to plan and pro-actively promote its sale and delivery.
- The implications relating to any assumed composition of UfW between technical and commercial losses e.g. most reductions in commercial losses should translate directly into increased sales because you are discovering water already being delivered.
- Service Coverage i.e. population served
- Capital programme
- Income and expenditure (Profit & Loss Account) and cash flow requirements
- Tariff setting
- Manpower planning
- Setting SMART targets

Pilot area for reduction of UfW

With the help of the consultants, the technical department identified a suitable location where the reduction of UfW could be piloted. The pilot area was identified through the following process:

- Identification of existing activities for reduction of UfW and the existing district meter areas (DMAs)

- Studying the water network plans and identifying potentially better DMAs
- Visiting potential sites and checking installations such as existing meters chambers, boundary valves, and any possible restrictions (e.g. busy highways)
- Selecting the most suitable place for establishing a pilot DMA.

The technical staff then established the pilot DMA through the following process:

- Data collation on the zone characteristics
- Identification of number, location and optimal dimensions of the district meters
- Evaluation of the potential to carry out pressure management
- Installing and marking boundary valves and district meters
- Updating network plans and establishing DMA data records

However, this process delayed due to unavailability of the required equipment.

Results of the Intervention

Although the SIDA-funded project on utility management and reduction of un-accounted-for-water came during KI-WASCO's transitional period full of turbulence, the project improved the capacity of senior and middle management staff in strategic planning. The PIP process enabled staff to carry out a situational analysis of the company in a fully participatory manner. This process enabled the staff to shift their focus from 'fire-fighting' short term issues, to the long-term strategic horizon of finding answers to the following four golden questions:

1. Where has the utility come from?
2. Where is the utility now?
3. Where does the utility want to be?
4. How does the utility reach the desired destination?

A number of improvements have already been realized since the development of the PIP document. Firstly, the estimated figure of unaccounted-for-water has reduced from 70% at the beginning of the project to 60% two years later. This short-term gain is mainly due to 'soft-ware' interventions that have so far been accomplished in the management of operation and maintenance of distribution networks and billing systems. It is expected that further progress will be made as interventions in 'hardware' aspects are intensified.

Secondly, there has been a significant improvement in the efficiency of addressing customer complaints since the employment of a Customer Relations Officer. The company has taken serious steps to reach out to its customers. Furthermore, capacity building in customer service through a tailored programme has contributed immensely to culture change and staff performance.

Challenges

The main challenges were:

- Huge outstanding arrears by government departments
- The transitory nature of the company, leading into frequent change of top management staff.

Conclusion

KIWASCO is a company in transition. It is evolving from being a department of Kisumu Municipal Council to becoming an autonomous commercial enterprise. The SIDA-funded project on 'Water Utility Management and Reduction of Un-accounted For Water' came at the right time when KIWASCO most needed to find its strategic direction. The Performance Improvement Plan (PIP) provides the basis for improving the performance of KIWASCO. The PIP will continuously be reviewed so as to take into account the gains made and the new challenges cropping up all the time.

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MAXIMIZING THE BENEFITS FROM WATER AND ENVIRONMENTAL SANITATION

Improving utility management: Case study of MWAUWASA, Tanzania

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Mwanza Urban Water and Sewerage Authority (MWAUWASA) has been encountering a lot of challenges, which includes inter alia, the still high UfW, great outstanding balances by debtors, high power costs, underdeveloped management system and low sewerage network coverage. This led to the need to improve utility management and thus the urge of the organisation to participate in the Water Utility Management & UfW project. One of the issues addressed is the developing of Performance Improvement Plan (PIP) to guide the organisation in its performance including reduction in UfW. This required the organisation to address the four key questions: where are we now, how did we get here, where do we want to go, how might we get there, and how do we ensure success. The newly established District Meter Areas (DMAs) is one of the effective strategies of reducing unaccounted for water (UfW) through Measurement-Validation-Identification-Rectification cycle. The project has indeed left MWAUWASA with the in-house capacity for long-term planning for further development and sustainability.

Background information

Mwanza Urban Water and Sewerage Organisation (MWAUWASA) is a Government Agency established in July 1996 as a semi-autonomous organisation under the Water Works Ordinance. It was declared fully autonomous from January 1998. It is solely owned by the Government of Tanzania and managed under the Executive Board of Directors appointed by the Minister responsible for Water Affairs in Tanzania.

The Organisation has the mandate and mission “to provide reliable, adequate and sustainable safe water and sewerage services in an environmentally friendly manner to Mwanza City at affordable and cost effective tariffs”. This is in realization of its vision of becoming “a model in the provision of safe water and sewerage services in Tanzania” by year 2008.

As an executive agency of the government, MWAUWASA was established to fulfil the following main objectives:

- Ensure consumers get a sustainable, continuous supply of adequate water that meets WHO guidelines.
- Ensure wastewater is treated to meet Tanzanian effluent standards before disposal into a receiving water body.
- Plan, design and execute new water and sewerage projects.
- Develop and carryout proper maintenance of all infrastructures connected with water supply and sewerage services.
- Promote conservation and proper use of water resource.
- Raise revenue from the service provided for cost optimisation and sustainability.

Since its establishment in 1996, MWAUWASA has achieved a considerable level of improvements. Some of the major achievements are shown in the key performance indicators summarized in Table 1:

Table 1 Key Performance Indicators, 1996/1997 – 2003/2004

Item	1996/97	2002/03	2003/04
Water Produced/yr (000m ³)		14,279	14,337
UfW	76%	57%	50%
Water supply Area coverage		70%	72%
Customer base (number of connections)	8,000	14,515	16,303
Metered connections (%)	1%	76%	89%
Av. water supply hours/day	12	20	22
Sewerage service area coverage	-	7%	7%
Staff per 1000 connections	20	14	12
Operating ratio		0.85	0.96
Days receivable ratio	>300	206	180
Revenue Collection efficiency	-	94 %	95 %
Average monthly revenue collection (in 000' of TShs)	18,000	200,000	220,000
Internally funded capital investments (in 000' of TShs)	63,000	327,000	513,000

Other key achievements/aspects of MWAUWASA include:

- The sewerage network and disposal system that had stopped functioning for some years has been revived.
- Computerisation of the billing, finance and human resources functions.
- Water network length was extended from about 100km to 210km and water distribution improved.

- Sewerage network was extended to a length of 24 km.
- The organization was restructured by establishing posts and employing professionals in key disciplines such as business, finance, administration, public relations, legal and engineering.

Purpose and scope of the utility management improvement project

The project to improve water utility management at MWAUWASA took a participatory approach whereby the project team (consultants) facilitated the processes and the participants produced the project outputs in terms of Performance Improvement Plans (PIPs) and UfW pilot area plans. The purpose was to improve the performance of water and sewerage utilities by improved management thereby allowing expansion of services to peri-urban areas.

Performance improvement plan (PIP)

A performance improvement plan (PIP) is a comprehensive work-plan developed to address a variety of management issues in a utility, with the intention of enabling the utility to achieve the objectives of its mandate and mission. It is therefore, an important tool for utility managers in effective and efficient water utility management.

MWAUWASA developed her PIP for year 2004 to 2008 in financial year 2003/2004 and started its implementation in financial year 2004/2005. Even at this early stage of implementation, the PIP has brought a considerable change in the culture and attitude of performance of the organisation. Much more in the performance and service delivery of the organisation is expected as implementation goes on.

The process of developing the PIP involved the following stages:

1. Institutional Analysis.
2. Training for developing the PIP
3. Preparation of Draft PIP
4. Review of Draft PIP
5. Finalisation of PIP document
6. Dissemination of the PIP to stakeholders.

Institutional analysis

This was an important starting point where the top managers, middle managers and other selected staff, by the facilitation of the project team, undertook an analysis of strengths, weaknesses, opportunities and threats (SWOT) of MWAUWASA, to determine the current situation of the organisation. Furthermore, a preliminary analysis and formulation of objectives of the organization, plans and strategies for improvement was done. All these were discussed with stakeholders in a participatory way to solicit in-house consensus on the issues.

Training for developing the PIP

Five Managers from MWAUWASA attended a two week intensive training course at the Umgeni Training Centre, Durban S.A facilitated by the consultants from the Water, Engineering & Development Centre (WEDC) and Severn

Trent Water International. Other participating utilities were NWSC Entebbe- Uganda, KIWASCO- Kenya and WASA Lesotho. The training covered key aspects of water and sewerage services utility management, necessary for developing and implementing comprehensive PIPs and action plans for UfW in the utilities. The aspects included the following:

- Institutional analysis and development
- Commercialisation and customer services
- Financial management
- Management of human resources
- Operations and maintenance
- Management of UfW
- Contracting out utility activities and private sector participation.
- Planning and development of PIPs
- Change management.

This enabled participants to prepare effective PIPs and action plans for UfW for the utilities based on good practices in commercial and customer oriented water utility management, and through shared learning and experiences.

Preparation of draft PIP

The preparation of the MWAUWASA PIP involved the following stages:

- Situation analysis of the organisation
- Strategies employed so far (how did we get there)
- Development of Vision, Mission, Objectives and Targets to be achieved
- Strategies to be implemented, and
- Monitoring and evaluation.

Situation analysis:

In the situation analysis, the organisation undertook performance audit against key performance indicators as agreed in the memorandum of understanding between MWAUWASA and the Ministry of water. Another aspect undertaken was the SWOT analysis and identified actions to reduce the weaknesses and capitalize on the opportunities identified by the analysis. Furthermore, political, environmental, social and technical (PEST) analysis of the organization was undertaken.

Strategies employed:

Analysis of strategies employed for the organisation to be there to determine the effectiveness and efficiency during implementation. This was important so the organisation could take what was good and leave what was bad.

Vision, mission, objectives and targets:

The management agreed on a Vision and Mission of the Organisation and then developed and clarified objectives in line with the Vision and Mission and derived from the Organisation's mandate and obligations.

To realize these objectives, by help of a financial planning model developed during the training, the organisation

developed and agreed on performance standards and targets that are Specific, Measurable, Achievable, Realistic and Time bound (SMART). Table 2 below shows some of the key targets to be achieved:

Table 2 Key Performance Targets/Indicators for the next 3 years of implementing the PIP

INDICATOR/RATIO	2005/6	2006/7	2007/8
Water Produced/yr (000'm ³)	14,280	14,280	21,080
UfW	40%	35%	30%
Water supply Area coverage	82%	84%	90%
Customer base (# of connections)	21,340	24,200	27,400
Meters in working order	97%	98%	99%
Average supply hours per day	21	23	24
Sewerage service area coverage	8.5	9%	12%
Staff per 1000 connections	10	9	8
Operating ratio	0.8	0.75	0.7
Days receivable ratio	120	90	60
Revenue Collection efficiency	97 %	98 %	98 %
People/house connection	22	20	18
% Of population served	80 %	81.5 %	82 %

Strategies to be implemented

The organisation assessed itself against a number of critical success factors that contribute to effective and efficient utility management and addressed each of them as below:

- The management agreed upon and developed a new management structure, which is more commercially oriented, aimed at bringing roles and responsibilities to the right units and/or posts. This is intended to enable effective delegation of responsibility, authority and resources as well as accountability.
- Strategies have been developed to address reduction of UfW. Essentially covering the following key aspects: active leakage control, speed and quality of repairs, pressure management, metering and meter management, pipeline and asset management, and UfW record management.
- The management agreed, developed and implemented a customer services strategy, that include: customer identification & management; targeting & serving the customers by increasing water production and water & sewerage service coverage, improving water & effluent quality, and giving preferential services; and linking customer database with other management databases.
- A comprehensive human resources strategy was developed and is being implemented. It addresses policies, procedures and plans on staff motivation, pay schemes, training, performance management, working environment improvement, and seeks to empower employees to release their full potential for the benefit of MWAUWASA.
- The existing Management Information System (MIS) was reviewed in light of objectives and targets set. A proposed

MIS addresses the issue of integrating financial, human resources, GIS and customer databases so as to enable the organisation to effectively communicate internally and externally.

- Operation and maintenance has been dealt with by a preventive and planned maintenance system for plants, networks and other capital and office equipments, with a commitment to prior and bulk purchasing.
- Financial management strategy was developed to include interventions for turnover increase, revenue increase, debt management, and operating cost reduction. It involves the issue of tariff setting to ensure cost recovery and affordability by using structures that bring cross-subsidy, budgeting and budgetary control.
- Capital investment programmes have been developed to include reviewing of existing assets, especially the infrastructures, and embark upon replacing those in poor condition. It also includes continuing soliciting external funding for major projects.

Monitoring and evaluation

This will be facilitated by the use of SMART targets and performance contracts. Monitoring will enable the organisation to review progress and to propose actions to be taken in order to achieve the set objectives in the sense that it will identify actual or potential success and failures as early as possible and facilitate timely adjustments.

In evaluation, there will be an annual audit, review, and objective assessment of the design, plan, implementation and outcome of all ongoing or completed interventions in order to:

- Improve planning and implementation,
- Improve future policies and intervention through feedback and lessons learnt
- Review and re-set objectives and targets if necessary
- Provide bases for accountability, including provision of information to the public.

Review of draft PIP

The draft PIP was reviewed in two ways:

1. A team of managers was assigned to work with experts from WEDC & Severn Trent and jointly visit the organisation to review the draft to ensure all important aspects and methodologies were taken on board.
2. A one-week seminar was held where the organisation presented the draft for peer review, discussion, comments and recommendations by the participating and invited water and sewerage utility managers.

Finalisation of PIP document

Finalisation of the PIP was done by incorporating recommendations that arose from the review. This also involved the process of getting the document accepted by key stakeholders and authorized by relevant bodies before formal implementation.

Pilot area action plan for reduction of UfW

The internationally accepted strategy to reduce UfW is that of M-V-I-R, i.e.: Measurement of flows (supply & demand); Validation of readings; Identification of the problem (leaks, commercial losses); and, Rectification (repair of leaks, corrected billing database). The most effective way to implement this strategy is to establish District Meter Areas (DMAs) and in this light the organisation established a pilot DMA in Mahina area that is part of Mkuyuni water distribution zone.

In setting this pilot area the following were involved:

1. In consultation with the experts this pilot area was identified based on easy isolation from the distribution system, it has a representative number of all customer categories, does not require boundary valves and only one meter is required to monitor flows into the area.
2. Analysis of the existing data on the area and its customers was made to determine water demand and pressure in the area. This was augmented by field tests.
3. Collation of data on the area characteristics including: number of properties, number of people per connection, any illegal connections, monitoring billing information, mains record verification, replacing/repairing all known faulty/stopped meters, and night demand data.
4. Calculation of the required meter size to measure inflows.
5. Installation of the meter and consumption meters to all connections in the area.
6. Updating network plans including by extending distribution lines and replacing some old pipes.
7. Recording the DMA data including: meter type & number, pipe work drawings, vulnerable customers, key customers and check meter points.
8. Commissioning the DMA

This completed the process of setting up the pilot DMA. However, the DMAs have to be managed properly for give better and desired results. Below are outlined further action plans taken in the management of DMAs:

- Establishing more DMAs. So far 14 DMAs have been established in all 4 water distribution zones.
- Daily reading of inflow measuring meters and consumption meters and then calculating mass-balance and respective UfW.
- Effective and timely locating, repairing leaks and eliminating illegal use
- Monitoring and re-measuring, which involves continuous recording of flows into DMAs and consumption, and verification of data.
- Managing records of the DMAs which includes: updating data, ie new connections; recording of time, materials & equipments used for leaks, illegal use detecting activities and for the evaluated costs incurred; recording of time, materials & equipments used for repairing leaks and legitimising or disconnecting illegal use and the evaluated costs incurred;

- Undertaking an annual review to assess the effectiveness of the strategy including elements such as progress against targets, change of targets due to lessons learnt and investment made.

Results of intervention

The performance improvement project undertaken by MWAUWASA has resulted into the organisation producing a comprehensive Performance Improvement Plan (PIP) of which the first phase is of 4 years (2004/2005 – 2007/2008). Furthermore the skills and knowledge gained has built an in-house capacity in preparation and implementation of the current and future PIPs.

The project resulted in the development of a financial model plan that has proved to be a very important tool in carrying out situational analysis of the organisation, setting and shaping SMART targets, and analysing the financial implications of strategies and thus allowing timely adjustments. The project, as it involves utilities with varying levels of development, set out for constructive benchmarking among the utilities themselves

The implementation concept of the DMA as an effective tool in UfW reduction strategy has even at this early stages shown significant gains in the organisation.

Conclusions

The performance improvement project came at the time when MWAUWASA was in transition to a full autonomous entity and changes were necessary. The project was greatly influential in these changes especially the concepts that came with it such as DMAs for UfW reduction. Furthermore, it has left MWAUWASA with the in-house capacity for long-term (strategic) planning for further development and sustainability. One of the lessons learnt is that any utility cannot do the right things without planning into the future, i.e. having a roadmap towards its vision of the future. The PIP has underscored this.

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Improving utility management: Case study from Lesotho

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This paper documents the process of developing a Performance Improvement Plan (PIP) and an Unaccounted for Water (UfW) Action Plan by the Water and Sewerage Authority (WASA). This is part of a SIDA-funded Water Utilities Partnership (WUP) management capacity building project towards increased coverage of water and sewerage provision to low-income peri-urban communities. The facilitating project team was made up of members of the Water, Engineering and Development Centre (WEDC) and Severn Trent International (STI). WASA's Corporate Plan (PIP), developed as a collaborative venture across the organization, includes findings of financial and performance reviews, a situational analysis, key objectives and the strategic activities required to achieve these. A Pilot Area Action Plan for UfW was identified as A District Metering Area with bulk meters installed and an UfW Unit planned. Target levels for the proposed performance indicators are as yet incomplete but the impact of involvement with the project has been positive with many related issues being taken forward as a direct result of this project.

Background information

The urban population of Lesotho has seen significant increases, with the migration of people from rural to urban areas in response to the burgeoning garment industry, particularly in Maseru. This has led to an unprecedented demand for water supply and sanitation services, which has resulted in about half of Maseru's inhabitants lacking an adequate supply of safe water, and having to rely on water vendors or joining the long queues at public water points (Reliefweb, 2004).

The water sector in Lesotho falls under the Ministry of Natural Resources, and within that, the Department of Water Affairs, which is responsible for the management of water resources. Since 1991, specific mandate has been given to the Water and Sewerage Authority (WASA), based in Maseru, Lesotho, as the utility responsible for water treatment and supply, sewage collection, treatment and disposal in 17 declared urban areas of the country.

WASA has recently developed a vision and reformulated its mission, which will guide operations from 2004 to 2009. In line with a vision which wants to become a world class provider of adequate water and safe disposal of wastewater services, WASA's mission is:

'In all designated areas, we provide water and safely dispose of treated wastewater into the environment'.

Purpose and scope of the project

The overall objective of the SIDA-funded *Water Utility Management and Unaccounted for Water project* was to improve the performance of six representative African water and sanitation utilities, of which WASA was one. This was to be achieved through better management processes, lead-

ing to the expansion of service provision to low-income, peri-urban communities. The project team from WEDC and Severn Trent International (STI) had the role of facilitating change within WASA, although it was the responsibility of the utility staff themselves to then plan and implement its own programme of improvements, with ongoing support from the consultants.

The specific objectives of the project as they related to WASA were:

- to assess the performance of WASA and enhance its management expertise through consultancy activities with the project team;
- to undergo training in elements of utility management techniques, leading to the development of a WASA Performance Improvement Plan and a UfW Action Plan; and
- to involve WASA in the promotion of partnerships between African water utilities and other utilities regarding the production of Performance Improvement Plans.

At the time of initial involvement with the project, WASA's corporate plan had lapsed without the development of a further version. Consequently, there was no broad strategy and what planning there was took place in one-day meetings, meaning that important issues were often not adequately discussed, if at all.

Performance improvement plan (PIP)

The development of WASA's new Corporate Plan, as its Performance Improvement Plan is called, was finalised in 2004, with target dates for completion in 2009, subject to

a rolling annual review process. The methodology used to develop the Corporate Plan began with a review of a redundant, previous corporate plan for the institution, in order to assess the level of achievement since then. Separate review processes were carried out in each WASA division, with consolidation by the Corporate Planning Unit. Key staff from each division were involved in this to allow lesson learning across the organization and the sharing of viewpoints and experience.

In addition to continuous support and assistance, inputs from the project team were consultant visits to WASA, and a two week-long training package on aspects of utility management techniques, plus a one week seminar for presentation of WASA's outputs. Firstly a situation analysis was carried out, examining the internal and external environments, focusing on perceived strengths, weaknesses, opportunities and strengths. This SWOT analysis revealed the following (Table 1):

Table 1. Abridged results of SWOT analysis by WASA

Strengths	Weaknesses
Business monopoly Large customer base Staff with good sector knowledge Available resources Well-paying customers Financial stability	Inadequate leadership Weak corporate governance Poor communication Poor customer service Low level of revenue Corruption and fraud High level of UfW Age and level of infrastructure maintenance Centralised decision making Inaccurate meter reading Inadequate ICT No HIV/AIDS programme Inability to meet demand Poor performance
Opportunities	Threats
Monopoly status High demand Demand for convenient payment methods Links with other institutions Donor assistance Benefits of proximity to S Africa Environmental Act Available good quality water	Droughts Privatisation of utilities Crime Legal impediments Environmental pollution Industrial disputes High mortality rate Unemployment Old loans Lack of union Inadequate water sources

To capitalise on its strengths and opportunities and to minimise the negative impact of the weaknesses and threats faced, WASA identified the following corporate objectives, applicable over the five year period (Box 1):

54 strategic actions were devised, to achieve these objectives (Box 2).

Box 1. WASA key objectives

- Streamlining and capacity building for management
- Improving human resource management
- Reducing 'Unaccounted for Water' (UfW)
- Ensuring financial sustainability
- Improving customer service
- Increasing productivity
- Expanding service coverage
- Ensuring adequate, reliable and quality products
- Institutionalising environmental management
- Reinforcing the HIV/AIDS programme.
- Expanding service coverage.

Box 2. WASA's strategic proposals

WASA's strategic approach is two-fold. 51 specific actions have been defined to meet the objectives listed in Box 1. Three more generic strategies are listed below and are prerequisites to achieving all the objectives during the allotted time period:

- To improve corporate governance
- To institutionalise strategic planning
- To implement the Performance Agreement

Pilot area action plan for the reduction of UfW

The reduction of UfW was identified as one of WASA's key objectives since it incurs a direct monetary cost. Although this had long been a major issue, the extent of it had been neither monitored nor effectively resolved. A consequence of the age of the main pipe work combined with a lack of maintenance was frequent major leakages and pipe bursts, some of which remained undetected.

Following on from the project team visit in December 2004, which strongly encouraged the development of pilot areas for monitoring and controlling UfW, WASA undertook to implement work in its identified pilot area. Other pilot areas are still to be chosen and appropriate action taken.

The pilot area has been identified as a District Metering Area (DMA), where a bulk meter is in use for monitoring purposes. It is planned to extend this scheme with further bulk meters, once approval has been secured for funding from the World Bank. A further additional proposed activity is the installation of leak detectors.

Furthermore, an Unaccounted for Water Unit, which would take responsibility for addressing all related issues, is yet to be established. Presently, consultations are still taking place about how to establish the proposed unit and how to allocate responsibility to it.

WASA has identified headings for the reduction of UfW in its Performance Measurement Matrix. These are summarized in Box 3:

Box 3. Reducing UfW from 37% to 25% by 2009

- Install bulk meters at production points and service reservoirs
- Ensure that quarterly drop tests are conducted at service reservoirs
- Update network maps
- Install district meters
- Carry out active leak detection activities
- Carry out pressure zoning and install pressure reducing valves
- Replace uneconomical-to-repair pipeline sections in a rational manner
- Digitize the water network and pressure maps
- Acquire Network Modeling Software
- Carry out Planned Preventive Maintenance of Network
- Ensure all connections are metered
- Improve the accuracy of meters
- Improve accuracy of meter readings
- Improve accuracy of bills
- Carry out surprise visits to sampled disconnected users to discourage illegal use.

Results of the intervention

There have been positive impacts on WASA as a result of the PIP process, although there have been some difficulties in implementing the necessary changes. Major advances have been made as a direct consequence of involvement with the project, on which to build improvements over the next five years. The following areas have been taken forward as a result of the project:

- Improving personnel regulations
- Divisional restructuring
- The reemergence of a five year Corporate Plan, with commitment towards a new institutional mission and vision, and monthly and quarterly reporting
- Producing annual reports
- Implementing a capital investment programme
- Developing a financial model.

Specific targets listed under 16 broad headings aim to translate the objectives identified in Box 1 into actions. Table 2 indicates just some of these basic performance indicators with the target date of 2009. This is taken from a much more comprehensive matrix (WASA 2004).

Conclusions

The outputs produced by WASA exemplify robustness and adherence to best practice. It is as yet, however, too early to quantify the effectiveness of the plans in reducing UfW. Still, significant challenges face WASA as listed below (Box 4):

Engagement in the PIP process has been a learning experience and several observations have been made about how it could be more effective, mainly relating to the need for more regular training:

- to help reinforce in staff an understanding on issues such as their responsibilities towards providing best quality services to customers and ensuring the utility's sustainability based on profit;

Table 2. Abridged list of performance indicators for WASA (date to 2009)

Indicator	Unit	2004	2009
Improve the financial performance of the Authority			
Collection efficiency	%	95	90
Debt age	months	40	6
Customer base for water	%	55	70
Customer base for sewerage	%	6	15
Meter reading efficiency	%	75	90
Improve customer service			
Customers with less than 18 hours water supply	Number	104 000	42 000
Monthly customer complaints	number	150+	100
Customer response time	time	3 months	5-10 days
Increase service coverage			
Water service coverage	%	55	65
Sewerage service coverage	%	6	10
Water service coverage increase	Km	-	300
Sewerage coverage increase	Km	-	20
Consumers in excess of 150 m from water supply	number	94,000	54,000
New water connections	number	-	7700
New sewerage connections	number	-	540
Reduction of UfW	%	37	25

- to assist with both long and short term planning in order to achieve the above;
- to develop a strategy for taking forward working agreements between the authority and other institutions;
- to compare the working practices and operations of WASA with other water utilities, in order to improve existing practice and develop new activities; and
- to include visits to other water utilities as a key learning experience about problem solving and responding to challenges.

Box 4. Current challenges facing WASA

- The transition from a government department to a financially sustainable corporation
- Operating on a commercial basis
- An inadequate and old reticulation system
- Water abstraction, storage, treatment and distribution
- Observing potable water and effluent standards
- The high demand for water supply and wastewater services
- Management of public standpipes
- Payment of bills by government institutions and other customers
- Monitoring illegal connections and disconnected accounts
- High levels of UfW.

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Challenges of managing non revenue water: Experience from a water utility in Uganda

S. Tumuheirwe and M. Lutaaya, Uganda

Reduction of Non Revenue Water, NRW remains one of the major challenges facing many utilities in most developing countries. High NRW means that in order to sustain the operations of the utility, the consumers have to pay high tariffs for the inefficiency which makes the service unaffordable to the majority of the consumers in low-income countries. Overcoming the challenges of NRW calls for joint efforts from all stakeholders and experience sharing from other parts of the world. This paper presents a step by step approach used by National Water and Sewerage Corporation- Entebbe to address the challenges of NRW with support from the Water Utility Partnership (WUP) and experts from other parts of the world. We discuss the approach that was used and how critical stakeholder mapping especially the cadre staff and top management of the Area was to creating ownership of the project and its successful implementation.

Introduction

Reduction of Non Revenue Water, NRW remains one of the major challenges facing many water utilities in most developing countries with some recording as high percentage as 60%. There are all the reasons as to why utilities need to be concerned with high NRW. Safe Water is costly to produce and a number of costs are incurred to produce it such as; chemicals, energy costs, staff salaries, cost of the plant and equipment, maintenance costs etc. These costs must be recovered through water sales if the operations are to be sustained and for utilities that have high figures of NRW, the consumers end up paying for the inefficiency through increased water tariffs. This is a big burden especially in developing countries where the majority of the consumers are poor and as a result the service becomes unaffordable forcing them to resort to other poor/contaminated sources.

To a large extent, the level of NRW is an indicator of how well a utility is managed and the reduction of NRW is a crucial step to improve the financial health of water utilities and to save scarce water resources.

Entebbe Area is one of the Towns operated by National Water and Sewerage Corporation NWSC in Uganda. NRW for Entebbe varied from 30% to 28% in 2003 This represented one of the highest NRW figures in all the NWSC towns. With almost maximum plant capacity utilisation (over 98%), NRW reduction was the only medium term solution to securing safe water for the ever increasing demand.

Given its situation, NWSC-Entebbe Area was one of the five selected pilot areas in Africa for the Sida supported Water Utility Partnership, WUP project on improvement of Water utility Management and Unaccounted-for Water reduction.

The Area team in partnership with a team of experts from

the project have under taken a number of initiatives geared towards NRW reduction. This involved among others, carrying out a situational analysis of the system and identifying the practical innervations for implementation. This paper highlights these initiatives and the impact they have had on the reduction of NRW in the Entebbe Area.

Situational analysis

Managing NRW calls for effective institutional management systems that are comprehensive and operational. Day to day operations and future planning should have this important factor in their perspective. This implies that human beings and machinery should be planned and managed in such away that they will timely and effectively react and prevent any water losses.

In order to adopt effective measures to reduce NRW in Entebbe Area, the first phase of the project focused on carrying out a comprehensive situational analysis of the entire system in order to determine its current status. The focus was put on both management issues and water treatment plant and the distribution network status. Some of the weaknesses that were identified as far as NRW was concerned included among others;

Lack of systems to measure bulk water supply to large areas. To effectively manage NRW, it is important that a utility's service area is broken down into smaller manageable water loss areas, geographically and a measurement system put in place to determine losses that occur in these areas i.e. bulk meters to measure supply into these areas and consumer meters to measure water sales.

Old and non-functioning bulk meters at the inlet and outlet of some of the reservoirs, and old and faulty consumer meters. Controlling means measuring. It is extremely difficult

to Control what you cannot measure. The system used in accounting for water produced must therefore be reliable. It is common that meters are put in place to measure water produced and sold. It is however, more important that the meters are measuring accurately. This calls for calibrations where necessary and meter replacement policy in line with life spans of the meters as determined by the manufactures or by the utility in accordance with conditions in which they operate. The meters used should be of good quality with all the necessary accessories e.g. non- return valves. Right sizing and positioning of the meters is also an important factor. It is now known that for proper measurement, meters should be of smaller size than the pipe size for accurate measurement of the flow. Very low flow tends to leave some water unrecorded and this contributes to NRW.

Lack of minimum leak detection equipments. As far as NRW is concerned it is important that a utility is equipped with at least minimum equipment to enable it detect and fix leakages. Examples of minimum leak detection equipment include listening sticks, flow data loggers etc. With the use of such equipment there should be a deliberate effort taken by the organisation to research and fix invisible leaks. It is known that invisible leaks exist and contribute greatly to water losses. They are as bad as, if not worse than, visible ones. They should thus be managed together with the visible ones and leak detection equipments are therefore key for any utility if NRW is to be controlled.

Inadequate controls and poor documentation of the interconnections in the network. Practising network management plays a big role in reducing NRW. This process calls for pressure measurement and installing of pressure reducing valves in areas of excessive pressures. It is common knowledge today that pressure is directly proportional to leakages and bursts. This therefore makes pressure management key as far as reduction of NRW is concerned. It calls for determining ideal flows. Important also is to be able to maintain a network in a good condition. To be able to do this there should be a deliberate effort to monitor and know the pipe

network condition, performance and have replacement plans in place. All these need to be properly documented.

Old network which was prone to leaks and bursts. The assets that are used to produce and distribute water must be well managed and their lives determined for replacement. There needs to be proper documentation related to their use, maintenance and disposal for proper management.

Goals, objectives and standards for NRW reduction

After assessing the current status of the system, a set of objectives and standards were established to guide the Area in planning for what it intends to achieve i.e. the improvements to be made and the time frame as far as NRW was concerned. These goals were made clear to all staff in the Area for ownership of the process.

The main objectives that were set included;

- Increasing the ability to measure UFW/NRW for smaller geographical areas and know exactly the problematic areas and find solutions for them so as to reduce the overall area UFW from 28% (2003) to 15% by 2009.
- Making staff more accountable for their actions by making it very possible and easy to apportion blame and success.
- Increasing depth of performance monitoring and being able to fairly reward extra individual and group efforts.

Strategies implemented

After going through the above process the Area implemented the NRW/Revenue zones.

The exercise took two months to accomplish (Oct. – Nov. 2004) and involved the following:

- Replacing old and faulty bulk meters at the treatment plant and reservoirs to have reliable measurement.
- Studying the distribution network to be able to technically insolate geographical zones network wise, taking into

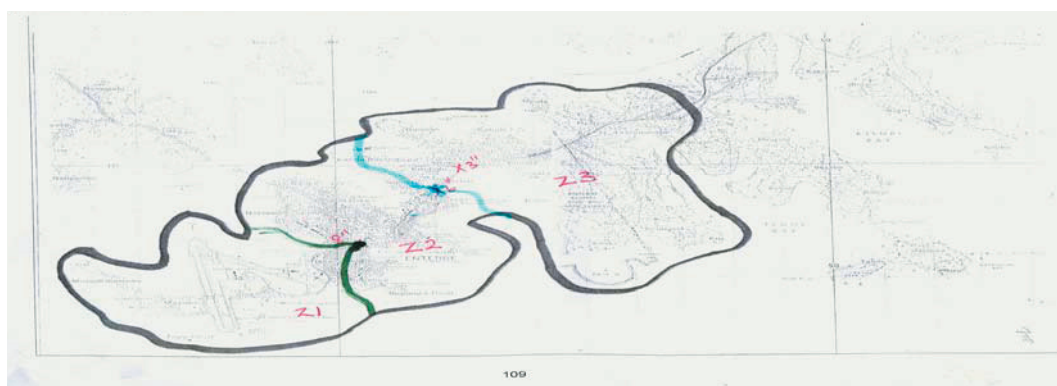


Figure 1. Map of the established Zones

- account any inter-connecting mains between zones.
- Drawing zonal maps and establishing zonal composition in terms of individual accounts, staff and other resources to create self - accounting NRW/Revenue zones.
 - Installing bulk meters and building chambers around them. One bulk meter was installed at the 8 inch main to the airport to measure water-going Airport, Kigungu and surrounding areas (named Zone I). Two bulk meters were installed at Katabi Sub County on the 6 and 3-inch parallel mains, to measure water supply to Baita and surrounding areas (named Zone II). By elimination therefore, a third zone (Zone III) consisting of Town Centre and surrounding areas was formed.
 - For each Zone, a monthly report is prepared on the operational data including full record of all leakage detection activities carried out. Zonal codes have been established in CUSTIMA (billing software) for easy monitoring of accounts and reports per zone for purposes of establishing zone by zone; monthly billing (shillings and cubic meters), revenue collected, No. of suppressed accounts, new connection and balance outstanding etc
 - Appointing zonal leaders (who are accountable for the zones' performance) and thereafter attaching staff and resources to each zone according to size, as well as defining the tasks. It was agreed that the zonal leaders should be technical persons and deputised by a commercial people since the major problem to be addressed is UFW. Apart from the Lead Partner (Area Manager) who oversees all zones each Partner was assigned a particular zone to oversee. The staff were also screened and distributed to zones according to their capabilities and mobility. Each zone has its own Meter Reader(s), Plumbers and Plumber mates and Revenue Staff. Distributed also were tools and equipment and transport allowing for sharing of resources, including staff, especially in cases of emergencies.
 - Agreeing on performance measurement indicators, reporting format and frequency. The agreed upon performance indicators include: - billing, UFW, collection, arrears reduction, new connections, suppressed accounts, response time to customer complaints, etc. In essence the zones operate as mini areas and there is a reward mechanism for each zones that achieves its set target.
 - A database has been established for bursts and leaks main cluster recording where all essential incidents of bursts and leaks on the mains are recorded and monitored accordingly.
- During initiation and implementation stages, a number of workshops were organised for all parties involved to make contributions. This was aimed at making sure that all ideas are captured and that everybody buys in, in the new system for easy implementation

Other achievements

Staffs are now more focused and motivated to work for better

Table 1. Entebbe Area NRW as per District Meter Area for the period December'2004 to March 2005

Months	Dece,04	Jan.05	Feb. ,05	Mar,05	Remarks
Zone 1					
Number of Accounts	131	140	147	151	
Billing Efficiency %	72	86	95	45	
UFW%	28	14	5	55	Big burst occurred on 2" mains over the weekend in March'05
Zone 2					
Number of Accounts	3401	3784	3827	3896	
Billing Efficiency %	61	63	80	89	
UFW%	39	37	20	11	Leak expert involved to identify invisible leaks in March'05
Zone 3					
Number of Accounts	1608	1717	1844	1919	
Billing Efficiency %	73	80	86	71	
UFW%	27	20	14	29	Grading of roads exercise cut many pipes, mains and service line in March,05

performance of their zones and since there is competition among the zones and the winning zone will be rewarded, this adds to their motivation and team spirit.

Increased knowledge and skill through training and exposure

More organised workplace and better systems in place (MIS)

Better planning process for people and other assets

Fine-tuning of the system continues as we go along but so far so good.

Conclusion

NRW is expensive for both the utility and the consumers especially in low income countries. Exchange of world experience on NRW provides means for more effective and economical measures of reducing NRW. As demonstrated above, Entebbe Area has used this experience in overcoming the challenges of NRW and though it's too early to celebrate the results are encouraging.

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Improving utility management through partnership and capacity building – the case of NWSC, Entebbe

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In order to maximise the benefits from water and environmental sanitation, urban water utilities need to improve their performance and therefore enhance the efficiency service delivery. This paper presents an innovative approach to utility management improvement taken by National Water and Sewerage Corporation (NWSC) Entebbe Area in partnership with the Water Utility Partnership (WUP), WEDC and Severn Trent and with support from SIDA. The paper discusses the participatory approach taken by all the parties in developing a five year solution oriented strategic plan and equipping the local staff with the necessary knowledge and skills to execute the plan. The partnership approach used is a crucial part in developing a sustainable performance improvement program; because the local staff have knowledge of the prevailing situation and problems in the organisation and the external experts (consultants) have knowledge of best practices and experiences from different parts of the world. The paper draws conclusions on how this approach can be introduced by other utilities in other low income to improve management performance.

Introduction

Low income countries especially in Africa are faced with a big challenge of utility management and performance improvement in order to realise the MDGs. A number of options have been tried in an attempt to address this problem including private sector participation whereby Multinational companies have been contracted to run some of the utilities in Africa. However recent trends indicate that the largest water multinational corporations are acknowledging that they cannot make money from the poor countries, and therefore they can't provide them services (David Hall, PSIRU, 2003). This position has compelled the major players in the water sector to devise alternative approaches in addressing this problem.

Water Utility Partnership (WUP) is an organisation established to address the key challenges facing water utilities and their partners in the region by building a partnership among African Water Supply and Sanitation Utilities and other key sector institutions, to create opportunities for sharing experiences and capacity building. In order to achieve its objectives, WUP initiated a Project in 2001 aimed at improving Utility Management and Reduction of Unaccounted for Water (UFW) which was funded by Swedish International Development Agency (SIDA). The project was awarded to Severn Trent Water International (UK) in association with the Water Engineering and Development Centre (WEDC), Loughborough University (UK), who constituted the consultancy and backstopping team.

The project provided support to water and sanitation institutions in five African countries of Uganda, Kenya, Tanzania, Lesotho, Benin and Congo to improve the management of

water and sanitation services, mainstream services to the urban poor within utility management and thus make progress towards meeting the MDG targets.

Background information on NWSC Entebbe

National water and Sewerage Corporation (NWSC) is a utility parastatal body, which is wholly owned by Government. The NWSC operations have grown from three towns in 1972 to 17 Towns at present. These towns include Kampala, Jinja (including Njeru), Entebbe, Mbale, Mbarara, Masaka, Tororo, Gulu, Lira, Kasese, Fortportal, Kabale, Bushenyi, Soroti, Arua, Lugazi and Mukono. The latter operations represent an urban population of about 2.1 million people (about 75% of the urban population).

NWSC Entebbe Area was selected as a pilot Area in NWSC due to its high level of UFW of 30% at the inception of the project. Like other towns of NWSC, Entebbe Area has undergone a number of strategic, purpose-oriented short-term performance improvement programs since 1998. These include 100-days' program, Service and Revenue Enhancement Program (SEREP) I and II, Area Performance Contracts (APCs), I, II and III, Stretch-out program, One-Minute Management program and the currently ongoing Internally Delegated Area Management Contracts (IDAMCs). Since their introduction, the internal reforms have had positive impacts on the performance of NWSC and Entebbe Area in particular. Table 1 below highlights the achievements realised by the Area between 1998 and 2001 just before the WUP project.

Table 1. Trend of performance indicators for NWSC Entebbe

	Indicator Prior Change Programs in 1998	Indicator Prior the WUP Project in 2001
Unaccounted For Water (UfW) (%)	44	30
Total Accounts (Numbers)	3,000	3,400
Suppressed Accts (Numbers)	890	689
Annual Billings (Billion Uganda Shs)	1	1.5
Collection Efficiency (%)	74	96

(Source: NWSC)

The success realised under these programs is mainly attributed to the following key factors:

- Board and top management commitment and support
- Purpose-based SMART targets and adequate facilitation to enable achievement of the set targets
- Proper planning at both the operational and strategic levels, with clear vision, mission, goals and objectives
- Bottom-up approaches adopted during the design and implementation of the programs which strengthened program ownership and support
- Reduced bureaucracy in operations, staff empowerment in decision making and encouraging a culture of boundary-less in day to day operations.
- The partnership approach emphasized during the implementation of the programs with significant “support and we-work-together” attitude by all stakeholders.
- Tailor made monitoring and evaluation arrangements and benchmarking possibilities to compare performance of one Area with another and sharing experiences on ways of further improving performance
- Tailor-made performance incentives (both financial and non-financial) as critical performance drivers

Despite the above achievements, NWSC-Entebbe Area acknowledged that there was still room for improvement especially in the area of UfW. The WUP project also presented the Area with an opportunity to consolidate the performance improvement trend and also develop a five-year strategic Performance Improvement Plan (PIP) which was operationalised through the short-term performance improvement programs.

The process of developing the PIP was a great experience for the Area and unique one, compared to the previous consultancy experiences. The approach adopted was demand-driven where the consultants or the technical team played a supportive and backstopping role and the staff of the Area where given the opportunity to brainstorm and devise means/strategies of addressing the problems identified.

WUP project implementation process

Performance audit of the organisations

The first phase of the project involved carrying out a performance audit of the Area with the aim of identifying the

strengths, weaknesses, opportunities and threats of the utility. This was done by a trained team of experts who worked hand in hand with the Areas staff. The audit process was executed using questionnaires and an audit manual which was distributed to the Area before hand with clear instructions for the preparation of the audit, to ensure that staff were aware of what was expected of them. Completion of the audit exercise was followed by preparation of the report of the findings and results which was presented at a joint workshop, where members from different countries deliberated and made contributions to the activities for the next phase.

In the case of NWSC the audit exercise established that although NWSC Entebbe had registered various improvements in the recent past, there were still many areas that needed further improvement. For instance, although UfW had reduced to 30%, the performance had stagnated and there was still need to build capacity in various UfW management aspects to bring this figure further down. Major weaknesses identified included: -

- Organisation structure that does not fully address UFW/ Revenue management needs.
- Inadequate Management Information Systems
- Inadequate Operation and Maintenance procedures
- Weak Asset management procedures
- Inadequate application of Planning tools e.g. financial modelling.
- Lack of district meter areas that would help monitor UFW on smaller geographical areas.
- Lack of meter replacement policy (systematic criteria/plan for replacing meters before they fail)
- Lack of flow measurements and use in metering leading wrong metering in some cases.
- Weak network management procedures e.g. inadequate pressure records and controls/management.

Training for capacity-building

A two weeks' training workshop was organized in Durban South Africa in December 2003. The workshop was aimed at equipping skills and knowledge to the participants necessary for developing and implementing a bankable PIP. The training focused on familiarizing the participants with the principles applied in the technical, commercial and financial operations of modern water utilities. A participatory approach was employed during the workshop and variation of learning methods were used which included; lectures, case study presentations and discussions on the subjects highlighted above. Field visits were also organized to Durban Metro and Umgeni Water to provide practical field demonstrations. The workshop also provided an opportunity for participants to learn from each other and appreciate other organisations' ways of doing things.

The output of the workshop was a PIP framework and an Action Plan for UfW for each utility developed by members of the respective utility. This framework was presented to the participants and there was plenty participation, interactions and exchange of ideas between the utility managers and resource persons.

Development the PIP and UfW pilot areas action plan

After the training workshop and development of the PIP framework, the trained staff fresh with the knowledge and skills acquired championed the process of developing the PIP in the Area. For the case of Entebbe this was done through a number of workshops organised at Area level and fully supported by NWSC Head office. During these workshops, just like for most NWSC programs, all staff were free to make contributions in analysing the problems and devising strategies and actions to addressing the identified problems. The PIP was developed putting the following into considerations;

- A market oriented approach with the main focus on customers
- Due consideration to the environment and the poor
- Investment and operational costs recovery from tariff revenues

During the process of developing the PIP the Area received adequate backstopping and pro-active assistance from the consultants. This was done through visits to Entebbe and assistance from their home offices.

The general outline of the PIP was as follows: - Background information on the project; the analysis of the present status of the utility using both PEST and SWOT tools; the vision of the utility, its mission, goals and objectives (where the organisation wants to be); the strategies to be employed (how it wants to get there); resource requirements (financial and non financial) and progressive monitoring and evaluation mechanism. The PIP also included a financial plan showing the cash flow derived from the PIP strategies and the financial model.

An Action plan for UfW was incorporated into the PIP and the Area was demarcated into three UfW zones of; Airport, Kigungu and surrounding areas (named Zone I), Katabi Sub County, Baita and surrounding areas (named Zone II) and the Town Centre and surrounding areas (zone III)

The draft PIP and UfW action plan for each utility was distributed to the rest of the utilities and later presented at a joint workshop organised in Lusaka. This was aimed at sharing experiences, ideas and developing strategies for completion of the plans.

The draft PIP was fine-tuned to incorporate ideas gained from Lusaka workshop and the final document was produced in December 2004.

All through these stages, there were continuous consultants' visits to the utilities to give the necessary support as well as monitor the progress of the PIP and the UfW Action plan. At the utility level, NWSC Entebbe management adopted workers participation approach in coming up with the PIP. The approach of discussion/brainstorming by committees and general meetings, learned from the stretch out program, was applied to generate ideas and strategies, for purposes of universal ownership at the end of the day.

Implementation of the PIP

PIP implementation process

The PIP for Entebbe Area is five year strategic plan which is being operationalised through IDAMC program where the Area prepares annual business plan. The business plans are developed from the PIP and there is a periodic evaluation of the performance of the Area and updating the PIP. Under the IDAMC arrangement staff earn incentives for achieving the set out performance objectives which has been a driving force in achieving the strategies within the PIP.

Results registered so far

A number of achievements have been registered since the launch of the PIP for Entebbe Area. These have been summarised below:

- New UFW/Revenue sensitive structure has been put in place and is now functional. This has benefits of enhanced performance through stronger accountability.
- Better Management Information Systems have been put in place e.g. all offices have been facilitated with computers which are net worked locally and also with other NWSC offices. Organised systems are in place to capture and make use of field information. More are under plan and will continue to be implemented accordingly.
- Enhanced debt management policy that allows for systematic follow up of customer debts and debt settlement agreements by use of a simplified debt management information system.
- District meter Area (3No) have been put in place leading to reduction of UFW from 30% to now 24%
- Enhanced understanding and application of UFW causes and management techniques that have lead to:-
 - Putting in place a meter management policy (meter database i.e. type, age, condition, manufacture, recommendations, calibrations etc) now in process.
 - Pressure measurement and control through, for example, use of pressure reducing valves is now in place
 - Right sizing of meters through matching meter sizes and flows
 - Acquired UFW management equipment e.g. listening sticks, data loggers, monometers etc
- Putting in place Asset Management policy (Asset database e.g. classification, condition, remaining lives, replacement plans etc) now in process.
- Enhanced operations and maintenance policy e.g. proper and complete documentation of our operations and maintenance planning and execution.
- Better Planning enhanced by financial modelling (matching water demands and supply/capacities, expansion planning, matching revenue and expenditure requirements, planning and building a case for tariff adjustments, among others)
- Enhanced Personnel Planning and Development to meet organisation needs especially training needs identification, planning and execution.

- Enhanced customer care policy e.g. faster and effective ways of customer complaints handling, consumer educational programs options, urban poor service options etc.

Learned lessons and conclusion

A number of lessons have been learned from this program and other programs undertaken by NWSC over time. These include:-

1. There is always a room to improve our organisations.
2. Worker involvement in planning improvements is important as it leads to ownership of the plans and makes the implementation smooth.
3. In such projects as the WUP one where consultants are used, it's more benefiting to the Utilities for consultants to give guidance and support functions and leave the beneficiaries to carry out the work themselves for purpose of ownership, appreciation and easy execution.
4. Board and Top management commitment is very critical for successful implementation of projects/improvement plans.
5. Consultants' suggestions/recommendations are not always the only ways forward. They need to be taken in the perspective of the organisations needs, beliefs and resources.

Conclusions

Many low income countries especially in Africa are unable to fully meet the demand for water and sanitation services. This is despite decades of governments and donor supported investments and consultancies. Experience has shown that the locals have better knowledge of the prevailing situations and the consultants have better knowledge of best practices around the world. In order to maximise the benefits from

both parties, there need to encourage a partnership and participatory approach by all stakeholders in order to address the challenges faced by Africa. The WUP project provides a practical benchmark for all future consultancies in low income countries.

References

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