

GOOD PRACTICES FOR IMPROVED PERFORMANCE OF WATER AND SANITATION COMPANIES IN KENYA



Learning, reflecting
and taking bold and smart steps
to change and transform



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FORWARD



Globally there has been a keen interest for companies to participate in benchmarking forums. These platforms present an opportunity for knowledge brokering facilitated by institutions set up with voluntary membership. Within this space, professionals learn from peers within the same sector or sometimes from other sectors that operate in a similar context.

As an association we are happy that the benchmarking programme has grown since inception from a membership of 9 to the current membership of 33. Our goal in implementing

this programme is to facilitate interrogation of data with an aim to trigger conversations on how the sector can find solutions that will support with the improvement of service provision. The adoption of technology is one of the areas that the programme is keen on by partnering with our associate members who consist of manufactures, researchers and software developers. Our development partners have played a critical role by walking with us side by side through to the point where the sector appreciates our contribution in driving positive change through the benchmark programme, capacity building and advocacy.

The advancement of technology has made it easy for water companies to analyse loads of data on water quality, quality of service and the cost of doing business vis-à-vis the price of services offered. Annually, WASPA collects and analysis data from its members who participate in the benchmarking programme based on 74 Key Performance Indicators. This facilitates interrogation of performance indicators and comparison of performance between peer companies. Discussions within the four task groups representing the four thematic areas facilitate the identification of best practices from water companies that have shown an improvement in performance. As an association we are keen to facilitate learning through sharing of best practices and in this regards with the support of our partners we documented case studies highlighting on processes, innovation and impact.

Over the years we have observed an increase in use of technology most especially in trying to address water losses and enhance access to water and sanitation in low income areas. Focus on customers is key for the sector hence we have observed increased use of technology in managing communications within the organisation and with its stakeholders.

I would like to encourage sector partners and organisations to contribute to the improvement of services by sharing and adopting of good practices highlighted herein.

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Eng. Daniel Nganga
WASPA CHAIRMAN

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ACKNOWLEDGEMENT



This report was developed by WASPA with the support of SNV Netherlands Development Organisation's team comprising of BfA Knowledge Management experts, Annabell Waititu and Eric Adams with input from David Wanyoike, (Programme Manager, SNV) and Ebenezer Amadi, (WASH Advisor, SNV). Eight water companies contributed to the content. The report presents case studies based on four thematic areas; Non-revenue Water, Pro-poor, Service Levels and Cost Recovery. Case studies were documented based on implemented strategies, adopted innovations and impact achieved as a result of implementing actions identified as good practices.

In this regard we would like to appreciate several individuals and organizations without whose invaluable support and input, the development of this report would not have been possible; Eng. James Gachathi, (Managing Director, Nakuru Water and Sanitation Service Company, Dr. Kimutai Murgor, (Managing Director, Eldoret Water and Sanitation Company), Eng. Nahashon Wahome, (Managing Director, Naivasha Water and Sanitation Company), Mr. Thomas Odongo, (Managing Director, Kisumu Water and Sanitation Company), Mr. Fredrick Atwa, (Managing Director, Kakamega County Water and Sanitation Company), Mr. Joseph Mberia, (Meru Water and Sewerage Service), Mr. Peter Gichaaga, (Managing Director, Nyeri Water and Sanitation Company), Eng. Daniel Ng'ang'a, (Managing Director; Muranga Water and Sanitation Company).

Equally, we are greatly indebted to all who gave technical input into this process, especially the Ministry of Water, Sanitation and Irrigation, Water Services Regulatory Board, Kenya Water Institute, Water Sector Trust Fund, and WASPA Executive Committee and the entire WASPA Secretariat Staff.

Finally we appreciate our partners; VEI and SNV Netherlands Development Organisation for their financial support to facilitate the documentation of good practice in the water and sanitation sector. Special thanks to Ms. Lieke Nijk (PEWAK Project Manager, VEI). You have played a key role in supporting anchoring of the benchmarking programme in the Kenyan water sector.

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Mr. Ambugo Antony
CHIEF EXECUTIVE OFFICER

ABBREVIATIONS AND ACRONYMS

BfA	Big Five Africa Ltd
DMAs	District Metering Areas
ELDOWASS	Eldoret Water and Sanitation Company
EWASCO	Embu Water and Sanitation Company
GIS	Geographical Information System
HAP	Hydroxyapatite
HR	Human Resource
ICT	Information and Communications Technology
IWA	International Water Association
JICA	Japan International Cooperation Agency
KACWASCO	Kakamega County Water and Sanitation Company
KES	Kenyan Shillings
KFW	Kreditanstalt für Wiederaufbau
KIWASCO	Kisumu Water and Sewerage Company
KIWASH	Kenya Integrated Water, Sanitation and Hygiene
KPIs	Key Performance Indicators
KRA	Kenya Revenue Authority
LIC	Low Income Consumer
LVNWSB	Lake Victoria North Water Services Board
MD	Managing Director
MUWASCO	Murang'a Water and Sanitation Company
NAIVAWASS	Naivasha Water and Sewerage Company
NAWASSCO	Nakuru Water and Sanitation Services Company
NRW	Non-Revenue Water
NYEWASCO	Nyeri Water and Sanitation Company
O&M	Operations and Maintenance
PEWAK	Performance Enhancement of Water and Sanitation Utilities in Kenya
RVWSB	Rift Valley Water Services Board
SNV	Netherlands Development Organisation
USAID	United States Agency for International Development
WASPA	Water Service Providers Association
WASREB	Water Services Regulatory Board
WHO	World Health organization
WSPs	Water Services Providers
WSUP	Water and Sanitation for the Urban Poor

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CLEAR WATER TANK
CAPACITY: 225 M³

1. BACKGROUND

1.1 Background of Water and Sanitation Providers in Kenya

The Water Service Providers Association (WASPA) was established in 2002. Its membership consists of water companies which were created through the enactment of the Water Act, 2002 to provide water and sanitation services delivery in the country. Other members of the association include manufacturers and suppliers of equipment and technology in the water sector, individuals (students for example) and honorary members. The Association has 104 members, and 70 concerns WSPs. WASPA has made significant strides to facilitate networking amongst member companies and running advocacy campaigns to advance Water and Sanitation issues in Kenya.

Facilitating capacity development of member organizations is a primary function of WASPA. Several projects and donor agencies have supported WASPA in this task, including the Partnership for "Performance Enhancement of Water and Sanitation Utilities in Kenya through Benchmarking and Collective Learning" (PEWAK).

The PEWAK project is funded by the Netherlands Enterprise Agency (RVO) and aims to improve the technical and financial performance of water service providers (WSPs) in Kenya through benchmarking, collective learning, and strengthening their capacity to implement performance improvements. The project is led by VEI in collaboration with SNV, and IHE Delft. The benchmarking programme is housed at WASPA. The project partners are WASPA, WASREB, WSTF, and 10 WSPs (Bomet, Kakamega, Kericho, Kikuyu, Kisumu, Malindi, Mathira, Murang'a, Nakuru and Nakuru Rural). The project is aimed to trigger performance improvement through peer learning and adoption of best practice within the sector.

WASPA convenes, coordinates, and facilitates the benchmarking and peer-to-peer learning activities among WSPs. In particular, WASPA has contributed to the scale-up phase and is expected to sustain the benchmarking processes after the PEWAK project is concluded. The WSPs, through Task Groups, have taken charge of project activities in their respective WSPs in terms of data collection, verification, and benchmarking with others; developed and implemented performance improvement plans by way of learning from peers; and monitored the results through a Management Information Tool. They have also shared their experiences and best practices and mentored each other in adopting the best practices.

1.2 Objective of this assignment

The objective of this assignment has been to identify and document good sector practices that have had an impact on WSPs' performance based on four thematic areas. Lessons learned through the implementation period have also been captured to facilitate further learning. The good practices aim at providing an opportunity for WSPs to share and draw lessons from each other, and trigger actions that enhance performance improvement in the following four thematic areas:

1. Management of non-revenue water.



This thematic area focuses on initiatives aimed at reduction of water losses (real and apparent loss). It includes improvements in metering technologies, billing and collections systems, use of District Metering Areas (DMAs) approach, leak detection, community engagement and reducing illegal connections, among others.

2. Service levels.



Under this thematic are WSPs have discussions on the quality of service offered by a WSP and includes communications between staff and with customers, sourcing for funds to facilitate increase in access to water and sanitation, customer care, and management of service standards among others.

3. Pro-poor services.

WSPs have a specific focus to improve on services to unserved and underserved areas, mapping of low income areas, spearheading behavior change through consumer engagement, and ensuring



sustainability by adopting proven business models. This thematic area highlights on strategies aimed to increase access to water and sanitation services in low income areas and includes the establishment of pro-poor units and development of pro-poor policies.

4. Cost recovery.



This refers to the ability of WSPs to recover the cost of operations and maintenance, and increase efficiency levels. It includes actions like reducing energy costs and use of renewable technologies, introducing e-billing systems, improving debt collections and policies, and obtaining a cost-recovery tariff, among others.

1.3 Content of this report

In **chapter 2** a description of the methodology used to document these good practices is provided. It also lays out the definition of the term 'learning' and 'good practices', how the utilities were selected, and how the information was collected and documented. In **chapter 3**, we share good practices of the utilities. Challenges, drivers of success and results are highlighted. The report ends with conclusions and recommendations in **chapter 4**.

2. METHODOLOGY

An important element of the assignment was to capture the baseline, and the current business cases or the changes that have occurred following the implementation for the benchmarking program housed by WASPA. Both intended and unintended consequences of project implementation per WSP was documented, allowing the interrogation of the key factors of success.

2.1 Approach

The assignment employed a mixed-methods approach to capture and provide a clear picture of WSP performance improvements in each thematic area. SNV through its local partner utilized a rigorous participatory and analytical approach. The general methodology is summarized as a three-phase approach:

2.1.1 Stakeholder Participation and Data Collection

A preliminary desk review was implemented to assist in further refining the appropriate conceptual framework and methodology. A list of key stakeholders and prospective WSPs was generated and a stakeholders meeting scheduled. The meeting sought suggestions from stakeholders regarding the prospective good sector practices, selection criteria and tools for collecting data and information. The assignment sought for generative dialogues with stakeholders rather than formal interviews. While semi-structured protocols used to ensure a degree of coherence across interviews, a high level of flexibility and openness to the ideas and interests of informants were maintained in conversations. The field visits were conducted in different utilities based on the successes they recorded in the different thematic areas.

The documenting team visited and held discussions with utility staff. The kick-off questions that was asked to the utility staff

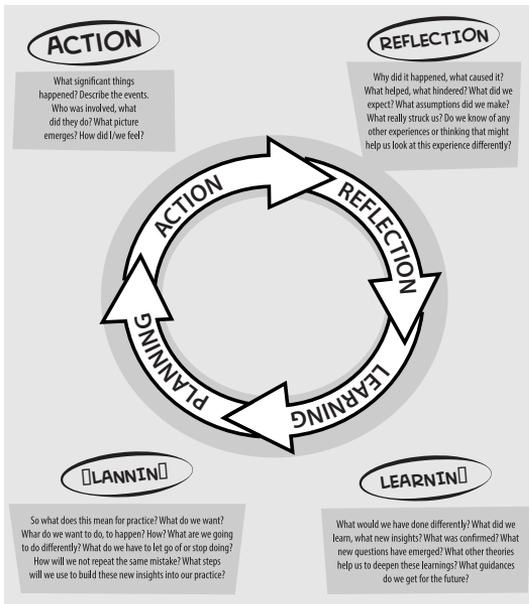
was on the experience they were most proud of which helped to confirm what the good practices should be about. This was followed by a focused group discussion using the learning cycle as a guiding framework.

2.1.2 Documenting the case studies

Once data was collected from the primary and secondary sources, the process of analyzing and documenting the case studies began. When assessing success, the assignment applied mixed approaches including observations, and field verifications to determine the reality on the ground.

During the same stakeholder meeting March 14, 2019, it was agreed that the good sector practices needed to be seen as tools for learning between water companies. As all participants of the meeting agreed that companies could learn from the experiences of other teams, consensus was reached to use the theories, concepts and methods of experiential learning as the basis for the good practices. With a focus on experiential learning, utility staff were asked describe how challenges were identified; what steps were taken to strategize, plan, and implement; and what quantitative and qualitative indicators demonstrated that the results were achieved. Staff were also asked to comment on key partnerships, management decisions, unforeseen challenges and other factors that affected the planning and implementation of actions.

The team followed the learning cycle framework developed by the Barefoot Guide Collection to facilitate staff discussions as shown below.



2.2 Selection of utilities

WSPs were selected based on their participation in the benchmarking program, annually WASPA collects data on 73 Key Performance Indicators (KPIs). An analysis is conducted therefore allowing comparison of WSP performance for the financial years that data was submitted.

During a stakeholder meeting held on March 14, 2019 at the SNV offices, a good practice was defined as an activity or a process with a good outcome. It was agreed that documented good practices shall include an aspect of change / impact achieved; social, economic or institutional change. The stakeholders also mentioned the following pointers for selection of the WSPs where good practices should be harvested:

- i. The Human Right to Water (affordability, non-discriminatory, accountable, participation, quality and accessibility)
- ii. WSPs that have addressed a challenge and can show impact of the change process or results.
- iii. WSPs which can share lessons that can be applied and are relevant to others.
- iv. WSPs that demonstrate good social and economic results.

On this basis, the following companies were selected, two companies were selected per thematic area:

WSP/ Thematic area	Theme focus
Non-Revenue Water Reduction	
Murang'a WSP	Zoning and DMAs
Nyeri WSP	DMAs, flow monitoring, meter testing, pressure management
Service Levels	
Kakamega WSP	Publicity and branding
Kisumu WSP	Customer care and complaint system
Pro Poor	
Nakuru WSP	Individual HH connections in a low-income area
Naivasha	Improving access to quality water in the poor households
Cost Recovery	
Embu WSP	Overall WSP management
Eldoret WSP	Automated management system

3. CASE STUDIES ON GOOD PRACTICES IN THE KENYAN WATER SECTOR

Good practices are considered dynamic undertakings that evolve over time to meet performance improvement needs of different WSPs. They involve partnerships between different stakeholders including development partners, customers/public, and have the potential for replication by other WSPs. Good practices are educative and contribute to capacity building and increased awareness on new technologies. A good practice integrates the efforts, expertise and experience of all stakeholders in providing solutions to some of the problems faced by a particular WSP; and offers the means for mutual exchange and learning.

The following section provides the set of good practices documented under the four themes (Non-revenue Water, Cost Recovery, Service Levels and Pro-poor).

THEME 1: MANAGEMENT OF NON-REVENUE WATER (NRW)

3.1 Management of water loss, a case study of Nyeri Water and Sanitation Company



Background

NYEWASCO is classified by WASREB as a very large water service provider, with a production capacity of 27,000 m³ per day versus a demand estimated at 19,875 m³ per day. Water service coverage is 98% within the service provision area and the company provides services 24 hours per day. NYEWASCO has 28,871 active water connections, all of which are metered.

The company has 119 staff (76% male and 24% female). The ratio of employees per 1,000 connections is 3.26 (target is ≤ 5 as per WASREB).

This case looks specifically at how NYEWASCO has implemented NRW measures to achieve and maintain its top performance in the country.

No.	Category of Customers	Connection Up to Feb. 2019
1.	Domestic	27,384
2.	Institution	79
3.	Commercial/Industrial	1,331
4.	Kiosk	9
5.	Car Wash	68
	Total	28,871

The challenge

Non-revenue water (NRW) is the difference between the amount of water produced and the amount of water billed to customers. NRW is the result of technical losses (leaks and bursts) and commercial losses (illegal connections, non-functioning meters, billing issues). Managing NRW is one of the most

significant challenges for Water Service Providers (WSP) in Kenya. The WASREB Impact Report 11 data notes that the average NRW for WSPs in Kenya is 41%.

The NYEWASCO technical team recalls that when the company took over services from the municipal council in 1997, NRW was ~56%. The high NRW was attributed to multiple factors including dilapidated infrastructure, operational inefficiencies, and staff complacency. The discussions also revealed that some customers were not being invoiced, and some revenue was not being collected.

At the time, water supply and infrastructure were insufficient and unreliable. NYEWASCO produced 6,000 m³ of water per day. NYEWASCO could only serve about one third of the population in its area of jurisdiction. Due to the poor water supply services, many informal methods of water distribution persisted. These sources often did not meet the necessary quality standards and had a negative bearing on the health of Nyeri's population. Growing ratios of diseases such as typhoid fever, cholera and diarrhea were reported.

In 2005 NYEWASCO applied for a KES. 1.15 billion loan from KfW Development bank for infrastructure rehabilitation and expansion to increase coverage of water and sewerage services and modernize operations. To repay the loan, NYEWASCO knew that smart investments combined with several focused improvements were required. This need for improvement was particularly true of Non-revenue Water (NRW), which was at ~56% in 2004. In layman's terms, the 56% NRW meant that NYEWASCO was not translating into revenue more than half of the water produced.

With the KfW loan, NYEWASCO more than tripled water production capacity from 6,000 m³ to 27,000 m³ per day. But having the water supply was only part of the solution. The other part of the solution was to ensure that this water translated in to sales and therefore revenue. Only by doing this could the company significantly increase coverage and services and generate enough revenues to repay the KfW loan. This compelled the utility to begin the process to minimize water losses to the lowest level possible.

***'To be able to pay this loan, we had no option but to make sure water losses were minimized. And we are proud to state that we have never failed to pay this loan any single month'.
[MD NYEWASCO].***

NYEWASCO's action on NRW reduction and management

The utility staff attributes its success in NRW management to a strong focus on their mission and last mile connectivity. They also say that the company has invested in strong leadership, a vibrant and competent team, and promotes team work, effective communication and customer focus. Of note, NYEWASCO has also remained the top performer in the country for the past ten years despite having the same tariff in place for the past six years. Although a tariff adjustment was approved by WASREB, the attempt to implement the gazetted tariff was met with political resistance. This harsh reality has meant that any additional revenue to the company over the past six years has not come through tariff increases, but through operational efficiencies and NRW reduction. Below are some of the key steps taken towards management of non-revenue water.

- **Setting up and equipping an NRW unit**

The NYEWASCO efforts with NRW reduction

dates back to 2007/08 when the utility developed distinct and reinforcing strategies focusing on losses in billing, collections and technical operations. A dedicated NRW unit was established in 2007 and a team of qualified staff that included Head of NRW, Water Technicians and Plumbers. The unit was equipped with the latest technology and NRW equipment including leak detectors, pressure data loggers and other equipment. For application purposes, all the staff were trained on the use of the equipment.

● **Block mapping and Geographical Information System (GIS) mapping**

In 2007, the utility mapped its service areas using GIS and established District Metered

Areas (DMAs) and Sub-DMAs for ease of monitoring water flows to each DMA & Sub-DMA. The data collected includes the type of infrastructure, material used for the pipeline and details per connection.

● **Calculating the water balance using the IWA Model**

To effectively measure NRW, the first step in the process was to calculate the water balance using the Water Balance System of International Water Association (IWA). This required the utility to meter all its production facilities and have accurate data to calculate the water balance. IWA has provided the following automated tool that assists water utilities including NYEWASCO to calculate water losses.

(A) System Input Volume	(B) Authorised Consumption	(D) Billed Authorized Consumption	(H) Billed meter Use	(Q) Revenue Water
			(I) Billed Unmetered Use	
	(C) Water Losses	(E) Unbilled Authorized Consumption	(J) Unbilled Metered Use	(R) Non-Revenue Water
			(K) Unbilled Metered Use	
		(F) Apparent	(L) Unauthorized Use	
			(M) Metering Inaccuracies	
	(G) Real losses	(N) Leaks on transmission		
		(O) Leaks on Services		
		(P) Storage Tank Leaks and Overflows		

● **A clear policy for metering customers**

NYEWASCO has a metering policy that requires 100% metering of individual customers and DMAs. It also defines the standards for meter types, meter location and meter replacement. All NYEWASCO customers are metered and are known to the company. The zoning and establishment of DMAs and sub-DMAs made this easier

because one staff is allocated to oversee three to four DMAs. To ensure meters are in proper working condition, the company conducts customer meter testing and calibration on a monthly basis. A target to check at least 125 meters per month is in place, and, as needed, these meters are serviced or replaced. The policy also stipulates that meters must be replaced after their useful life. NYEWASCO relocated



Meter calibration

most customer meters from the customer premises to the service line to facilitate easy access and prevent water theft (e.g. meter tampering, bypasses). Finally, the company regularly inspects disconnected and dormant connections to minimize illegal connections.

- **Proactive leak detection, malfunctioning of meters and prevention of illegal connections**

Personnel in the NRW unit are proactive in detecting leaks, using network flow monitoring and the night flows technique to identify and correct these issues.

- **Prompt response to leaks and bursts**

The utility is prompt when it comes to responding to leak repairs and has an Emergency Response Unit that swiftly responds whenever a burst and leak is reported. Under normal circumstance, water supply will be closed off to reduce water loss within 30 minutes after a report on leak/burst is received. Within 6 hours of receipt of report on leak/burst, repairs will be completed, and the pipes flushed before water supply to customers is resumed. For service line, it takes about 3 hours.

Daily, staff collect, analyze and produce reports to monitor and identify leaks in the network using state of the art equipment.



NRW Technician doing Flow measurement using the UFM

If any pressure deviation is detected, the cause is determined and acted upon. Every 6 months, the company also calculates higher average and lower average consumption per meter which gives an indication of whether there are any concerns with the change in consumption or individual meter functionality.



Leak Repair in progress



Meter testing bench at the head office progress

To encourage reporting of illegal connections, staff are awarded KSH. 1000 for reporting an illegal connection. This amount is recovered from the perpetrators who are also highly fined for illegal connections.

- **Good quality infrastructure, material and workmanship**

To prevent bursts and leakages, NYEWASCO's infrastructure development is driven by its commitment to high quality standards for pipes, valves and meters, among others. The specs for all materials are detailed in the procurement policy and enforced. The company staff scrutinize materials acquired internally and oversee the installation process

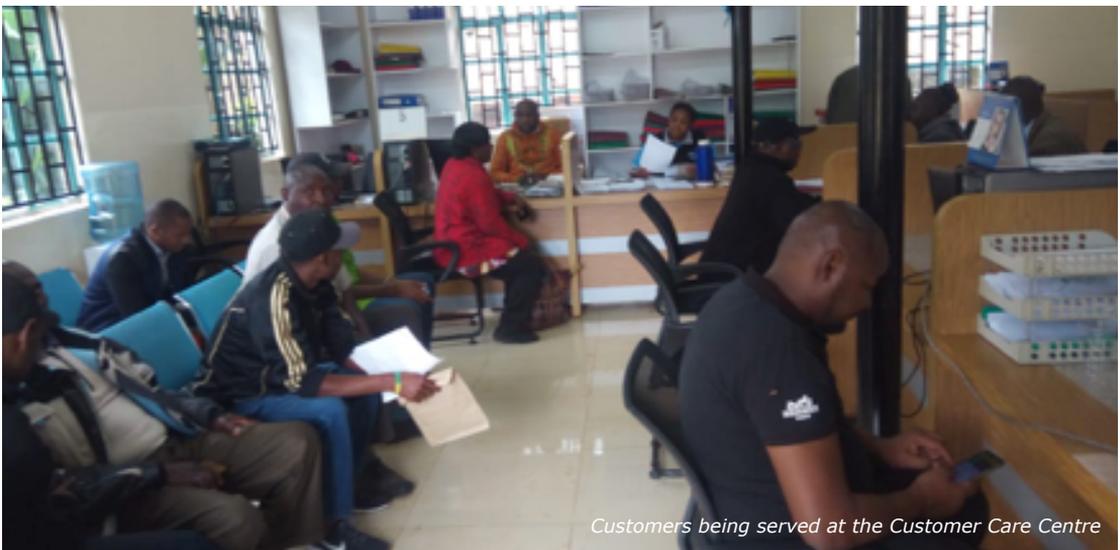
to ensure quality control. Proper design and tests for any new assets installed is ensured.

'We cultivate good quality workmanship by ensuring quality work is done and quality standards are adhered both internally and by our customers when purchasing service connection materials. We ensure that the pipes we buy are of high quality and can withstand pressure. If we don't and poor-quality materials find their way into the network, the NRW battle will be lost'.

[Head of Technical Services].

- **Customer engagement in NRW reduction**

Customer involvement is key in winning the NRW battle. At NYEWASCO, the NRW team is supported by a communications team that regularly sensitizes and encourages customers to promptly report leaks and bursts. The company reaches out to customers through SMS, posters and annual open days to raise awareness and educate customers on aspects of service delivery as well as NRW reporting procedures. Maji Voice has been used since 2018 and has improved public reporting and feedback. The utility also gives special attention to large customer meters, which are monitored daily



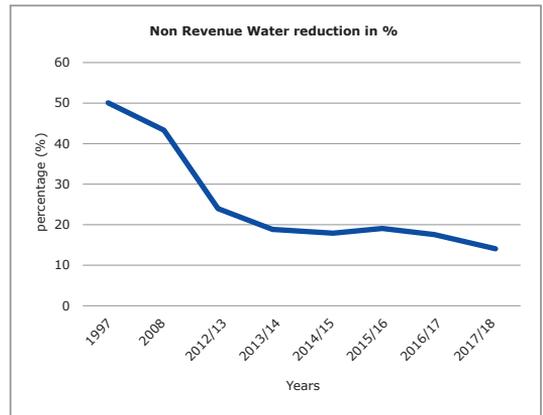
Customers being served at the Customer Care Centre

● **Empowering and motivating staff**

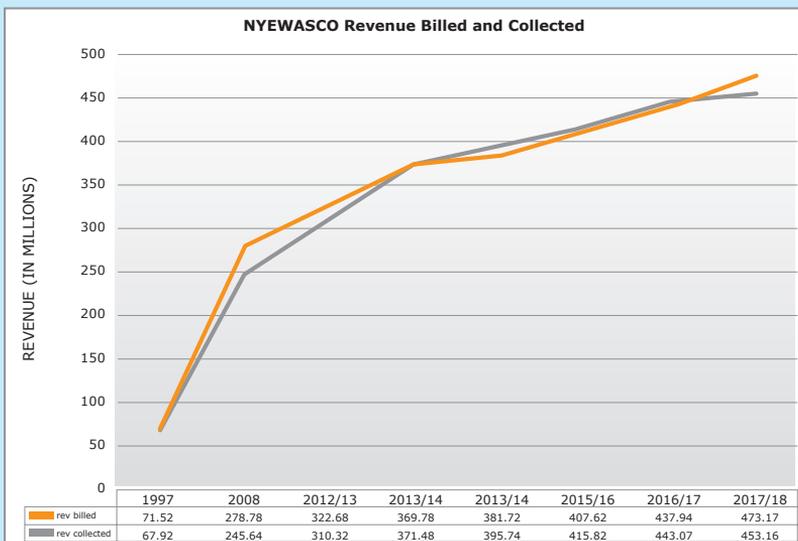
Having the right people with a good work ethic has been key for NYEWASCO in its efforts to achieve its NRW goals. Since 2008, the company has invested in staff training on culture change but also adopted the 'one man, one job approach' that has resulted in improved staff performance and productivity. This was critical especially because the company inherited staff from the defunct municipality whose work ethics were poor. This old attitude is referred to as the 'council mentality' (corrupt, inefficient, don't care attitude and lack of business-oriented culture among other challenges). The MD noted that training to enhance staff skills to perform has been done, and a budget for local and international training and benchmarking is set aside. Another reward structure to motivate staff productivity is performance-based bonuses that allow staff who have performed well.

Results of NRW management

The table below shows NYEWASCO's achievements in reducing NRW over the past 20 years. As shown, in 1997, NRW levels were approximately 50% and when NYEWASCO set up the NRW unit, were at 43%. By 2013/14, NYEWASCO had brought NRW under 20% and by 2017/18 NRW had been reduced to 15%.



As noted in the introduction, NRW reduction is among the most critical issues in the country for WSPs and impacts revenues, operational efficiency and service delivery. The table below clearly shows how the reducing NRW trend that started in 1997, resulted in a steady increase in billing and revenue collection from that same year onwards



Lessons learned

The NYEWASCO case points to several key learnings:

- **Concerted effort over time.** The efforts to reduce NRW were undertaken over a ten-year period and it took eight years to bring NRW down from 56% to under 20%. WSPs doing this work must lay out a clear plan and be prepared for return on investments in the long run. The team noted that there were huge investments, however, the difference is on how the project is implemented. This also requires the company to be accountable hence resulting in a huge impact on the financial position of the company and quality of service delivery.

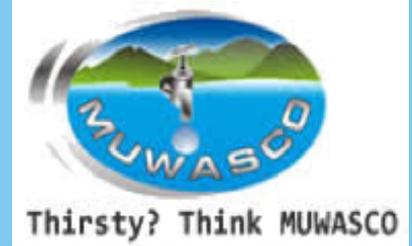
- **NRW unit.** Setting up an NRW unit and providing the necessary tools, equipment and transportation ensured that the team could implement the developed roadmap towards reduction of water losses. The team noted with respect to equipment that:

- o it can be costly to keep up with the latest technology. The WSP should consider their options and costs when deciding on which types of NRW interventions to make, and
- o there are many options in the market that are of poor quality. The procurement specifications and standards, and the company controls for quality contributes towards safeguarding the company against rogue suppliers.

- **GIS mapping of DMAs and data management.** Once the DMAs and sub-DMAs were in place, the regular monitoring of water flows and deviations allowed for a rapid response to water losses and checking on large consumers daily. The NYEWASCO team identifies this daily data management as critical to decision making, NRW management and results.



3.2 Reduction of water losses through the DMA approach, A case study of Murang'a Water and Sanitation Company.



Background

Murang'a County is located in the Central province of Kenya and is of historical significance. When the British set up the East Africa Protectorate in 1895, their very first administrative post (Fort Smith), was located in Murang'a. Murang'a is the source of many big rivers, like river Maragua, Matheoyah, Kayahwe, and Irati.

The Murang'a Water and Sanitation Company (MUWASCO) was registered in March 2006 as an agent of Tana Water Services Board through a Service Provision Agreement (SPA) to source, treat and provide efficient, reliable and economical water and sewerage services to Murang'a town and its environs. MUWASCO operates two water treatments works, namely Kiawambeu, commissioned in 2014 with a design capacity of 11,000 m³ per day and Kayahwe (currently being rehabilitated) with a capacity of 4,000 m³ per day. The company operates a sewage treatment works with a design capacity of 4,000 m³ per day. It services an area of 145 km², with approximately 13,500 water connections and 5,000 sewer connections. This translates to 92% of the population within its area of jurisdiction.

The state of NRW before

When MUWASCO came into being, water supply infrastructure in the area was old and dilapidated and the company lost large volumes of water and revenue. The network was not mapped, the bulk meters were

inadequate, and non-revenue water was very high due to illegal connections through 'spaghetti' lines. It could take days for a leak to be reported by a customer or identified by a staff member. And even once reported, it could still take a week or even longer before it was repaired. Conflicts between the commercial and technical teams emerged, with each blaming the other for the high non-revenue water percentage.

On the demand side, customers only reported a problem if it directly concerned them. Anything beyond their homestead was perceived as 'a problem for the municipality'. Customers were intermittently served, and others were not receiving water because of low pressure. Customers were dissatisfied with services and this significantly strained the relationship between them and the company. Billing was based on estimates due to low levels of meter functionality. This situation also encouraged water theft, which was aided by corrupt staff as they collaborated with customers. The meter reader could change the entries on water consumption or remove entries entirely, and in return the consumers paid less in comparison to the actual consumption. It was also noted that customers would not report leaks or bursts unless it directly affected them. The utility was also using non-permanent plumbers this resorted to them sabotaging the operations of the company when their contracts came to an end by aiding illegal connections.

How NRW was improved

The NRW efforts at MUWASCO started in earnest in 2010 with a number of approaches and strategies running in parallel. The overall NRW of MUWASCO was reduced by thirty-nine percentage from 65% to 26% in February 2019.

The following section outlines some of those actions the utility embarked on:

Establishment of an NRW unit, mapping and zoning the service area

In 2010, the utility established an NRW unit and engaged and trained a number of professional staff to spearhead the NRW activities. This was followed by zoning the service area and mapping the network. In each zone, DMAs and sub DMAs were created and bulk meters installed to enable the utility to track water supply and consumption within the DMA as well as zero in on specific areas with high levels of water loss.

The utility identified NRW hotspots where leakages, bursts and illegal connections were common, and defined key response actions. In areas with frequent and recurrent leaks and bursts, the pipeline was replaced with higher quality pipes and fittings. Bulk meters were installed to more accurately track water flows. A surveillance team was established to conduct line patrols to ensure consistent monitoring in such areas. The utility went further to relocate the lines that passed through private premises to minimize illegal connections.



Water balance analysis

MUWASCO has been undertaking a monthly water balance analysis for each of its three zones to understand its NRW status. This is done using a template provided by WASREB and WASPA that allows one to measure up to 14 NRW indicators to obtain a clear picture of the NRW problem and monitor this through regular data collection. The corporate management team uses this data to set NRW performance targets that zonal managers alongside their team work towards achieving. WASPA has also provided a roadmap that guides the utility on basic steps towards achieving the NRW reduction and if applied, WSPs can make strides in managing NRW.

Strengthening the NRW staff

The management knew that the NRW battle required a motivated workforce and wanted to strengthen their creativity and productivity through training, team building and benchmarking. To develop and nurture the team spirit, the management supported outdoor games between the technical and commercial staff. The NRW staff were also trained through benchmarking visits to Nyeri and Embu to learn how they were addressing NRW and to reflect on the gaps at MUWASCO. To support and improve NRW management, MUWASCO established a GIS unit and hired GIS staff to undertake the network mapping. This enabled management to understand the network layout, pipe sizes and materials needed in distinct areas, and document the number of customers in each zone, DMA and sub-DMA. The unit is well equipped with leak detection equipment that allows MUWASCO to conduct its daily surveying for distribution leaks to enable proactive leak mitigation. Pressure management systems has been introduced to enable pressure controls.

A major step taken was training and equipping the NRW unit to improve efficiency. Meter readers were trained to collect and verify accurate data. To build stakeholder confidence, the response turnaround time for leaks and



burst repair was set at a maximum of 3 hours. The unit was equipped with motorbikes to facilitate transportation to the affected areas, and tools and materials were procured and stored. To prevent lack of inventory in the stores the company tracks the store balances in order to and tools from being lost, a system was developed to track the entire requisitions process. A meter bench to measure meter accuracy was also acquired and staff have been trained on how to use this technology.

'The trainings enabled me to see things from another angle. Before I saw the revenue loss as a problem of money being wasted for the company. Now I see the image of a customer suffering from a lack of water. When I see a leak or a burst I immediately think 'awful!, some people are not getting water now' (MUWASCO staff).

To ease meter reading and minimize the opportunity to create illegal bypasses, customer meters were relocated from customer premises to the premise boundaries, and the company continues to educate and advise customers on securing their meters so that they are not stolen. At the moment, 92% of the meters are accessible.

Customer registration

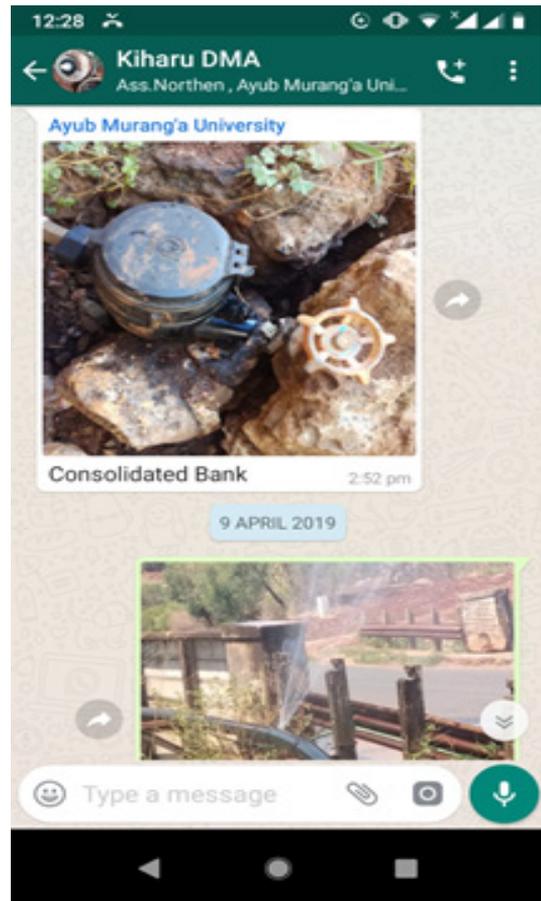
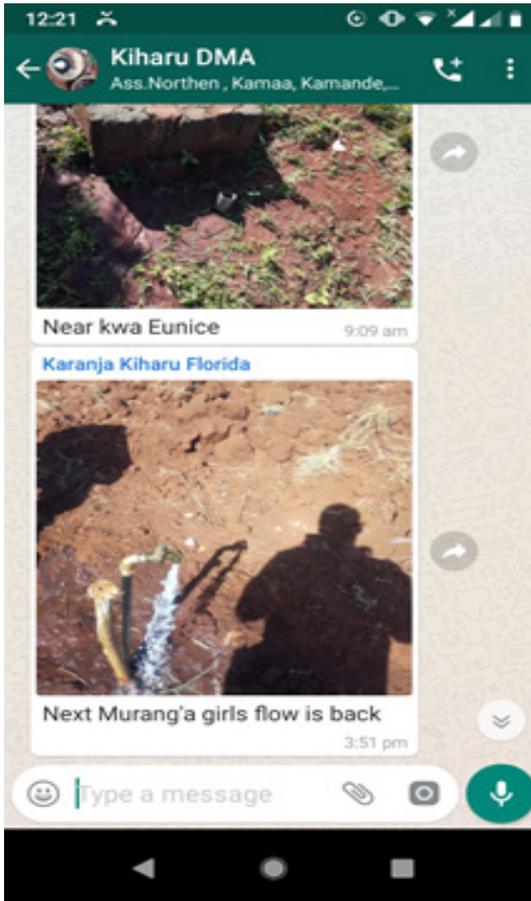
Recognizing that a key NRW challenge was that many customers were unknown to the utility, MUWASCO embarked on a customer registration exercise. The company's

surveillance team moved from house to house to update customer information captured in the billing system (meter number, customer name, parcel number, KRA pin particulars of the customers, locality, next connection, GIS coordinates, etc.). In 2017, the company took this a step further, partnering with Upande and repeating the customer identification exercise to digitize this information and automate the billing system so that monthly meter reading is done through an application which updates the system as soon as it is captured in the field.

Involving customers

The company understood that the service situation had significantly eroded customer trust and perceptions on value for money, which undermined their willingness to pay for services. Engaging with customers can improve payment for services and customer support in reporting leaks and bursts. MUWASCO needed to improve customer confidence by improving service delivery and relationship.

To achieve this, MUWASCO automated customer care services, and customer complaints and feedback are now done online. The customer clinics were conducted to provide an open forum for customers to interact with the utility on services. Use of social media to engagement and encourage customer interaction enhanced. A slogan 'piga nipo' ("call, I am available") is being used to encourage customer to report visible leaks or lodge complaints for quick response. Customers were educated on the use of a 'report platform' where they report leaks, take a photo of the leak and the building next, and it is shared by phone. Further, a cash incentivize is provided to the public for reporting illegal connections. The person reporting may receive 10% of the penalty charged, which is KES. 30,000 for domestic water illegal connection and KES. 100,000 for commercial customers.



The above photos show customers messages reports on leakages showing the exact location of the leak and the sender.

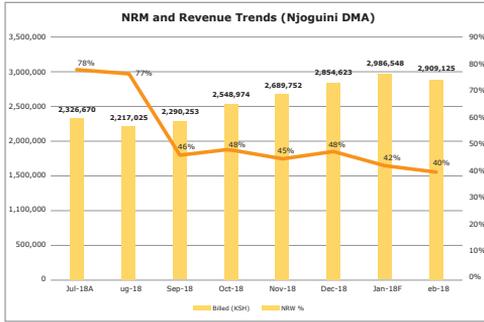
The company is also using an initiative that encourages self-reading of meters (jisomee meter) by customers. Customers were educated on how to capture the serial and meter numbers and to read the meter every 2 months by taking a photo. Customers also check to see if meters are under or over registering using a bucket test.

Critical to public engagement was ensuring a sense of equity among the customers. To do this, MUWASCO stabilized pressures within the network so as to ensure that all customers get water supply.

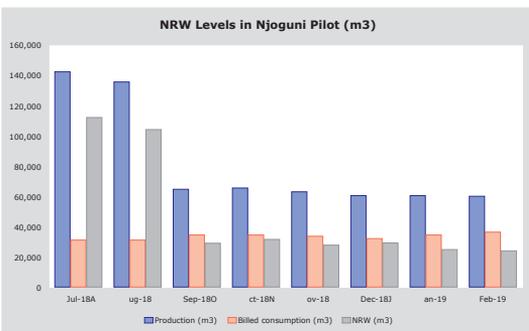
An NRW pilot project

A pilot project subsidized through the PEWAK project helped the company gain experience in bulk metering, zoning, sub-zoning and meter reading. Two pilot areas were identified where the PEWAK project was implemented. The first pilot was implemented in 2015 – 2016 in Kiharu where a DMA was created and later extended in Njoguini in 2017 where a DMA of 2,300 connection was isolated and then sub-divided in smaller sub-MDAs of 250 – 370 connections. The NRW in Kiharu was brought down from an estimated 54 to 16%, while the one in Njoguini was reduced from 78% to 40%.

These projects involved rehabilitating an old and dilapidated pipeline, and undertaking leakage management, bulk meters and meter calibration at higher scale within the DMA. Looking specifically at Njoguini, this work resulted in the following improvements over an 8-month period.



As noted in the graph above, the percent of water lost in the pilot area reduced dramatically by 38% from 78% to 40% over a short period of time. During this same period, the monthly revenues increased by 25% from KES 2,326,670 in July 2018 to KES 2,909,125 in February 2019. The NRW decrease was most notable in month 3, dropping by 31%, whereas the increases in revenue happened gradually over time as customer and billing issues were brought in line.

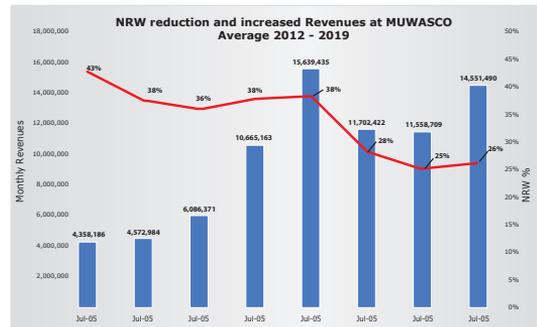


As noted in the graph above, the changes in water volumes were stunning. Water production to the area reduced by 81,329 m3 per month from 142,587 m3 to 61,258 m3 (a 57% reduction). In line with this, NRW

water volumes were reduced by 87,522 m3 from 111,928 m3 to 24,406 m3 (a 78% reduction). Billed consumption increased by 5,193 m3 from 31,659 m3 to 36,852 m3 (a 16% increase).

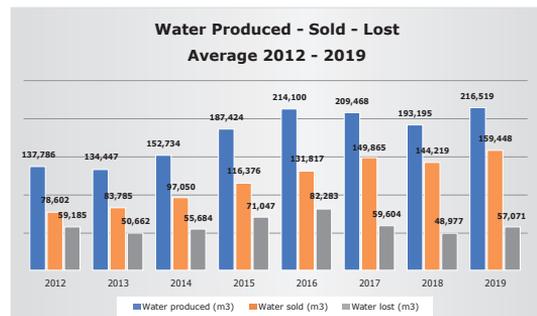
Companywide Results

The average annual NRW of MUWASCO has actually reduced while water sold has more than doubled. As a percentage, NRW has decreased by 17% since 2012.



As noted in the graph above, the percent of water lost by MUWASCO reduced dramatically by 17% from 43% to 26%. During this same period, the monthly revenues increased by 234% from KES 4,358,186 in 2012 to KES 14,551,490 in 2019. The NRW decrease and revenue increases were most notable in 2016 and 2017.

Water produced – sold - lost (average for 2012 – 2019)



As noted in the graph above, water production has increased by 78,733 m3 per month from 137,786 m3 to 216,519 m3 (a 57% increase).

Despite this huge increase in water production, NRW water volumes have basically remained steady, reducing slightly from 59,185 m3 to 57,071 m3. Billed consumption is where the company has seen the most dramatic change, increasing the volume of water sold by 80,846 m3 per month from 78,602 m3 to 159,448 m3 (a 103% increase).

Challenges and lessons learnt

In spite of the impressive NRW reduction that has been realized by the company, MUWASCO is not at the WASREB target of >150% O&M cost recovery. But does have the “acceptable” level of 121% according to IMPACT 11. The company does not have a cost reflective tariff and efforts to get an approval have faced strong political resistance. However, this has not deterred employees from their focus. It is impressive to see how devoted they are to their cause in spite of these setbacks.

Lessons learnt are:

- Non-Revenue can be reduced by taking small steps. In Murang’a, pipes are being rehabilitated since 2010. Staff has been trained and a few pilots have shown how non-revenue water can be reduced by zoning and improving meter reading. All these changes are set in slowly but steadily.
- Although some staff resisted the changes the company was instituting, MUWASCO did well in embracing the change management principles,

including enforcement of the new rules and regulations. For example, in case of corruption the company kept to its commitment to discipline any perpetrator.

In addition, the management also increased its employee engagement and support, increased coordination across the departments and accountability, which greatly helped sustain institutional change.

- With good and reliable services, customers have remained loyal to MUWASCO irrespective of political storm from the county government that would have otherwise tore the utility apart. The company staff feel very dedicated to the mission and vision in spite of some of the governance tensions that have arisen during the transition to devolution.
- Through WASPA’s performance improvement initiative and benchmarking, MUWASCO was motivated to accelerate NRW management actions which culminated to NRW reduction. The company staff are also inspired by the other well-functioning companies that they benchmarked with and does not want to lag behind. In the case of NRW, it has demonstrated that reduced water losses and increased revenue go hand-in-hand with improved services for all.



3.3 Improved relations between KACWASCO and its customers, a case study Kakamega County Water and Sanitation Company



Background

Kakamega County is well known for its miraculous 'crying stone'. The gigantic towering basil has the shape of a human being and inhabits a unique phenomenon: Water seems to be streaming from the very rock itself, thus earning it its name. The stone features in a myriad of folk tales, rituals, myths and traditional believes.

The County is also well known for the Kakamega Forest National Reserve, the only Tropical Rainforest left in Kenya, and the last remnant of the ancient Guineo-Congolian rainforest that once spanned the continent.

Kakamega County Water and Sanitation Company limited (KACWASCO) is a county corporation that was formed after Kakamega County took over the operation of water supplies from Lake Victoria North Water Services Board (LVNWSB) July 1, 2016, following the separation of the joint operations of the water supplies between Kakamega and Busia Counties. The company currently serves 253,983 people with clean water in Kakamega against a population of 319,266 in the service area. This population is mainly in urban areas, but the total population of Kakamega County is approximately 2 million.

The KACWASCO team makes a dynamic, energetic impression with the youth of diversified gender and ethnic backgrounds that are eager to share ideas and learn new skills. After the employees from different

departments met the documenting team, they took the initiative to write their stories of success. Their stories were eventually merged into one.

This overall story explores how customer satisfaction levels have grown from 55% to 65% in a short time span of two years . It is exciting to see how quickly such levels can improve when a team is dedicated, support is provided from management, training and learning visits.

Customer Satisfaction challenge

Any company that wants to grow and make profits, should ensure that customers that are happy with its services. Satisfaction of clients with services relates directly to their willingness to pay.

For this story, customer satisfaction was gauged from 2016 onwards, when a software was introduced that allowed clients to air their complaints through a free app downloaded on an android phone.

During the first year when the app became available to customers, majority of complaints (58%) concentrated on technical issues while (39%) centered on administrative matters such as billing, and responding late to the customers .

The table below shows the percentage breakdown of 9,344 complaints per complaint category in the financial year of 2016/2017.

Percentage of complaints	Complaint Category
Bursts and leakages/Insufficient water issues (58%)	
45%	No water / Insufficient water / Insufficient pressure
13 %	Burst or leakage
Complaints on Other Organizational issues (39%)	
23%	No bill received (9%) or disagreement on water consumed; customers suspect incorrect reading or a faulty meter
17%	Delayed response on complaints of any sort
3%	Complaints on (a) Water quality; (b) Suspected Corruption; (c) Meter stolen; (d) Sewer blockage / other sewer issues; (e) vandalism, (f) other
(N = 9344)	



How the company improved Customer Satisfaction

How did the company manage to lower customer complaints and improve its performance? This sections aims to provide an answer to how KAWASCO was able to trigger improvement on customer satisfaction levels.

1. Branding

At the end of 2016, Kakamega County Water and Sanitation Company (KACWASCO) was not a known entity. A survey carried out in 2017 showed that many clients did not identify with the company and some even referred to the company as Lake Victoria North Water Services Board (LVNWSB) and County Water. Some customers did not know where and

how to pay for their water consumption, and some were even writing cheques to LVNWSB or giving money to individuals purporting to be Company staff.

It even happened that private plumbers and people with bad motives pretended to be company staff and demanded money from customers. The Company did not have signage and many visitors would go to the LVNWSB before they were directed to the company. The company staff had no identification tags. The company also lacked visibility on social media platform and as a result there was no systematic customer feedback. Because of all this, the company was unable to quickly provide information to customers and stakeholders and address issues.

To improve branding, the company established a Communication Committee in July 2017. All departments of the company were represented in this committee, which also worked closely with Development Partners such SNV Netherlands Development Organisation, USAID-KIWASH, WASPA and VEI to improve its branding and relations with customers.

The committee managed to arrange for a benchmarking visit Nakuru Water and Sanitation Services Company (NAWASSCO), which has done some excellent branding work.



Above: Flyers produced and distributed once branding was an important company activity.

After being trained on their role in addition to the development of a terms of reference and a communication plan to guide the committee, various branding mechanisms were developed including door signs on office doors and a myriad of brochures, flyers and posters. The company also organized events such as World Water Day, Water Conferences and County meetings.



The company improved its visibility and accessibility to customers by setting up and managing a website, a Twitter account, a Facebook account and established a hotline. Currently staff members proudly identify themselves with the company through branding and all KACWASCO employees now have identification cards.

Additionally, the company plans to have monthly radio broadcasts and plans to introduce three-monthly newsletters to customers.

2. Human Resources Development

Before, there were no customer service trainings for staff, and, therefore, very few improvements were realized on customer complaints management. Angry customers would storm the Customer Care offices and would get into heated arguments with staff about service delivery. Currently, the company has ensured that staff are continuously equipped with skills and knowledge to enhance continuous performance. Each year, a budget is reserved for staff training. Most of the trainings are conducted through benchmark programs, externally and in house to encourage knowledge sharing. The staff trainings have also been supported by SNV Netherlands Development Organisation, USAID-KIWASH, VEI and LVNWSB. The Company has 183 staff, of which 129 are male and 54 are female.

The Management embraces a participative style of management, which has bridged the barrier between management and staff and has improved service delivery as workers are not left out in operational decision making. The overall more participative management style has improved work related relationships, morale and productivity. The company often holds meetings with staff in order to keep vertical communication lines open. The company has recently started specific teambuilding activities, and more meetings and joint training sessions are organized.

Field and office staff are were encouraged to interact and socialize during tea breaks. This fosters healthy work relations.

The company did not previously track performance systematically, but this changed as a Performance Management system was introduced. The Managing Director signs a Corporate Performance Contract with the Board of Directors.

This is followed by Heads of Department signing Performance Contracts with the Managing Director. Finally, the Performance Contract are cascaded to the rest of the staff. The tool helps to measure the performance of each employee and rewards them based on their performance.

3. Applying ICT in a variety of company operations and services

ICT has made company operations and services more efficient, accurate and transparent to customers it in following areas:

a. Payments

Cash payments have been brought down to zero. SMS billing was introduced since January 2018, and it is also possible to pay through banks and Mpesa. The cashless transfers have brought down corruption cases and increased revenue from the average of KES. 16M in the financial year 2016/2017, to 19M in the Financial Year 2017/2018.

The cashless payment saves customers time as they no longer need to queue to pay bills. Complaints about non delivery of bills reduced from 9% of all complaints in the 2016/2017 period to only 1% of all complaints in the 2017/2018 period.

Automation of the billing process allows meter readers to send meter readings by photo to the office. The office registers the readings with the GPS coordinates to prevent wrong entries. The application has helped in reducing manual mistakes and complaints that come from that and has helped in monitoring the performance of meter readers.

Another meter innovation that has been introduced is the smart meter. A pilot with 100 smart meters gave positive results in several ways. First, the meters enabled the company to monitor the consumption of large customers as closely as desired, even hourly. Besides, Deviations from average consumption are signaled by the system immediately, which enables staff to respond quickly to irregularities.

The close monitoring and quicker responding times have resulted in a reduction of complaints and contributes to the management of Non-Revenue Water.

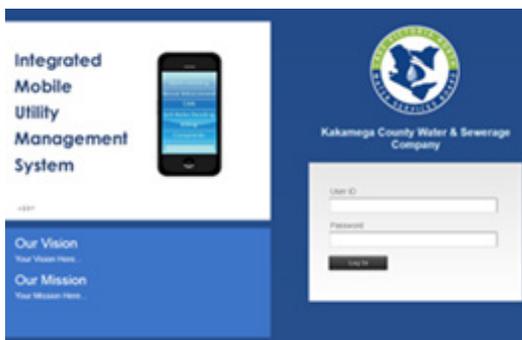
The platform keeps communication open and transparent between KACWASCO and the consumers. All complaints are recorded in the system and grouped into different categories. Follow up of complaints by both customers and company staff is very easy as customers are given reference numbers.

The company ensures that complaints are handled within a short time span, and that the different kind of complaints go to the relevant company departments. The flow diagram below shows how a technical complaint is handled.

Object Number	Object Logger	Object Identifier	Current Read Time	Current Reading L	Previous Read Time	Previous Reading L	Consumption L
1017004012501	708AF4	Kakamega Catholic Convent	2019-05-30 12:50:25	304.35	2019-05-29 11:55:41	302.81	1.54
1017004016806	708BSA	Joseph Makholo	2019-05-30 23:00:56	87.37	2019-05-27 23:20:34	87.21	0.16
1017004093609	708B45	Kathleen C. Muchiwa	2019-05-30 15:02:34	269.11	2019-05-29 14:08:47	268.40	0.71
1017004178207	708RED	Slaye Guest Hse	2019-05-30 21:49:48	1222.46	2019-05-27 22:35:59	1221.88	0.58

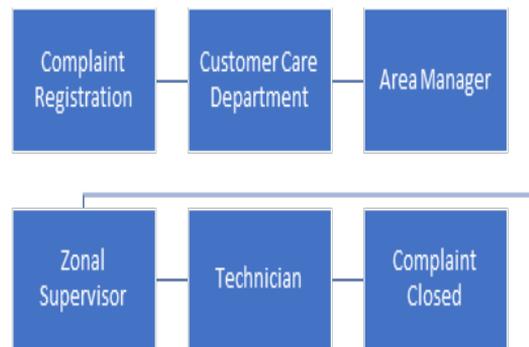
Above: A screen shot of the smart meter readings that are transmitted after every hour. KACWASCO has a tower that transmits the readings every hour.

b. Customer Management System



Above: Screen shot of the Customer Management System

A Customer Online Portal was introduced in January 2018. Through this portal, customers can print physical bills and view their meter reading history.



c. SMS platform

The SMS platform enables staff to send bills and disconnection notices, notifications on bursts, water rationing, financial adjustment notifications and other information that the company deems fit to share.

4. Applying GIS

In the period 2016-2019, an additional 3,530 connections were mapped and, as a result, GIS coordinates of 12,449 connections are now known to the company. The mapping exercise surfaced 400 previously unknown accounts, from which debts were recovered. All sewer and water pipes were mapped as well. The billing system has been linked to the GIS maps.

The use of GIS has helped in running operations and maintenance services more efficiently and effectively, improving asset management, recovery of old debts and not found accounts, effective communication, planning, decision making and zoning. Results of Improved Customer Satisfaction Since late 2016, the company has drastically changed its operations and responsiveness. The transformation has resulted in a 40%, reduction in complaints from 9344 complaints in 2016/17, to 5788 in 2017/18.

The trend also shows that a much higher percentage of total complaints, 83% as compared to 58% before, concern issues on leaks, bursts and lack of water. A much lower ratio of complaints centers on organizational topics such as delayed responses and billing problems. It should be kept in mind that with the adoption of the complaints management system, KACWASCO was keen to document and track complaints.

This therefore gave an impression that the number of complaints had increased. On the contrary, this signified that the system was in use therefore complaints documented to facilitate tracking and ensuring resolution in line with set timelines as defined by the service charter.

The company managed to stabilize the service levels as far as managing water supply quantity, quality and leakages and bursts were concerned. At the same time, the company

succeeded in improving services that were more directly within its span of control. It managed to respond much quicker to complaints and managed to bill the customers in such a way that they hardly saw reasons to complain about their billing any longer.

Change in Percentage of complaints per category (N changed from 9344 in 2016/17 to 5788 in 2017/18) ¹	Complaint Category
Bursts and leakages/insufficient water issues (from 58% to 83%)	
From 45% to 51%	No water / insufficient water / insufficient pressure
From 13 % to 32%	Burst or leakage
Complaints on Other Administrative issues (from 39% to 12%)	
22% to 4%	No bill received (1% vs 9% before) or disagreement on water consumed; customers suspect incorrect reading or a faulty meter
17% to 8%	Delayed response on complaints of any sort
3%	Complaints on (a) Water quality; (b) Suspected Corruption; (c) Meter stolen; (d) Sewer blockage / other sewer issues; (e) vandalism, (f) other

The following graph shows the percentage of complaints by category in financial year 2016/2017 and 2017/2018.

Category of complaint	Percentage (N=9433) 2016/17	Percentage (N=5788) 2017/18
No water, insufficient water	45%	51%
Burst or Leakage	13%	32%
Bill dispute	22%	4%
Delayed Response	17%	8%
Other	3%	3%
Total	100%	100%

In the financial year 2016/2017, there were 9,433 complaints. This was reduced by 39% in 2017/2018 to 5,788 complaints. The major decrease in complaints were related to bill disputes (from 22% to 4%) and delayed response (from 17% to 8%).

The increases in complaints were in insufficient water (from 45% to 51%) and in bursts and leakages (from 13% to 32%). The latter is actually a positive development as customers were encouraged to let the company know when a burst or leakage occurred.

The table below shows the percentage of technical versus administrative complaints.

Category	Percentage (N=9433) 2016/17	Percentage (N=5788) 2017/18
Technically based complaints (No water, insufficient water Burst or Leakage)	58%	83%
Administratively based complaints (Bill dispute Delayed Response)	39%	12%
Other	3%	5%
Total	100%	100%

Lessons Learnt

Main lessons learnt from this is that an organization can make drastic improvements in a short period of time. KACWASCO improved customer relationships and reduced the turnaround time in responding times to complaints drastically within two years' time.

Improvements in water supply quantities however were hardly made, as this requires more in-depth and longer-term investments. To improve service levels following interlinked parallel interventions mutually reinforce each other and lead to quick results;

1. Branding and improving communication with customers

In the case of KACWASCO, Customers did not know what KACWASCO was, and customers were not aware of their roles and responsibilities vis-à-vis this company. This has drastically changed by developing clear branding strategies, introducing a customer service charter and by improving communication with customers in a myriad of ways, i.e. setting up a Communication Committee within KACWASCO.

2. Introducing ICT and GIS tools for communication, billing and O&M improvements

ICT has helped tremendously in making payments more transparent and efficient and less prone to corruption. ICT and GIS tools have also helped in locating customers, meters, pipes and connections, and this makes it much easier for the company to run O&M efficiently. ICT has also made communication between customers and the company traceable, transparent and efficient.

3. Human Resource Development

As better customer relationships and more efficient O&M resulted in a lot more revenue, the company has been able to improve its Human Resources base by training staff, sending them for exchange visits and encouraging them to participate in conferences. KACWASCO's management style is participative in nature and encourages people to share knowledge and learn from peer companies, this does not benefit only the staff individually, but also the company as a whole.

THEME 2: SERVICE LEVELS

3.4 A Good Practice on how the Water and Sanitation Company of the Lake City managed to improve customer relationships, a case of Kisumu Water and Sewerage Company



Background

The town of Kisumu is located on a bay of the largest tropical lake in the world, and the world's second largest freshwater lake measured by surface area; Lake Victoria. KIWASCO, the Water and Sewerage Company of Kisumu, is located near to the lake in the vicinity of the old port, on Oginga Odinga Road.

The Water Services Regulatory Board (WASREB) ranks Kisumu as a Very Large company. Kisumu city has a population count of 437,336 people, of which 289,247 (66%) are served through active water connections.

As the population grows at the fast rate of about two and a half percent, KIWASCO needs to improve and then maintain high quality standards, in order to be able to expand services further. According to the WASREB Impact Report 10, the company had a turnover of KES. 641 million in 2017.

Ten years ago, there was no Customer Care Office in place at KIWASCO, there were no rules and procedures on handling customer complaints, and a Customer Charter setting out the rights and responsibilities of customers was absent. Company employees and customers hardly communicated. They seemed like an unhappily married couple, both dependent on each other, but caught up in their own world. Unhappy with the

situation, but not quite knowing what to do about it. How fortunate that the couple has now started talking and liking each other! No longer feeling condemned to each other's presence, but rather appreciative of their mutual, dynamic roles and responsibilities.

Today, the KIWASCO Customer Care Relations Office is a lively place where customers move in and out, and where conversations between KIWASCO employees and customers cause a beehive-like buzz. Signboards above different desks help customers navigate their way to find the desk from which help is required. Burst or leak in Manyata zone? Go to the Manyata Zone desk! Billing problem? Follow the Billing signboard! Sewerage blockage? Meet the sewerage officer! Visiting the office was a completely different experience ten years ago.

"At that time, customers and company employees hardly communicated. They seemed like an unhappily married couple, both dependent on each other, but caught up in their own world."

How did this change happen, and where do they stand now? These are the questions we will address in this short story about the improvements in customer services at the Kisumu Water and Sewerage Company.

Challenges in the past

Before 2003, Water and Sanitation Services were provided by the Kisumu Municipality. All municipality staff was paid from the revenues and hardly any resources were available for operations and maintenance, leave alone expansion. Operations were chaotic and guided by emergent short-term requirements rather than by sound technical, social and commercial organizational considerations.

Staff was not selected on basis of competence, hardly trained and demotivated by a top-down management style, low pay and few promotion opportunities. Tasks were implied and aside from a few bicycles and one pick-up truck, no transport was available.

"If the complaint was not properly handled, leave alone closed, the only option the customer had was to report the complaint again and hope for the best."

Most customer complaints centered on billing, bursts and leaks, and meter readings. The first challenge for the customer was to bring a complaint under the attention of the company. All complaints, either aired by customers themselves or by staff, were brought under the attention of the Head of Commerce. Once that hurdle had been taken, the next step required was the channeling of the complaint to the relevant officers. After that had been done, the head of Commerce could not monitor whether the case had been closed satisfactorily as papers could be lost by both customers and officers. If the complaint was not properly handled, leave alone closed, the only option the customer had was to report the complaint again and hope for the best. Customers felt that the municipality, and later the company, carried the important responsibility of supplying water and sewerage services, yet did not really care about them. The fact that all communications between



customer and officers went through managers was hard on all people involved: The manager had too many cases to handle, the customers felt left alone, and the officers tried the best they could, but felt squeezed between demanding customers and managers.

'At that time (2009), I did not communicate with customers directly. My boss told me: 'Go there!' I went, solved the problem and reported back to him what I had done. The customers had no role in my day-to-day operations. They did not even know who I was, we had no official clothes that branded us and no identity cards. Customers did not trust us.

The transformation

Today, customer relations and the way complaints are processed have made a U-turn. Roles, rights and responsibilities of both customers and the water company are set out clearly in a customer charter, legally binding policies and contracts. Customers are one of the most important company resources and not as a kind of 'necessary evil'. Customers can voice their complaints through social media platforms in addition to registering their complaints online through the KIWASCOLink app. This app ensures real-time registration of a complaint and enables staff to monitor if and how the complaint is handled, by whom, and within what span of time. Reported cases are only closed after customers have confirmed full satisfaction with the solution(s) found. Customers now reveal that they feel appreciated by the company as clients who pay for the services.

How were customer relations improved?

Employees of KIWASCO all agree that the introduction and roll-out of the Computer software programme KIWASCO Link caused a major shift in the culture and operations of the company. This system was rolled out in August 2015 and is still under development. The ambition of the company is to ensure that

all operations, be it billing, meter reading, leak detection, human resource development or customer relations, are efficient with the adoption of technology.

'Now, I have a clear overview of the sewerage complaints forwarded to me. When I go to see the client, people in the city centre recognize me as a KIWASCO employee and start conversations spontaneously about the sewerage and water services of the company. I always first go to see the customers in order to better understand the problems at hand. After having handled the complaint, I contact the client in order to see if he is satisfied with the way I handled it.

The customers are more educated now. Before, when I did not communicate with the public, we always had the same problems at the same spots. Some people kept on throwing pampers, sanitation pads and other waste into the sewerage whereas this is no longer the case. The current situation is much better both for us as employees and for the customers as they obtain better services and are better informed on their roles and responsibilities in keeping up the service levels.'

(Sewerage officer who started his employment with KIWASCO in 2009)





The question that would be asked is, how could the introduction of this software lead to such far reaching improvements in customer relations? We will look at factors that were crucial in making its implementation successful. This included management’s dedication and commitment (1), changes in company culture (2), Use of ICT and Geographical Information system (GIS) (3), and improved Human Resources Development policies and practices (4)

Management Dedication and Commitment (1)

The commitment of the management to turn the company into an efficient service provider and make customer relations the heartbeat of the company certainly helped. In 2014, the company launched a Service Charter. To be able to meet the rules and regulations set out in the charter, a customer relations office was established. Management, with direction from the board, also recruited new staff that not only had a technical background but also had a more commercial background.

“Now, my boss encourages me to tell what customer complaints are about so that something can be done about it.”

Changes in Company Culture (2)

A culture developed where customer complaints were appreciated rather than shuffled under the table. As a result of the regular companywide trainings on customer care, staff feel that, ‘customer care is every departments’ business’. Not only customers were approached with a much more appreciative attitude, the relationships between staff members of different departments improved considerably.

Improved Human Resources Development policies and practices (3).

A positive influence on staff conditions was felt immediately after KIWASCO was established in 2003, in response to the then newly introduced Water Act in 2002. Before 2003, less than 100 people worked on water and sewerage delivery in Kisumu Town.

This increased to about 200 in 2009 and about 330 in 2019. The expansion was possible because of increased revenue. Employment terms and conditions have improved, as have task divisions and chances for job promotion.

After 2003, permanent staff no longer suffered from payment delays that before could stretch periods of three months or more. Before 2003, most of the staff were processes oriented but since the establishment of the company, departments and clear task descriptions have emerged. This is with the change in strategy to focus on improving customers' experience. New employees are selected based on pre-set technical and social competences and education levels. Employees have an opportunity for career growth hence an incentive for staff focus on making contributions that helps the company to meet its strategic objectives in the long run. The company wide trainings on customer care that have been provided from 2014 onwards helped to make staff change their perception in relating to customers. These trainings were attended by all departments.

Use of ICT and Geographical Information system (GIS) (4)

Most customer complaints are centered on metering and billing. Once new ICT technologies were introduced, and all meters and sewerage connections were located with the help of a digitized map and GPS coordinates, operations became much smoother, efficient and transparent. Finding a meter no longer depends on one- or two-meter readers. From the Bulk Meters per zone, it can be seen how much water is lost from leaks and bursts and leaks can be detected more easily.

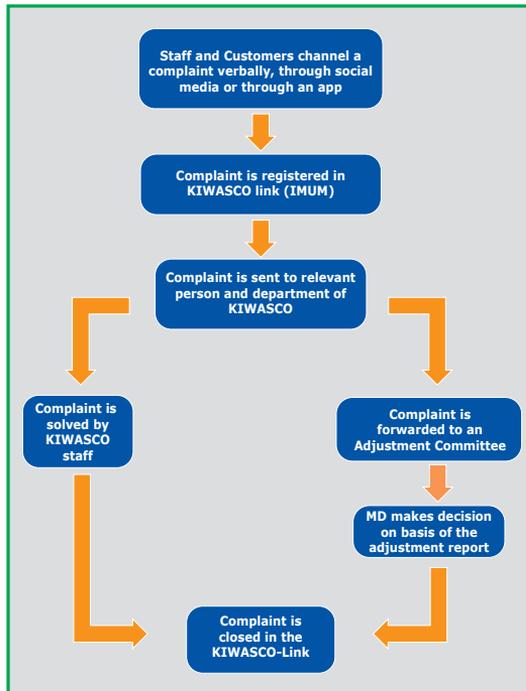
All commercial connections now have smart meters. Only the plumbers employed by KIWASCO can install and service meters which prevents the use of materials of substandard quality and substandard workmanship. If customers are dissatisfied with metering and doubt the meter quality, the meter can be tested at a KIWASCO meter testing site in the presence of the customer. Meters are also calibrated at regular intervals.



"I am grateful for the chances provided by the company. I started an internship here and was coached well. What I did not like is that I had to provide my own protective clothing, my own tools and my own transport and that I did not have an identity card. But a few years after my employment this changed drastically. I now work with better tools as they are now provided by the company and replaced by them if necessary. I also have transport and clothes that both protect me and show for which company I work."
(Plumber)

'In 2009, the company sent staff to the Sewerage Department for punishment. We had no transport and had to bring our own bicycles if we did not want to walk. We also had to pay for our own Personal Protection clothing like gloves, an overall and boots. Now, I feel proud to wear my yellow jacket with the brand of our company. And colleagues appreciate my department everyone is now aware that we contribute significantly to the total revenue of the company.'
(Sewerage Officer)

Flow Chart of Customer Complaints



Lessons learnt and challenges

There are still many complaints related to the quality of old pipes that keep on causing bursts and leaks. There are also complaints on the smell of water, caused by the water hyacinth growing in Lake Victoria. This hyacinth negatively influences the water intake and its smell; and a proper response to the growth of this fast-growing weed is still to be found.

Looking back at the achievements made by the company so far, a few key lessons surface:

- 1) Set out clear responsibilities and rights of both the customers and the service suppliers. Parties need to understand their roles and obligations to ensure service standards are maintained at the acceptable levels.

- 2) It is essential to establish a Customer Relations Office, as this signals to customers and the company staff that the management deeply values customer relationships.

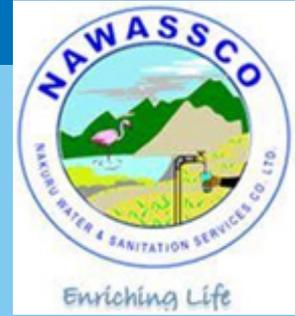
- 3) Every department contributes towards maintaining good relations with customers. It's the responsibility of the management team to build an organizational culture where staff understand that the responsibility of maintaining good customer relationships and even expanding them is shared.

- 4) Companywide trainings on customer care help staff to internalize the idea that Customer Care is at the very center of the company's operations.

- 5) The adoption of technology that helps identify and respond to customer issues is tremendously helpful in making operations smooth and transparent therefore ensuring that customers are satisfied with the quality of service.

- 6) If relationships between company employees are well managed this positively influences customer relationships too. Company employees need to realize that customer relationships can only reach high levels if the staff can cooperate well across departments.

3.5 A low-income service delivery model, a case of Nakuru Water and Sanitation Services Company (NAWASSCO), Kivumbini low income estate



Background

Nakuru County is home to three beautiful lakes – Nakuru, Naivasha and Elementaita - and awe-inspiring scenery due to its geographical position at the Mau Escarpment, the Rift Valley floor, Oldonyo Eburru volcano, Akira plains and Menengai Crater.

Nakuru is the third-largest urban town in the country and growing rapidly. A survey released by the Institute of Economic Affairs in 2019 September showed that Nakuru is rising to become the most preferred region by investors. Nakuru is also said to be steadily transforming from the traditional farming town it has been, to a commercial hub. This and other factors including high birth rates and urban migration among others are driving the population of Nakuru to sky rocket.

This has an implication on the existing water and sanitation services as demand is expected to rise significantly. About fifty percent of the Nakuru population resides in low income areas and more than fifty percent of the inhabitants

of these areas do not have adequate access to safe water and sanitation services. To improve access to water and sanitation in these zones, NAWASSCO established a pro-poor unit dedicated to serving customers in the low-income areas in 2012, which was upgraded to a section/department in 2017.

NAWASSCO initiative to serve low income areas

NAWASSCO has tested various pro-poor service delivery models to facilitate equitable and affordable access to water and sanitation. Water kiosks and prepaid standpipes are the most common services provided to these areas and at the start the unit investigated ways of initiating improvements. However, NAWASSCO went an extra mile in improving its services to the residents of the low-income county estates when exploring the possibilities of responding to the deepest wish the inhabitants had: providing them with their own private connection.

The unit set aside the common assumption that people in low-income areas cannot pay for this service and explored with other city actors, such as the Rift Valley Water Services Board, County department of water and health, civil society organizations and development partners, if and how this wish could be fulfilled. To further improve sanitation, NAWASSCO has subsidized on-site sanitation facilities and developed sludge management services.



This story explores how NAWASSCO managed to provide individual connections to customers in the county estates and zeros in on Kivumbini Estate; a move away from the common practice of serving low-income areas through water kiosks and standpipes.

It also shows how collaboration with stakeholders can lead to a win-win situation in providing comprehensive WASH services.

Through these efforts, customers obtained access to safe water and sanitation, and the utility was able to tap into the financial resources of the community and drastically improve revenues from the area.

The Water and Sanitation Challenge in Kivumbini Estate

Kivumbini is a low income planned county estate, which was built in colonial times. It is approximately four kilometers from town centre and 1km from stadium along Kahawa road. The area is fairly developed in terms of roads, schools and hospitals, but the demand for water and sanitation outstrips supply. It is a densely populated estate with 1,136 households with some houses providing shelter to more than one family.

Water was mainly supplied through communal water points. Several households used to share Pour Flush Toilets connected to the sewer and a common laundry place, however, the water supplied was not being paid for and water wastage was a common place. To control this wastage, the company decided to control water supply in the target locations and water was supplied only three hours a day for two days a week. This intermittent supply resulted in customers waiting in long queues for hours that were marred with fights and conflicts among the water collectors, most of whom were women.

The residents resulted to vandalizing the already old and dilapidated network, making access to water even worse as time went by. Some of the residents had no alternative but

to use water vendors as the water supplied by the municipality did not suffice. Residents paid vendors between KES. 5 and KES. 10 per 20-liter jerrican. If we are to make a comparison between what domestic customers pay at KSH. 55 for 6cubic meters, residents in LIA are paying 10 to 20 times more.

This poor service resulted to customers having to wait in long queues for hours that were marred with fights and all sorts of conflicts among the water collectors, most of whom were women.

Being a planned county estate, sewerage infrastructure had been in place since the colonial days. However, the sewer system was dysfunctional due to a lack of maintenance, a lack of water required for flushing and due to the habit of people disposing solid waste in the manholes, thus blocking the sewers. To make matters worse, many water collection points were located at the premises of the malfunctioning and unhygienic toilets. Not surprisingly, keeping up Public Health and hygiene standards was a consistent challenge, and most diseases in the area were water borne.

Not surprisingly, keeping up Public Health standards was a consistent challenge, and most diseases in the area were water borne.

The customers did not pay for services, vandalism and illegal connections were commonplace and county government and the utility blamed each other for the sad. The Company and its low-income clients hardly communicated. The cartels knew how to exploit this situation to set up illegal connections to enrich themselves. The Kivumbini situation was typical of many low-income areas, and the NAWASSCO board and management were determined, through their

pro-poor policy and strategic plan objectives, to take very deliberate steps with partners and the community to provide better access to safe water and sanitation.

Actions taken by NAWASSCO

NAWASSCO made the important decision to bring low income municipal council estates into mainstream service delivery. To do this, the utility 1) put in place pro-poor strategies and policies, 2) strengthened the pro-poor institutional framework, 3) sought collaboration with the county government and other key stakeholders, 4) initiated communication, outreach and education to the low-income dwellers, and 5) introduced flexible payment options. These actions are further described below.

Strengthening the pro-poor institutional framework

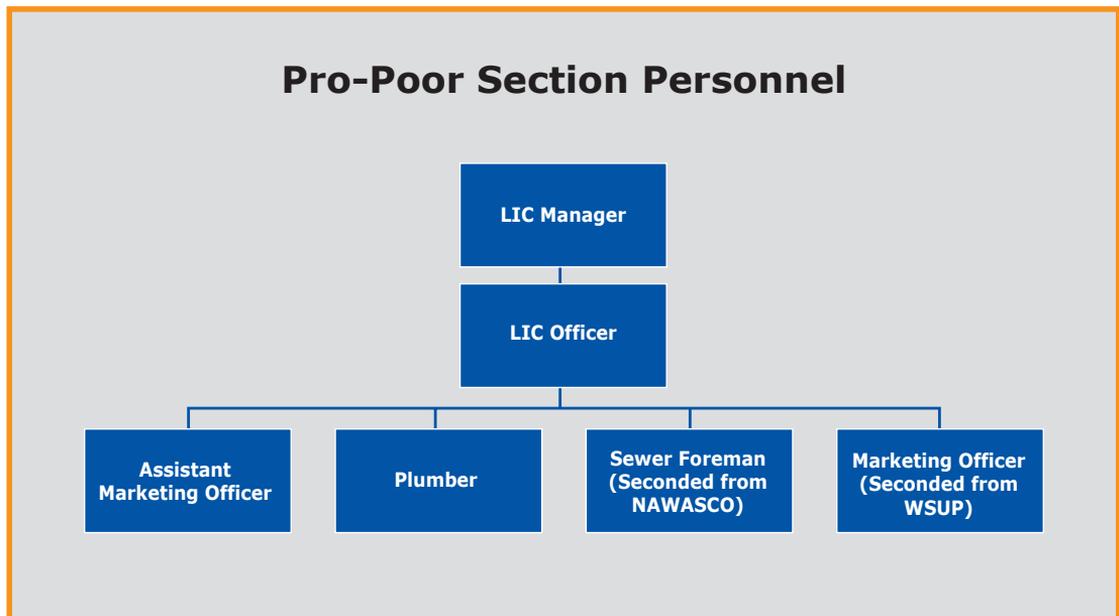
The unit was subsequently upgraded to a section in 2017. The section has four full-time staff members and three seconded staff. The team consists of a Low Income (LIC) Manager supported by a LIC officer, an Assistant Marketing Officer and a Plumber. The three

seconded staff include two Marketing Officers attached to the section through a partnership with Water and Sanitation for the Urban Poor (WSUP), and a Sewer Foreman from NAWASSCO's Sewer Department.

The pro-poor section works under the commercial department and closely coordinates with the technical department to ensure timely service delivery to low income customers.

Putting in place pro-poor strategies and policies

The Rift Valley Water Services Board (RVWSB) strategy lays out interventions and actions to extend commercially-viable water and sewer lines to under-served and unserved areas. To operationalize the pro-poor unit, a pro-poor strategy was formulated in 2013. To further define and enact this strategy, the NAWASSCO Board and Management integrated these efforts into their strategic plan, which provides objectives, actions, targets and timeframes for extending commercially-viable water and sewer lines to under-served and unserved areas.



Key to NAWASSCO's pro-poor approach was the development of a Social Connection Policy. This policy seeks to ensure that customers in low income areas obtain access to water and sanitation services that meet high Standards of quality, quantity, affordability and accessibility. The policy also introduces subsidies and sets out clear eligibility criteria for low income settlements to qualify for social connections. To ensure that the subsidy is well targeted to the poor, one of the criteria is that it is only for customers that are getting a connection for the first time.

Collaboration with the County Government and other stakeholders

NAWASSCO engaged with the county government and with development partners to implement the project. ygiene issues and encouraged households to acquire an individual connection.

The new 3.6 km pipeline to Kivumbini was taken up in coordination with the County and WSUP. The County Government provided financing for the sanitation infrastructure, NAWASSCO contributed materials such as pipes and fittings, and WSUP financed all the labor expenses to install the pipeline.

Communication, outreach and education

Upon completion of the network, NAWASSCO raised awareness and educated customers on the timeframe for operationalizing the new network, how to get connected, the cost of water, how to pay for services, and how to access customer care services. This information was shared through chief's baraza's, pamphlets, and door-to-door meetings with residents.

To create demand and respond to questions or concerns about the new services, Marketing Officers were deployed to the area to do door-to-door visits. The door to door visits were especially effective in demystifying perceptions about individual water connections and the process of getting a connection. The one on one interactions provided immediate feedback to both sides to ensure clarity and

responsiveness. The Marketing Officers also brought application materials to Kivumbini so that people didn't need to go to the main office, making the process shorter and less expensive for customers.

The door to door marketing approach has greater impacts on the uptake of services as well as the utility-customer relationship.

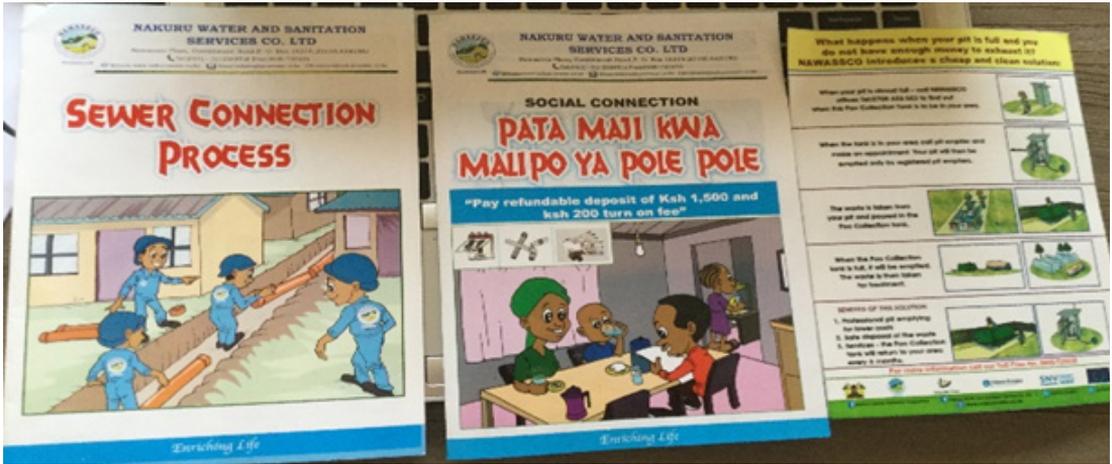
Previously, we conducted community outreach through chief's barazas, but there is an incredible difference between the two approaches in terms of results. The door to door enables the utility and customer to have a one on one interaction and immediate feedback is received from both sides. In addition, since the marketing staff joined in 2016, they have facilitated about 2,500 new connections across the county estates.
(LIC officer)

Communication, outreach and education using customer friendly brochures and fliers, was persistent and continuous. The brochures explain in very simple terms the water and sewer connection processes and procedures. Also, brochures were distributed showing the cheap and clean solutions to emptying full on-site sanitation pits, and how to access desludging services provided by NAWASSCO.

Flexible payment options

NAWASSCO recognized that water and sewer connection fees were very high for low income customers and decided that, in the interest of expanding access, a subsidy should be introduced to ease this financial burden. The NAWASSCO social connections policy provides for a connection subsidy to select settlements.

The subsidized connection fee for low income customers is KSH. 2,700 paid up front, which



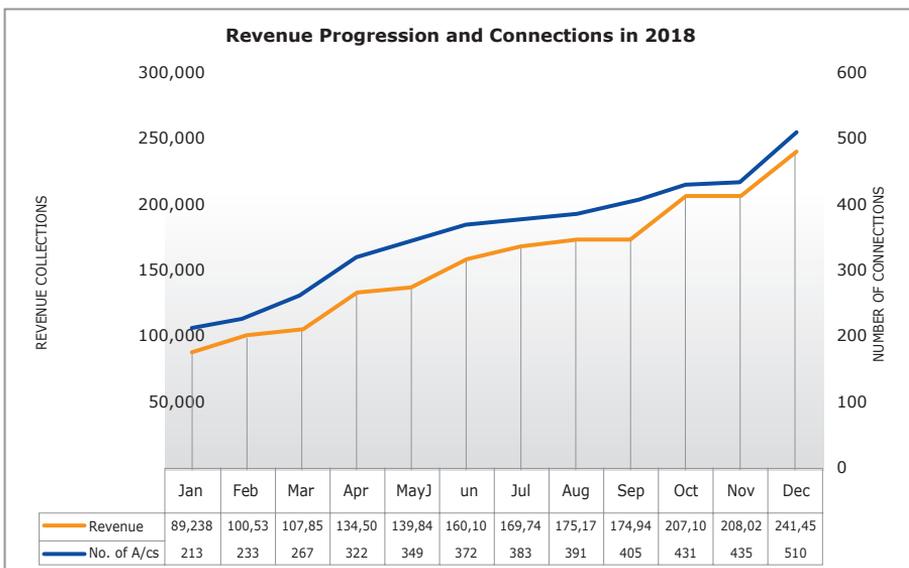
is lower than what other customers pay. Upmarket customers, for example, pay a connection fee based on a percentage of the total connection costs, including materials. This percentage tends to be an amount much higher than KSH. 2,700.

The subsidy also provides for materials, which are installed and then paid for by the customer over 6 – 24 months. The financial deficit that occurs to NAWASSCO as a result of the subsidy is shouldered by what is paid by commercial and high end customers. NAWASSCO has, in some cases, also renegotiated payment terms

with customers who are unable to pay their monthly bill.

The win-win results from the Kivumbini project

The Kivumbini project model showed the value of providing individual connections in low income areas. In an estate where there were no individual connections and no revenue was collected before the project, NAWASSCO now collects KES. 250,000 per month from 500 water connections. The following graph shows there has been progressive growth in connections and revenues in 2018.



The company anticipates that the positive trend in connections and revenues will continue in Kivumbini and other estates.

Communication between NAWASSCO and the customers remains strong. Customers are willing to pay for water services and normally engage the utility staff in case there are challenges and concerns with payment.

Today, approximately 50% of households' individual domestic water connections and receive water 24-7. This is a drastic change from before when there were no individual connections in Kivumbini, and water was only available two days a week. In addition, more households now have access to decent sanitation, as the sewer network in Kivumbini has been rehabilitated and toilets have been upgraded.

Families enjoy privacy, dignity and hygiene as the quantity of water is enough to flush the toilets and keep them clean, and one toilet is shared between two households, each of which has a key to access the facility. This is big change from before when there was a lack of facilities and a toilet was shared by up to ten households.

As no one in this estate was paying for water services in the past, all water sent to this estate was considered "non-revenue water". With this project and the strong community

engagement, revenues have increased dramatically, and illegal connections are significantly reduced.

It is very exciting to see the improved living standards of our customers in these areas through the provision of safe and clean water at affordable rates. Water-related conflicts among neighbors are no more. With the new pipeline and reduced vandalism, NAWASSCO is saving on repairs and maintenance of the network, helping to save a drop to serve others.
(NAWASSCO LIC officer)

Lessons learnt

NAWASSCO, in line with the Nakuru County Government mandate, is striving to reach all low-income areas and wholeheartedly aims at providing universal access in its area of jurisdiction. It is very encouraging that the utility has started down this path by walking in collaboration with low income residents, county departments and development partners.

To further progress along this path to full coverage even deeper into the hilly and sometimes muddy landscape, lessons learnt here will act as an eye opener for peer water companies. Some of the key interlinked lessons include the following:



Above: The sanitary facilities before and after the WASH improvements

- The assumption that low income residents are not willing and able to pay is not a reality on the ground. The fact is that residents in low income areas without individual connections spend more money on water provision and sanitation services than mainstream utility customers. The prompt payments for services by majority of those that are now connected by NAWASSCO in LIAs shows that there is a business case for investing in low income areas.
- Accepting that there was a solid business case to be made for providing services to low income areas, NAWASSCO undertook a deliberate and thoughtful process to develop strategies, policies and an institutional framework to drive the work, and effectively engaged partners and stakeholders to leverage resources in a targeted area.
- An integrated WASH service delivery approach to customers in one estate addresses water, sanitation and hygiene needs and can have a much bigger impact on the community than piecemeal interventions because WASH services are interlinked by nature.
- The work in Kivumbini demonstrates the benefits that can be achieved through collaborative efforts with the County Government and other stakeholders. The partners aligned their technical capacities and resources in providing access to water and sanitation services in low income communities. This project also demonstrated the value of actively engaging low income customers to demystify and inform them of the costs and benefits of an individual water connection. This was reinforced by the recognition that the company needed to have the appropriate social connections policies and payment plans to remove financial barriers to access.
- Creating and anchoring Marketing Officers in the pro-poor section helps create demand for services and therefore the customer base. It provides a human touch to interactions, and propels a focus on the needs of low-income customers and how the utility can effectively respond to these.



3.6 Safe Water through Defluoridation and pro-poor focus, a case of Naivasha Water, Sewerage and Sanitation Company

Background

Naivasha Water, Sewerage and Sanitation Service Company (NAIVAWASS) is one of the three regulated water companies in Nakuru. It was incorporated on the 8th of September 2005 as a limited liability company under the Companies Act, CAP 486 of laws of Kenya. Its mandate is to provide water and sanitation services in Naivasha Sub-county and its environs on self-sustaining basis. Its vision is to be "A world class water and sanitation service provider" and its mission is "To provide adequate, quality, affordable and sustainable water and sanitation services that meet all our customers' needs and expectations within our area of operations through utilization of contemporary systems and technology." NAIVAWASS upholds the following core values: Customer Focus, Responsiveness, Integrity and Honesty Team work, as well as Community Participation.

The challenge

Naivasha is located in the Rift Valley, a region with the highest concentration levels of fluoride in the country, going as high as 20 mg/L on average. Research done in the Rift Valley region shows that the fluoride levels in Naivasha alone ranges between 1.3 mg/L (being the lowest) and 9 mg/L being the highest against the recommended guideline value of 1.5 mg/L by WHO. Further research shows that consumption of water in Naivasha by majority of residents is done without any treatment. This therefore means that communities in the area ingested high amounts of fluoride, which poses health threats such as severe tooth and skeletal fluorosis, which can cause brittle bones/teeth, joint impairment and possible damage to the thyroid gland over time.





Starting off as a pilot plant, it has now been converted to the main plant serving other areas beyond the four that were originally piloted.

With this understanding, the company could maximize production in low fluoride level areas and determine sources where water could be blended to reduce fluoride levels.

iv) **Connecting low-income consumers:**

with the pilot project, NAIWASS expanded services to previously unserved areas through water kiosks. The utility also decided to promote individual connections to the same target groups especially where there is existing infrastructure. To strengthen this initiative, the utility established of a pro-poor unit that is still undergoing development. As first key steps, a social connection policy was developed and is being implemented; and an officer has been appointed to drive the pro-poor actions.

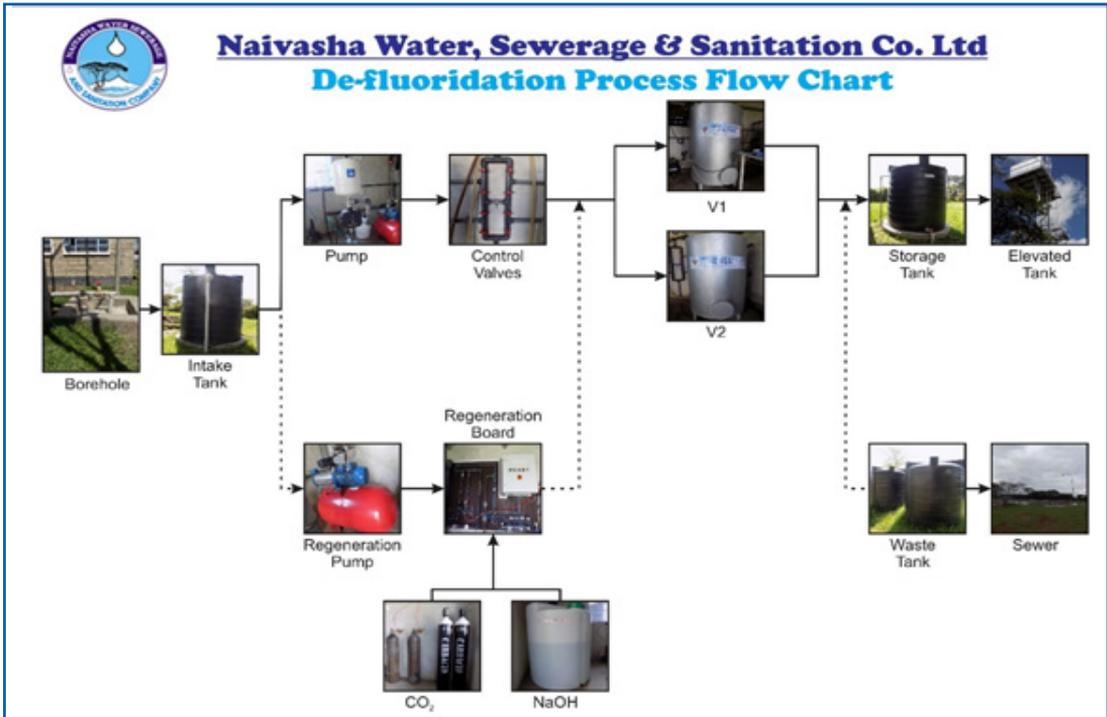
v) **Marketing team:**

The utility has recruited a marketing team that is operating under the distribution and sales department whose work is to encourage individual households to acquire own connection.

This section has six people, consisting of a marketing officer and five sales persons who are paid on commission and a small retainer fee. Through the marketing unit, NAIWASS has increased the community's knowledge and awareness on the effects of high levels of fluoride in the water they consume. This has been done through door to door visits, community clinics, road shows and community barazas.

vi) **Institutional reforms and strengthening the human resource base:**

The utility went through a harrowing experience from poor governance in the past that seriously affected staff performance, confidence and morale. To transform the company, the leadership/management was



determined to strengthen a performance management culture and to confront water supply challenges in its area of jurisdiction. The utility initiated reorganization and realignment of its structures in order to address overlaps, conflicting roles and respond to changing circumstances. The utility envisioned and implemented a structure that improved on the delivery of its mandates, empowered staff, increased accountability and transparency. Individual and section-based targets were developed and are regularly monitored.

vii) Staff Motivation:

To motivate performance, the management introduced performance rewards that include financial incentives, work recognition and promotions. Trainings and benchmarking opportunities are also availed to all staff equitably. The utility supports internal and external staff training through an annual budget allocation. Internal training includes

on-the-job training by management and co-workers on need basis.

Benchmarking created enthusiasm and eagerness to do what others have done to overcome similar challenges and realise improved performance. (MD)



Key Challenges

Some of the challenges the utility experienced include:

1. **Disposal of wastewater from de-fluoridation:** There are no proper disposal methods in place for water waste collected during de-fluoridation. About 10 m³ of waste is collected every four months and dumped in tanks before being taken by exhausters to sewers. While this amount may seem negligible, it poses a great environmental risk when collected over time as it can increase levels of fluoride in the nearby ground and surface water. The company is currently exploring a possible market for fluoride to convert it into raw material in the future.
2. **Unwillingness to pay for services:** There are many residents in Naivasha who feel that water supply should be free. As well, there are many private borehole water operators that compete with NAIVAWASS and charge much lower prices than NAIVAWASS for water that has fluoride. Unregulated donkey vendors are also selling fluoride-filled water to residents and there are many potential customers with boreholes who are unwilling to take up individual connections even though they are not sure of the quality of water they consume.
3. **Absent Landlords:** Majority of the houses in the informal settlements are rented and the landlords do not live within. Both the property owners and tenants are not willing to invest for the obvious reasons that property owners see it as an extra cost while tenants see it as the owner's responsibility.

Lessons Learnt

1. The assumption that everyone in the community wants safe water and is willing to pay for it has been very deceptive. Community engagement is critical to realizing increased uptake and individual connections. NAIVAWASS has increased community engagement using various community outreach and communication models including customer satisfaction surveys, customer clinics and community barazas.

2. Marketing is a critical component in accelerating connections and expanding services to the unserved. In a region like Naivasha where water supply competition is common place, marketing can help respond to the stiff competition.

3. Partnership plays a key role in accelerating the performance of a water company. Without the support of VEI and other partners who financially supported NAIVAWASS to install the infrastructure, and provided technical support through short term and long term experts, it would not have been possible to realise the KPIs on coverage and water quality.

Key Results

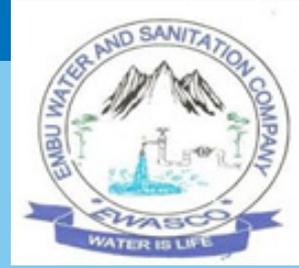
1. Since the project was launched, NAIVAWASS has expanded the supply of good quality water to unserved areas. Marketing and awareness campaigns have enabled an increase in the number of connections by just over 1,000 (Kayole 900 and Mirera 120), leading to an increase in revenue for NAIVAWASS.

2. Water supply reliability has increased from 12 hours per day to 20 hours per day on average, with some low-income areas receiving 24 hours supply of quality water.

3. The use of a delegated management model has also helped to increase the number of connections. Under this model, agents are delegated to sell water on behalf of NAIVAWASS.

4. The overall satisfaction index from customers who receive water and sewerage services from NAIVAWASS stands at 78%, an improvement from an index of 71% in 2015. Customer satisfaction surveys conducted in 2018 indicate that 77% of the customers served directly by NAIVAWASS are satisfied with their services. Findings also show that 86% of the customers indicated that NAIVAWASS provides timely services, while 82% were happy with the relations between the company and the customers.

3.7 Staff optimization, a case of Embu Water and Sanitation Company



Background

EWASCO was incorporated as a private company in March 2003 and became operational in 2005. Under the new dispensation, the company is wholly owned by the County Government of Embu. EWASCO covers an area of 1700km² and serves an estimated population of 190,000 people.

Water production improved from 2,000m³ per day in 2005 to 13,000m³ and 28,000m³ per day after completion of a treatment plant funded by JICA in 2012. Sanitation is another responsibility of the organization. When it was established back in 2005 the sewerage system was in a very poor condition and only covered 16% of Embu municipality. EWASCO quickly improved it, increasing its treatment capacity from 1,000m³ per day to the current 1,500m³ per day.

But with the growth in population this is not enough and through a loan from Cooperative Bank, EWASCO has secured a KES. 450 million loan to expand its capacity. This loan is linked to the World Bank funded and Water Sector Trust Fund-managed Results Based Aid program. EWASCO has 31,150 water and 305 sewer connections.

EWASCO uses a gravity system and a mini hydro to generate electricity. The power generated by the mini hydro services its energy needs at the treatment plant, which significantly reduces its costs of operation. EWASCO currently has 4 staff per 1,000 connections and is considered to be performing

well according to the Water Sector Regulatory Board (WASREB) key performance indicator benchmark for staff efficiency.

The challenge

EWASCO came from humble beginnings to become one of the most progressive and best performing utilities in Kenya. Its history is marked with exciting and dynamic challenges that have been overcome through a steadfast and a determined commitment to its vision and mission. At the start, EWASCO inherited staff from the national government and the defunct municipal council, who promulgated a different organizational culture in terms of results, working terms and conditions, salaries and general expectations. There were many casual workers without contracts who were paid on a daily basis and this caused a number of challenges that included legal risks as well as cash flow strains to the young company. The company also had no policies to govern and guide decisions on these difficult human resource management issues. This was frustrating and EWASCO knew that these employee non-performance and dissatisfaction would continue if they didn't take immediate action.

EWASCO was careful to not create a bloated workforce. The company decided to engage in a dialogue with the municipal council on this issue. EWASCO's management requested the council take back some staff. With the view of working independently EWASCO would in future appoint its own staff.

. The company offered those employees who had been seconded to it with an option to stay with the company if they were willing and able to conform to the new work culture. Due to fear and uncertainty, many employees returned to their former employer and within one year, the staff situation at EWASCO was relatively clear. EWASCO also resisted political and other pressure to appoint staff who did not bring intellectual capital because they knew it would be damaging to the new company but would affect employee morale and cause friction. At the end of this process, there were 19 permanent staff and 23 casuals. To address the lack of an HR policy manual, EWASCO borrowed and customized the HR policy of Meru Water Company.

EWASCO's actions towards staff optimization

EWASCO continued with its commitment to staff optimization and it has been a major strategy towards maximizing efficiency in service delivery while maintaining costs within the WASREB sector benchmark guidelines.

'I was opposed to a bloated workforce. The staff optimization process has not been easy, but the results speak for themselves. We have maintained staff salary at 1/3 of the total revenue'.

The staff optimization has followed two guiding principles:

- ***Automating processes to improve cost recovery and save time and money.***

Automating time and attendance with software eliminated wasted time and errors associated with manual time cards. Automating time and attendance also speeded up clock-in and clock-out processes and simplified time card tracking and data entry.

- ***Recruit and redeploy professional staff and continuously pursue employee performance improvement***

EWASCO management understands that employees are the cornerstone of its business

success. Hiring the right people has been key to the company, and this has been followed by assigning tasks and matching skills for redeploying existing staff whose positions were overtaken by automation. The utility acknowledges there are many individual and political pressures when it comes to hiring staff. To ensure there is no interference or canvassing, and only the qualified candidates fit for the company are selected, the utility hired a professional HR company to conduct the process. The company has also been invested in improving employee performance through staff training and participation, in experiential learning, and through benchmarking. In addition to the frequent training, the company has invested in team building.

The utility keeps the staff motivated by providing staff with health insurance, end of year parties to celebrate and bond, bonuses to staff, and holding sports days where winners are awarded. All of these efforts have led to an organizational culture where staff capacity is optimized, automation is integrated, and the team is united and results driven.

The actions under these two guiding principles are further described below.

Automation of operations

- **Automated biometric system for tracking staff time on the job**

Previously the company was using a manual clocking system for employees to register their work time, which was tedious and also easy to manipulate. The company replaced the manual system with a biometric system. The system improved efficiency by eliminating time wastage and errors associated with manual cards. It speeded up clock-in and clock-out processes and simplified time card tracking and data entry.

- **Automated meter reading and billing system to increase speed and reduce errors**

EWASCO replaced the manual meter reading and billing system that was inefficient, slow and responsible for the largest proportion of commercial losses through manipulation.

Using a software that is integrated with the smart phone devices, meter readings are automatically uploaded to the system in the office, and billing to the customer is generated faster and losses as a result of errors reduced. The system has helped to save time and reduce billing errors and delays that previously occurred in data entry, data losses, and sorting documents manually. The system sends out e-bills mainly through SMS and email to customers, and allows online payment options by customers through Mpesa and bank payments. The utility has completely eliminated manual billing and payment options which has reduced operating costs.

EWASCO optimized meter reading with the use of smart phones (a real time system), which in turn reduced the number of staff needed to key in data. In town, 300 meters are read per day, while in the rural areas it is 40 per day because of the distance. The company has only 13 Meter Readers, whereas previously the company had 40 Meter Readers.

Previously, the company also used to spend up to KES. 230,000 to post 10,000 water bills (KES. 23 per bill) through the post office. Having moved to SMS billing, which costs KES. 3, the company is saving KES. 200,000 every month, an amount that grows with the increase in number of customers.

● **Redeployment of staff overtaken by automation**

Instead of releasing staff who had lost their positions due to automation, the company looked internally to see if redeployment was possible. For example, after automating the billing system and the company becoming cashless, cashiers and tellers were redeployed in the same (finance) department instead of looking out for new people.

● **Reduction in the number of Casuals used**

EWASCO limits the number of casuals and they are typically used only for emergencies. The company also uses casuals from the

neighbourhood, a decision that has helped reduce vandalism of the network.

● **Automated treatment plant operations**

Automation of the treatment plant operations helped reduce the number of staff at the plant. Currently there is one person managing the plant at night and a maximum of three during the day. Previously there were about five staff at any one time. Chemical dosing of the water at the treatment plant has also been automated, which has resulted in savings as well as comfort that there is no chance of exceeding the dosage.

● **Automated HR management payroll and online payments to staff**

Previously EWASCO paid salaries through paper checks. This was shifted to online management and payment, which has saved many man hours. Paper work is also reduced as staff leave and requisition processes are also done online.

Innovations

EWASCO has also complemented its automated processes with GIS mapping and its own invention of a ball valve to save water.

● **GIS.** This system assists the WSP in mapping the different service locations and also helps with meter reading and locating bursts and leakages.

● **Ball valves to control tanks overflow.**

The company has innovated a ball valve to control overflow from its water tanks. EWASCO used to buy one that was selling at KES. 250,000, and which used to attract thieves, which meant the company would lose lots of water from overflowing, on top of the costs to replace this when it was stolen. The company decided to innovate its own ball valve, which costs KES. 60,000. This ball valve is distinct from those used on other pumps and, as such, it is never stolen because it would not fit for any another system. In addition, the pump performs better with no maintenance cost compared to the one before.

Challenges

With automation there is also a period of learning and adjustment to the change. By maintaining a transparent commitment to staff and looking at redeployment options, the focus and dedication of staff was maintained. The company has also been able to grow through these changes and adaptations, which has meant that new positions were created. For example, in the last decade, EWASCO has actually increased its staff from 48 to 122 (254%), but has significantly reduced the number of staff per connection .

On the other hand, EWASCO also notes that the requirement by WASREB to limit staff salaries as a percentage of O & M does not encourage the water utilities to improve operational efficiency. For example, if the company adopts automation to reduce operating costs, this has the immediate effect of increasing staff salaries; a high percentage of O&M. Utilities that are highly efficient feel that instead of rewarding, operational efficiency, this KPI is punitive to innovators.

On an efficiency-related matter, the company also recognizes that it continues to struggle with NRW, which is as high as 40% and keeps fluctuating. This is largely due to water theft by farmers who irrigate their crops, especially during the dry season. The company is looking at another innovation - a proposed smart meter that may not be manipulated - to address this situation.

Results

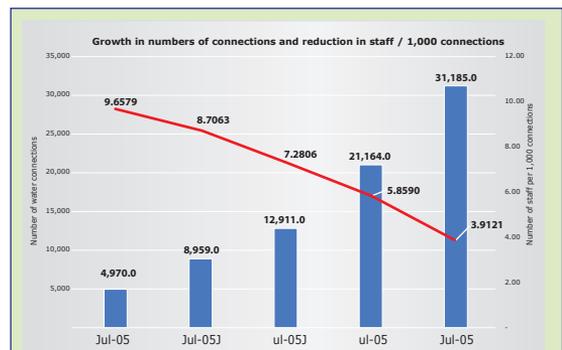
1) The use of new processes and technology to reduce costs and make operations more efficient has enabled the company and its staff to focus on the expansion of services. The company's financial position and the growth have given confidence to lenders and EWASCO has benefited from commercial financing to connect thousands of new customers. These projects are described below:

- Two water pipelines of 29km were constructed through a loan of KES. 80,000,000. EWASCO connected more than 6,000 households and repaid the loan in 18 months.

- A new Sewerage Project was financed KES 450,000,000 by Cooperative Bank under the Results Based Aid program of WSTF. The financing of repayable in 10 years and since April 2018, EWASCO is setting aside KES 8,000,000 per month into an Escrow Account towards loan repayment.

2) Due to increased profits, the company provides a welfare kitty to provide staff with an upgraded health insurance, for a Christmas party, and for annual bonuses. This keeps staff motivated and prevents turnover.

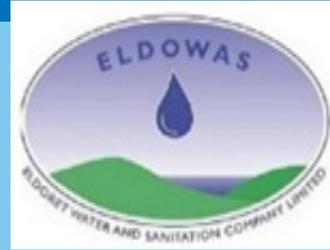
3) EWASCO has maintained a staffing level of 4 staff per 1000 connections, which is within the regulator benchmark for good performing companies and it's among the best in the country. The graph below shows the growth in the number of connections at EWASCO and how staff efficiency per 1,000 connections has been managed and reduced.



As shown in the graph above, EWASCO has increased the number of water connections from 4,970 in 2007 to 31,185 in 2018 (a 627% increase). During this same period of time, EWASCO has reduced the number of staff per 1,000 connections from 9.7 in 2007 to 3.9 in 2018 (a 60% reduction). This highlights the importance of combining efficiency with growth to maximize operational efficiencies and expansion of services.

4) The positive growth of the company has helped build stakeholder trust and confidence in the management of the company.

3.8 Reduction of operations and maintenance costs through automation, a case of Eldoret Water and Sanitation Company



Background

Eldoret Water and Sanitation Company (ELDOWAS) was incorporated in October 1997 under the Companies Act CAP 486 as a private company limited by shares. ELDOWAS is fully owned by the Uasin Gishu County Government and has a Service Provision Agreement contract with Lake Victoria North Water Services Board valid through 2021. The utility's service area covers 249 square kilometres with an estimated population of 493,996. The company has 116,355 accounts, 87,064 (75%) of which are active.

The story looks at how the company integrated and automated its systems to improve customer management, reduce NRW, increase revenues, and reduce customer complaints.

The challenge

The lack of an integrated and computerized system was leading to many challenges for the company. The lack of a modern meter reading and billing systems meant that bills were sent late, some meters were not linked to a customer, and complaints related to bills were high. Due to these issues and others, the company was under-billing or not billing some customers, debt management was not handled consistently, and the billing system permitted users to change the bills, allowing for fraudulent activities. The lack of a computerized system meant that management could not effectively track and resolve issues. The old system also allowed for cash payments – something that is a burden to customers and a risk to the company.

The lack of an integrated system also meant that customer records were not up to date, bills could not be pulled up quickly when there was a dispute, and there was not a system for registering and responding to complaints. As the company did not have updated customer information and phone numbers, it was unable to communicate with customers through SMS regarding bills, water rationing, complaints, etc. This led to long queues, unresolved questions on payments, collusion between customers and staff, and a general lack of a communication system with customers.

The ELDOWAS move to an integrated system

The integration process took six months and involved the following steps:

1. Strategic plan goals and objectives to integrate the system

A clear mandate with specific goals and objectives from the board of directors to develop and implement an integrated management system was at the foundation of the company's actions. This clear guidance gave management the ability to delve deeply into the issues and a timeframe in which to implement the system. The company also set aside KES 50 million for the development and implementation of the system.

2. Internal committee set up and benchmarking

As an initial step, ELDOWAS set up a committee of 20 persons from different departments

to discuss the current challenges and the requirements for a new integrated system. The ELDOWAS staff also commented on a few key aspects to the process:

- a. Strong IT staff. The Information Technology (IT) staff were very engaged and helpful in the process. Through some basic introduction of IT processes to the committee, it allowed the process to flow with a common understanding of how the system should ideally work.
- b. No external consultants. It is a commonly held belief that the first step is to bring in consultants to guide the process. In this respect, the ELDOWAS management and staff decided that they understood the issues and needs, and were the best people to lay out the system requirements. However, as we see in the next step, they also appreciated that benchmarking with other companies would inform their decisions.
- c. A customized system. The ELDOWAS system was constructed according to their needs. An off-the-shelf system was not available.

The committee members benchmarked with three companies during the process, including: NYEWASCO (Nyeri), KEWASCO (Kericho), and NCWSC (Nairobi). This helped committee members frame the overall system components and understand the linkages between the different departments. It also provided them with sample reports that could be generated from the system to improve management decision-making in operations, services and human resources.

3. Staff training and equipment

With the system developed, ELDOWAS management provided an orientation and training on the system to all staff. As part of the new system, additional computers and smart phones were purchased. The smart phones were part of the meter reading system

and allow meter readers to take a picture of the meter reading, this is automatically uploaded to the billing system. The company purchased 30 smart phones, which are used to read approximately 55,000 meters per month.

Another example of how the system improves efficiency is in obtaining materials from the stores. Materials required for operations and maintenance are entered into the system and move through a computerized approval process, something that used to be done manually. The materials in the stores are tracked and inventoried, and monthly reports show the usage of different materials, which improves procurement and management of these items.

4. Customer identification and sensitization, running systems in parallel

ELDOWAS identified the customer outreach and education aspect as one of the most important in the process. This engagement was used to update customer details. ELDOWAS used this as an opportunity to raise awareness on the new system, which after implementation would aim to improve services to its customers. Information obtained through the door-to-door visits was entered into the system. The intention here was to update customers' information into the billing system and automate the billing and customer care processes, ensuring that information could be shared through SMS. The mobile phone details would also come in handy in operationalizing the cashless payment system introduced by the company. During the initial system implementation, both the old system and the new system were running concurrently to ensure that any issues were resolved and didn't interrupt operations and services.

5. Full integration and reporting

ELDOWAS deployed an integrated analytics and automation system to improve its customer experience and operations that includes:

Customer registry

- Digitization and storage of customer details

Meter reading and billing

- Customer meters are digitally read and a meter photo is captured and stored for reference
- Customer bills are dispatched via SMS and customers can query their bills via an online query portal or SMS short code 22384
- Periodic analysis of consumption with evidence of actual readings provides transparency and the customer experience.
- Internal and external VoIP communication

Customer complaints handling

- Registry of complaints and how handled
- Tracking of days to resolve the complaint
- Monthly reports by number and type of complaint

Supplies & Stores

- All requisitions, purchases, and inventory are automated to optimize and track stores, and initiate procurement
- Online approvals to speed up process and eliminate unnecessary paperwork

Finance & Accounts

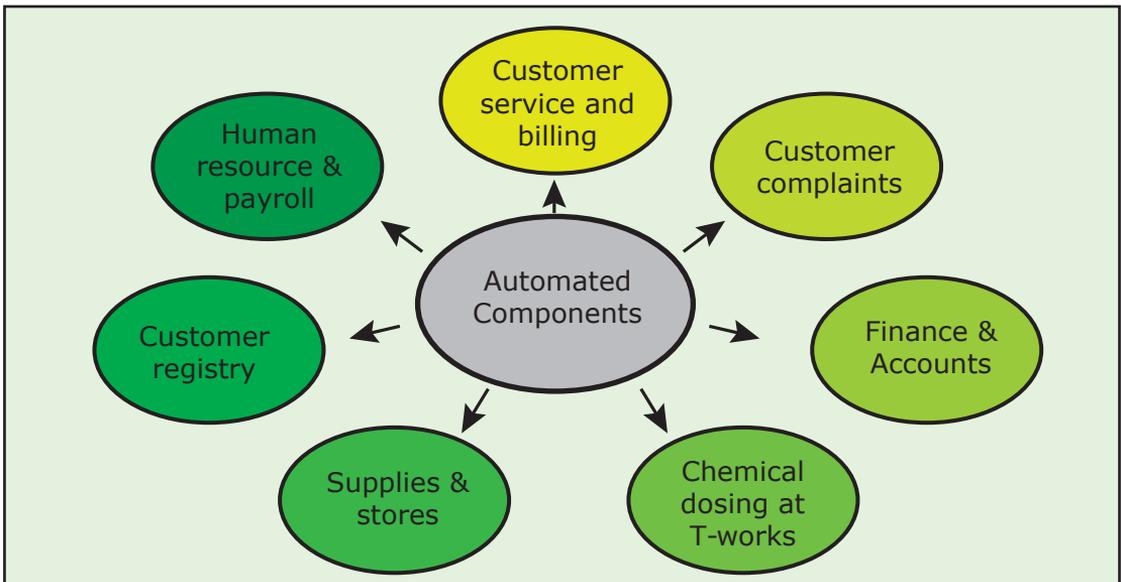
- Finance and accounting tracking and reporting on all aspects of operations including revenues and expenses, facilitates budget projections and cash flow management
- Networked with banks for customer and supplier payments
- Improved debt management-aging analysis -sufficient reports/data easily available.

Chemical dosing at treatment works

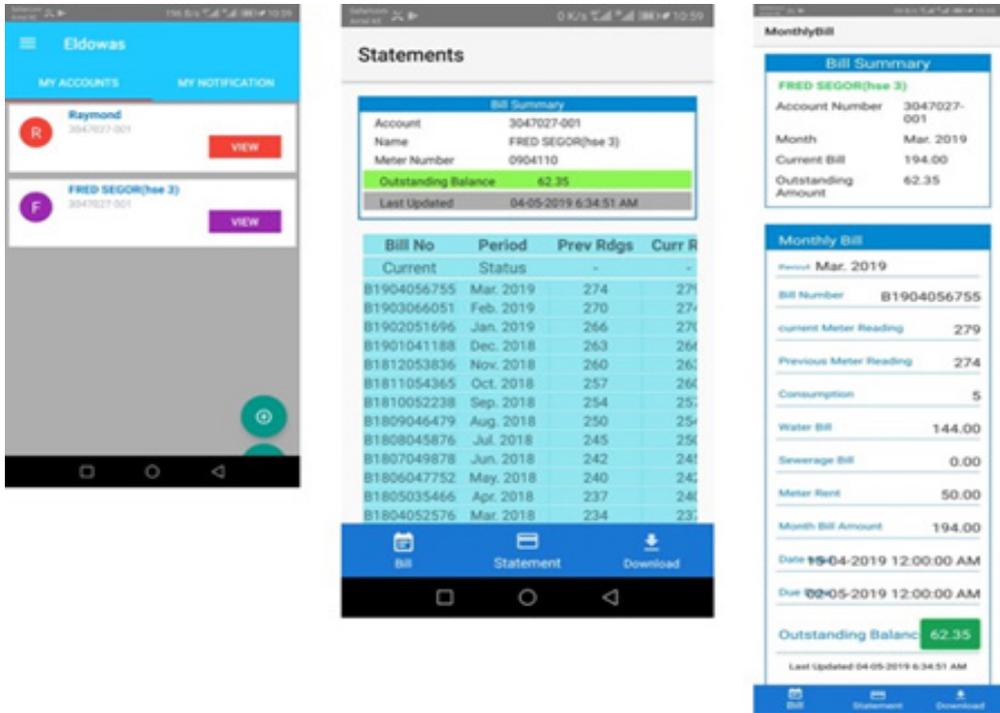
- Automatic dosing system at its treatment plants
- Improved water quality, less risk of human error
- Optimal for budgeting and cost control

Human Resource and Payroll

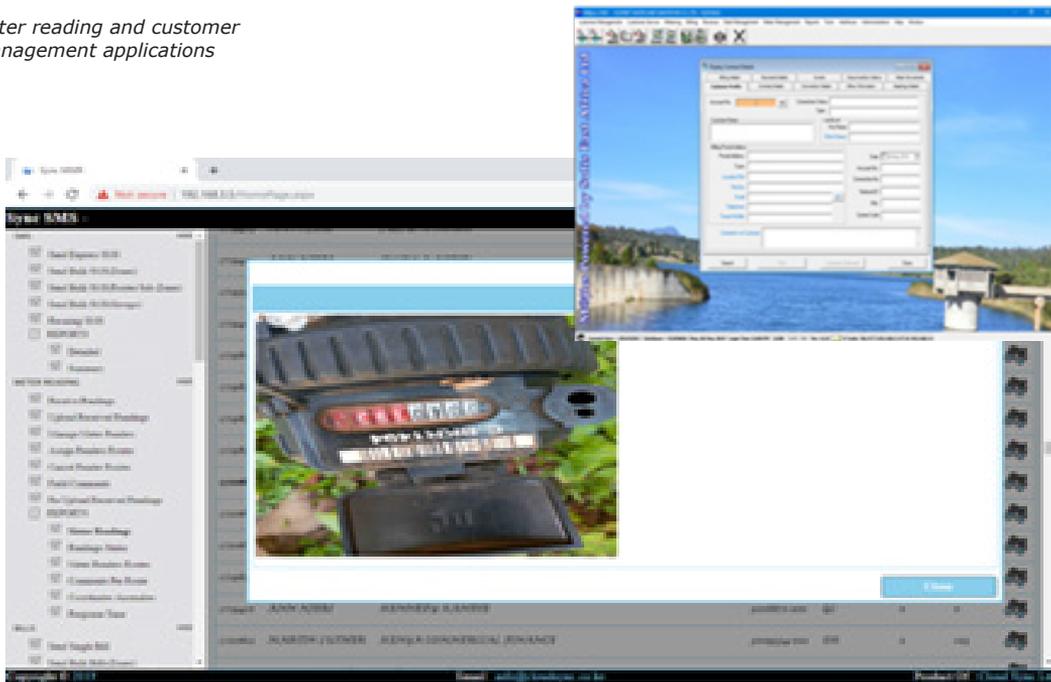
- Employees can submit leave applications, print online pay slips, and enter achievements on their performance self-appraisal form.



Below are sample views from the system.
Customer details, statements and billing summary



Meter reading and customer management applications



Chlorine level online monitoring dash board



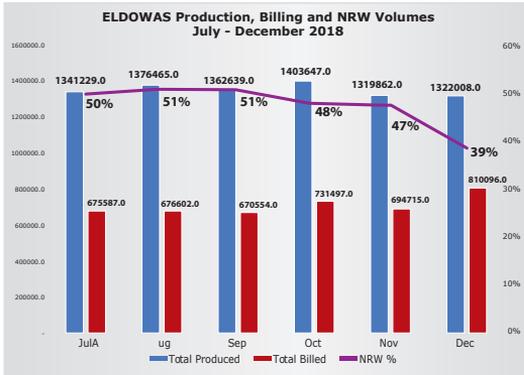
Results

The new system has resulted in many improvements for ELDOWAS in terms of customer data capture and storage, billing & revenue collection, reduction in illegal meter installation, improved debt management-aging analysis, reduction in fraud, and reduction in complaints.

Below are some key results from July – December 2018

Volumes of water produced/billed and NRW level

Month	Total Produced	Total Billed	NRW %
Jul	1,341,229	675,587	50%
Aug	1,376,465	676,602	51%
Sep	1,362,639	670,554	51%
Oct	1,403,647	731,497	48%
Nov	1,319,862	694,715	47%
Dec	1,322,008	810,096	39%
Change	(19,221)	134,509	-11%

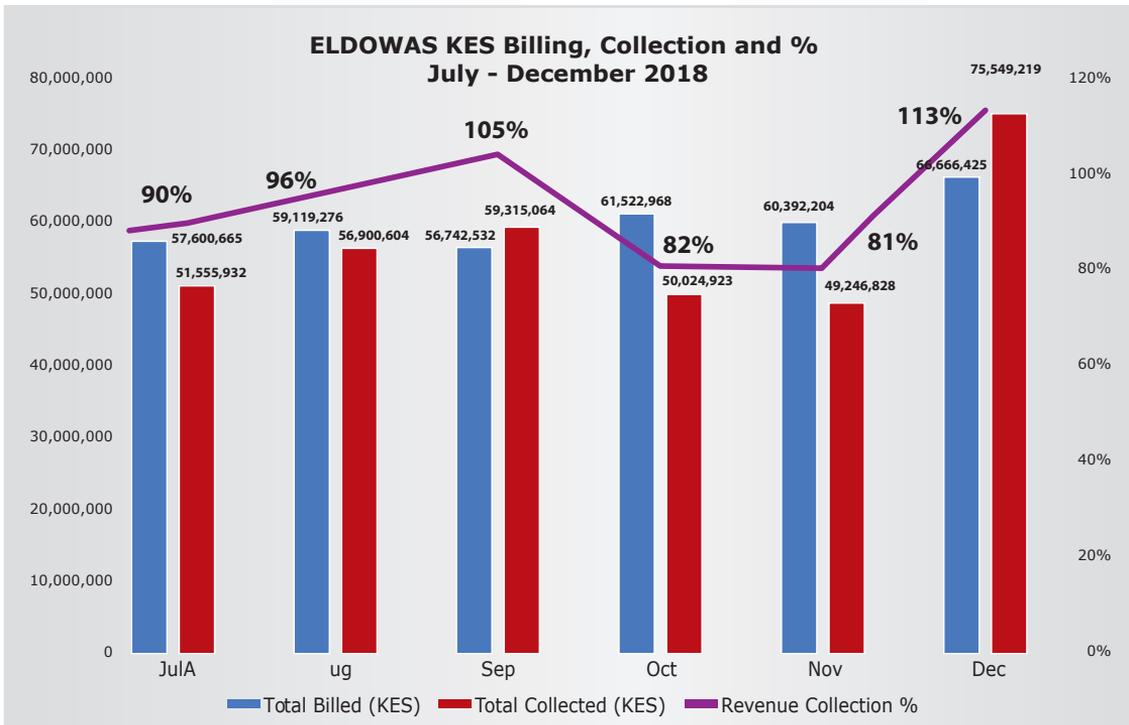


As noted above, over the 6-month period, the company had a decrease of 11% in NRW from 50% to 39%. The NRW improvement correlated with an increase in the amount of water billed of 134,509 m3 per month from 675,587 m3 to 810,096 m3 (a 20% increase).

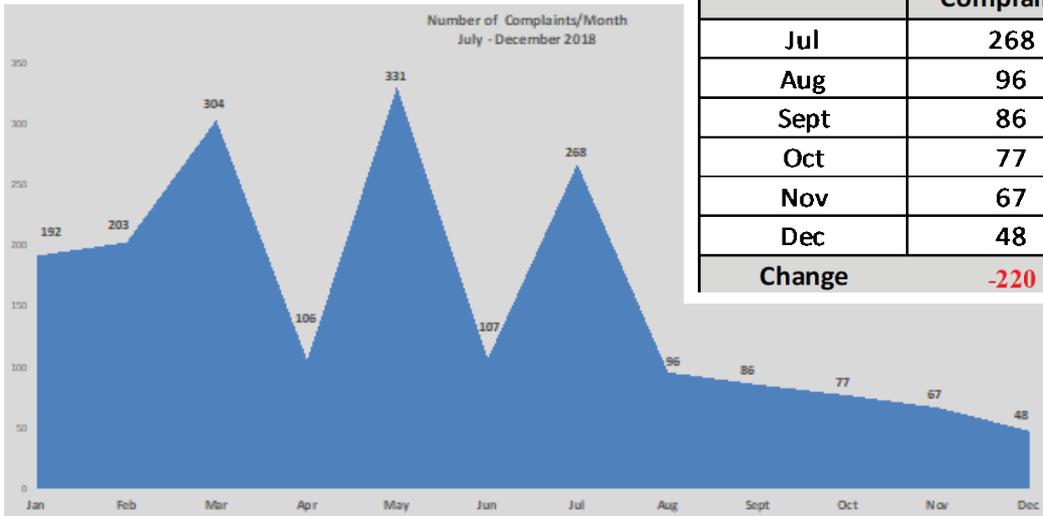
Kenya Shilling Billing, Collection and Revenue Collection Percentage

Month	Total Billed (KES)	Total Collected (KES)	Revenue Collection %
Jul	57,600,665	51,555,932	90%
Aug	59,119,276	56,900,604	96%
Sep	56,742,532	59,315,064	105%
Oct	61,522,968	50,246,828	82%
Nov	60,392,204	49,024,923	81%
Dec	66,666,425	75,549,219	113%
Change / Average	9,065,760	57,098,762	94%

Note: the total collected and revenue collection change are calculated as the average over the six month period



As noted above, over the 6-month period, the company had an increase in the total amount billed of KES 9.1 million per month from 57.6 million to 66.7 million (a 16% increase). The company also had an increase in the average amount collected of 11% from 51.6 million to 57.1 million. The average revenue collection increased from 90% to an average of 94% over the six months.



The number of complaints during this period of changes and improvements fluctuated significantly from January – July. It is not uncommon to see this type of fluctuation when complaints are more accurately recorded and tracked, and initially the number of complaints increases from the norm. But most importantly, what is shown in the graph is a stabilization of complaints per month beginning in August and a consistent declining trend through December to a record low for the year of just 48 complaints. In addition, the number of illegal meters was reduced, fraud was reduced by system controls, and reporting of data became more accurate, all of which contributed to customer confidence and reduced pressures on staff. 95% of customers now get an exact monthly meter reading.

Lessons learned

When an organization undertakes changes of this magnitude, there is always a risk that challenges, delays, confusion, resistance, etc. will prevent the initiative from achieving the intended results. The success of the ELDOWAS process brings out several key lessons learned:

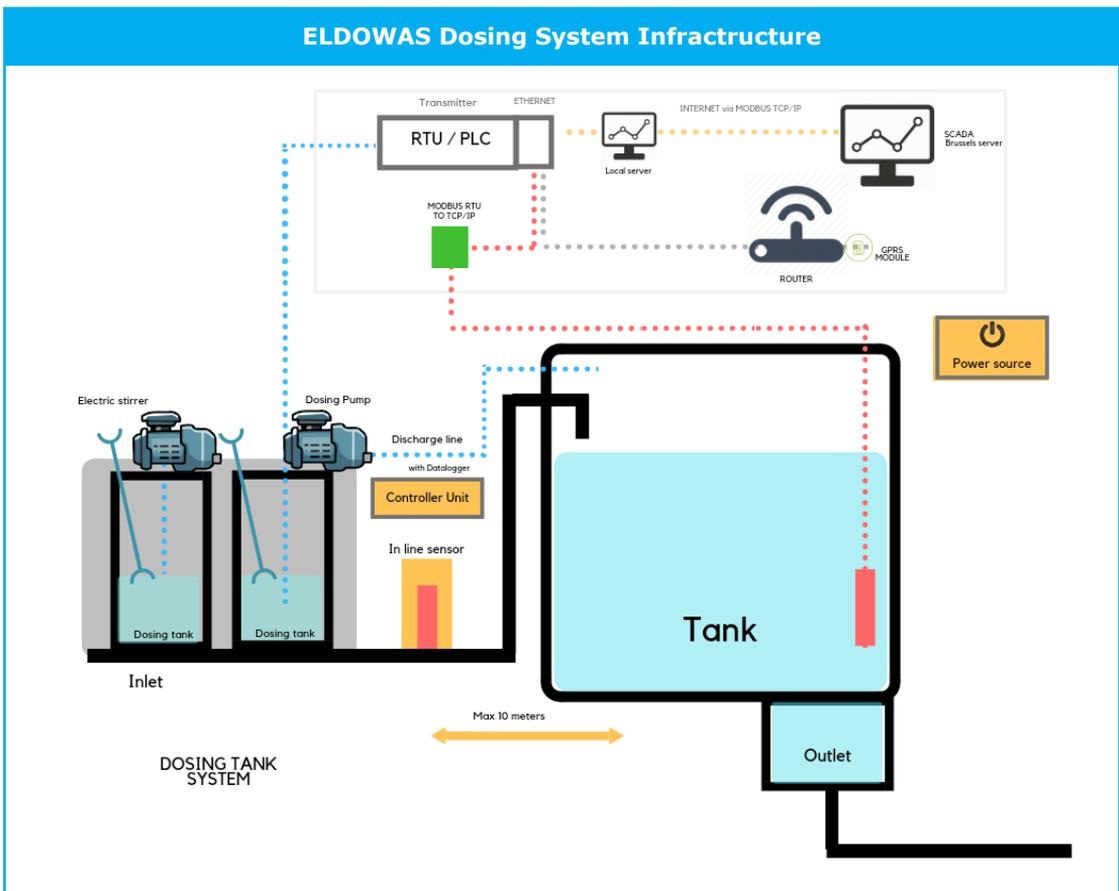
- **A strategic commitment backed by resources.** The decision to take this initiative came from the Board of Directors

and senior management. It was included in the strategic plan with clear targets and a budget of KES 50 million was allocated.

- **Staff engagement.** One approach might have been to immediately bring in consultants. ELDOWAS did not do this. The company created a committee with staff from all departments to determine what they needed from the system and committee members benchmarked with NYEWASCO (Nyeri), KEWASCO (Kericho), and NCWSC (Nairobi). This helped committee members frame the overall system components and understand the linkages between the different departments.
- **A structured roll out of the system.** ELDOWAS coordinated the timing of staff training, community outreach and education efforts, and customer identification activities to bring everyone along with the changes. The company also continued with the old systems while they introduced the new system to ensure information was not lost and any issues with the new system were addressed. The management noted that committee members were willing to work evenings and weekends, and came together as a strong team through this process.

- HR integration.** The new system integrated operational issues and didn't forget HR. ELDOWAS employees are very happy with the reduced paperwork and transparent information that affects them personally. By integrating HR elements in the system, ELDOWAS gave staff another benefit to help ease acceptance and support for the changes. All employees now have access to a computer where they can manage their HR-related matters. The system also allows for transparent tracking and reporting on performance targets. This drives a focus on results and supports objective performance evaluations.

- Customer adjustment.** It is expected that in the first few months, some customers will see changes in their bills. The amount billed in many cases will increase as actual data is read versus estimates. The system of meter pictures and access to customer billing information will help staff address these issues. Customers will also need support to make payments via Mpesa or banks. The company must make the transfer details very clear to customers to minimize errors in payments.



4. CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNT

The documenting process was an exciting and a great learning process for both the utility staff and documenting team. The benchmarking project played a key role in triggering the desire to improve performance but also remain competitive. These utilities had gone through a process of transformation and all had benefitted from improved revenues, trainings, exchange visits and the benchmark exercises. Ingredients for change always included organizational change, more and better use of ICT and GIS, better Human resources Development and better Customer relations. Overall performance of the water utilities interviewed in all cases was largely pegged on good customer care management. The stories of success all show that good customer relations significantly helped the utility improve on all the performance indicators.

4.1 NRW management

Data management has been key in managing NRW and especially in sustaining the achievements gained. However, the case studies clearly showed that to achieve NRW reduction, a combination of strategies targeting technical, commercial and operational efficiency have to be applied. A single strategy will never achieve NRW.

In bullet points, following are crucial ingredients in NRW improvement:

- **NRW requires concerted effort.** NRW is a concerted, dedicated and persistent effort of all staff, and must involve stakeholders. WSPs need to prepare short and long-term plans.
- **Setting up a NRW unit.** Setting up an NRW unit and providing the necessary tools, equipment and transportation ensured that the teams could implement the strategy effectively and respond to issues on the ground. The team noted with respect to equipment that:

✓ It can be costly to keep up with the latest

technology. The WSP should consider their options and costs when deciding on which types of NRW interventions to make, and

✓ Quality materials was emphasized noting that there are many options in the market, but many are of poor quality and WSPs must be careful as these compromise NRW efforts. The procurement specifications and standards, and the company controls for quality are critical to NRW reduction process.

- **GIS mapping, DMAs and data management.** Once the DMAs and sub-DMAs were in place, the regular monitoring of water flows and deviations allowed for a rapid response to water losses.
- **Categorizing customer.** Identifying the large consumers and dedicating staff to check on their water supply and meters daily helped greatly in NRW management.
- **Peer to peer learning** Through WASPA's performance improvement initiative and benchmarking, WSPs are motivated to accelerate actions on performance improvement. MUWASCO for example was motivated to accelerate NRW management actions which culminated to NRW reduction. Both Nyewasco and Muwasco staff were inspired by the other well-functioning companies that they benchmarked with. Muwasco noted that they did not want to lag behind. NYEWASCO has also benefited greatly from benchmarking, but has also hosted and shared their experience with many WSPs in the country and from outside the country.

4.2 Service levels

Companies that had improved service levels mentioned following crucial aspects in making the change happen:

- **Developing clear branding strategies, introducing a customer service charter and improving communication with customers.** For

example in In the case of KACWASCO, Customers did not know KACWASCO. This has drastically changed.

- **Introducing ICT and GIS tools for communication, billing and O&M improvements.** ICT made payments more transparent and efficient and less prone to corruption. ICT and GIS tools can locate customers, meters, pipes and connections, and this makes it much easier for the company to manage O&M efficiently. ICT also made communication between customers and the company traceable, transparent and efficient.
- **Setting out clear responsibilities and rights of both the customers and WSPs.** Preferably, rights and responsibilities are set out in a customer service Charter and translated into legally binding contracts with customers.
- **Making customer relations the business of every employee.** All WSPs acknowledged the importance of maintaining good customer relations and making it everyone's business.
- **Organizing companywide trainings and benchmarking on customer care** helped staff to internalize the idea that is at the very center of Company operations.
- **Developing trust between company employees and customers.** If relationships between company employees are respectful and trusting, it positively influences customer relationships too.

4.3 Pro-poor

The case study on the pro-poor units at Nakuru and Naivasha provided following main insights:

- **Low-income residents are willing and able to pay.** Residents in low-income areas without individual connections spend more money on water provision

and sanitation services than mainstream utility customers.

- There is a solid business case to be made for providing services to low income areas, NAWASSCO undertook a deliberate and thoughtful process to develop strategies, policies and an institutional framework to drive the work, and effectively engaged partners and stakeholders to leverage resources in a targeted area.
- The work in Kivumbini demonstrates the benefits that can be achieved through collaborative efforts with the County Government and other stakeholders. The partners aligned their technical capacities and resources in providing access to water and sanitation services in low-income areas.
- Creating and anchoring Marketing Officers in the pro-poor section propelled a focus on the needs of low-income customers and provided the needed face-to-face interactions between the utility staff and customers.

4.4 Cost Recovery

Following lessons were drawn from the practices on improved cost recovery:

- Automation helps improve productivity, efficiency and lowers O & M costs. After automating operations, both EWASCO and ELDOWAS reported significant reduction in paperwork, and time spent on different functions.
- The only challenge that this cost recovery poses, is in regard to WASREB's KPI that requires that WSPs limit staff salaries to a percentage of O & M. This does not encourage the water utilities to improve operational efficiency because they feel that instead of being rewarded they are actually penalized.

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