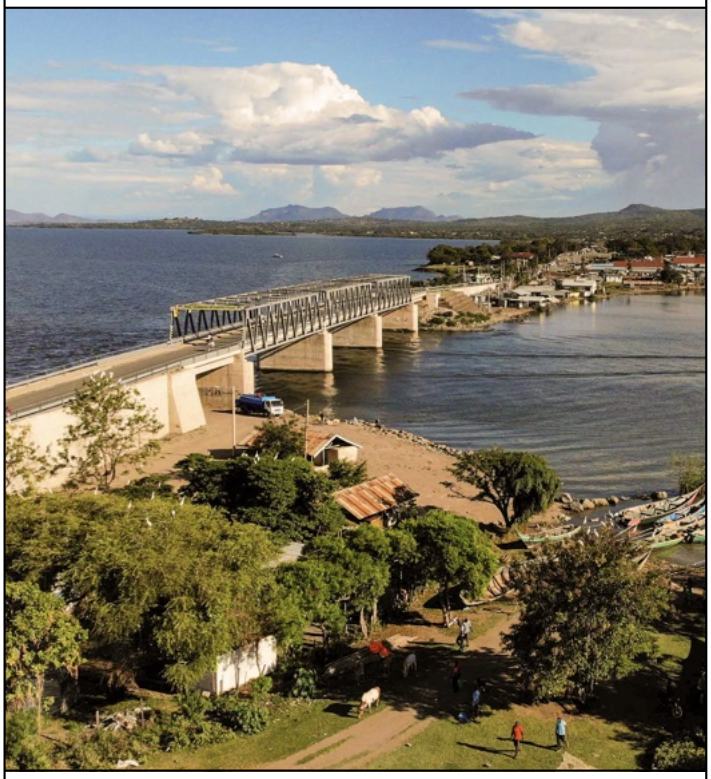
WATER OPERATORS' PARTNERSHIP

CASE STUDY



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Dunea, The Netherlands **MENTOR**

Homa Bay County Water & Sanitation (Homawasco), Kenya **MENTEE**

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GWOPA
Global Water Operators' Partnerships Alliance

UN-HABITAT

BEWOP
Boosting Effectiveness of Water Operators' Partnerships

Contents

Case-study compiled by Winifred Nabakiibi

Abbreviations

AHK	Amref Health Kenya
DGIS	Dutch Ministry of Foreign Affairs
Homawasco	Homa-Bay County Water and Sanitation Company Limited
KEWI	Kenya Water Institute
LIA	Low Income Areas
MTR	Mid-term review
NRW	Non-Revenue Water
STE	Short Term Experts
WASREB	Water Services Regulatory Board
WOPs	Water Operator Partnerships
WSPs	Water Services Providers
WWX	WaterWorX

Key facts

WaterWorX (WWX) is a partnership of public water operators to increase access to sustainable water services for 10 million people between 2017-2030. The WaterWorX Programme is co-funded and jointly implemented by the Dutch Ministry of Foreign Affairs (DGIS), 10 Dutch water operators, and local water operators throughout Africa, Asia, and South America. By working together in Water Operator Partnerships (WOPs), water utilities can improve operational, maintenance, financial, and administrative processes. In doing so, the continued strength of WaterWorX stands out in building and strengthening the capacity of local counterparts to make lasting improvements that increase access to sustainable water and sanitation services and generate viable pro-poor investment propositions.
https://gwopa.org/what-we-do/projects/waterworx/

Partners

The partners in this WOP project were Dunea N.V and Homa Bay County Water and Sanitation Company (Homawasco). Amref Health Kenya (AHK) was also involved as facilitator to support the sanitation and Pro-Poor aspects of the programme (i.e., setting up of the Low-Income Area/Pro-Poor section).

Mentee: Homa Bay County Water and Sanitation Company Limited (Homawasco)

Homawasco is the Water Services Provider (WSP) in Homa Bay. Homa Bay is in Southwestern Kenya along Lake Victoria with a population of over 1.13 million people[1]. Approximately 880,000 people live in the rural areas and 250,000 in the urban areas of the County. Homawasco serves over 150,502 people through 9,006 no. connections and water kiosks (66,000 people being in urban centers). It also collects sewerage and operates a wastewater treatment plant in Homa Bay and a DTF (Decentralized Treatment Facility) in Mbita Town. Homawasco came into existence in 2006 brought about by the water reforms in Kenya through the enactment of the water Act 2002. The reforms recognized the need for autonomous Water Service Providers (WSPs) to take over services previously offered by the National Water Conservation and Pipeline Corporation (NWCPC) and the Ministry of Water and Irrigation (MoWI) to improve service provision and efficiency.

Mentor: Dunea (Drinking Water and Nature Conservancy)

is a drinking water company that supplies water to the western part of South Holland. It serves more than 1.3 million people daily with safe drinking water. The municipalities in the service area are the shareholders of Dunea.

Duration of the WOP

The WOP between Homawasco and Dunea took place 3 years, between 1 January 2018 and 31st December 2021. This was phase I with the intention to collaborate in other phases with Phase 2 set to run from 1st Jan 2022 to 31st Dec 2030.

[1] 2019 Kenya Population and Housing Census Report

Cost

The 3,850,000 Euros of the WOP cost were co-funded by the Dutch Ministry of Foreign affairs (MFA) and Dunea N.V. (as part of 10 Dutch Water Companies in the WaterWorX Programme). The breakdown of the cost is as shown below:
Amref Health Kenya (AHK) contributed an additional Euro 182,000 for sanitation activities.

	2018-2021
Salary for Dutch & local staff	1,050,000
Investment for operational improvements	1,300,000
Water investments package	1,500,000

Source: MTR 2019

Aim

The WOP between Homawasco and Dunea aimed to contribute towards increased sustainable access to and use of improved water supply, sustainable sanitation, and proper hygiene practices among low-income urban dwellers in Homa Bay County.

I. Develop Human and Organizational Capacity.

- Establish a leadership development program and improved business plan.
- Introduce an improved Management Information System (MIS).
- Increase transparency and integrity via an internal audit.
- Develop an annual benchmark report.
- Develop a NRW reduction plan.
- Improve maintenance and asset management through the pro-poor service provision lens.
- Strengthen the long-term sustainability vision via a Climate resilience water supply program 2050.
- Incorporate gender mainstreaming in all project activities.

II. Improve access to safe water supply and sanitation services

- Increase coverage of the water supply from 15% to 20%, targeting poor and vulnerable communities. Work on dormant connections with the ambition to increase water access to an additional 83.500 people by 2021.
- Provide access to water and sanitation via pro-poor infrastructure (water kiosks, shared yard taps, pre-paid meters, on-site toilets, etc.) and new water and sewerage household connections.
- Develop and implement a utility WASH improvement plan.
- Introduce a non-revenue water reduction plan targeting one or more District Metering Areas.
- Improve maintenance practices and asset management by developing and implementing a Preventive Maintenance and Management Program and realizing improvement plans for sanitation, sewage, and wastewater treatment.
- Increase the security of supply by establishing a water distribution program and digitizing assets through GIS.
- Improve water quality and safety through a monitoring program
- Increase customer satisfaction via analysis and yearly M&E

III. Improve the financial position of Homawasco

- Enhance the administrative (customer) processes
- Monitor and modify billing and collection efficiency

Facilitators

The WOP was facilitated by Amref Health Africa. The Dutch Government supports progress towards achievement of SDG 6. Amref Health Africa contributed expertise in sanitation and hygiene promotion.

Approach

Dunea and World Water Net (WWN) worked with Homawasco to implement 14 key strategies and to improve the capacity of the utility Homawasco to fulfill its mission i.e., to provide world standard water and sewerage service adequately and sustainably to all households, institutions, business units, and their consumers, while ensuring affordability, reliability and maximum consumer satisfaction and benefits for all stakeholders. Dunea supported improvement of internal efficiencies and processes, skills development and improvement, non-revenue water reduction, basic infrastructure investment and rehabilitation to enable the team to do the work.

The support given covered training both locally and internationally, development of policies, guidelines and manuals, rehabilitation of water supply systems, water supply network improvements, sewerage expansion and on-site sanitation provision. The billing software and organizational work processes were also supported.

Results

Capacity Building

- Internal inefficiencies of the utility were addressed through improvement of staff skills and capabilities for network maintenance.

Water Supply Rehabilitation

- A solar power option was incorporated in the production process, thus doubling productivity, and providing an alternative when the water system was off the grid due to non-payment.
- Breakdowns and stoppages for operating hours have reduced due to improved operation and maintenance practices.

Water Quality

- Regular chemical dosing hence improved water quality.

Non-Revenue Water Management

- Employee attitude and morale has improved with the staff more able to handle their duties. The utility team has better understood how to deal with the network challenges that they used to face.
- Reduced turnaround time in handling bursts and leakages
- NRW has reduced from 57% to 44%

Water Supply

- Technical skills to handle trenching and pipefittings to the required standard were acquired.
- Production capacity has increased from 3,500 to 6,000 m^3/day

Customer Processes, Billing and Customer Care

- Improved customer relations
- The metering ratio in Homawasco increased from 68%to 100%

Sanitation

- Improved latrines provided for 20,945 people.

Success factors

- The direct skills enhancement through the mentor's involvement in field work was highly motivating for the team and boosted their morale
- Commitment levels of the utility staff was high and a key success factor

Challenges

Most challenges affected the water supply aspects of the project

- Failure of the County Government to meet its contribution to the WOP; The County Government had committed to pay the electricity bills. This affected the water supply productivity in that production capacity was mostly available from the solar powered part of the system as electricity was sometimes cut off due to unpaid electricity bills.
- Increased demand from the utility clients as the company grows posed challenges to the team to meet the ever-growing supply demand.
- The hilly terrain posed some challenges to expansion of the water services
- The land tenure system where the people own everything also created a challenge in acquiring land when it was needed for system extension
- The covid 19 pandemic stalled some of the planned internal trainings e.g., not all planned Governance trainings were held.

Introduction

About Homa Bay County

The county is one of the 47 counties in Kenya and is the formal Nyanza Province. It covers an area of 4,267.1 Km^2 inclusive of the water surface which on its own covers an area of 1,227 km^2. The county is accessible by lake transport, road, and air. Homa Bay town is its capital and largest town. Its population is 1,131,950 (2019 census). The county has 8 sub-counties with 40 wards. According to the 2019 Kenya Census Report, Homa Bay's poverty level stands at 40% poverty level, and it has an HIV prevalence of 26.0%, which is nearly 4.5 times higher than the national prevalence. Lake Victoria is the major source of livelihood for the county's residents.

Social Services in Homa Bay

There are a total of 206 health facilities in Homa Bay County (144 public and 62 private). Most poor and vulnerable groups in Homa Bay County still collect water from rivers and streams. 56% of the population relies on unimproved water sources, while 68% relies on unimproved sanitation. On average, each household currently covers 3km to a secure and clean water point. There are 1452 ECD centers, 1089 primary schools, 50 youth polytechnics, 2 technical training institutions, and 2 university colleges in Homa Bay.

Economic Activity in Homa Bay

Fishing and fish processing is the major economic activity in Homa Bay County. Homa Bay is the main supplier of fresh fish in Kenya and abroad because it contains 80% of Kenya's Lake Vitoria and the longest shore of the lake. Agriculture is the second source of livelihood for the residents. Maize, millet, cassava, and sunflowers are the leading agricultural crops. The county has a thriving commercial business and huge potential for Agribusiness, mining, and tourism but it has remained unused.

Climate in Homa Bay

The climate is inland equatorial, with temperatures ranging from a mean annual minimum of 17.1°C to a mean maximum of 34.8°C, with rainfall amounts of between 250 mm and 700 mm per annum. Homa Bay is popularly known as Bay County because it has many bays. It has breathtaking islands with the most famous being Rusinga and Mfangano, hills, valleys, and the longest shores of Lake Victoria (79% of Lake Victoria in Kenya lies in Homa Bay County).

Water availability

The county is divided into two main relief regions namely the lakeshore lowlands and the upland plateau with several rivers namely Awach Kibuon, Awach Tende, Maugo, Kuja, Rangwe and Riana rivers, most of which originates from Kisii and Nyamira counties. Rainfall varies in Homa Bay County and is influenced by the movement of the Intertropical Convergence Zone (ITCZ)[2]. The southern areas further from Lake Victoria receives the most precipitation around

[2] A belt of low pressure which circles the Earth generally near the equator where the trade winds of the Northern

1750 mm, and the northern areas closer to Lake Victoria receives 1000-1250 mm of precipitation per year. The temperature is consistently warm throughout the year. Precipitation is also consistent throughout the year, although the first wet season (January-June) receives a slightly greater amount.

Homa Bay County prone to Drought and Floods

In recent years, flash flooding has triggered mudslides and repeatedly caused major rivers to overflow their banks, leading to displacement and even death. In 2015, rivers Maugo, Awach Tende, Rangwe and Riana overflowed destroying homes and reclaiming farmland on more than 300 farms. That same year, seven people were lost to floods and landslides in Homa Bay County alone. The effects of the flash floods were compounded by the fact that the County had faced more than two years of a persistent drought that compromised human and agricultural water sources, forcing the most affected residents in Kojwang to travel over two dozen kilometers to collect water. The drought saw hundreds of livestock, particularly cattle and donkeys, perish and led to outbreaks of waterborne diseases, especially in Karachuonyo. In 2017 Homa Bay was one of the non-Kenya's Arid Semi-Arid Lands (ASALs) that was experienced drought due to the short rain (National Drought Management Authority (NDMA) January 2017). It was declared a national disaster. Most recently, the national government again declared drought as a national disaster in 29 counties including Homa Bay after a meeting between the president and the leaders (Capital News, March 2022).

Homa Bay Legislation and Policies

The County Government Act (2012), passed in 2012 provides the legislative framework for the functioning of county governments, with some guidance on the new roles and responsibilities of county governments, including on the delivery of water and sanitation services. Urban Areas and Cities Act of 2011: section 12 states that "The management of a city or a municipality shall be vested in the county government and administered on its behalf by a board with the mandate to develop and adopt policies, plans, strategies and programs, and may set targets for delivery of services. They serve as the agents responsible for urban water, sanitation, sewerage, and solid waste management services".

There are several authorities and boards at national and regional/county, and local levels within and outside the ministry which play important roles in the provision of water services to Kenyans as shown in Figure 1 below.

and Southern Hemispheres come together.

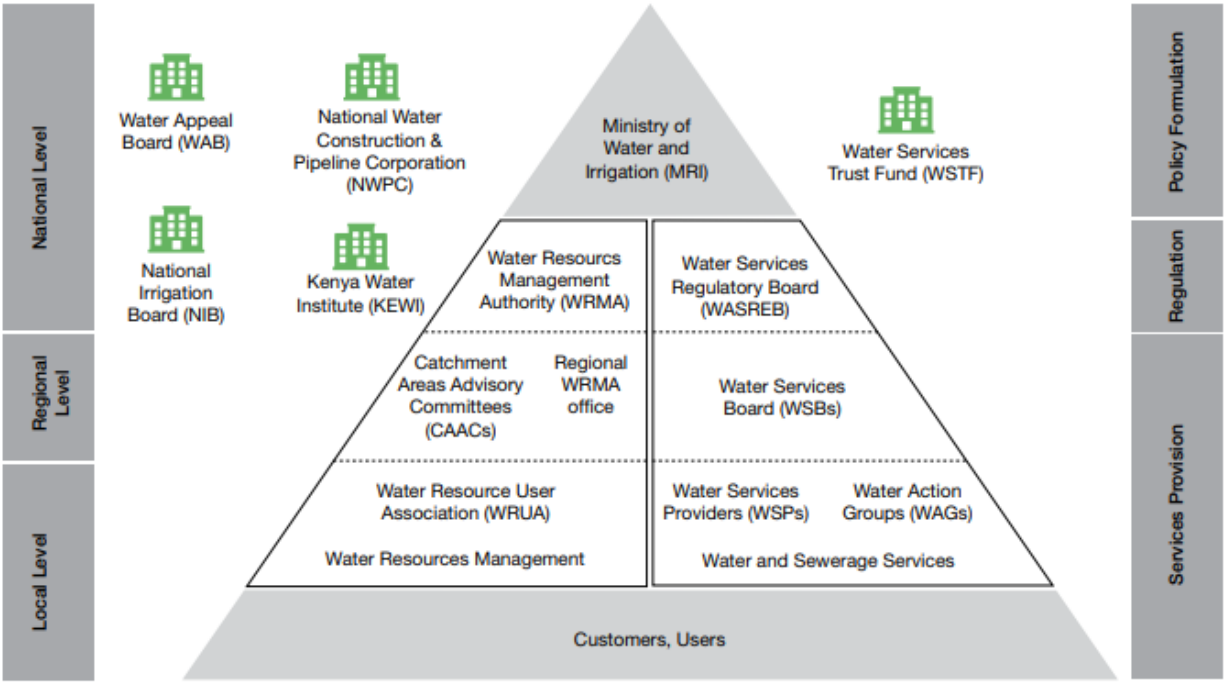

Figure 1: Water institutional setup. Source: Water Reform Review (2012)

Water Services Regulatory Board (WASREB)established in the Water Act of 2002 heads the water services at the national level. At the regional/county level, there are eight Water Services Boards (WSBs) who areas of operations are based on the boundaries of the main rivers. The local level has 94 Water Services Providers (WSPs) providing water to consumers and maintenance of water service infrastructures. They cooperate within a set regulatory framework for water supply services.

There are other national institutions with specific national mandates: Kenya Water Institute (KEWI) carries out training and research; Water Sector Trust Fund finances pro-poor water and sanitation projects; National Water Conservation and Pipeline Corporation (NWCPC) constructs water storage facilities and drills boreholes; Water Appeal Board (WAB) arbitrates water-related disputes and conflicts.

Homa Bay a County Rich in Water Resources

The county has abundant sub-surface water resources evidenced by the occurrence of underground water at shallow levels of less than 10m deep[17]. Also, the county is rich of surface water resources which includes rivers and Lake Victoria. The county covers an area of 3,342.2 km^2 of which approximately 1,227 Km^2 is covered by surface water resources. The increasing population in Homa Bay due to improved standards of living implies an ever-increasing demand for water uses for agriculture, domestic and industrial purposes.

Partnership creation

First Contact

Dunea had no existing WOP and needed to select the best fitting partnership according to the WaterWorX goals. In 2017 together with Amref Health Africa, Dunea visited Kisumu Water and Sewerage Co. Ltd. (KIWASCO), Vihiga Water Services Co. Ltd. (VIWASCO) and Kakamega County Water and Sanitation Co. Ltd. (KACWASCO) before finally settling on Homa Bay Water and Sanitation Company Ltd. (Homawasco).

Dunea expressed several reasons on why they settled for HomaWasco:

- Homawasco had just been restructured with a new Board and Management and they gave an excellent presentation based on the WWX criteria and Work packages
- The size of HomaWasco fitted the Dunea principles; not too big and not too small, so a direct line to the Managing Director (MD) and County government was guaranteed
- HomaWasco exhibited enormous potential for growth and development

Also, the HomaWasco workforce was young and vibrant which greatly impressed Dunea. At the time (late 2017) the average age for the workforce in Homa Bay was 30 years. The team was seen as willing to learn and open to new ideas. The Homa Bay County, Homawasco Board and Management as well as Dunea and Amref were all enthusiastic about this cooperation.

- June 2017: The first visit for partner selection out of four incl. Letter of Interest (LOI) with HomaWasco
- September 2017: Set up of project plan and agreement with HomaWasco
- October 2017: Signing of partnership agreement during AIWW

Partnership with Amref Health Africa

The collaboration was enabled by Amref Health Africa who joined the partnership as a local partner to facilitate the pro-poor aspects of the programme. Amref Health Africa was available for engagement as project partner and additional donor, and this was exciting for Dunea. Additionally, willingness to adapt and receptivity to new solutions was fundamental in the formation of this partnership. The openness to learning encouraged Dunea to work with Homa Bay and made the partnership successful. The collaboration between HomaWasco and Dunea was code named Timiza Usafi.

Partnership Formalization

The Partners

Mentor

Dunea was the mento in this partnership. Dunea is the drinking water company that supplies water to the western part of South Holland. It supplies more than 1.3 million people 24 hours a day. The municipalities in the service area are Dunea's shareholders.

Dunea Key Performance Indicators (KPIs)

Dunea KPIs (Data 2020)	
Population served	1.342.000
Number of connections	643.976
Water supply (millions of m3)	82.227
Number of employees	524
Number of water treatment plants	3
Length of network (in kilometers)	4,778
Unaccounted for water (percent of total)	5,5%
Staff per 1000 connections (water supply)	1.22
Staff per 1000 population served (water supply)	2.56
Turnover (Euros)	147.432.000
Average drinking water price per m^3 (Euros)	1.57

Dunea's engagement in this WOP

Dunea wants to contribute to improving (access to) drinking water and sanitation worldwide. Dunea does this through financial support and by sharing and transferring their expertise and knowledge with local utilities. Through the WWX WOP with Homawasco, Dunea sought to help directly and indirectly to connect thousands of people in Homa Bay County with improved access to water services.

Mentee

Homa Bay County Water and Sanitation Company Limited (Homawasco) was the mentee utility. Homawasco is the Water Service Provider (WSP) in Homa Bay County. Homawasco operates 6 Water treatment plants and 2 wastewater, treatment plants. Homawasco was incorporated on 27th June 2007 in accordance with the Kenya Water Act 2002 that was later repealed by the Water Act 2016.

Under the Water Act 2016, the provision of water services was devolved from the regional Water Services Boards to the County Government. The County Government of Homa Bay are consequently the owners of the Water Service Provider (WSP) Homawasco. This was the first WOP experience for Homawasco.

Homawasco KPIs (Dec 2021)

Population served	150,502
Number of connections/households	9,006
Water produced	1,033,120
Number of employees	96
Number of water treatment plants	8
Length of network (in kilometers)	200
Unaccounted for water (percent of total)	42%
Total number of connections	10,224
Staff per 1000 connections (water supply)	10
Staff per 1000 population served (water supply)	2
Turnover (in EUR)	505,353.86
Average drinking water price per m^3 (EUR)	0.38

Homawasco's engagement in the WOP

Homawasco engaged in this partnership for capacity building. The capacity of its water treatment plants fell short in meeting the design capacity due to the poor condition of the plant components. Also, the utility was missing the systems for water supply and proper revenue collection. As a result, the coverage was low and the quality of services provided by Homawasco poor. There was not enough money for infrastructure maintenance. Some of the staff were well educated and generally all the staff exhibited high potential for growth but the environment was not conducive for them to exhibit their full potential.

Facilitator

Amref Health Africa International were facilitators of this partnership. They are an international NGO and are good in supporting health promotion in rural areas. They supported hygiene and improvement of sanitation in schools. While Amref Africa offered this expertise, Dunea provided the funds for infrastructure.

Financing (of the WOP)

The contributors to the WOP were the Dutch Government and Dunea– EUR 2.483.000, Homawasco EUR 185.000 and Amref EUR 182.000 (Total EUR 2.850.000). The involvement of the partners was done on a not-for-profit basis. During Phase 1, the budget was raised to €3.500.000 due to an extra contribution of the Dutch Government and Dunea.

Diagnosis of needs

For the diagnosis, 2 sessions were held between Homa Bay and Dunea. 2 members of WaterWorX together with Dunea did the first assessment. According to the Homa Bay team,

similar discussions had been held with Kisumu, a much larger utility than Homa Bay, however these were not very receptive. The Homa Bay team on the other hand was found to be young and enthusiastic. Over 90% of the team was below 30 years. According to Samuel Fatayah, the local project manager, the decision to work with Homa Bay was made not based on their past performance record but rather on the fact that they were a team ready to work. Everyone knew what they wanted to achieve. This willingness to learn was a key factor in encouraging Dunea to partner with Homa Bay.

During the 2nd visit, an assessment template was used where members picked interventions then together with their project teams identified ideas and based on these the final work packages were selected. Together with the project manager, the team selected 16 work packages. According to the mentee, the short-term experts were all very good and made a lot of contribution to the Homa Bay team. The expertise provided was highly appreciated.

Agreement Characteristics

The parties signed a Letter of Intent for the partnership to run from Jan 2018 – Dec 2021. The objective was to create the right environment for Homawasco to make sure that Homawasco can improve the water service delivery to its customers but also to increase the coverage of water supply from 15% to 20% of the people in the service area. Other objectives were to improve the cost covering ratio and to improve access to 83,500 people. The expected outcome was that Homawasco would improve their performance e.g., the collection efficiency would rise, break downs would quickly be repaired resulting in increased willingness to pay for services and as people pay more, there would be a positive impact on the company.

The activities foreseen were:

On NRW

- NRW reduction plan developed,
- people trained in NRW reduction approach
- Level of NRW reduced in several DMAs, experience in DMAs increased

Organizational management

- leadership development programme,
- business plans developed or improved
- management information systems introduced or improved
- internal audit for transparency and integrity
- annual benchmarking report
- organisation improvement plan developed and implemented

HR development

- capacity development plan developed and implemented

Asset management and O&M

- a maintenance and asset management programme
- staff trained in asset management
- Assets digitized in GIS
- implementation of preventive maintenance and management program

Sanitation

- development of an improvement plan for sanitation, sewage and waste water treatment
- improvement plans for sanitation and sewage and waste water treatment developed

Pro poor strategy

- pro-poor vision, strategy and objectives developed
- a pro-poor coordinator appointed and trained
- proposals developed for inclusive access to improved water and/or sanitation facilities
- implementation of access to water and / or sanitation for the poor and vulnerable groups via shared facilities
- access to water and sanitation via pro-poor infrastructure, (yard taps, pre-paid meters. On site toilets)

Water supply and distribution

- Water supply programme developed for 2050
- access to water and/or sanitation via new water and / sewerage household connections
- improvement plan for WASH at the utility developed and executed
- water distribution program developed and implemented
- Water quality monitoring programme developed

Customer care

- Customer processes analyzed and improved
- yearly monitoring and evaluation of customer satisfaction
- administrative customer processes improved, billing and collection efficiency monitored
- gender analysis and approach developed

Project Implementation

Management of the partnership

The WOP had a Steering Committee that was responsible for approving the project plan, year plan and annual report. The Committee comprised of:

- the Homawasco MD (Evans),
- the Dunea Programme Manager (Wytze Boonsma),
- the Dunea Project Manager (Marco Kortleve),

- Homawasco WOP Local Project manager (Samuel Fatayah) and
- the Homa Bay scheme Manager (Winnie Rakwach).

A project team was tasked with carrying out all the activities that are described in the project and annual plans. The project team reported to the steering committee on everything including any problems that couldn't be solved or risks with a high impact. Each team was attached to a STE from Dunea.

Roles and Responsibilities of the Partners

According to the contract, Dunea N.V. as initiator of the Project and lead partner had overall responsibility for the project implementation and fulfilment of all obligations under the Project. Dunea N.V. was to coordinate the overall planning of all Project activities including those of all other Partners as well as carry out the overall management for the project. Dunea N.V. appointed the project manager who oversaw the project and maintained all contacts, conducting all communications with WaterWorX on behalf of all partners.

The project manager oversaw the day-to-day implementation of the Project and the day-to-day activities needed for the execution of the project on behalf of Dunea N.V. The County Governor was to ensure that the planned investments were done.

Each party was to assign enough of its personnel to the project to allow compliance with the provisions of the agreements to ensure services were carried out in accordance with the project plan. The utility was to make available their staff, Dunea was to avail expertise and funding for the WOP, the County Government had to pay the utility electricity bills which was a big expense for the utility and the National Government was to avail new water treatment plants as per their responsibility of constructing new utility infrastructure for these County Governments. The County Government was responsible for overseeing the investments. Each party was responsible for all actions of its personnel

Governance mechanisms

Based on the respective work plans the involved partners met regularly (in person or via video or telephone conferences) to evaluate the execution and the progress of the project plan.

The Dunea project manager for Homawasco WOP was based at Dunea in Zoetermeer and was the one responsible for developing the annual plan, identifying, and sourcing the STEs from within Dunea, and ensuring that the composition of the teams of STEs knew the project background. The local project manager at Homa Wasco was responsible for ensuring availability of local staff. The WOP has a project team responsible for carrying out all the activities that are described in the project and annual plans.

Monitoring and reporting were led by an acting M&E officer at Homawasco who provided the data that was thereafter consolidated by the local project manager for finalization and submission.

Improvement tracks implementation

Improvement Track 1: Capacity Building

Since the year 2018, a total of 30 staff were trained on both long term and short-term courses both locally and internationally in various learning institutions and in-line with their roles. 20% of those trained were technical staff including plant operators and field staff who received on-the-job training.

When the project started, only 5% of the staff were graduates. The company had only 1 manual i.e., the HR manual.

Capacity Building interventions reported by CHRP- LIZ AMOLO (HUMAN Resources Manager HOMAWASCO)

Policies, Guidelines and Manuals developed by the project include:

- Human resource manual (revised)
- Operations and maintenance manual
- Wastewater operations manual
- Pro-poor Strategy and policy (in collaboration with AHK))
- Gender mainstreaming guidelines (in collaboration with AHK)
- Finance manual
- Billing Policy
- Service Charter

Every policy developed was disseminated to senior and middle management with middle management expected to disseminate to lower-level cadres.

Sensitization trainings done under the project:

- Sensitization on Occupational Health and Safety (40 staff trained)
- Sensitization training of Occupational Health and Safety (10 staff trained).
- Sensitization on gender mainstreaming within the company (40 staff trained).
- Sensitization to Board/Management on HR, Finance, Gender, Technical Manual, and pro-poor policies (40 staff trained).
- Occupational health and safety audit conducted on all plants.

Technical trainings done under the project:

6 staff received technical training internationally in water resources planning, water management, water transport and distribution and leadership skills. These have all completed their certifications. 8 staff received technical training locally and 6 have completed their certifications, 2 were still on-going at the time of compiling this case study. Another lot of 17 staff have recently commenced training locally in certificate (water

operations, plumbing and pipe fittings) and diploma courses in water engineering. Another 6 staff from the Head office were undertaking short courses in accounting, business administration and project management.

'Short-term experts on the Timiza USAFI Project supported various areas - Governance, Customer care, Billing and Technical areas- which has developed the company'. Ms. Liz Amolo.20% of all the Zonal officers and plant operators underwent on job training on best practices in field operations and pump maintenance. This was conducted by Dunea experts through the peer-to-peer program.

Improvement Track 2: Sanitation

This improvement track was supported by Dunea together with Amref Health Africa. It aimed at increasing sanitation coverage in low-income areas (LIA). This would be achieved through increasing access to latrines and access to hygiene including handwashing and solid waste management.

Activities carried out

- Several activities were carried out including
- developing a Wastewater Operations Manual
- sensitization of local communities within Homawasco schemes on sanitation and hygiene and responsible use of water
- construction of sanitation facilities responsive to the needs of the girls
- Promotion of the use of latrines for Open Defecation Free (ODF) declaration per village and monitoring by CHV's

Outcome

The intervention provided improved latrines for 20,945 people. New latrines were 2,049 doors, latrines improved from basic sanitation were 1,422 doors, new improved latrines were 718 doors. In total 4189 doors were added by the project where average use per door is 5 pax.

Improvement Track 3: Wastewater

Trainings and workshops were held on developing the Homabay wastewater improvement plan, on operation of wastewater treatment plants as well as trouble shooting of sewer networks, asset management and operational investments for wastewater treatment plants. The team was also trained to collect relevant data and to analyse these data to better operate the sewer network and treatment plant. After the trainings, the team developed a wastewater improvement plan for Homa Bay step by step. This plan was successfully approved by the board of HomaWasco.

Sewer manholes were reconstructed and elevated which helped reduce debris, silt, sand

and rainwater at the plant. Eventually there is less blockages of the sewer network and at the treatment plant less scooping needed, reduced growth of the sludge level in the ponds and a better effluent quality. Also, a draft Wastewater Operation and Maintenance Manual was developed. Data management and the Wastewater Operation and Maintenance Manual will get follow up support in phase 2 of the WOP.

The activities helped increase sewer connections in Homa Bay for 211 households (1055 people) and the wastewater team is capable to better set priorities.

Improvement Track 4: Water Supply

The partnership between Dunea and Homa Bay triggered another consortium[3] between Dunea, Practica, Vox Impuls, Amref – Africa, Aqua for All and Football for Water. The partnership, which was an initiative of Dunea calling on partners to support Homa Bay, resulted in the establishment of a programme called 'Football for Water'.

Wash In Schools

The Wash concept implemented in schools was named 'football for water'. It was supported by Amref and Aqua for all and financed by Dunea Water Utility.

Interventions under football for water included Mini grids establishment and Sanitation promotion through football.

Mini grids establishment

Objective: Borehole renovation and improvement from hand pumped boreholes to solar powered pumps with prepaid water meters to cater for the cost of operation and maintenance.

The mini grid concept involved fitting water kiosks with overhead tanks and solar panels to supply power for the pumping. The mini grids/ kiosks were fitted with automated/pre-paid meters (water ATMs) and so allow self-supply 24hrs a day. Chips are loaded with money that reduces as one consumes water from these so-called water ATMs.

Boreholes were upgraded by installation of solar-driven pumps, use of prepaid chips to draw water and installation of storage tanks to create these mini grids. In total, 6 mini grids were constructed serving 17,000 no. of people. The price at the mini grids is subsidized at Kshs 2 per 20l[4] jerrycan. The price was guided by an assessment carried out by Practica on ability and willingness to pay. The mini grids are placed at institutions e.g., schools, and connect health facilities and churches thus allowing access to neighboring communities. Water User Associations (WUAs) were constituted for these mini grids.

[3] Amref-Africa supported Sanitation and hygiene promotion, Football for Water supported levelling of football pitches, Aqua for All was a financier, Practica was the backstopping consultant and supported designs of the facilities, Vox Impulse was a financier and Dunea supported both financing and technical capacity building.
[4] The kiosk price was determined through a willingness to pay study performed by Practica a Consulting firm from Netherlands that also supported design of the water ATMs and local capacity building.

A mini grid fitted with automated payment system

Outcome

The approach has expanded the company's service to rural communities who do not have access to the conventional water network system. The mini grids are now a solution to reaching the poor and this has increased faith that the utility also caters for this category of consumers. Also, the use of pre-paid meters has contributed to NRW reduction.

Football Coaching

This activity included preparation of football fields and provision of football equipment. It also included training of the teachers and pupils on football skills and on good sanitation practices.

Sanitation Blocks: 10no. toilets blocks were constructed in 5 schools of Magare, Ndori, Roba, Nduta and Orego each having a 2-door boys' toilet + urinal and a 2-door girls' toilet and a changing room. Each block serves 100 pupils, therefore the total for these blocks serves 1,000 pupils i.e., a student: door ratio of 100:1. The interventions in schools were supported by Amref Africa through hygiene promotion. Teachers were coached on good hygiene practices that they continuously pass on to the pupils. The idea is that the disseminated messages on sanitation and hygiene are taken back home by the school children. Sanitation in schools was improved as a result.

Improvement Track 5: Pro-Poor (Feasibility Study)

This improvement track aimed to ensure that interventions by Homawasco in Homa Bay also target the poor and to ensure that the low-income people equally access both water and sanitation services. A feasibility study was done to support proper understanding of the low-income areas. This would support proper planning as service provision requires financing. Water Coverage in the LIAs was between 20-30%.

A staff who was formerly an engineering trainee was promoted and is now responsible for the pro-poor section of Homawasco. The objective was to have someone coordinate and formulate plans that are beneficial and helpful to improving access in these low-income areas. A pro-poor strategy was developed and is now in-place. Low-income areas were mapped, and it was found that 70% of the population in Homa Bay live in

slums or rural areas. Some of the characteristics that defined such areas were the type of structures, the sanitation levels, accessibility to water, electricity, and roads and where household size was higher than 7 people in the household.

Following the mapping of the low-income areas, a baseline survey was planned to better understand the needs of the people in these LIAs.

Improvement Track 6: Non-Revenue Water Reduction

When the project started, NRW was at 52%. It was not clear how much water was being supplied as there were no production meters in the system. The utility had 0% production site metering and the supplied volume was estimated based on pumping hours. Many of the household meters were faulty. There was vandalism of meters and network lines.

Through the WOP, a NRW reduction plan and SOPs to guide continuous improvements was developed. All production sites were metered to quantify all the system input volume. 10,500 customer meters were installed moving the metering ratio from 68% to 100% in a period of 2 years. Dunea also donated 4 bulk meters and 5200 customer meters. Public sensitization was done to increase awareness of the community on their role. The NRW interventions focused on permanent solutions and not temporary ones, so not on bursts. Also, a water masterplan which focused on priority areas of investment into the future e.g., pipe network distribution and in phases eliminating the current problems was developed.

A pilot DMA was created in Oyugis however this failed because of road upgrade works in the area. A network audit had shown that most losses in the network were experienced where the system had the crisscrossing networks (spaghetti lines). Elimination of spaghetti lines was therefore fundamental to address the problem. Spaghetti lines were eliminated through the creation of submains. This key activity had a two-fold benefit 1) it resulted in reducing the NRW and 2) it resulted in connecting more people to the water supply network. Through these interventions, the NRW was reduced to 42%.

Improvement Track 7: Customer Processes (Billing and Customer Care)

The utility had a terminology 'under the tree' which implied that data was collected while one was seated under a tree. They couldn't vouch for their data integrity. The M-Water free app was used to clean up the data. Through this app, the GIS location of each customer was captured. With this app, one takes a photo of a meter read, uploads it to the cloud and the readings are of the account entered. The advantage of this is that there is photo evidence to aid in resolving any billing query and that as the photos are geo-referenced, it ensures that no meter can be illegally moved from its known installation location to another without approval.

When the project started, metering was at 60%. With the app. customers are free to query their accounts. The utility also rolled out a USSD Code supporting customers to identify staff before engaging anybody to work on their lines. This was to curb non-utility staff who mascaraded as people working for the utility. The project also encouraged self-read meters for customers to read their own meters and upload their readings themselves. This allows the customers to have the right information on their connection

and promotes confidence in the utility.

Marketing is also key as the utility aims for people to desire to be connected to their system. There is however a risk in this as the national Government funds infrastructure development but not last-mile connections. The onus is therefore on the utility to ensure that the people are connected to the system. The WOP helped with this intensification of the distribution lines.

An ERP system was installed and by the time of this assessment it was about to go live and would be rolled out incrementally. The operationalization had been planned for April 1st 2022 with the consultant providing on-need backstopping and system tweaks up to April 2023. The ERP system would support data clean up and would also improve efficiency of operations.

Improvement Track 8: GIS

When the project started there were no GIS maps. GIS was singled out as an area to work on for all assets covering intake works, raw water transmission, distribution network, reservoirs as well as mapping of all clients. Using M-Water an android based application the team embarked on mapping all their assets.

Homawasco created a GIS map of all its connections. Currently, GIS maps are available for all 27 zones (25 Physical, 2 Commercial in Oyugis) of Homawasco. GIS will soon form the backbone of all the data for Homawasco and for every new project, the GIS map is immediately uploaded.

With this development, the utility has less complaints from the customers. Evidence of the meter reading is provided as proof of the charges to the customers. As a result, revenue collection has improved and cost recovery which in 2017 was 70% now stands at 95% - 105%.

Improvement Track 9: Finance (Manual and Business Plan)

This activity was not handled due to internal changes in the Dunea team so developing Homawasco's business plan is still pending.

Improvement Track 10: Water Quality

The objective was to improve the quality of water supplied in Homa Bay. The project purchased basic testing kits (6 No.) for measuring physical parameters and plans are underway to have a fully-fledged laboratory that can also measure coliforms, Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) for wastewater.

Improvement Track 11: Audit

In 2021 a TAP (Transparency, Accountability and Participation) audit was conducted. The main goal was to open the discussion about integrity and transparency and to define the activities that should be carried out in phase 2. As part of the audit, a first scan of main stakeholders, their interests and how this relates to each other was performed. Together with the audit manager the role of integrity and transparency within Homawasco Standard Operating Procedures (SOP) was scanned.

Improvement Track 12: Distribution and Modelling

Four (4) members of staff were trained on using EPANET[5] to model the network, pipe sizes and pressure zones.

Improvement Track 13: Governance

The Board of Directors (BOD) and the Central Management Team went for a cross-learning to National Water and Sewerage Corporation (NWSC) in Uganda, Kampala City and picked up vital lessons, some of which have been implemented. They were:

i. Use of technology to increase efficiency in billing. NWSC was using devices which could read the meter and provide instant bills to the customer on the spot. Homawasco picked on the element of reading customer meters using the mWater app as a start with image and georeferenced and later upgraded it to an app connected to an ERP system. This has lessened the customer complaints and resolution of emerging issues evidence-based, derived from the captured meter images and stored in a cloud for ease of reference.

ii. From the year 2000 to 2019 NWSC improved their NRW by 20%. On average, this was a yearly reduction by 1%. Homawasco had reduced its NRW from 57% to 52% between 2018 and 2019, an average reduction of 2% annually. This was proof that whatever investments and policy Homawasco had deployed were working. Initially with no comparable data, there had been unease at the ''slow'' pace of improvement.

iii. NWSC had a robust fully fledged department tasked with enforcement. This department's role was further beefed up by infusing it with Police Officers for security and investigation purposes like water theft. After the visit, the Board created an enforcement unit within the MD's office to follow up and investigate water theft and other malpractices. They have been instrumental in stopping various malpractices in relation to water challenges in Homawasco's areas of operation.

Improvement Track 14: Water Supply Rehabilitation

The production capacity for three schemes 1) Kendy Bay 2) Mbitha and 3) Ndhiwa was increased from 350m3/day to 800m3/day, to 1800m3/day and from 30m3/day to 350m3/day respectively. Schemes formerly run by the community that had become dysfunctional were rehabilitated e.g., Kanyadhiong. The rehabilitation improved the water supply, and the utility is now running this scheme. The rehabilitation also supported the teams to implement the knowledge they had acquired through the trainings. As a result of the partnership, there is now a water masterplan for the whole county.

[5] EPANET is a public domain software package developed by the United States Environmental Protection Agency's Water Supply and Water Resources Division. It is used throughout the world to model water distribution systems.

Rehabilitation of one of the water supply treatment systems

New pumps installed for one of the water supply systems

Improvement Track 15: Energy

The utility had high electricity bills and was not able to pay these huge energy bills. Electricity was a major bottle neck. To reduce reliance on Grid power (KPLC – Kenya Power Lighting Company), hybrid power solutions (power and solar) were incorporated for the water supply systems.

Solar panels fitted to augment energy supply on one of the water supply schemes.

Improvement Track 16: MIS

The MIS track started with a small step i.e., to collect all the data in one excel sheet. The MIS data was collected in a separate sheet per month. This sheet made it possible to create pivot tables and graphics to evaluate the impact of specific activities. Also, an online platform (google drive) was set up to share documents with colleagues.

Project impact and effectiveness

Changes In Capacity (Organizational and Individual) of the Mentee Water Operator

The human resources manager Ms. Liz Akinyi reported that the internal capacity of the lower cadre staff had improved from 30% to 40% because of the project interventions. When Timiza Usafi Project started, some of the lower cadre staff had the job experience gained over time through practice with no formal qualifications. Also, some staff members were able to undertake Diploma courses at KEWI (Kenya Water Training Institute). A total of 14no. staff were able to undertake these trainings and Trade Tests I-III and as thus an improvement of 10% was realized with respect to job placement and qualifications thereof.

Mentee Utility Perspective

According to the Homa Bay team, Dunea did a lot of capacity building for their staff. The training contributed to reduction of the NRW rate, reduction of the number of breakdowns at the plants as well as the turnaround time on attending to field maintenance operations.

- There have been general improvements on operations and maintenance of plant mortars hence reduced breakdowns and stoppages for operating hours.
- There has been improved dosing of chemical hence improved water quality.
- Employee attitude and morale has improved with the staff more able to handle their duties. The utility team has better understood how to deal with the network challenges that they used to face.
- There has been general improvement on technical skills to handle trenching and pipefittings to the required standard.
- Improved customer relations.
- Reduced turnaround time in handling bursts and leakages
- Following the gender training, the company is more cognizant of being gender sensitive in all its operations which include giving equal opportunity to all genders in recruitments, promotions, trainings and even suppliers.
- The company saw improvement in leadership skills from the senior managers and among others.
- The team's ability to develop project concept papers and proposals also improved.

As a result of these improvements, the level of trust from the customers for the utility has increased.

Sustainability of change trend

The staff of Homawasco are growing in number (almost hitting 100), as the Company grows it will be more and more important to provide avenues for sharing and passing on knowledge. This will be a major requirement for sustaining the wins so far. Technology changes and new systems are being integrated as the utility grows. As a result of this, further capacity will be required to maintain the pumps and to operate the plants. The WOP contributed to making every investment from Dunea more sustainable.

Unexpected results derived from the project targeted improvement tracks

As a result of this WOP, Homa Bay is the first County in the Lake Region to have a Water Supply Master Plan. During Covid, Dunea walked with the team and funded the building of handwashing points and sanitation spraying stations at the entry point of every facility. "Through this journey, Dunea and Homawasco became more than partners; they became friends" (Evans Nyangol, MD Homawasco). The Dunea Project Coordinator even though not based in Homa Bay still follows up on decisions that were made.

Project evaluation

Effectiveness

The WOP was very effective as the Homawasco staff capacity improved, and the team is now in a good position to effectively handle the utility operations. The targeted objectives of this WOP were achieved. 'The Dunea undertakings under WWX have been achieved and surpassed. The peer-to-peer training was done, equipment was given, software installed, and rehabilitation of water schemes done' ~ *Evans Nyagol, MD Homawasco.*
Homawasco is only 15 years old hence a young utility compared to other utilities in the region. Under these circumstances, staff capacity was a huge gap and the efforts towards building capacity were highly welcome. The scope was wide, with the WOP tackling as many as 12 working areas. All these were key for the staff as the whole team need this support. As the utility grows, the requirements will become more specific and more targeted efforts will be required.

Efficiency

The partnership was executed efficiently and delivered a lot more than its original design. 2 potential international masters' degrees were converted into 5 international short courses, and 20 local certificate and diploma courses from local Kenyan institutes. The training has built self-confidence in the team. International masters' degrees offer a unique level of expertise and competence however under the circumstances, the conversion to local trainings for more did benefit the utility. The collaboration with other contacts of Dunea e.g., Practica brought new money and opportunity for Homawasco and certainly efficiency in the WOP.

Success factors and challenges

Success factors

A young team that was enthusiastic and very willing to learn was a big driver of success for this WOP.
Seeing the mentor involved in the field work in Homa Bay, doing work in the field the same way the utility staff would do it built a lot of morale for the technical staff. It was eye opening in the sense that if the mentor could manually solve the challenges they had, the team could also do this. The current capacity of the Homawasco team is highly attributed to the WOP. Skills enhancement was critical, and this worked out very well. Capacity in general was enhanced with the tools given and rehabilitations done. The team are now capable of better operations based on the skills that were imparted under the WOP.

Commitment to learning highly influences the success of a partnership. The high willingness to learn was a fundamental factor of success in this partnership. *'The capacity building, the peer-to-peer knowledge, the rehabilitation, have brought life'*. MD Homawasco. On the downside, stakeholders felt that the Governance aspects of the utility did not come out well. Much as manuals were created, more could have been done under this package.
Acquiring an inventory of the utility assets in a period of 4 years was seen to be the biggest benefit of the WOP.

Challenges from the partnership

The parties agreed to specific commitments however the County Government did not meet its contribution on paying the utility electricity bills. Because of this gap, the production capacities of the plants remained below their full potential despite the additional solar capacity that was provided by the WOP.

As the company grew some staff were unable to cope with the growing client demands. With the company now expanding and the facilities growing the manpower was not developing at the same rate as the company facilities and this paused a challenge to some staff. With the technical team being the backbone of the Company, the staff need to be better prepared for the likely change in scope of work as the demand for service expands.

Because of the Covid 19 pandemic, the company experienced financial constraints which stalled their planned internal training schedules. There is still a recognizable capacity gap in this utility. The mentee reported that there is still a 60% capacity gap i.e., 30% on overall operations and 30% on soft skills for management staff.

Due to the pandemic some planned internal trainings that had been scheduled were not done. However, HomaWasco is hopeful that in Phase 2 of the TIMIZA USAFI capacity building Project they will mitigate some of the capacity gaps within the training programs.

Lessons learned from the partnership

- Incremental growth through a structured approach delivers big results. As very basic small activities are implemented, every area of the utility is in the end supported to achieve overall growth. 'All the small steps put together make the growth that you need' MD Homawasco.

- For young utilities, training is a game changer and can greatly improve the workings of the utility. Training proved to be key in building Homawasco capacity.

- Improvements by the utility support building trust from customers and other stakeholders.

- Based on the Dunea approach, the team could see that they can start with what they have, where they are, optimize that to achieve the goals of the company.

Replicability

This partnership can be replicated in any young utility where training is the most urgent need for the utility.

Contribution to SDG6

The Timiza Usafi WOP contributed to the increased realization of access to clean and affordable water and sanitation services. Rehabilitation of Kendu Bay Water Supply (350 to 800 m3/day), rehabilitation of Ndhiwa-Mirogi Water Supply (30 to 350 m3/day) and Mbita Water Supply (1,150 m3/day) projects increased access to water to an additional 30,000 people. The sanitation component, through partnership with Amref Health, granted access to sanitation for 22,000 people served through improved latrines.

The project had incorporated Amref Health to help establish a LIA/Pro Poor Section in the utility who will help coordinate and formulate plans to improve access in these areas. From their interventions, there was an increase in sewer connection in Homa Bay wastewater system to 211 households (1,055 people) and 20,945 people for improved latrines.

Cross-cutting issues

The Gender Mainstreaming (GM) Guidelines developed helped to steer the company operations with regards to Gender. The company did not have a parameter on this. As a result of the WOP interventions, a committee was established to guide on Gender Mainstreaming activities.

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Interviewees

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6. Samuel Fatayah, Local Project Manager samfatayah@gmail.com
7. Collins Obango, Technical Manager, also Project Manager for Dunea-funded Rural Water MiniGrids
8. Robert Migai, Operations and Maintenance Engineer robertkowiti@gmail.com
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WATER OPERATORS' PARTNERSHIP

CASE STUDY

Water Operators' Partnerships (WOPs) are peer support relationships between two or more water or sanitation operators, carried out on a not-for-profit basis in the objective of capacity development. This is one of a series of four impact-oriented case studies conducted on WOPs in Africa. It is intended for water and sanitation service providers, governments, development banks, donors, WOPs facilitators and all who are interested in gaining a better understanding of this solidarity-based approach to helping public operators improve their capacity to sustainably deliver water and sanitation services for all.

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