

# The Water Voice

**Nwasc**  
NATIONAL WATER SUPPLY AND SANITATION COUNCIL



Newsletter

4<sup>th</sup> QUARTER EDITION 2022

A satellite view of the Earth from space, showing the Americas and surrounding oceans. The text is overlaid on the bottom half of the image.

# Climate Change VS Service Provision

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## ABOUT Nwasco

The National Water Supply and Sanitation Council (Nwasco) was established under the Water Supply and Sanitation (WSS) Act No. 28 of 1997 (as amended by Act No. 10 of 2005); with the core mandate to regulate the provision of WSS services in Zambia

### Vision

A world-class Regulator of Water Supply and Sanitation Services

### Mission

To effectively regulate the provision of water supply and sanitation that ensure safe, adequate, efficient and sustainable service delivery for all

### Core Functions

- Licence providers;
- Advise the Government on water supply and sanitation matters;
- Establish and enforce sector standards and guidelines;
- Advise providers on procedures for handling complaints from consumers; and
- Disseminate information to consumers on water supply and sanitation issues.

### Core Values

- Integrity
- Innovation
- Transparency
- Accountability
- Respect
- Gallantry
- Equality
- Teamwork
- Professionalism

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Ensuring better services and fair value



# Editor's note



2023 is here. It's time to pen those dreams and prepare for the year with smart goals.

The Water Voice Newsletter, a platform through which we disseminate information about the water supply and sanitation sector, which is in line with our mandate.

Allow us to thank all our readers who have supported the publication and given us feedback on every edition over the years.

In this edition, we shine the spotlight on climate change and its impact on service provision.

Climate change is the global phenomenon that has impacted the planet in ways never imagined. It has been described as adverse changes in the usual

climate of the planet in terms of temperature, precipitation mainly triggered by human activity. It is evident that this phenomenon has resulted in an imbalance of the earth and threatening sustainability of the ecosystem.

The Water Supply and Sanitation Sector has not been spared from the impact of climate change. Changes in weather patterns, leading to extreme weather patterns have resulted in unpredictable water availability, exacerbating water scarcity and contaminating water supplies.

We also highlight the negative impact of vandalism of WSS infrastructure which impacts service delivery.

We also continue with our Guest author Mr. Justin Kangwa on preparing for retirement.

If you would like to contribute to this publication please feel free to reach us on [mails@nwasco.org.zm](mailto:mails@nwasco.org.zm).

Enjoy the publication.

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# DIRECTOR'S FOREWORD



Zambia is home to a fair amount of water resources which, if sustainably developed, can meet the current and future demand for domestic, agriculture and industrial water uses.

However, threats to this resource have come in many forms and must be addressed in order to see the realisation of the country's aspirations as stipulated in the Vision 2030.

One such adversary is climate change. Zambia has not been spared from climate change effects that cause extreme weather events such as floods and droughts.

The impact this has had on the sector include drying of water sources causing serious water

shortages in a number of areas, compromised water quality and reduced energy used in pumping water.

Other indirect impacts on the sector include inability for service providers to extend service to unserved areas, reduced revenue for the service providers, failure to maintain infrastructure and reduced customer satisfaction and confidence in the service providers. It is therefore imperative to address the issue of climate change as a sector and indeed at national level if service delivery is to be sustained and improved.

The water sector is therefore particularly at greater risk to these effects and must work to find solutions that will ensure these effects are mitigated. National policies and strategies have been developed to this effect and it is incumbent upon all concerned stakeholders to assume an active role in implementing government policies and strategies.

The other threat to sector progression is vandalism. This vice has proven to be retrogressive to the sector and the country at large because of its deep-rooted causes that, if left unchecked, will continue to be a hindrance to the access of

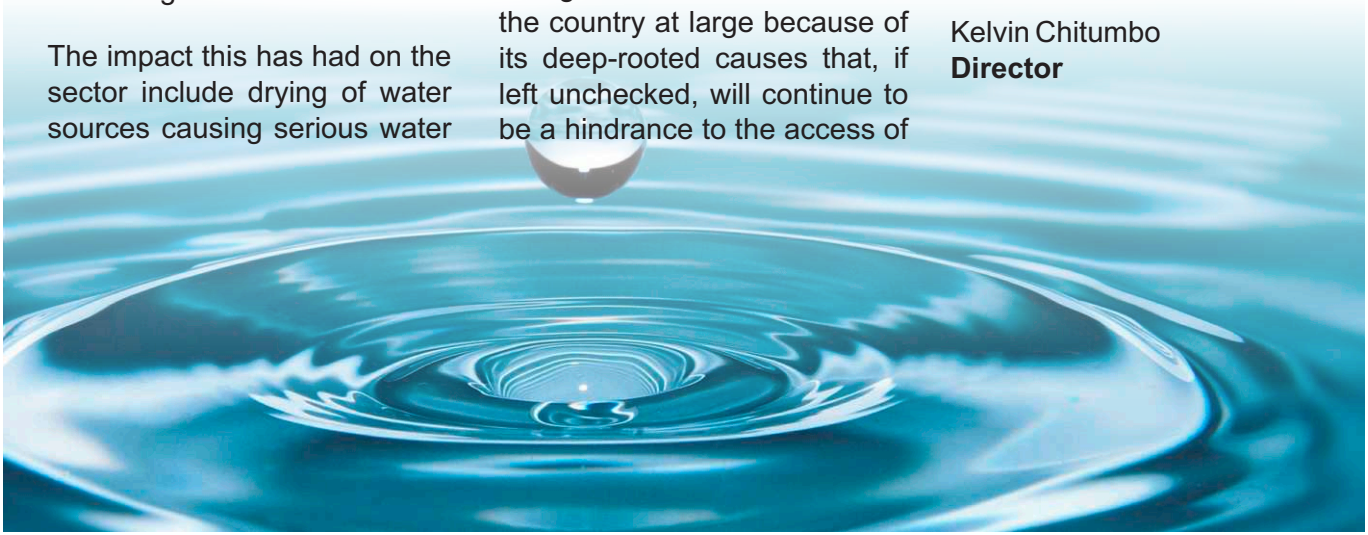
the much needed water supply and sanitation services.

One other issue that remains critical to the sector is access to adequate sanitation and the attainment of universal access to the service. Onsite sanitation and faecal sludge management remains one of the inescapable ways of addressing this matter especially in already established communities that do not have sewer systems.

The unplanned nature of most settlements make laying of sewers difficult and an expensive venture. Reorganising this sub-sector to ensure sustainable and affordable service delivery, protection of public health and the environment are key.

This edition of the Water Voice discusses these and other topics in the sector for the purposes of informing decision makers so that they can make informed decisions on matters of water supply and sanitation as well as the general public

Kelvin Chitumbo  
**Director**





# INSPECTION HIGHLIGHTS

The National Water Supply and Sanitation Council (NWASCO) conducted annual inspections on all four Private Schemes namely ZESCO, Zambia Sugar, Kafue Sugar and Kaleya Smallholders Limited, in the last quarter of 2022.

Annual Inspections of the Private Schemes were conducted from 17<sup>th</sup> to 21<sup>st</sup> October 2022. In addition to the aforementioned schemes, the inspection covered the Lukanga Water Supply and Sanitation Company (LgWSC) serviced areas of Nampundwe and Itezhi Tezhi town.

## ZESCO Itezhi-tezhi

- Hours of supply were maintained at 24 in most areas serviced by ZESCO, i.e Kataba, SWECO, Chambondela and ITPC save for a few houses near the ZESCO club that received 17 hours.
- A review of water quality records showed that they were consistent with the quarterly water quality results submitted to NWASCO. Further, all the water quality results conducted were being displayed at the ZESCO public notice board, a practice that is in tandem with the NWASCO drinking water quality monitoring guidelines.

## ZESCO Kafue Gorge

- The scheme continued to have water supply challenges in Camp 3 compound. The houses in



NWASCO Inspector conducting an inspection at Senanga Water Treatment Plant

- the compound were sold in 2010 and residents have since constructed other housing units within their property boundaries thereby increasing the number of houses accessing water from the scheme.
  - It was established that the scheme had contacted Southern Water and Sanitation Company to initiate discussions on possible handover of Camp 3 for the CU to run service provision.
  - A visit to the water treatment plant revealed that water quality records were in place and that 6 samples were sent to the University of Zambia water quality laboratory monthly, which fully met the minimum required number.
- ## Zambia Sugar PLC
- Following the restructuring of how water supply, sanitation and environmental matters were dealt with at Zambia Sugar Company, better coordination among the departments was evident through sharing of information and implementation of activities such as water and wastewater quality monitoring.
  - The scheme operates 4 water treatment plants (WTPs) that were all fully functional at the time of the inspection. These are the Dam 10 WTP serving about 700 households, the Misale WTP serving 100 households, and the Factory and Njomona WTPs serving 800 households collectively.
  - Although all the 12 plant operators were trained by the supplier of the water testing equipment the scheme had procured, the training was centered on the equipment rather than regulatory requirements. The scheme therefore looked forward to a training organized by NWASCO.

*Continued on page 6 >>>*

### **Kaleya Smallholders Limited.**

- ☞ There were 10 functional boreholes in addition to the surface water treatment plant that received raw water from Zambia Sugar.
- ☞ The scheme was ill-equipped for water quality monitoring with only a colour comparator used at the water treatment plant.
- ☞ For other tests, the scheme sent water samples to the University of Zambia Laboratory for analysis.

### **Lukanga Water Supply and Sanitation Company-Nampundwe**

- ☞ Following the handover of Water Supply and Sanitation Services from Konkola Copper Mines (Chingola) to Lukanga WSC, Nampundwe Township continued to experience a low collection efficiency as some of the customers were still not fully informed/ aware that the service area was under the jurisdiction of Utility.
- ☞ Hours of supply in the service area were maintained above 17. However, there were other areas that needed water through the extension of the existing water network such as Womba (Shanty) and Hillside area.

### **Kafue Sugar**

- ☞ The scheme was commended for the maintenance works it had undertaken at the blue houses that were in the past

found with broken water fittings that subsequently caused high water losses.

- ☞ Hours of supply at the scheme were maintained at 24.
- ☞ The scheme was conducting the required physio-chemical tests while bacteriological tests were outsourced and conducted by the University of Zambia laboratory.

### **Lukanga WSC- Itezhi-tezhi**

- ☞ The station had a total customer base of 898 out of which 740 were active compared to 866 in 2021 of which 752 were active. The inactive accounts were mostly due to zero billings as a result of 'no water' situations in some areas.

Following the re-alignment of the district from Central to Southern Province, the Itezhi-tezhi district had been facing enormous challenges to attain the required benchmark of collection efficiency.

This followed a pronouncement made on radio by the Council Chairperson earlier in the year, stating that the district would no longer fall under Lukanga WSC jurisdiction but that of Southern WSC and that no resident should pay water and sanitation bills to Lukanga WSC anymore. Therefore, this coupled with the inadequate water supply, had reduced

the customers' willingness to pay.

Further, there were residents that strongly felt that they should not be paying for water supply as they claimed that the water was a 'gift' and part of Corporate Social Responsibility of ZESCO, despite numerous attempts by Lukanga WSC to sensitize customers and stakeholders.

- ☞ In Kataba Ward, the Lukanga WSC Station Superintendent complained of rampant illegal water connections in the service area.

### **ZESCO Victoria Falls**

- ☞ Water analysis for the station is outsourced and done by the University of Zambia Water quality testing laboratory. However, a concern was noted in the transportation of the samples through improper handling that compromised their integrity.
- ☞ The station managed to maintain water supply hours at 24 in all areas.
- ☞ The inspection revealed that components of the containerized water treatment plant were dilapidated due to exposure to the sun while little to no maintenance works were done.



# SECTOR UPDATES

## NWASCO Board Tour to Iolanda



**NWASCO Board Members on tour of the Iolanda treatment plant**

NWASCO Board members undertook a familiarisation tour of the Iolanda and Kaseba Treatment Plants in Kafue on 10<sup>th</sup> October, 2022. The entourage was composed of the Board Chairperson Mr. Sylvester Hibajene, the Vice Board Chairperson Dr. Lillian Mutesu, Mrs Malama Kasalwe, Mr Mwenda Hamanyati and the NWASCO Director Eng. Kelvin Chitumbo. The tour provided an opportunity to the board members to appreciate water and sewage treatment processes and the challenges faced thereof.

### **NWASCO launches Citywide Inclusive Sanitation Planning and Service Provision Guideline**

Citywide Inclusive Sanitation (CWIS) is a public service approach to urban sanitation where all city dwellers have equitable access to affordable, adequate and safe sanitation services using both Sewered and onsite sanitation options. In accordance with its core function of developing sector guidelines as enshrined in the Water Supply and Sanitation Act No. 28 of 1997, NWASCO, during the 2<sup>nd</sup> National Sanitation Summit held from 19<sup>th</sup> to 20<sup>th</sup> November 2022, launched the CWIS Planning and Service

Provision Guideline on 20<sup>th</sup> November 2022. The launch was graced by the Permanent Secretary in the Ministry of Water Development and Sanitation, Eng. Joe Kalusa.

The objective of the guideline is to provide utilities and other Service Providers guidance on planning and implementation of sustainable, safely managed sanitation services along the entire sanitation service chain in both urban and peri-urban areas. The guidance also aims at advancing and sustaining Zambia's commitment to attaining the country's population access to sanitation in accordance with the 8<sup>th</sup> National Development Plan, Vision 2030 and the United Nations Sustainable Development Goal 6.2.

Ministry of Water Development and Sanitation Permanent Secretary, Eng. Joe Kalusa and NWASCO Board Chairperson Mr. Silvester Hanguwa Hibajene at the launch of the Guideline at Mulungushi International Conference Center in Lusaka, Zambia. Picture Courtesy of NWASCO, November 2022

### **Sanitation Safety Planning Training**

The National Water Supply and Sanitation Council

conducted a three day training of twenty two Sanitation Managers and Experts drawn from all the eleven CUs. The training was held at Four Pillars Lodge in Chilanga District from 5<sup>th</sup> to 7<sup>th</sup> December 2022. The objective of the training was to capacitate staff with knowledge on how to develop Sanitation Safety Plans as recommended by the World Health Organisation for targeted and result based sanitation interventions.

### **Joint Implementation Team for Rural Water Supply and Sanitation and Urban Onsite Sanitation**

The National Water Supply and Sanitation Council (NWASCO) held its 2<sup>nd</sup> Western Province Joint Implementation Team (JIT) meeting for Rural Water Supply and Sanitation (RWSS) and Urban Onsite Sanitation (OSS) and Faecal Sludge Management (FSM) on 29<sup>th</sup> – 30<sup>th</sup> November 2022 at Country Lodge, Mongu.

The objectives of the meeting were to train District Water Supply and Sanitation Coordinators of Western Province on the NWASCO RWSS data collection tool and to establish reporting channels and transmission of RWSS data to NWASCO.

The training was a prerequisite to the data collection of establishing baseline information on the status of RWSS in Western Province.

NWASCO has been implementing the Regulatory Frameworks for the Provision and Regulation of RWSS and Urban OSS and FSM since 2020 through JITs.

JITs for various provinces were formed by the Ministry of Local Government and Rural Development to spearhead the implementation of the framework.

# EVENTS

Events in the water supply and sanitation sector present an opportunity for organisations to showcase their mandate while at the same time engaging stakeholders. In the 4<sup>th</sup> quarter of 2022, the National Water Supply and Sanitation Council (NWASCO) participated in the following events:

## Global Handwashing Day

Global Handwashing Day is commemorated every year on 15<sup>th</sup> October. It is an annual global event that advocates for good hygiene practices through handwashing with soap as an easy, effective and affordable way to prevent diseases and save lives.



NWASCO Legal Counsel Mr. A. Mwansa at the GHD event in Kabanana

It creates an opportunity to design, test, and replicate creative ways to encourage people to wash their hands with soap at critical times. The Global Hand Washing day commemoration was held at the Highland Secondary School in Kabanana Township of Lusaka. In the spirit of collaboration, NWASCO partnered with BORDA Zambia in the event which attracted 20 schools from within Lusaka and other stakeholders from within the Sector. NWASCO presented 65 litres by 20 Handwashing

buckets and 5 litres by 20 hand washing soaps worth K15, 000 to the 20 invited schools. GIZ donated brooms and hand washing soap, while BORDA donated a hand washing facility to the host school. NWASCO was represented by the Secretary to the Council, Mr. Andrew Mwansa.

## Sanitation Summit



Her Honour the Vice President Mrs. W.K Mutale-Nalumango tours the NWASCO booth at the summit

The World Toilet Day falls on 19<sup>th</sup> November. The commemoration celebrates toilets and highlights the global sanitation crisis that affects billions of people around the world who are living without access to a safely managed toilet. Without clean, safe toilets, human faecal waste can contaminate food and water, which increases people's chances of getting sick. The 2022 Sanitation Summit was held from 18th -19th November, 2022 as part of the World Toilet Day commemoration.

The theme for the national summit was *'The Sanitation economy, making the invisible visible'*. The Summit presented an opportunity for stakeholders to showcase what they were doing in the sanitation space. As a build up to the national summit,

NWASCO hosted the Onsite Sanitation (OSS) and Faecal Sludge Management (FSM) panel discussion and Webinar on 14<sup>th</sup> November, 2022 at Radisson Blu Hotel. The main objective of the panel discussion and webinar was to enhance stakeholder engagement on matters concerning OSS and FSM in the country.

The panellists included the NWASCO Chief Inspector Eng. Peter Mutale, Ministry of Water Development and Sanitation, Assistant Director Water Supply Eng. Ulanda Nyirenda, SNV Senior WASH Advisor Eng. Moffat Tembo and Lusaka Water Supply and Sanitation Company, Manager Peri-Urban Ms. Yvonne Siyeni. The session was moderated by the NWASCO Public Relations and Communications Manager Mrs. Mpunga Chipepo Simukwai.

During the 2-day national summit, NWASCO hosted a focused session on the progress made on the regulation of Onsite Sanitation (OSS) and Rural Water Supply and Sanitation (RWSS) and also launched a new guideline on City Wide Inclusive Sanitation (CWIS) Planning and Service Provision. NWASCO also participated in the exhibition and showcased elements of the Sanitation Service Chain and the 7 principles of CWIS



# Service Provision in the Face of Climate Change

Climate change has been part of many discussions in the water sector because of its effects on the water sector and indeed other sectors. Because water is at the centre of climate, the effects of climate change are felt more directly in the water sector. The impact on the water sector come in the form of reduced water levels for both ground and surface water sources and poor water quality in water bodies as the concentration of contaminants mainly increases.

NASA defines Climate as the average weather for a particular place, which includes such parameters as temperature, precipitation, humidity, and windiness over a long period, usually about a period of 30 years. Naturally, weather and therefore climate, changes over time and this is called climate variability. However, these changes have been happening at a faster rate in the past century and although the causes of these changes have been highly debated, the scientific world generally agrees that the changes have accelerated with the advent of the industrialisation of the world. In other words, anthropogenic activities have largely contributed to this challenge. This is mainly through the burning of fossil fuels which release carbon dioxide and other substances into the atmosphere and in turn brings about the greenhouse gas, a process by which the atmosphere retains some of the sun's heat. With the increasing greenhouse gasses in the atmosphere, the Earth's average temperature has been increasing, causing a shift in climate, otherwise called global warming.

Climate change is defined in the Zambia National Policy on Climate Change as a change of climate, which is attributed directly or indirectly to human activities that

alter the composition of the global atmosphere, and which is additional to natural variability, and observed over comparable periods of time.

Globally, The United Nations Framework Convention on Climate Change (UNFCCC) was established in the wake of the realisation that climate change has adversely affected the ecological environment of the Earth, threatening the very existence of humankind. The UNFCCC which is an international environmental treaty, has its overall objective of stabilising GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The convention meets annually at Convention of Parties with notable agreements made such as the 1997 Kyoto Protocol, the 2010 United Nations Climate Change Conference, and the 2015 Paris Agreement. Countries have been called upon to take action to reverse the effects of climate change by taking certain measures. Parties to the convention report on their national GHG emissions and mitigation measures.

At national level, climate change initiatives can be traced to as far back as 2007 when the National Adaptation Programme of Action on Climate Change (NAPA) was developed. A NAPA is a plan submitted to the UNFCCC by Least Developed Countries that describes a country's most urgent and immediate needs to adapt to climate change. The NAPA include profiles of priority projects that are intended to address the identified needs for adapting to the adverse impacts of climate change. The vulnerability assessments by the NAPA identified five specific sectors namely agriculture and food security, natural resources (wildlife and forestry), human

health and energy and water. On energy and water, the NAPA Report points out that despite Zambia having abundant surface water resources, communities living in arid parts of the country's agro-ecological Region I experience severe water shortages during summer, with population increases in urban centres putting pressure on groundwater. It identified Southern Province, which experiences critical shortages during drought conditions, as being extremely vulnerable.

In 2010, the Government of the Republic of Zambia through the then Ministry of Tourism, Environment and Natural Resources developed the National Climate Change Response Strategy (NCCRS) to support and facilitate a coordinated response to climate change issues in the country. The Strategy, whose vision is "a Prosperous Climate Change Resilient Economy" and mission "to ensure that the most vulnerable sectors of the economy are climate proofed, and sustainable development achieved through the promotion of low carbon development pathways", aimed at, among other objectives, ensuring sustainable management and resilience of water resources under the changing climate.

National Policy on Climate Change for Zambia was developed in 2016 to "provide a framework for coordinated response to climate change issues and to give guidance on how the Zambian economy can grow in a sustainable manner and thereby fostering a smooth implementation of national development plans including the achievement of the Vision 2030".

Climate change has so far posed a significant development

challenge for Zambia. The floods that have been experienced have caused damage to infrastructure such as roads and buildings and destroying homes for a lot of people while droughts have disrupted farming with other far reaching ripple effects.

The water sector in Zambia is one that has been directly impacted by climate change effects through the frequent and increasingly intense floods and droughts, affected the quantity and quality of available water resources for the sector. Just in the last five years, the total water production for the sector reduced by over 11 million cubic meters while the population in urban and peri-urban areas for the same period has increased by over 900,000. This has put a strain on the available water supplies, increasing the risk of people resorting to other unsafe water sources such as shallow wells and untreated water from boreholes. The reduction in water production is a combined effect of poor rainfall resulting in dwindling of water sources, both ground and surface, and the extensive load shedding. Zambia relies mostly on hydro-power which has also been heavily impacted by the droughts in recent years. The fact that the water sector is energy intensive makes the water-energy nexus or relationship inextricable and therefore most vulnerable to effects of climate change.

Both extremes of high rainfall and droughts have resulted in water sources experiencing unusually high levels of contaminants, usually above the design capability of most water treatment plants. In an effort to ensure that water produced meets the national drinking water standards, water utilities have seen an increase in the amount of water treatment chemicals used, further increasing production costs.

Dealing with climate change involves putting in place measures that will ensure mitigation and adaptation. According to the National Climate Change Policy, mitigation refers to efforts that seek

to prevent or slow down the increase of atmospheric GHGs concentrations by limiting current and future emissions and enhancing potential sinks for GHGs, whereas adaptation refers to actions aimed at managing the known and unknown impacts of climate change. Zambia, like most developing countries, contributes insignificantly to the direct causes of climate change because of its low level emissions of GHGs and therefore has to lay more emphasis on adaptation other than on mitigation.

The water sector has been playing its part by putting in place adaptation measures in line with national policy directions on climate change.

The Water Policy of 2010 recognises that climate change has the potential of reversing gains made in water resources management and thus the need to develop and employ adequate coping and adaptation measures. The policy highlights five measures to be implemented to address the challenges of climate change. Two of these measures that directly relate to the water sector concern conducting public awareness campaigns to ensure that the public is enlightened on climate change issues, including mitigation and adaptation measures, and supplying of clean and safe water to communities to prevent water borne diseases that come as a result of floods or droughts. The National Urban Water Supply and Sanitation Programme (NUWSSP), which spells out government's roadmap on improving access to clean water and sanitation, amplifies these two measures by stating the investment needs of the sector.

Pursuant to Part II, subsection 4(2d) of the Water Supply and Sanitation Act No. 28 of 1997 that mandates NWASCO to develop sector guidelines on the management of water and sanitation services, NWASCO is in the process of revising a Climate Risks Screening Guideline. The guideline was developed for use

by practitioners in the country's water sector to help identify, eliminate or allay adverse impacts that climate change may pose towards water infrastructure and resources. It provides guidance on systematic steps practitioners can take to identify climate hazards and extenuating measures, thereof, as they design and implement water supply and sanitation projects. Although the guideline is primarily intended for use on new projects, it will also be used to climate proof already existing water supply and sanitation projects and infrastructure by guiding decision making for any modifications that may be required.

As a response to the growing water demand amid dwindling water resources in the capital city which has seen increasing urbanisation and industrialisation, an initiative called Lusaka Water Security Initiative (LuWSI) was started in 2016 to contribute to the security of water resources. LuWSI, a multi-stakeholder collaboration system between public sector, private sector, civil society and international actors, aspires for a water secure city for its residents and businesses. Currently, LuWSI has 25 members and the patron is the Ministry of Water Development and Sanitation. In line with one of its core functions of assessing, prioritising and monitoring water security threats and solutions, impacts of climate change is one of the challenges LuWSI tries to address. As a LuWSI partner, NWASCO hosts the LuWSI secretariat.

NWASCO has also collaborated with partners in collecting information for the purposes of quantifying green gas emissions for the sector and in identifying opportunities for reduction including energy reduction.

The water sector must continue developing climate change mitigation and adaptation measures in order to safeguard its resource.



# CRY OF THE SECTOR – Vandalism

The water sector in Zambia has in recent years seen increased activities in infrastructure development involving construction of new facilities and rehabilitation of the existing ones. However, there are a number of threats to this development that contributes to the country not attaining its targets for access to clean and safe water and adequate sanitation. Vandalism is one of those threats that has largely been ignored but if left unchecked, has the potential to derail the progress of a sector.

Vandalism can be defined as the action involving deliberate damage to public or private property. The term includes property damage, such as graffiti and defacement directed towards any property without permission of the owner.

In the water sector, vandalism has been the cause of service interruptions many times, inconveniencing customers while costing service providers millions of kwacha in damages to infrastructure and loss of business. Damaged water infrastructure increases the risk of contaminating treated drinking water and consequently the risk of an outbreak of waterborne diseases. The following are but just a few examples of vandalism in the water sector as experienced by Southern Water and Sanitation Company Limited.

In Livingstone, a number of Automated Meter Reading (AMR) meters installed in Dambwa central under a Devolution Trust Fund project were vandalized through thefts. The vandals were interested in the metal brass in the meters. In Livingstone and Monze, cases of stolen manhole covers are rife, not just the metallic manhole covers, but also the concrete covers which are broken to access the metal reinforcements. The exposed manholes are often misused by communities who dump household waste in them, causing sewer blockages and sewage flooding, a recipe for disease outbreaks and environmental nuisance.

In Maamba, incidents were recorded where people were digging out Galvanised Iron (G.I) pipes on the line supplying a school and surrounding communities.

In Monze, vandals have been cutting armoured cables at borehole installations. Some members of the public deliberately puncture the rising

main from Hachanga Dam to the treatment plant and from treatment plant to the booster station for the purposes of accessing water for their gardens and animals.

In Mazabuka, vandals target the ZESCO transformers which they temper for draining oil thereby affecting power supply to water installations.

*Vandalism has been the cause of service interruptions many times, inconveniencing customers while costing service providers millions of kwacha in damages to infrastructure and loss of business*

Clearly, vandalism is motivated by a number of factors and understanding these is the first step to devising strategies for curbing the vice. In a book called the Psychology of Vandalism, Arnold P. Goldstein describes the types of vandalism and how they could be recognised:

- ❧ **Predatory vandalism.** Here the perpetrator's motivation is material gain driven by the need for survival. Unemployment is the main underlying factor causing the perpetrator to involve themselves in acts of theft of anything valuable to them. Stealing of stand taps, water meters, pipes, electric cables etc. are a few examples. Puncturing of water pipes in order to gain access to water is also another example of predatory vandalism.
- ❧ **Vindictive vandalism.** The goal of vandalism motivated in this manner is to express animosity or anger toward, and perhaps to intimidate, a particular individual or group. This can also occur when there is an insurgence against certain decisions which may be viewed as disadvantaging the perpetrators. An example of this type of vandalism is the damage of prepaid meters as a protest to the technology for reasons that the access to water is limited when water units run out.
- ❧ **Wanton vandalism.** Perpetrator motivation here is less clear or obvious and appears to be "without reason". Destruction accompanying play and malicious damage for the sheer joy of the act. This type of vandalism is



usually displayed by individuals of a younger age or may be as a result of ignorance of the actions being undertaken. Examples of this are the removal or defacing of important sign posts, the indiscriminate dumping of waste in uncovered manholes.

There cannot be a single solution to the problem of vandalism but rather service providers must endeavour to identify the cause for the vandalism cases in their locality and apply the appropriate mechanism to arrest the situation. Below are a few suggested methods:

**Community engagement.** Providers must engage the community on any new project they are about to undertake clearly stating the benefits to all concerned stakeholders, keeping them informed and where possible, involved during and after the project. Further, sensitisation campaigns form an important aspect in this strategy and should be tailored to the targeted community grouping with specific messages on safeguarding of infrastructure.

**Building a sense of ownership.** The benefits of water and sanitation projects in communities must come at a reasonable cost to the community, enough to instil a sense of ownership and protection.

**Enhancement of enforcement.** Malicious damage to private or public property is punishable under the laws of Zambia and service providers must take advantage of this provision by ensuring that perpetrators of such acts are brought to book. This involves strengthening of relations with law enforcement agencies and all individuals and companies that may be interested in the materials that can be supplied by the perpetrators. In the Water Supply and Sanitation Act No 28. of 1997, as amended in SI No. 10 of 2003, penalty units of 100,000 or five years imprisonment or both have been stipulated.

## Urban Onsite Sanitation and Faecal Sludge Management: An Aid to Citywide Inclusive Sanitation Service Provision

**A**ccess to sanitation continues to remain a key priority programme. This is because sanitation is one of the powerful determinants of health that promotes socioeconomic development. Effective implementation of key sanitation intervention strategies has proved to reduce preventable morbidity, mortality and health related costs for households and government at large. Further, sanitation is not only a social service but a human right that is essential for the full enjoyment of life and was recognised by the United Nations General Assembly Charter of July 2010.

Government has been implementing key sanitation programmes since the United Nations Millennium Development Goals (MDGs) of 2000 – 2015 to the current Sustainable Development Goals (SDGs) of 2016 - 2030. The MDG goal on sanitation focused more on availability of toilet facilities while the SDG goal 6.2 is even more ambitious as it not only advocates for availability of toilets but their safe management for the protection of public health and the environment. Government's commitment to ensuring universal access to safely managed sanitation services by 2030 is enshrined in the country's Vision 2030 and 8<sup>th</sup> National Development Plan (8NDP).

Universal access to safely managed sanitation entails



**Newly Constructed Faecal Sludge Treatment Plant at Matero, Lusaka Province, NWASCO 2022**

“service provision for all”, that is, both Onsite Sanitation (OSS) and centralised systems. Therefore, service provision will not only be limited to the urban but extended to peri-urban and rural areas. The sanitation needs of the latter, because of their unplanned nature and geographic location are diverse and require a 'business unusual' approach to be employed by service providers

Before the start of Urban Onsite Sanitation (OSS) and Faecal Sludge Management (FSM) regulation in December 2019, service provision by utilities was only skewed towards sewerage services in urban areas. As such, sanitation coverage in peri-urban areas where the majority about 60% - 70% of the population lived lagged behind. This is because they used unimproved OSS facilities such

as simple pit-latrines which were poorly constructed and did not accord users the privacy, dignity, security and safety. Further, these facilities were a known cause of ground water contamination and significantly contributed to the high morbidity and mortality rates of waterborne disease as some households used shallow wells as their source of drinking water.

However, since the launch of the regulatory framework for the provision and regulation of urban OSS and FSM services in December 2018 and the subsequent extension of mandate for utilities by NWASCO to include OSS and FSM, utilities are at different levels of implementation of the extended mandate.

While others such as Lusaka, Chambeshi, Southern and Lukanga Water Supply and Sanitation Companies have



made significant ground through Public Private Partnerships in providing safe emptying, transportation and treatment of faecal sludge from OSS facilities in mostly peri-urban areas, others are still undertaking mapping surveys of OSS facilities in their services areas whose information is needed for the development of business and service delivery models.

However, it must be emphasised that investments in urban OSS and FSM by utilities and other Service Providers will be required to be implemented side-by-side with investments for centralised/offsite systems which are mostly accessed by the urban population.

This is because no household, regardless of their socioeconomic income and geographic should be left behind in accessing safely

managed sanitation as espoused in the Citywide Inclusive Sanitation (CWIS) approach that has been recognised world over by various governments, scholars, Cooperating Partners and philanthropists as an effective pathway for countries to follow in order to attain SDG-6.2.

In light of the above, NWASCO launched the CWIS Planning and Service Provision Guideline during the National Sanitation Summit on 19<sup>th</sup> November 2022. The guideline among other things provides insights on how utilities and sector players can channel sanitation investments, business and service delivery models that respond to sanitation needs of various population segments.

The provision of urban OSS and FSM services in peri-urban

areas by utilities following their extended mandate supplement past efforts made by utilities to increase sanitation services which were skewed towards sewerage services in urban areas.

The goal to attain SDG-6.2 on safely managed sanitation entails provision of inclusive sanitation services by government through various programmes and investments. Utilities and other Service Providers are therefore required to use the NWASCO CWIS Planning and Service Provision Guideline to assist them to plan sanitation investments which should respond to the country's commitments on universal access to safely managed sanitation services as enshrined in the 8NDP, Vision 2030 and the SDG-6.2.

# CLIMATE CHANGE: Water Scarcity, the case of LWSC

Nshamba Muzungu

Over the past decades, climate change has significantly affected rainfall patterns resulting in droughts, low water levels, reduction in energy production and consequently a reduction in economic growth. The water sector is very sensitive to changes in climate as it particularly presents a challenge for companies such as Lusaka Water Supply and Sanitation Company to assure its customers of stable supply.

Climate change has altered the hydrological cycle across the world and has added to existing pressure on water resource

availability and accessibility thereby affecting ecosystems, biodiversity and economic development.

Even in the absence of climate change, it is said that present population trends and patterns of water use indicate that more countries in Africa will exceed the limits of their economically usable, land-based water resources before 2025 (UNECA Policy brief on climate change in Africa).

Lusaka is one of the fastest growing cities, in terms of population, in the sub-Saharan Africa. This population increase

coupled with increased industrialisation and agricultural activities has resulted in increased demand for water resources. In addition to this, the city has been affected by climate change as evidenced by the poor rainfall patterns over the years that has resulted in the reduction in the available water for abstraction by the utility company.

In 2019, Lusaka Water Supply and Sanitation Company recorded a significant reduction in water production for the city by 42% which affected steady supply to most parts of Lusaka. The water demand for the city is estimated to be 480, 000 m<sup>3</sup>/day.

The reduction in water production from boreholes and surface sources coupled with the impact of power load shedding has adversely affected operations and steady supply of water to customers.

The utility abstracts water from two sources, surface and ground. Surface water from Kafue River accounts for about 40% whilst groundwater, which is from over 130 boreholes in various parts of Lusaka accounts for around 60% of the city's water supply.

Of these boreholes, 60 boreholes have been severely affected. Ten boreholes were shut down due to poor yield or drastic reduction of water levels. In light of the situation, the company instituted water rationing which means reduced supply hours and interruption. This intervention is aimed at managing the situation in the midst of water scarcity. It is an act of responsibility to ensure equitable distribution of water but also ensuring that meeting the needs of today does not compromise the ability to meet the needs of tomorrow. The impact of power load shedding has also affected production and supply of water to customers serviced by boreholes. This is because all the boreholes, booster stations and

treatment plants are dependent on hydro power.

It has been predicted that water stress and scarcity will increase in many countries, the question of how we are going to ensure adaptability is key given that most developing countries will excessively bear the brunt of climate change impacts due to inadequate institutional, financial and technological capacity to adapt.

Adaptive capacity is dependent on policies and strategies that are put in place to respond to the needs as well as enhance the resilience of the most vulnerable systems and groups in society. We are comforted by the fact that the Government of the Republic of Zambia (GRZ) has initiated activities to help determine priority climate impacts and vulnerabilities, adaptation strategies and means to integrate this knowledge into development and sectoral planning. Key policies and strategies include; National Climate Change Policy (2016), National Water Policy (2010), the National Adaptation Programme of Action (2007) and National Climate Change Response Strategy (NCCRS, 2010).

Robust long term strategies are still required to ensure future water supply meets demand in the face of scarcity. The government of Zambia is investing a great deal in enhancing water management to withstand erratic rains through water harvesting, water conservation and infrastructure development projects. However, there is need to ensure that all water projects are sustainable considering the fact that most African countries are likely to face water stress, which will reduce the availability of water despite the level of infrastructure development.

African countries are encouraged to develop water conservation strategies that are sufficiently flexible to accommodate the anticipated effects of climate change. These strategies should allow for water demand management, water conservation measures and contingency planning for extreme events such as droughts and floods. This obviously includes creating awareness and educating consumers on the need to conserve water at household level.



## Guest Author Preparing for Retirement - Part 2

**Justin Kangwa**

In Part 1 of this article published in the previous edition of The Water Voice, I shared two major aspects namely, four key areas in which retirees appeared vulnerable or stranded and two main reasons for the low quality of lifestyle among retirees.

This instalment focuses on what I consider, from my personal experience, to be the three greatest challenges that a retiree faces as follows:

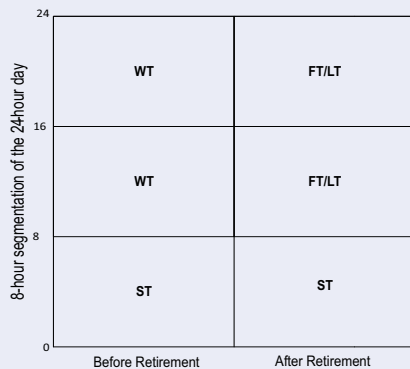
### **Mental Realignment**

The need for mental realignment is triggered by the abrupt increase in the amount of free time at one's disposal when they retire. When you have a formal job, you spend an average of sixteen (16) hours daily on work and work-related activities, from the time you wake up in the morning (05.30 hours) until you retire to bed in the night (21.30 hours).



But when you retire your working time (16 hours) becomes your free time/leisure time (FT/LT) while your sleeping time (ST = 8 hours, from 21.30 to 05.30 hours) generally remains the same.

Therefore, upon retirement one is expected to swiftly implement an already devised schedule of 'spending' the sixteen hours' time block, which changes from being working time (WT) to free/leisure time (FT/LT) as illustrated in the figure below. This reprogramming of time usage must be accompanied by an appropriate mindset of self-empowerment. And, the key question that you must begin answering way before your retirement is, *“What alternative activities will I be doing in the sixteen hours that I have been dedicating to work and work-related activities?”*



Unfortunately, failure to positively handle this question by one's inability to implement a productive intervention has caused many retirees to adopt harmful habits such as excessive alcohol consumption, which have the potential to lead to illnesses, poverty and 'early' death! The deal is to start addressing the above question while you are still in formal employment as an integral part of your preparation for retirement. If you are able to, you should begin implementing or practicing your answer before you even separate from employment. It is too risky to

wait until your last working day before you find or identify a plausible answer to the question.

### Poor Cash Flow

When you retire from formal employment, your monthly salary stops coming in but your bills continue in mainly the following three forms:

- **Daily/Weekly:** ration/food, talk time, fuel, etc.
- **Monthly:** water, electricity, etc.
- **Quarterly/Bi-Annually:** school/college/university fees, property rates, etc.

Therefore, as part of your preparation for retirement, you should ask yourself one question, *“Assuming I will live twenty-five years beyond my retirement, will my terminal benefits be adequate to cover my bills for the same period?”*

If the answer to the above question is **no**, then that strengthens your case for establishing an income generating venture to enable you settle your bills whenever they fall due while you remain alive.

### Declining Health Status

As you grow older, your physical strength begins to decline and inevitably, your body becomes susceptible to illnesses. In this case, physical strength refers to the ability to engage in physically strenuous activities, lift heavy loads, walk extended distances and stand for long periods.

The implication of experiencing dissipating physical strength is that you need to be mindful of the occupations you engage yourself

in so that you do not endanger or jeopardise your health status. On this basis, the question that you should start asking yourself while in gainful employment is, *“As I grow older, what occupations can I engage in without compromising my health status?”*

Failure to plan and manage your physical activities as you grow older will most likely harm your health condition leading to preventable illnesses.

During the many 'Retirement Planning and Implementation Workshops' that I am privileged to facilitate, I never forget to give the following counsel:

*“It may not be wise for you to neglect your own retirement planning and substitute it with the thinking that your children will be your social security! The reason is simple; if currently you are not adequately providing for your aged parents, what makes you believe that your children will take care of you in your old age? Most likely, they will be pre-occupied with their own lives and raising their children; the same things that pre-occupy you!”*

**The author proceeded on early retirement from formal employment at the age of forty-seven (47). Five years later, he had managed to register an appreciable level of success as a consultant, trainer, speaker, coach, mentor and a published author of three (3) books including 'Twelve Keys to a Decent Retirement'. Any feedback or comment on the article can be sent to [justinkangwa@yahoo.com](mailto:justinkangwa@yahoo.com) or WhatsApp number 0977 508 350.**

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## ACROSS

1. Food and Agriculture Organization, abbr(3)
5. Tiny (4)
8. Difficult economic conditions created by government measures to reduce public expenditure (9)
11. Copper element (2)
12. Shout at length in an angry and impassioned way (4)
13. Curriculum Vitae, abbr(2)
14. Measure of acidity or alkalinity (2)
15. Public health conditions related to clean drinking water, treatment and disposal of human excreta and sewage (10)
17. Unit of measurement equivalent to 1,000 kilograms (3)
19. Move slowly in an order to avoid being detected (5)
21. Toilet (3)
22. Ministry responsible for Water Development and Sanitation, abbr (4)
23. Group of players forming one side in a competition (4)

## DOWN

1. Human waste excrement (6)
2. African continental organization (2)
3. System software that manages computer hardware and software resources, abbr(2)
4. Chemical element with atomic number 34 (2)
5. Cause to move in a sloping position (4)
6. Information Technology abbr(2)
7. American City, abbr(2)
9. Lethargic (6)
10. Television (2)
12. Regulator for Water Supply and Sanitation, abbr (6)
13. Common fatal waterborne disease (7)
14. Ratio of circumference of any circle to the diameter of that circle (2)
16. Before the present (3)
17. Male cat (3)
18. Lower and raise ones head in acknowledgement (3) Decay (3)