

The Water Voice

July - September 2017

Newsletter



CLIMATE CHANGE AND WATER SECURITY

FOUR
CRITICAL SKILLS
NEEDED IN
21ST CENTURY

Message From The Editor



Mpunga Chipepo Simukwai

*A warm welcome
to the second half
of the year!*

Climate Change and water security issues have become topical issues on the global agenda. Zambia, like many countries around the world, has not been spared from the ravaging effects of climate change and the eminent threat on water security. In 2016, the extent of climate change was felt across the country when there was a spike in load-shedding due to low water levels in the Kariba Dam.

The water sector is bound to be the most negatively impacted by Climate Change and hence the need for water security has never been more critical.

Research has revealed that the majority of the fresh water resources have depleted and there is reduction in agricultural production globally with escalation in population and food demand. Some of the prominent climate change impacts are, expanding deserts, and increase in the magnitude of floods and droughts.

The Zambian government through the 7th National Development Plan (7NDP) estimates the impact of climate change to cost the country approximately 0.4 percent of annual economic growth. It is further estimated that without action, rainfall variability alone could lead to losses of 0.9 percent of GDP growth over the next decade, thereby keeping a significant section of Zambia's population below the poverty line.

In response to this, the Government plans to promote the adoption of agricultural environment-friendly practices (climate smart and organic techniques,) such as conservation farming, crop rotation, less use of chemical fertilizer and creating public awareness on the adverse effects of climate change. Furthermore, since climate change has increased the frequency and intensity of disasters, the 7NDP has put in place strategies and programmes to aid communities to adapt to its effects through climate proofing their livelihoods, production and assets.

It is therefore heartening to hear the ushering in of the Lusaka Water Security Initiative (LUWSI) which focuses on water security in Lusaka City urban areas including vulnerable urban compounds. The initiative is currently developing a Climate Change Screening tool for the water sector. The tool is a clear indication that government, through the Ministry of Water Development, Sanitation and Environmental Protection is paying attention to issues of Climate Change and Water Security.

And for the first time, we have a guest author who will share his thoughts on Four Critical Skills that are needed in the 21st Century if one is to attain Financial Freedom –this is an interesting read.

Lastly, let me end by paying tribute to my predecessor Ms. Rose Enala Tembo for carrying the Water Voice torch over the past few years. We wish her the very best as she moves in to her new role.

Enjoy!

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Director's Foreword

The Water Sector is one of the sectors with a transverse effect on other sectors and therefore should receive precedence in the era of economic development and challenges. With all that maybe be said or done, the principal of understanding the critical elements that will provide the basis for the successful sector development and enhancement is important to achieve any meaningful impact on the population of Zambia bearing in mind that the resource we want to manage has been under threat and stress from the beginning of the century.

The Water Voice is a publication that envisages to fill up the void and create a platform for general discussion and technical information dissemination for the wider population in Zambia, for both those inside the sector as planners and those that maybe called stakeholders due to their largely dependence on water for their economic, social and cultural reasons.

It is therefore important that this edition and many more to come will provide and discuss important subject matters through written

articles that shall be published by the editorial team and other guest writers who will be involved in discussing issues that matter to the water sector without malice or partiality.

This Publication shall endeavor to serve all the stakeholders with the greatest impartiality through well researched and balanced reporting, at the same time playing the role of a sectoral advisory platform through information exchange and sharing.

The pertinent issues that affect the sector shall be given prominence and covered in such a manner as to provide the basis for discourse and engagement with all relevant stakeholders. I am pretty certain that the team involved in the production of the magazine will continue to exhibit exemplary professionalism in their line of duty and be part of the sector transformation as projected in the vision 2030.

Like any other publication, the Water Voice in the midst of all financial and time constraints, shall ensure that the publication will become one of the best platform of communication for the water sector.



Kelvin Chitumbo



JOINING THE NWASCO TEAM!



Mr. Andrew Mwansa

Mr. Andrew Mwansa joined the National Water Supply and Sanitation Council (NWASCO) on 3rd April, 2017 as Secretary to the Council/Legal Counsel. Mr. Mwansa is an Advocate of the High Court for Zambia (AHCZ) with more than ten years of practice at the Bar and is a full member of the Law Association of Zambia. He holds a Bachelor of Laws (LL.B.) Degree from the University of Zambia, a Post-graduate (PGD) in Legislative Drafting from the Zambia Institute of Advanced Legal Education as well as a Specialist Qualification, Certified Anti-Money Laundering Specialist (CAMS)-Miami, USA and is also a World Bank trained Legal and AML (Anti-Money Laundering) Country Risk Assessor. He is currently pursuing his Master of Laws (LLM) Degree with the University of London. Before joining NWASCO, he worked as a Learner Legal Practitioner and then as a State Advocate in the Attorney Generals' Chambers-Department of Civil Litigation from 2004 to 2009. In 2010, he joined the

Pensions and Insurance Authority (PIA) as In-house Counsel (Legal Counsel) up to the time he left to join NWASCO. Besides membership with LAZ, Mr. Mwansa is also a full member of the Commonwealth Association of Legislative Counsel (CALC).



Mr. Chongo Chileshe

Mr. Chongo Chileshe joined the National Water Supply and Sanitation Council (NWASCO) on 3rd February 2017 as Finance and Administration Manager

Mr. Chileshe Holds a Master of Business Administration with a major in Strategic Planning from Edinburgh Business School (Heriot Watt University). He holds a Bachelor's Degree in Accounting from Copperbelt University (CBU).

Mr. Chileshe is a professionally qualified chartered accountant with ACCA. Before joining NWASCO, he worked at Multi-choice Zambia Limited as Management Accountant.



Mrs. Mpunga Chipepo Simukwai

Mrs. Mpunga Chipepo Simukwai joined the National Water Supply and Sanitation Council (NWASCO) on 1st June, 2017 as Public Relations and Communications Manager. Ms. Mpunga Simukwai is a Media and Communications specialist with over 15 years' experience. She holds a Master of Communication for Development from the University of Zambia, a Bachelor's Degree in Communication Science from the University of South Africa and a Diploma in Journalism from the Evelyn Hone College. Before Joining NWASCO, Mpunga worked for the Zambia News and Information Services from 1997-2006. She later moved to the Zambia Institute of Mass Communication Education Trust as Radio Manager until 2012 when she started working at the Zambia National Broadcasting Corporation as Public Relations Officer until 2017 when she moved to NWASCO.

THE FOUR CRITICAL SKILLS NEEDED IN THE 21ST CENTURY



During the industrial age professional training for example in engineering, medicine, Law, was all one needed in order to live a financial worry free life before and during retirement period, or simply the sunset days. We are now in the information age and the boundary lines have been redrawn and the above skills can no longer guarantee financial security. One contributing factor to this insecurity is the change that has taken place in the pension industry. Most employers have now placed the burden of looking after oneself during retirement days on the employee through change in retirement policy. There has been a shift from Defined Benefit Plan to Defined Contribution retirement policy. A defined benefit plan is a retirement plan in which you are guaranteed a certain benefit each year. A defined contribution plan is a retirement plan in which your employer guarantees a yearly contribution while you are working but does not guarantee a retirement benefit. The defined contribution pension scheme is linked to the performance

of the market. As you very well know markets go up and markets come down. If you retire when the market is up you will have cash to finance your retirement. However, if the market is down you may face serious financial woes.

There are no guarantees from the employers. Not many people understand this change. For example in the past few months the USA and UK Real Estate markets underwent some turbulence caused by subprime. In short mortgage bankers in the last few years were lending money to people who were not creditworthy. The bankers were behaving like a very happy father who gives a loaded gun to his five year old son in a stadium packed with people watching football. Dear reader I will leave to your creative imagination to paint a vivid picture of what might happen.

Rise in international competition has also removed the safe nets that nations and companies and employees used to enjoy. With the internet, competition will not only

come from competitors in your locality but also from anywhere on the globe.

We should also note that in the past one would survive financially with skills only in one field. Globalisation now requires that you have multiple skills. Knowing one language was all you needed but if you now want to be a major player in the new world you had better learn another international language. I recommend that you also consider the Chinese language because china is going to turn the tables around and shift the center of economic power to the east. It is just a matter of time. As a student studying international business in 1995, the idea of china becoming an economic giant to me sounded far etched. The picture is different now.

Having a single income stream based on the pay cheque in today's world is a very risky venture. Sadly our school system has not reformed to reflect the changed reality in industry with regard to achieving financial success. The school system continues to

place a very high premium on the certificate that one gets after college as the secret to success. This philosophy is incomplete and inadequate.

In this article I will attempt to bring out what I consider to be the Four Critical Skills that are needed in the 21st Century if one is to attain Financial Freedom and success whatever you define your success. Financial Freedom is achieved when your income from the various investments you have more than cover your expenses without you physically working for it. To achieve this goal you need to acquire the following four critical skills:

How to Set and Achieve Goals

Goal setting is an important life skill that is critical to finishing well. Goals give direction and meaning to life and guarantee success to people who have mastered the art of goal setting. Certainly if you want to succeed in life in any given field, be decisive about what you want to accomplish. Once you have settled this matter, then daily chose to invest the minutes and hours of your life doing only those things that will move you in direction of your goals. "If you are not making the progress you would like to make and you have the capability to do so the reason is simple says Paul J Meyer the founder of Success Motivation International (SMI). The reason is that your goals are not crystallized. SMI's primary goal is to help people reach their full potential through goal setting. Dear reader I urge you if you are not a practitioner of goal setting to find a mentor who can help you. You can become more and do more for our country by becoming a practitioner of goal setting. Goals as you may be aware are the fuel in the furnace of achievement.

Zig Ziglar, America's motivator of motivators believes that Man was designed for success, engineered for accomplishment and endowed with the seeds of greatness by his creator. If you want to see what goal setting can do to your life study the life of John Goddard, the WORLD'S greatest goal achiever. In his life time he set 600 goals and achieved 520! His were grand goals. But he had one quality which most people do not have. He never wavered from the goals he set for himself at the age of 15. That is the secret. If you master the art of goal setting, you can literary do whatever you set your mind on and financial freedom will come to you at an alarming speed. Fear of losing a job or possible failure of your enterprise will not intimidate you.

Financial Literacy

"Financial Literacy is the ability to read and interpret financial statements and use them to convert cash or labour into income earning assets that generate positive cash

flow" says ROBERT T. KIYOSAKI the author of the international Best Seller book Rich dad poor dad. Financial Literacy is hardly taught at school and this is the reason why many people struggle financially. When we leave college we place our faith in the certificates we obtain to solve all our money problems. It is interesting to observe that even your banker does not ask you for your school's report card but he is only interested in your financial statements when you want to borrow money to set up a business. Does this not suggest something we may have missed whilst in school?

The point to note is that if you want to improve your financial literacy, find mentors and read anything you find on finance and investing. You need to understand the relationship among income statement, cash flow and the balance sheet because each financial transaction you make affect these statements. I recommend that you buy the Cash flow Board and I know that it will help you see the relationship. If you follow this advice, you will soon begin to grow your asset column that will begin to give you multiple income streams.

Learn also how to write a winning business plan that bankers want to put their money on. Soon new doors of opportunity will open for you. Remember the old adage which says that "learning is a lot like eating. It is not how much you eat that matters. What matters is how much you digest. Knowledge is potential power; wisdom is real power." Apply what you are learning and then wait to see miracles happen. James in the New Testament says "Do not merely listen to the word and so deceives yourself. Do what it says." Patience and discipline are the watch words of investing as you begin to take action. As you take action, do not allow other people's negative evaluation of you to weaken your resolve to chart a new path to financial independence.

Leadership

If you have a compass in your head to point to the true north and a magnet in your heart you will soon have followers who believe in the vision you have. You might wish to know that the world always give way to an individual who knows where he is going. That is leadership! Nothing more and nothing less.

The hearty of leadership is serving others. The Master Teacher Jesus in the land of Israel in ages past was asked to explain what it takes for one to achieve true greatness. His answer was humbling. "Learn to be a servant of all." The person who wants to be the leader must understand that his primary responsibility is to serve. This goes against the grain of

wheat in our time just as it did in Israel then. Dear reader if you want to improve your leadership skills commit yourself to studying the biographies of great leaders. As you study the biographies of great leaders, pay particular attention to the following:

- i) The things they valued most
- ii) The principles they stood for
- iii) What they said
- iv) The kind of people they surrounded themselves with
- v) Review the examples they set
- vi) Study the institutions they established
- vii) Explore their attitudes towards life

Slowly but surely you will begin making progress towards your dreams if you embrace the above tenets. It is important that you understand that before you can lead others learn to lead yourself.

Communication and Selling

The world has always loved great communicators. This is a fact! During the early 90s when the wind of change swept across Zambia, as a student I used to enjoy going to listen to our leaders during the political rallies. Our former president, Dr Fredrick Chiluba's speeches were simply brilliant. His eloquence was simply unmatched.

The ability to communicate effectively is an important life skill that you must seek to acquire for it will take you places. Having great ideas is one thing, but communicating and selling your ideas to others so that they can rally behind you is what counts. Most people are shy when it comes to selling. Remember that with each sale transaction the economy moves forward. Learn the selling skills and you will gain courage to work in any industry.

In this article I have shown why goal setting, communication and selling, financial literacy and leadership skills are so critical to your success in the 21st century. Having multiple skills and multiple income streams is the way to go so that if one stream dries up the other streams will continue to pour cash flow into your bank account. All is said and done and the matter is now in your capable hands.

I wish you a pleasant journey as you move towards your coveted dream through daily application of some of the thoughts I have outlined in this article.

By Engineer Bernard M. Chiwala (Student and Practitioner of Transformation Leadership)

INSPECTION HIGHLIGHTS



Five Commercial Utilities (CUs) were inspected during the period April to June, 2017 namely Southern, Mulonga, Nkana, Kafubu and Lusaka Water and Sewerage Companies. Salient issues emanating from the inspections were as follows:

Kafubu Water and Sewerage Company

- The CU had put up a commendable process of rapid response to technical faults and leakage complaints in Luanshya following the introduction of the Zero Tolerance to Leakages Policy.
- The pace of handling new connections had significantly improved in Ndola.
- Generally, there was minimal to no improvements in the level of service as evidenced from the field works conducted through interaction with customers. With erratic to no water supply in parts of Roan, Mpatamato (Luanshya) and Kabushi (Ndola) Townships, customers were forced to use water from shallow wells.
- A number of leakages were observed in townships such as Fisenge (Luanshya), Mushili and Kabushi (Ndola) where residents indicated that some had gone unattended to, for long periods.

Mulonga Water and Sewerage Company

- The long outstanding incidences of sewage flooding in PPZ Township had greatly reduced after the CU implemented regular maintenance on the sewer lines.
- Water supply to Sections 1 to 3 of Kantanshi Township in Mufulira had improved to over 18 hours after the CU metered the area.
- Sikalangwe Township in Mufulira, Kawama in Chililabombwe, Chabanyama, Bwalya Chisanga Site and Service, parts of Lulamba

and Twatasha Townships in Chingola had unacceptably low to no water supply.

- Physical works on the European Investment Bank (EIB) funded projects are still in the procurement stage.

Nkana Water and Sewerage Company

- The company had made slight improvements to water supply in Makobo area in Chambishi, averaging about five hours. Previously, most parts of the area had only one to two hours of supply.
- Most kiosks in Chibuluma were non-functional with the town poorly serviced with water supply. Nearly all households had a shallow well as an alternative source of water.
- In Mindolo North, residents spoken to indicated that some of the houses in the area have never received water in years.

Southern Water and Sewerage Company

- There was improvement in the hours of supply in Mundolobelwa Township in Livingstone which previously had no supply because of blocked water pipe then supply was restored back to 24 hour service after pipe was replaced.
- The CU continued to be non-compliant to the Water Quality Monitoring Guidelines in Zimba where the pH was still lower than the acceptable range of 6.5 to 8.0
- Water supply hours in highly elevated areas were below the Service Level Guarantees in a number of townships. Notably, Kanyebele Township in Siavonga (five to six hours), Harry Mwangi Nkumbula and Manungu Townships in Monze (half an hour to four hours), Treasure Township in Zimba (three to five hours) and Kamunza and Shampande Townships of Choma, with some residents

in the latter township having completely no supply.

- Lapses were observed in the process of making new connections, particularly in Livingstone, with some paid-up would be clients remaining unconnected from 2016.

Lusaka Water and Sewerage Company

- There was an improvement in the process of connecting new customers and entering them in the billing system. However, lapses were noted in the process in some branches such as Chongwe and Chelstone.
- Customers in Luangwa and Chongwe were being overcharged for new connections contrary to the approved tariffs.
- Water quality testing was in line with Water Quality Monitoring Guidelines except for the pH which was not being conducted. However, some areas where water treatment was taking place like George Compound did not have basic testing equipment such as comparator, pH meter and turbid meter.
- Approved tariffs for new connections were not followed for both standard and non-standard.
- The CU continued to experience challenges with prepaid meters mainly to do with battery life, valve failure, failure to recharge and many others
- Quarterly Water quality results were not displayed at most customer pay points.

A common feature on the Copperbelt based CUs is the vandalism of water and sanitation appurtenances in the Low Cost and Peri-urban areas hence causing a lot of water wastage. The Commercial utilities were directed to take corrective measures on the areas of non-compliance within the specified period.

GLARING REALITIES OF CLIMATE CHANGE IN ZAMBIA



“We have no energy crisis in Zambia but the real crisis is water as a result of the Kariba Dam not having sufficient water. We need to find other alternatives to increase storage capacity because water is a finite resource”

Those remarks are an excerpt from the Key note address by the Permanent Secretary (PS) in the Ministry of Water Development, Sanitation and Environmental Protection, Dr. Bishop Ed Chomba, during the 2017 Zambia Water Forum and Exhibition (ZAWAFE).

The PS further said that the 7th National Development Plan should critically look at the Water Resource Management Act provisions in order to increase storage capacity and consequently become resilient to climate change.

Climate change, human activities, population boom and underdeveloped water resources are desperate straits threatening the water sector today.

The 2009 Zambia National Water Report Resource to the 3rd World Water Development (WWDR3) Forum revealed that Zambia had enough water to meet the present demand, but it lacks developed water resources to meet the future demand for both industrial and domestic consumption.

The current goings-on obtaining in the country seven years down the line after the report, presented a gloomy picture for future generations. In Zambia, there is glaring evidence that the consequences of climate change are already taking place. For instance in November 2016, Mumbwa’s Chibila Dam in Central Province, a water body which provides over 50% of water to residents was declared a disaster after it substantially dried up, plunging the district into a serious water crisis.

Mumbwa Council Chairperson, Gracious Hamatala, hastened to tell the media that climate change had taken its toll on the dam besides other human activities. Nevertheless, albeit water is a finite resource not all hope is gone as Zambia still lives

in a reality of occupying 40% of the Zambezi water basin.

During the 2017 ZAWAFE, the PS revealed that Zambia reserves 60 Billion Cubic Litres which it equitably shares with Zimbabwe to remain with 30 Billion Cubic Litres. In the light of such revelations, it is only true that the greatest challenge the country is grappling with is that of inadequate water storage capacity.

Going forward in the midst of climate change, there is need to come up with deliberate policies to increase water storage capacities country wide. One way in which that could be realised is by upgrading, expanding and rehabilitating Water Supply and Sanitation (WSS) infrastructure to meet both current and long term requirements.

Nevertheless, it takes huge capital resources to commission and complete WSS infrastructure works and robust plans from both Government and Commercial Utilities are required to attract investments in the sector.

In Zambia drought periods are reported to have increased followed by shorter rainy seasons and water bodies are fast-drying up resulting in insufficient surface water especially for dam reservoirs. For instance, eight years after completion of the \$4 million Kapiri-Mposhi’s Mushimbili Dam in 2008, the dam which is still a major source of surface water for the residents, has started slowly drying up and parts of its banks are literally being used as grazing land for animals.

No one ever thought the dam constructed barely 8 years ago could undergo drastic change in its infancy stage. The realities of climate change in Zambia point to the fact that government should start looking to exploring other available water harvesting options, perhaps invest in viable water harvesting technologies.

By Louis Mwape, Public Relations Officer- Lukanga Water and Sewerage Company.

DTF BOOST ACCESS TO WATER IN KABANANA TOWNSHIP (LUSAKA)

Kabanana compound is located on the north western part of Lusaka town. It is divided into 2 parts namely Kabanana main and Kabanana site and service. The area of focus for the project is Kabanana site and service. Apart from the limited water supply network, many people in Kabanana depended on a single borehole with capacity of 44m³ per hour, resulting in erratic water supply.

An estimated 5.4 million Zambians have access to clean and safe water from a population of 6.5 million according to the NWASCO 2016 Sector Report.

The Devolution Trust Fund (DTF) established by NWASCO under the Water Supply and Sanitation (WSS) Act number 28 of 1997 as an instrument to assist commercial utilities CUs’ to improve water supply and sanitation services, has changed the story of the people of Kabanana. In October, 2014 the DTF signed a Financing Agreement with Lusaka Water and Sewerage Company amounting to about K1.9 million under the 8th call General Fund Water in February, 2014.

The project was commissioned on the 19th June, 2017 and has improved water supply to more than 22,000 people.

The project has also improved living conditions and public health for the people. The other benefit of the project is associated with gender impacts, where women in the area have been relieved of the burden of fetching water and taking care of the sick due to water related illnesses.

DTF’s drive is to ensure that water is at the core of sustainable development for the people across the Country. The Kabanana Water project is one of the 83 projects financed by DTF since 2003. Giving those in need access to clean and safe water changes everything in life for the millions of people around the world



Minister of Water Development Sanitation and Environmental Protection Hon. Lloyd Kaziya in Kabanana

PROJECT MANAGEMENT CHALLENGES IN CUs

In Zambia, service delivery is facing challenges due to increased population that has put a lot of stress on the aged and dilapidated infrastructure.

From 2012 to date, the sector has received a lot of financing from the Government and Cooperating Partners to fund capital projects. In addition to the externally financed capital projects, a number of CUs have been making headways in funding some projects using internal funds. The Water Sector can only guarantee improved service delivery through efficient and effective development and management of water supply and sanitation infrastructure.

However, there have been a number of failed projects in the sector. An example includes the collapsing of the elevated tanks in Luapula and Western Provinces. In this regard, NWASCO identified a need for capacitation in project management skills. This is evidenced from the 2016 to 2020 NWASCO Strategic Plan Objective 2 Goal No. 3.2 which prioritise the promotion of business acumen and project management which are prerequisites for successful service delivery.

Delayed and/or failed projects have always resulted in loss of time and revenue and the following have been some of the identified causes:

- Non adherence to project schedules. The sector has seen a lot of delayed projects in a number of CUs for both internally and externally funded projects. This results in more than just a missed deadline on the calendar because workers have to be paid for more time while prices of project inputs increase and therefore estimated budgets go up while the revenues go down.
- Poor communication in the implementation and management of projects. This has always been one thing that consistently shows up on a number of failed projects. Thus it is vital for CUs to proactively enhance information and knowledge sharing during a project. For example, there known facts that, some projects after completion have recorded operational failures because they did not fully understand the project scope during the implementation phase.



- Project Management issues have also caused challenges because lack of clear roles and responsibilities result in confusion, errors and omissions. The recommendation is that respective CUs implement performance monitoring systems.
- Failure to hammer out the nitty gritty details, which may build or break the progress of any project. If not addressed early, it may start to inhibit progress as the project gets closer to the deadline even when it started out strong. The sector has seen projects stagnating at over 90% and not reaching 100% complete. Further, a number of CUs do not come up with dedicated teams for projects. Instead, the project works become part of added responsibilities to the daily tasks thereby leading to

compromise in detail and bogged down in the CU management structure bureaucracy.

- Management not paying enough attention. This has been another cause of project failures and / or delays. For example, the project manager is the symbolic parent and champion of progress. Therefore, CUs need to have a dedicated manager specific to the project.

It is therefore hoped that development of capacities in project management for CUs' should be emphasised if the sector has to attain the vision 2030 goal on water supply and sanitation component.

ZAWAFE 2017



A group photo during the 6th Zambia Water Forum and Exhibition

The 6th Zambia Water Forum and Exhibition (ZAWAFE) was held on 12th and 13th June, 2017 at the Mulungushi International Conference Centre under the theme 'Water, Sanitation and Sustainable Development Goals: What is Zambia Doing?' The forum was graced by the Acting Minister Water Development, Sanitation and Environmental Protection Honourable Freedom Sikazwe ZAWAFE the largest forum in the Water Sector aims to raise public awareness on the importance of water. It also brings together various national and international stakeholders to discuss and share best practices on water management and mainstreaming water as a core component of social and economic development.

It provided a unique opportunity for participants to interact with local and international experts and current practitioners working in the water sector in Africa and around the globe. The forum drives on goal number six of the Sustainable Development Goals (SDGs) – Clean Water and Sanitation, which aims at ensuring universal access to safe and affordable drinking water for all by 2030. It also encourages investments in adequate infrastructure to provide equitable sanitation facilities for all, hygiene at every level and protecting and restoring water-related ecosystems such as forests, wetlands and rivers to mitigate water scarcity.

The 6th ZAWAFE brought together people from all walks of life; the forum attracted 36 exhibitors and about 350 participants both foreign and local. A number of activities such as keynote speeches, exhibitions, focused sessions and field trips were lined up.

The PS of the Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP) Bishop Dr. Ed Chomba delivered a keynote speech on the importance of all stakeholders working together to develop the water sector. Mr. Alex Simalabwi, the Executive Secretary of Global Water Partnership Southern Africa, also delivered a keynote speech on "Water, Job creation and Industrialization and SDG implementation in Africa".

Institutions like GIZ, World wide fund for Nature (WWF), Southern Africa Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL), Hokkaido University and the Department of Water Resource Development (DWRD) held focused sessions on various topics such institutional framework for water supply and sanitation, sustainable wetland management, sanitation value chain and water resource development for social-economic development.

Aside from the presentations and exhibitions, educative and social field visits to Chazanga and Kanyama (bio latrine projects) and Livingstone were conducted respectively.

By Victoria Ngwenya- ZAWAFE Intern.

Excessive Non-Revenue Water – A Curse for a Sustainable WSS Management?

Facing ever-increasing urban populations and expanding service areas, many water utilities in Zambia continue to struggle with providing clean and safe drinking water to their consumers. The common water supply problems in most Zambian districts and towns like many other African cities are related to the sources, intermittent supply, and the quality of tap water at the consumer's end. Now, one of the major challenges facing water utilities in the country is the high level of water loss in distribution networks.

According to the Nwasco 2016 Sector Report, the average Non-Revenue Water (NRW) "defined as the difference between the amount of water put into the distribution system and the amount of water billed to consumers" for all the eleven Commercial Utilities was 49.2%. The same report gives the total annual production for 2016 for all the CUs at 316 million m³ and therefore resulting in a total water loss of 116 million m³. The total revenue loss is everyone's guess taking into account the average tariff being K5.40n in 2016. Despite the benefits and decades of advocacy from the regulators like Nwasco and other international organizations, NRW reduction still receives very little attention amongst most utilities in Zambia who may in fact benefit from it – The question is "why is that so?"

Whilst there are many explanations and excuses, much of the failure is due to underestimating the technical difficulties and complexity of NRW management, along with the potential benefits of taking action. As long as utility owners are not sufficiently aware that they are "sitting on a goldmine," they will continually fail to incentivize or oblige their management to take action. On the other hand, if utility middle managers are not sufficiently informed

about the costs associated with NRW, along with the potential for improvement, they will not be able to convince their subordinates to passionately resolve system leakages and many other NRW components with the urgency the problem demands.

If a large proportion of water that is supplied is lost, meeting consumer demands is much more difficult. Since this water yields no revenue, heavy losses also make it harder to keep water tariffs at a reasonable and affordable level. NRW is a good indicator for water utility performance; high levels of NRW typically indicate a poorly managed water utility. In addition, published NRW data are often problematic, suspicious, inaccurate, or provide only partial information.

Few successful utilities actively address NRW by controlling physical losses, ensuring customer

meter accuracy and making all efforts to keep the number of illegal connections within limits. Taking these measures can boost revenue by increasing the amount of water that can be billed while reducing wastage of water. This increases profitability and improves the return on investment.

Further, lack of support for comprehensive NRW management systems, necessary tools and organizational structures by utility management makes it difficult to motivate utility staff to operate efficiently.

Remember that the legitimate consumers of the water supply system have to pay more for their consumption of water since the illegal water consumers use water without paying at all. This creates an IMMENSE INJUSTICE to the legitimate consumers



LUSAKA WATER SECURITY INITIATIVE- A SOLUTION TO WATER RESOURCE THREAT

Lusaka's demand for water, currently estimated at 600,000m³ per day, is outstripping supply, which relies on groundwater and the Kafue River. Both of these important sources are under threat due to land-use degradation, pollution and over-abstraction. In order to build an integrated multi-sectoral approach to development that enhances inclusiveness in development without leaving anyone behind a stewardship of organizations called the Lusaka Water Security Initiatives (LuWSI), was launched focusing on water security in the Lusaka City urban area including vulnerable urban compounds such as Mtendere and Chazanga etc. However, in order to achieve water security in Lusaka, LuWSI must also support the sustainable management of the Kafue River.

LuWSI has four main action areas for achieving water security in Lusaka: groundwater pollution prevention, sustainable groundwater exploitation, health of the Kafue River, water supply and sanitation services access for all and urban flood risk management.

Who are the partners?

LuWSI has 21 partners from the public and private sectors, civil society and international stakeholders. The Interim Secretariat was hosted by GIZ however, in late 2016 the steering board members agreed to a gradual process of transferring the responsibilities of the interim secretariat to a local organisation to foster buy-in and sustainability of the initiative. On 30th November 2016, NWASCO was selected by the LuWSI Steering Board to host the Secretariat for an initial period of two years from 2017 to 2019.

The Steering Board Membership has been restricted to 13 members, with three representing each of the four stakeholder groups and NWASCO sitting as a non-voting member with its role as host of the Secretariat.

What do Partners do?

LuWSI partners engage in dialogue and leadership, analysis and knowledge generation, advocacy and awareness raising, planning and project development. They also collaborate on developing and implementing strategic and timely projects which concretely contribute to improving water security for Lusaka's residents and businesses.

What projects are underway?

LuWSI has engaged in some projects to achieve their aim in line with their four action areas. These are the Wellfield Protection Project (WFPP), the Education and awareness campaign - The Think, Act be smart School awareness campaign, FRACTO, Solid waste management and the Alliance for Water Stewardship standard.

The Wellfield Protection Project (WFPP)

The WFPP was developed as part of LuWSI's effort toward achieving groundwater pollution prevention. The WFPP was necessitated by the increased encroachment of Lusaka Water and Sewerage Company's (LWSC) wellfields in mass media and at shaft 5. These two wellfields contribute 27% to Lusaka's groundwater supply and serve approximately

80,000 residents. Under the WFPP, LWSC is proposing to protect their Mass Media and Shaft 5 wellfields by establishing multi-purpose recreation zones at these locations. The shaft 5 project will be funded by Millennium Challenge Cooperation (MCC) while the works at Mass Media still needs funding. The proposed recreation zones will be green buildings in the sense that they will: utilize few resources during construction, generate very little waste at construction and demolition, energy efficient, socially inclusive (facilities will cater for all age groups) and will be cautious of the occupational health of workers and the safety of its patrons. The landscaping and recreational features will be done by PLAZA, a landscaping organization.

The Education and awareness campaign - Think, Act, be smart

The Think, Act be smart is a school awareness campaign which is aimed at educating children, communities and businesses on solid waste management and water security. The awareness campaign has been going on in 10 schools around Lusaka. The aim of this campaign is to have an increased understanding of water security threats and solutions amongst children and adults. These have been educated/ trained on water security threats and solutions through workshops and theatre performances in collaboration with Eco Zambia, Manja Pamodzi and Bare feet Zambia. As a result at least 10,000 people have been reached.

MAPPING OF WSS INFRASTRUCTURE



For the Commercial Utilities (CUs) to operate in an efficient manner, there is a need for having reliable and detailed data on the water networks. Spatial data in form of maps makes it easier to understand what the situation is like and where to target specific measures. Currently, this data is not easily available in most of the CUs. Often information is fragmented or outdated.

A project has been initiated by NWASCO in an effort to assist the CUs' collect the necessary information about their networks in a systematic way. To begin with, seven CUs' have been selected amongst the 11 CUs' to collect data that would be used for a wide range of applications ranging from planning aspects such as connecting new customers and replacing old water pipes, monitoring and managing assets and non-revenue water.

Currently, a team of three mapping experts drawn from the CUs and NWASCO are facilitating the data collection exercise targeting a third of the towns serviced by the CUs in Zambia by the end of 2017. Information is collected about the location

and types of pipes, the location of the customer connections and any additional parts of the water networks, such as fire hydrants, water kiosks and storage tanks.

The nature of water network assets is that they are laid underground. So it is not something that can simply be observed by passing by. In order to map water utility assets, the knowledge of the CU districts managers, plumbers and meter readers on the existing infrastructure is of high importance. Thus, the mapping consists of the district staff identifying where they suspect there is a water or sewage network after which the points are excavated to confirm and document the specifications of the network or appurtenances. Where available, printed design drawings and marker posts (concrete stones marking the pipes) can be helpful to identify the network.

Although nowadays a wide range of surveying equipment is available on the market (including

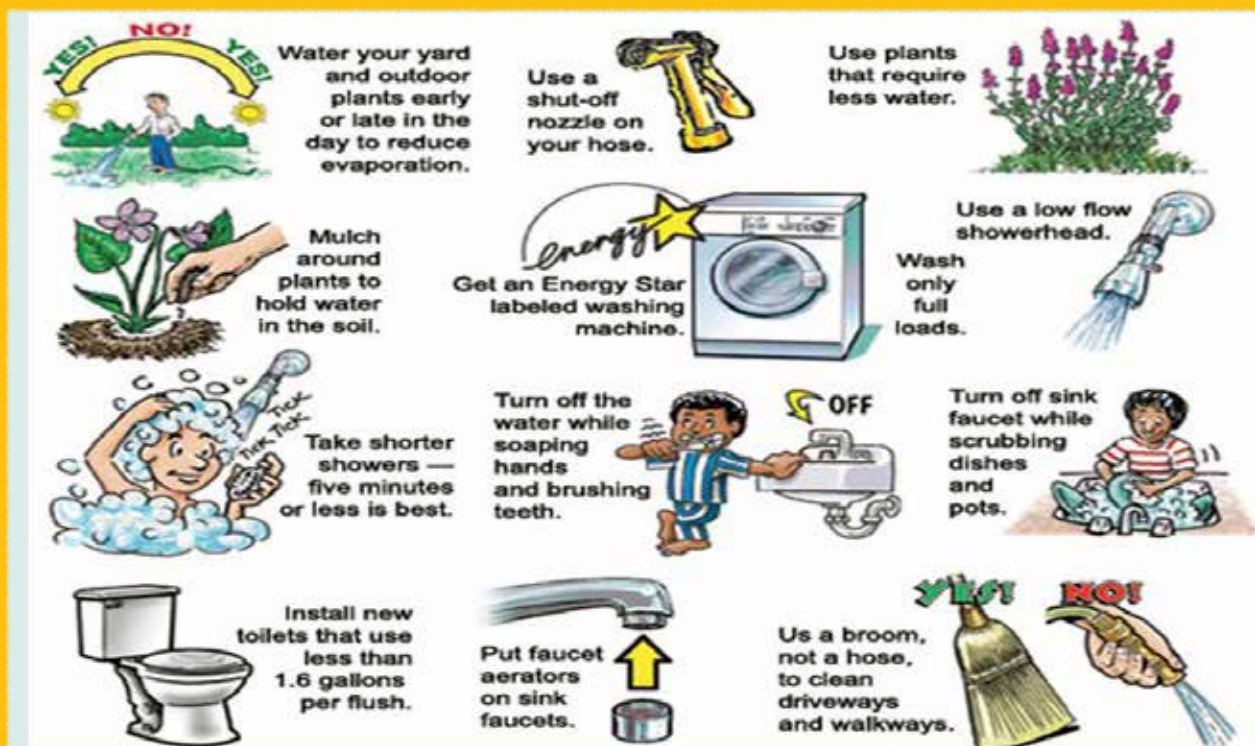
pipe detectors), this approach is time-consuming. The approach in the currently ongoing mapping project is to indicate the pipes and customer connections on a printed satellite image which shows sufficient detail in order to recognize the actual location, size and type of material. Buildings, trees and fences can be recognised clearly and thus the location of the pipes can be drawn quite precisely.

Data collection is mainly field work which means being on the ground for several days to weeks, depending on the size of the town. What can be tiresome at times is also rewarding when it comes to getting to know Zambian settlements, seeing development happen, interacting with the people and getting to know their opinion and needs when it comes to water supply and sanitation. The most diverse setups can be found in Zambia: newly created water networks with a systematic layout on one side and old networks that have been subsequently extended bit by bit, on the other side. The latter can result in quite unsystematic layouts, a situation that is supposed to be avoided in the future and one of the purposes of the data collection project.

At the end of the day, the information collected in the field needs to be transferred into a database (Geographical Information System). The process of entering the data is called digitizing. Once the information is digitized, it can now be used to produce maps and analyse the data in many ways. Ideally, this is not the end, but the collected data will be updated regularly to ensure that it always reflects the situation on the ground. Making a deliberate effort to do this, safeguards the planning process and helps the CUs to always base their decisions on the latest available data.

SCHOOL CORNER

For every drop of water that you see from your tap, remember that we all get that water from one source. This means that water is a finite resource and needs to be conserved by all. So, in your community, what is your responsibility in stopping water wastage? Below are some examples on how you can conserve water in your community;



Water Resources Chapter 13 YOUR Responsibility:

HELP YOUR SERVICE PROVIDER SERVE YOU BETTER BY;

- Paying your bills on time
- Reporting illegal activities on your property
- Fixing leaky faucets as soon as the problem arises
- Educating others in your community about efficient water practices

SCHOOL CORNER QUIZ

Surely you have noticed that the WaterVoice contains a lot of abbreviations.

Fill in the missing words and solve the quiz by reading the **missing word in red** from top to bottom.

LUWSI:	Lusaka Water ■ _ _ _ _ _ Initiative
LWSC:	■ _ _ _ _ _ Water and Sewerage Company
NWASCO:	National Water Supply and Sanitation ■ _ _ _ _ _
ZAWAFE:	Zambia Water Forum and ■ _ _ _ _ _
DTF:	Devolution ■ _ _ _ _ _ Fund
7NDP:	7th ■ _ _ _ _ _ Development Plan
MWDSEP:	Ministry of Water Development, Sanitation and _ _ _ _ _ Protection
CU:	Commercial ■ _ _ _ _ _
SDG:	Sustainable ■ _ _ _ _ _ Goal
NRW:	Non- ■ _ _ _ _ _ Water



Water and Sewerage COMPLAINTS?

Look no further.....

What is My WatSan Quickfix?

It is an integrated complaints platform aimed at expediting resolution. You can either use sms, voice call or web interface. Network lines open Monday-Friday 08:00 to 17:00. Ts and Cs apply.



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Or simply log onto (www.mywatsan.co.zm) for a speedy resolution of complaints

