Government of the Republic of Zambia

Ministry of Local Government and Rural Development

Kawambwa Town Council

Kawambwa District WASH Master Plan

September, 2021

MEMBER OF GOPA CONSULTING GROUP

Foreword

The Town Council has been making concerted efforts of investing in rural Water Supply and Sanitation Services in the District ever since the water and sanitation reforms started in the early 1990s in Zambia. The investments are in line with the National Policies and the National Rural Water Supply and Sanitation Programmes.

Among the National policies and programmes that the district is following which informed this WASH Master Plan include: The National Vision 2030, which provides that by the year 2030 there will be 100% access to safe clean water and 90% to proper sanitation by all Zambian citizens, The National Water Supply and Sanitation Policy of 2020, whose vision is: "A country's population that has sustainable and equitable access to safe water supply, adequate sanitation and improved services". These targets are in line with the United Nations Sustainable Development Goal number 6 (SDG 6). These targets are supported by the 7th National Development Plan (2017-2021).

The Town Council places so much importance on rural water supply and sanitation, in line with the Government's vision, and collaborates well with the newly realigned Ministry of Water Development, and Sanitation (MWDS) which is responsible for water supply and sanitation. The Ministry's overarching vision is to enhance the effective and sustainable provision of adequate safe water and sanitation in line with the policy of Decentralisation; and this will be done through the Local Authority.

The water supply and sanitation coverage in the district were 86% and 80% respectively as at the end of 2020, and we have to work extra hard in resource mobilisation and project implementation to reach the targets of 100% and 90% for water supply and sanitation coverage respectively by 2030. This plan is our roadmap which will guide us through to ensure sustainable implementation of WASH services in the district.

This WASH Master Plan will be used by the Local Authority and will be shared with, our Cooperating Partners (CPs) and other key stakeholders.

It is with great pleasure and honour that I officially launch this WASH Master Plan document for the period 2021 - 2030. It will surely guide us all with our partners in the sector and ensure that "***no one is left behind***".

Mr. Chifumbe Kalumba,

Council Chairperson

Acknowledgements

Council Secretary's photo

In developing the WASH Master Plan for the period 2021 – 2030, The Town Council appreciates the hard work and dedication shown by the Rural Water Supply and Sanitation Unit.

The Town Council acknowledges and appreciates the contributions and active participation of the stakeholders and private institutions who participated and provided valuable contributions that supported the development of this WASH Master Plan document.

The Town Council wishes to extend its profound gratitude to UNICEF, who with the central government (The Government of the Republic of Zambia) jointly financed the Consultancy Services for the baseline studies and the development of the WASH Master Plan for the period 2021 – 2030.

Furthermore, The Town Council would like to extend its gratitude to the Provincial Water Supply and Sanitation Office in the Province and the D-WASHE members for their valuable inputs in developing this WASH Master Plan

Mr. Isaac Mwale

Council Secretary

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ABBREVIATIONS AND ACRONYMS

7NDP	Seventh National Development Plan
ABB	Activity Based Budget
ADF	African Development Fund
AfDB	Africa Development Bank
APM	Area Pump Menders
AWP	Annual Work Plan
CC	Community Champion
CLTS	Community Led Total Sanitation
CSO	Civil Society Organization
CU	Commercial Utility
CWASHE	Community Water Supply, Sanitation and Hygiene Education
DDCC	District Development Coordinating Committee
DHIS2	District Health Information System 2
DRA	Demand Responsive Approaches
DWASHE	District Water, Sanitation and Hygiene Education
EHT	Environmental Health Technician
FGD	Focus Group Discussion
GRZ	Government of the Republic of Zambia
IDP	Integrated Development Plan
JICA	Japan International Cooperation Agency
JMP	Joint Monitoring Program
Kfw	Kreditanstalte fuer Wiederaufbaus
KII	Key Informant Interview
LA	Local Authority
MCDMCH	Ministry of Community Development, Mother and Child Health
MCTA	Ministry of Chiefs and Traditional Affairs
MGEE	Ministry of Green Economy and Environment
MHM	Menstrual Hygiene Management
MLGRD	Ministry of Local Government and Rural Development
MoH	Ministry of Health
MWDS	Ministry of Water Development and Sanitation
NDP	National Development Plan

NGO	Non-Governmental Organization
NHC	Neighbourhood Health Committee
NRWSSP	National Rural Water Supply and Sanitation Program
NUWSSP	National Urban Water Supply and Sanitation Program
NWASCO	National Water Supply and Sanitation Council
O&M	Operation and Maintenance
OBB	Output Based Budget
ODF	Open Defecation Free
OFID	OPEC Fund for International Development
PTA	Parent Teacher Association
RHC	Rural Health Centre
RWSSP	Rural Water Supply and Sanitation Program
SAG	Sanitation Action Groups
SDG	Sustainable Development Goals
SDM	Service Development Model
SHN	School Health and Nutrition
SOMAP	Sustainable Operation and Maintenance Project
ToT	Training of Trainers
UNICEF	United Nations Children's Fund
VIP	Ventilated Improved Pit
VWASHE	Village Water, Sanitation and Hygiene Education
WARMA	Water Resources Management Authority
WASH	Water, Sanitation and Hygiene
WASHE	Water Supply, Sanitation and Hygiene Education
WHO	World Health Organisation
WRM	Water Resources Management
WSS	Water Supply and Sanitation
ZABS	Zambia Bureau of Standards
ZamStats	Zambia Statistical Agency
ZEMA	Zambia Environmental Management Agency

KEY DEFINITIONS

Term	Context
Water Supply Definitions	
A basic drinking water service	If the improved source does not meet any one of these criteria, but a round trip to collect water takes 30 minutes or less, it will be classified as a basic drinking water service. Or Drinking water from an improved source provided collection time is not more than 30 minutes for a roundtrip including queuing. (Source: SDG 1.4). For Schools: Basic service is when water from an improved source is available at the school. For Health Care Facilities: Basic service is when water from an improved source is available on premises
A limited water service	Drinking water collection from an improved source for which collection time exceeds 30 minutes, for a round trip including queuing. For Schools: Limited service is when there is an improved source but water is not available at the time of survey For Health Care Facilities: Limited service is there is an improved source, but it is not on premises or water is not available. (Source: JMP 2017)
A safely managed drinking water service	In order to meet the criteria for a safely managed drinking water service, people must use an improved source meeting three criteria: • it should be accessible on premises, • water should be available when needed, and • the water supplied should be free from faecal and priority contamination. Drinking water from an improved water source that is located on premises, available when needed and free from faecal and priority chemical contamination. (Source: SDG 6.1)
Access to safe water	Access is defined in terms of "Service Clusters" as follows: • Rural Settlement; The percentage or proportion of the number of people accessing a minimum of 40 l/c/d of water from a protected source every day of the year within a distance of 500m from point of use. • Rural Growth Centre and Peri-urban Areas: The percentage or proportion of the number of people accessing a minimum of 60 l/c/d of water from a protected source every day of the year within a distance of 250m from point of use. • Urban: The percentage or proportion of the number of people accessing a minimum of 95 l/c/d of water from a protected source every day of the year within the yard.
Improved drinking water sources or Improved sources	Improved drinking water sources are those which by nature of their design and construction have the potential to deliver safe water. (Source: JMP 2017) Improved sources include: piped water, boreholes or tubewells, protected dug wells, protected springs, rainwater, and packaged or delivered water (JMP Ladder for water). (Source: JMP, 2015/ 2017)
Safe Water	Water is considered safe if it has no chemical, physical and biological substances that negatively affect human health.
Water Demand Management	Water Demand Management (WDM) is defined as the efficiency of water utilization among competing needs.
Water Security	"The capacity of a population to safeguard sustainable access to adequate quantities of and acceptable quality water for sustaining livelihoods, human well-being, and socio-economic

	development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.[1]"
Water service levels	During the SDG period, the population using improved sources will be subdivided into three groups according to the level of service provided. The three levels of service are: • safely managed drinking water service • basic drinking water service • limited water service. (Source: JMP 2017)
Water Supply	The abstraction, treatment, storage and distribution of water, for domestic, commercial and industrial use.
Water Safety Plans	Water Safety Plans (WSPs) are a comprehensive risk assessment and risk management approach from catchment to consumer, with the aim of consistently ensuring the safety and acceptability of a drinking-water supply.
Sanitation and Hygiene Promotion Definitions	
Sanitation	
A basic sanitation service	If the excreta from improved sanitation facilities are not safely managed, then people using those facilities will be classed as having a basic sanitation service. (Source: SDG 1.4)
A limited sanitation service	People using improved facilities that are shared with other households will be classified as having a limited sanitation service. (Source: JMP 2017)
A safely managed sanitation service	There are three main ways to meet the criteria for having a safely managed sanitation service. People should use improved sanitation facilities that are not shared with other house- holds, and the excreta produced should either be: • treated and disposed of in situ, • stored temporarily and then emptied, transported and treated off-site, or • transported through a sewer with wastewater and then treated off-site. (Source: SDG 6.2)
Access to adequate sanitation	Household with access to sanitation facilities which hygienically separate human excreta and industrial effluents from contact with human, animals and insects (particularly flies) • Have hand washing facilities; • Do not pollute drinking water sources; • Do not cause intolerable smells; • Ensure privacy for those using the latrines; • Are kept clean. Public institutions are required to have facilities that meet the foregoing criteria in line with the public health and building requirements. Acceptable technologies and systems currently include systems that utilise technologies such as: • Off-site o Sewer networks connected to a treatment plant; o Sewer networks connected to a communal septic tank, which has to be emptied when full. • On-Site o Decentralised Wastewater Treatment Systems (DEWATs)

[1] https://sdg.iisd.org/news/un-water-brief-defines-water-security/

	○ Individual septic tank; Ecosan technologies (such as Bio-digester Septic Tank (BST) and Urine-diversion latrine); ○ Pour flush latrine ○ Compost latrine; ○ Ventilated improved pit latrine (VIP); ○ Pit latrine with a slab / smooth floor surface Acceptability will also be linked to specific service cluster conditions (MLGH, 2015b). For Solid Waste Management (SWM), access is given for the household where waste collection is carried out according to standards and by-laws.
Adequate Sanitation	Implies a system which hygienically separates excreta from human contact as well as safe reuse/treatment of excreta in situ, or safe transport and treatment off site. (Equivalent to Safely managed sanitation service as per JMP 2017) A sanitation system that is • Accessible and available (located not more than 100 meters away from home • Easy to access for children, elderly and handicapped at all times during the day); • Acceptable for the user and provides a safe, convenient, private, secure and dignified place and complies with the socio-cultural norms of society (e.g. smell and reuse aspects); • Affordable and can realistically be paid for by the households • Provides a handwashing facility. (Source: NUSS Strategy 2015 – 2030)
Community Led Total Sanitation (CLTS)	CLTS is an approach to achieve behaviour change in mainly rural people by a process of "triggering", leading to spontaneous and long-term abandonment of open defecation practices. The process of triggering stimulates behaviour change that leads to households constructing latrines and ending open defecation. CLTS is a demand driven participatory approach without hardware subsidies. Through CLTS, communities recognize the problem of open defecation (OD) and take collective action to clean up and become "open defecation free" (ODF).
Dry sanitation	The term "dry sanitation" is somewhat misleading as sanitation includes hand washing and can never be "dry". A more precise term would be "dry excreta management". When people speak of "dry sanitation", they usually mean sanitation systems with dry toilets with urine diversion, in particular the urine-diverting dry toilet (UDDT).
Ecological sanitation	Ecological sanitation, which is commonly abbreviated to ecosan, is an approach, rather than a technology or a device which is characterized by a desire to "close the loop" (mainly for the nutrients and organic matter) between sanitation and agriculture in a safe manner. Put in other words: "Ecosan systems safely recycle excreta resources (plant nutrients and organic matter) to crop production in such a way that the use of non-renewable resources is minimised". When properly designed and operated, ecosan systems provide a hygienically safe, economical, and closed-loop system to convert human excreta into nutrients to be returned to the soil, and water to be returned to the land. Ecosan is also called resource-oriented sanitation.
Effluent	Effluent means waste water or other fluid of domestic, agricultural, trade or industrial origin, treated or untreated, and discharged, directly or indirectly, into the aquatic environment. (Source: MTENR (2011). The Environmental Management Act, 2011) Effluent is the general term for liquid that has undergone some level of treatment and/or separation from solids. It originates at either a collection and storage/treatment or a (Semi-) centralized treatment facility. Depending on the type of treatment, the effluent may be completely sanitized or may require further treatment before it can be used or disposed of. (Source: Tilley, Elizabeth et al, 2008. Compendium of Sanitation Systems and Technologies. Swiss Federal Institute of Aquatic Science and Technology (Eawag). Dübendorf, Switzerland)
Environmental sanitation	Environmental sanitation encompasses the control of environmental factors connected to disease transmission. Subsets of this category are solid waste management (SWM), water and wastewater treatment, industrial waste treatment and noise and pollution control.
Excreta	Excreta consists of urine and faeces that is not mixed with any flushing water. Excreta is small in volume, but concentrated in nutrients and pathogens. Depending on the quality of the faeces it is solid,

	soft or runny. (Tilley, Elizabeth et al, 2008. Compendium of Sanitation Systems and Technologies. Swiss Federal Institute of Aquatic Science and Technology (Eawag). Dübendorf, Switzerland)
Faecal sludge	Faecal sludge comes from on-site sanitation technologies and has not been transported through a sewer. It is raw or partially digested, a slurry or semi-solid and results from the collection, storage or treatment of combination of excreta wastewater with or without grey water. (Source: MLGH NUWSS Strategy 2015 – 2030)
Faecal sludge management	A system for safe collection, transport, treatment, disposal and/or reuse of faecal sludge. (Source: MLGH NUWSS Strategy 2015 – 2030)
Faeces	Faeces refers to (semi-solid) excrement without urine or water. Each person produces approximately 50 L per year of faecal matter. Of the total nutrients excreted, faeces contain about 10% Nitrogen, 30% Phosphorus, 12% Potassium and have 107–109 faecal coliforms /100 ml. (Tilley, Elizabeth et al, 2008. Compendium of Sanitation Systems and Technologies. Swiss Federal Institute of Aquatic Science and Technology (Eawag). Dübendorf, Switzerland)
Improved pit latrine	A simple improved pit latrine has all of the following features: • Latrine floor should be raised, smooth and impervious for easy cleaning. It should leave no cracks. • Where there is no slab, the floor should slope towards the squat hole to facilitate effective draining of water during cleaning.. • It should have a well-fitting lid that does not allow flies into the pit. • The Superstructure should offer maximum privacy • It needs a roof to prevent rain from damaging the latrine floor. • The latrine should be at a distance of at least 40m from water sources and pit depth should be a minimum of 2m above the highest ground water levels. In urban/peri-urban areas, the facility should be embedded in a functioning sanitation system, where the excreta from the toilet is properly collected, stored, transported, treated, disposed or reused in a manner that is not hazardous to human health and not detrimental to the environment and should not contaminate water sources.
Improved sanitation facilities	Improved sanitation facilities are those designed to hygienically separate excreta from human contact (Source: JMP 2017). Improved facilities include flush/pour flush to piped sewer systems, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs (JMP ladder for sanitation). (Source: JMP, 2015 and 2017)
Latrine	A toilet facility (public or private) comprising of a superstructure around it. (Source: MLGH NUSS Strategy 2015 – 2030)
Off-site sanitation	Off-site sanitation refers to sanitation systems in which excreta are collected from individual houses, commerce, institutions, and industry and public toilet facilities and carried away for disposal and treatment through pipes. Two main types are used: • Sewer networks with a treatment plant • Sewer networks with a communal septic tank, which has to be emptied when full (Source: NUWSSP) Components of the sanitation chain that are located away from the immediate vicinity of the toilet. (Source: MLGH NUSS Strategy 2015 – 2030)
Onsite sanitation	On-site sanitation is also commonly referred to as non-sewered sanitation because the containment facilities are situated within the plot occupied by a dwelling or its immediate surroundings. On-site sanitation, also called decentralised sanitation, is a system where the treatment of excreta or sewage takes place at the same location where it is generated
Open defecation (OD)	Open defecation is the practice of people defecating outside and not into a designated toilet. (The term is widely used in literature about water, sanitation, and hygiene (WASH) issues in developing countries)

Open Defecation Free (ODF) Status	MLGH guidelines stipulate that, in order for a village to be verified ODF, it must meet the following criteria: • No evidence of faeces in or around household compounds. • Every household has an 'adequate' toilet, meaning one that effectively separates excreta from human contact and has: o a smooth, cleanable floor (not necessarily a concrete slab) o a cover for the drop hole o a superstructure providing privacy • Every household has a hand washing facility near the latrine, with water and soap or ash. (Source: MLGH NUSS Strategy 2015 – 2030)
Safe sanitation system	The function of a system creating barriers between humans and excreta to reduce the incidence of water and vector- borne diseases and parasitic infestations. A safe sanitation system • effectively prevents human, animal and insect contact with human excreta and wastewater, and • ensures a long term clean and healthy environment (not polluting ground and surface water bodies, soil and air) both at home and in the neighbourhood of users; the concept of safe sanitation comprises treatment/discharge points that are part of the sanitation chain. To be considered "safe" the sanitation facility must also provide a handwashing facility.
Safely Managed Sanitation	Private improved facility where faecal wastes are safely disposed on-site or transported and treated off-site; plus a handwashing facility with soap and water. (Source: JMP, 2015)
Sanitation	Sanitation involves interventions to reduce people's exposure to diseases by providing a clean environment in which to live and work, with measures to break the cycle of disease. This usually includes hygienic management of human and animal excreta, refuse and wastewater, the control of disease vectors and the provision of washing facilities for personal and domestic hygiene. It also involves both behaviours and facilities which work together to form a hygienic environment. For the purpose of this programme, sanitation is understood to be the safe collection, transportation, treatment and disposal or reuse of human excreta, domestic liquid waste, industrial effluents and municipal solid waste.
Sanitation chain	Incorporates the various steps required to sanitise excreta and waste water, between the user interface (household or public, industrial and commercial excreta and waste water production sites) and final sites for disposal or reuse of sanitized material. (Source: MLGH NUSS Strategy 2015 – 2030)
Sanitation marketing	Sanitation Marketing is neither advertising nor a communications program; it is a systematic and dynamic process to make strategic decisions about four components, or the four P's of the marketing mix: Product, Place, Promotion, and Price. Recently, two more Ps have been added: Policy and Partnership: • Product is a tangible item, a service or a practice that commercial marketers are primarily interested in selling for profit while Social marketers also want the customers to use it correctly and behave differently. • Place refers to where the product is always available to the target group; through public or private channels. Place considers how to bring the market close to customers. • Price must cover all costs but the vulnerable should be given special consideration so that they too can benefit • Promotion creates demand for a new products or services. (Source: SANITATION MARKETING: A handbook for: Policy Makers (PLAN) & Case of Sanitation Marketing (WSP) 2004
Sanitation service area	The area defined in the CUs operator's license approved by NWASCO. (Source: MLGH NUSS Strategy 2015 – 2030)
Sanitation service levels	During the SDG period, the population using improved sources will be subdivided into three groups according to the level of service provided. The three levels of service are: • safely managed sanitation service

	• basic sanitation service • limited sanitation service. (Source: JMP 2017)
School Led Total Sanitation (SLTS)	SLTS is one of the approaches used in the WASH in Schools programming and is an adaptation from CLTS, which is a methodology for mobilising communities to completely eliminate open defecation (OD) and improve sanitation and hygiene at the household level. On the other hand, SLTS focuses on using schoolchildren as agents of change.
Septic tank	A septic tank is an excreta collection device consisting of a watertight settling tank, which is normally located underground, away from the house or toilet. The treated effluent of a septic tank usually seeps into the ground through a leaching pit. It can also be discharged into a sewerage system. (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP))
Shared Sanitation	Facility shared with other households. (Source: JMP, 2015)
Sustainable sanitation	Sustainable sanitation considers the entire "sanitation value chain", from the experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment, and reuse or disposal. The term is widely used since about 2009. In 2007 the Sustainable Sanitation Alliance had defined five sustainability criteria to compare the sustainability of sanitation systems. In order to be sustainable, a sanitation system has to be, • Economically viable, • Socially acceptable, • Technically appropriate, • Institutionally appropriate and • Protect the environment and the natural resources. (Source: (Tilley, E., Ulrich, L., Lüthi, C., Reymond, Ph. and Zurbrügg, C. (2014). Compendium of Sanitation Systems and Technologies. 2nd Revised Edition. Swiss Federal Institute of Aquatic Science and Technology (Eawag), Duebendorf, Switzerland SuSanA (2008). Towards more sustainable sanitation solutions - SuSanA Vision Document. Sustainable Sanitation Alliance (SuSanA))
Ventilated improved pit latrine (VIP)	Ventilated improved pit latrine (VIP) is a pit latrine ventilated by a pipe that extends above the latrine roof. The open end of the vent pipe is covered with gauze mesh or fly-proof netting and the inside of the superstructure is kept dark. (Source: WHO/UNICEF JMP for Water Supply and Sanitation)
Hygiene Promotion Definitions	
A basic hygiene facility	Households that have a handwashing facility with soap and water available on premises will meet the criteria for a basic hygiene facility (Source: SDG 1.4 and 6.2).
A limited hygiene facility	Households that have a facility but lack water or soap will be classified as having a limited facility, and distinguished from households that have no facility at all. (Source: JMP 2017)
Hand washing with soap (HWWS)	Hand Washing with Soap (HWWS) is the most cost-effective intervention against disease according to a recent review2 of curative and preventative health interventions in developing countries. Prevention of transmission of diarrhoeal diseases (including cholera, dysentery) and intestinal worms are the main benefits from improved hand washing practice but recent evidence suggests that it can also lead to a reduction of respiratory infections. According to a systematic analysis by Curtis and Cairncross3

2 Intervention Cost-Effectiveness: Overview of Main Messages. Ramanan Laxminarayan, Jeffrey Chow, and Sonbol A. Shahid-Salles. Disease Control Priorities in Developing Countries. 2nd edition. (2006)

3 Curtis V & Cairncross S (2003) Effect of washing hands with soap on diarrhoea risk in the community: a systematic review. Lancet Infectious Diseases 3, 275–281.

	in 2003, the universal practice of HWWS could reduce the risk of diarrhoea in the community by 47%, and an additional review by Aiello et al. in 2008 concluded that HWWS could reduce the risk of lower respiratory tract infections such as pneumonia by 16% to 21%.
Hygiene	Hygiene encompasses the conditions and practices that help maintain health and prevent spread of disease including handwashing, menstrual hygiene management and food hygiene.
Solid Waste Management Definitions	
Hazardous Waste	Waste which is poisonous, corrosive, irritant, explosive, inflammable, toxic or other substance or thing that is harmful to human beings, animals, plants or the environment.
Integrated Solid Waste Management.	Frame of reference for designing and implementing new solid waste management (SWM) systems and for analysing and optimising existing systems. It is based on the concept that all aspects of an SWM system (technical and non-technical) should be analysed together, since they are in fact interrelated and developments in one area frequently affect practices or activities in another area.
Municipal Waste	Waste generated from domestic, trade and commercial activities. (Source: Statutory Instrument No. 112 of 2013 of the EM Act No. 12 of 2011)
Solid Waste	Means domestic waste, trade and commercial waste, construction waste, garden waste, waste that does not pose an immediate hazard or threat to human health, plant, animal life or the environment.
Solid Waste Management	The supervised handling of waste material from generation at the source through the recovery processes to disposal.
Operation and Maintenance Definitions	
Asset management	The combination of management, financial, socio-economic, engineering, and other practices and considerations taken into account and applied to physical assets with the objective of providing the required level of service in the most cost-effective manner. It includes the management of the whole asset life cycle (design, construction, commissioning, operating, maintaining, repairing, modifying, replacing and decommissioning/disposal) of physical and infrastructure assets. Operating and sustaining assets in an environment with budget limitations requires some sort of prioritization scheme to ensure maximum use of resources.
Maintenance	Maintenance refers to the activities required to sustain the water supply facilities in a proper working condition. It includes preventive maintenance, corrective maintenance and crisis maintenance. (Source: National Guidelines for sustainable O&M of hand pumps)
Operation	Operation refers to the day-to-day running and handling of water supply facilities in a manner that optimises their use and contributes to a reduction in breakdown and maintenance needs. (Source: National Guidelines for sustainable O&M of hand pumps)
Preventive maintenance	Preventive maintenance refers to an activity that includes checking the status of hand pump components at regular fixed time intervals. (Source: National Guidelines for sustainable O&M of hand pumps)
Rehabilitation	Rehabilitation is the correction of major defects and the replacement of equipment to enable a facility to function as originally intended. (Source: National Guidelines for sustainable O&M of hand pumps)
Repair	Repair is the restoration of a defective component to return the facility to acceptable working condition. (Source: National Guidelines for sustainable O&M of hand pumps)
Sustainable supple chain	Sustainable supply chain is a system of procuring and supplying spare parts that guarantees a continuous supply of spare parts. (Source: National Guidelines for sustainable O&M of hand pump)
Sector Development Definitions	
Capacity development	Capacity development is aimed at developing the capacity for development (CfD), which is “the availability of resources and the efficiency and effectiveness with which societies deploy those resources to identify and pursue their development goals on a sustainable basis”. In that context capacity development is “the process through which societies, organisations and individuals acquire, strengthen, maintain and renew the capabilities to set and achieve their own development objectives over time”. (Source: CD Water supply and sanitation strategy, 2015 – 2020)

Disability Inclusion	Making sure everybody has the same opportunities to participate in every aspect of life to the best of their abilities and desires.
Full Cost Recovery	Where recurrent income is sufficient to cover "operating, maintenance and administration (OM&A) expenditures, land, financial and capital investments to repair, rehabilitate, replace, expand and upgrade facilities; and, in some cases, decommissioning and disposing of infrastructure.
Gender Equality	Gender equality denotes women having the same opportunities in life as men, including the ability to participate in the public sphere. (Source: MoGCD, 2014)
Gender Equity	Gender equity is the equivalence in life outcomes for women and men, recognising their different needs and interests, and requiring a redistribution of power and resources. (Source: MoGCD, 2014)
Gender Mainstreaming	Gender mainstreaming ensures women, men, girls and boys benefit equally from the development process by highlighting the impacts of policies, programmes and laws on the real situation of women, men, girls and boys. (Source: MoGCD, 2014)
Governance	"The exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences" (Source : (UNDP, 1997) and (UN, 2015)) Characteristics of good governance include Transparency, Accountability, Responsibility, Rule of law, Equity and inclusive, Participatory, Effective and efficient. With respect to Corporate Governance, this has been defined to be the system by which companies and organisations are governed, controlled and managed.
Planning, Monitoring, Evaluations and Reporting Definitions	
Rural	The National Environment Sanitation Strategy for Rural and Peri-Urban Areas in Zambia (1998) defines rural as "Areas of population outside urban or peri-urban using point or surface water sources for which the community is responsible for the operation and routine maintenance and sanitation primarily through pit latrines for which the community is responsible for operation and maintenance". In addition, low population densities characterise rural areas (usually less than 20 persons per square kilometre), with small houses isolated from each other. (Source: National Guidelines for sustainable O&M of hand pumps)
Coverage	The percentage or proportion of the population with household access safe water or adequate sanitation.
Evaluation	Evaluation is the periodic and systematic review and analysis of a practice to determine the relevance, effectiveness, efficiency and impact of programmes/projects compared to set objectives. (Source: National Guidelines for sustainable O&M of hand pumps) Evaluation is a process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, efficiency and impact of activities in the light of specified objectives. It is a learning and action-oriented management tool and organizational process for improving current activities and future planning, programming and decision-making. (Source: Monitoring & Evaluation Framework for the National Water Supply And Sanitation Programme, 2017)
Integrated development	Includes integrated social, economic, environmental, spatial, infrastructural, institutional and organisational development and the provision of amenities and services aimed at alleviating poverty and improving the quality of life of members of a community. (Source: The Urban and Regional Planning Act, 2015)
Learning	Learning is the process through which information generated from monitoring and evaluation (M&E) is reflected upon and intentionally used to continuously improve a project's ability to achieve results.
Monitoring	Monitoring is the regular and continuous checking of whether plans, activities and situations are being implemented as planned, and includes the provision of feedback to facilitate the taking of corrective measures by relevant stakeholders. (Source: National Guidelines for sustainable O&M of hand pumps)

	Monitoring is the periodic oversight of the implementation of an activity which seeks to establish the extent to which input deliveries, work schedules, other required actions and targeted outputs are proceeding according to plan, so that timely action can be taken to correct deficiencies detected. "Monitoring" is also useful for the systematic checking on a condition or set of conditions, such as the number of water points functioning, quantities and quality of water, etc. (Source: Monitoring & Evaluation Framework for the National Water Supply and Sanitation Programme, 2017)
Plan	Includes reports, drawings, maps and models. (Source: The Urban and Regional Planning Act, 2015)
Planning	The initiation and management of change in the built, socioeconomic and natural environment in, and across, a spectrum of sectors and urban and rural areas. (Source: The Urban and Regional Planning Act, 2015)
Reporting	Reporting refers to the responsibility of the project management team to provide periodic formal updates to the project's funder (central government through provincial administration). Reporting can be thought of as a tool for accountability; it helps the central government know that the project management team (the local authority) is making progress towards the project's (WASH) goals.
Service Clusters	These are comprised; • Rural o Rural settlement with populations of 50 (10 households) to 500 (100 households); and o Rural Growth Centres with populations of 501 (101 households) to 5,000 (1,000 households). • Urban o Small Towns with populations 5,001 (1,001 households) 50,000 (10,000 households). o Towns with populations in excess of 50,000 (more than 10,001 households). o Peri-urban areas that started as unplanned and informal settlements. • Public Places and Institutions such as: schools, markets (including shopping malls) and health centres, are required to have facilities that meet the foregoing criteria in line with the public health and building requirements.
Social Inclusion	Social inclusion is the process of improving the terms on which individuals and groups take part in society—improving the ability, opportunity, and dignity of those disadvantaged on the basis of their identity[4].

[4] https://www.worldbank.org/en/topic/social-inclusion#1

EXECUTIVE SUMMARY

Background and Context

The Government has National Planning and Budgeting Policy, and National Planning and Budgeting Act No. 1 of 2020, which requires Ministries, Provinces and Spending Agencies (MPSA) to have development plans. Furthermore, the Regional and Urban Planning Act No 3 of 2015, requires Local Authorities to have Integrated Development Plans (IDPs). It's against this background that the Town Council developed this WASH Master Plan.

In the past the Local Authority (LA) has been developing WASH annual work plans and budgets (AWPBs) and the challenge was that these were short-term and could not adequately address the long-term WASH needs of the district. Long term planning is largely beneficial because it allows us to chart our own future rather than let the environment around us dictate the terms of our future steps.

The Sustainable Development Goals (SDGs), which have the same end date as both the Country's Vision 2030 and the National Rural Water Supply and Sanitation Programme (NRWSSP) 2019 - 2030, has the overarching objective of "***eradicating poverty by 2030***". Amongst its 17 Goals, there is Goal 6 "*Ensure availability and sustainable management of water and sanitation for all*" frames the global context of the WASH Master Plan.

The master plan follows the national development agenda documents that frame rural water supply and sanitation, and these are the Vision 2030 and the 7NDP (2017 – 2021) and successor National Development Plans (NDPs) within the period to 2030.

The WASH Master Plan Objectives and Strategies

Vision: All of Kawambwa District's rural population have sustainable and equitable access to safe water supply and adequate and equitable sanitation to meet basic needs for improved health and alleviating poverty.

Mission: Promoting sustainable provision and usage of affordable and socially acceptable safe water supply and proper sanitation facilities to the rural population in Kawambwa District.

Overall Objective: The overall objective of the 2021-2030 WASH Master Plan is:

"Sustainable and equitable access to safe water supply, and adequate and equitable sanitation **to meet basic needs for improved health and poverty alleviation** for all of Kawambwa's rural population in line with the Vision 2030 and the Sustainable Development Goals for water supply and sanitation."

To achieve the above, the WASH Master Plan has five specific objectives:

1. Increased proportion of rural population has access to improved, functioning water supply (WS) facilities in rural areas through systematic investments in new facilities, rehabilitation and effective operation and maintenance (O&M) of existing facilities on the basis of a single, comprehensive district programme for rural water supply and sanitation (RWSS);
2. Increased proportion of rural population has access to adequate and equitable sanitation facilities in rural areas through promotion of improved household latrine construction using sanitation marketing and strategic demonstration facilities, health/hygiene

behaviour change promotion, involvement of traditional leadership and legal enforcement;

3. Increased proportion of rural population has access to improved, functioning institutional WASH facilities;
4. Increased proportion of rural population has access to improved solid waste management (SWM) services;
5. Improved performance of the RWSS sub-sector in the district in terms of efficiency and effectiveness of planning, implementation, O&M, Advocacy & Communication, M&E, budgeting and reporting through policy and institutional reforms, capacity development and use of a sustainable management information system (MIS).

The Master Plan Outcomes and Estimated Budget

The Master Plan sets out a holistic and adaptive framework for achieving the provision of "*sustainable and equitable access to safe water supply and adequate and equitable sanitation"* in the district. In this regard, community, sub-district and district level participation in defining technologies to be used, priorities, location of services, operational and maintenance of the facilities will be the bedrock of the Master Plan. The objectives and priorities of the Master Plan, the stated strategic approaches and the linkages between water supply, sanitation, hygiene, health and poverty reduction/improved livelihoods have informed the design of the Master Plan. The Master Plan has six (6) main components;

- Water Supply
- Sanitation and Hygiene Promotion
- Sustainable Operations and Maintenance (O&M)
- Capacity Development
- Governance, Research and Development (R&D), Sector Coordination and Cross-cutting Issues
- Planning, Monitoring, Evaluation, and Reporting and Learning (PMERL).

The outcome / results of the WASH Master Plan and its six (6) components are listed in the Table 0-2; while Table 0-1 gives the National WASH Baseline and targets. The district water supply and sanitation coverages were estimated as 86% and 80% respectively as at the end of 2020.

The district will benchmark itself to the national programme outcomes/results as provided in the National Rural Water Supply and Sanitation Programme (NRWSSP) 2019 – 2030 as summarised in the table below.

Table 0-1: National WASH Baseline and Targets

Outcome Indicators	Baseline	Year of baseline estimate	Target 2021	Target 2030
Percent of households with access to improved drinking water (Rural)	46.6	2013 - 2014	67.0	100
Percent of households with access to improved sanitation (Rural)	18.5	2013 - 2014	37.0	90
Percentage of water samples from a representative sample of water points that meet ZABS/WHO standards	64	2017	100	100

Table 0-1: Master Plan Outcomes / Results

Component	Sub-component	Outcome / Result
1: Water Supply	1.1 Water Supply facilities	1.1.1 Households: Increased % of rural population accessing safe water supply. (At least basic drinking water services) 1.1.2 School WASH: Increased proportion (%) of schools with access to adequate and equitable water supply facilities 1.1.3 Health Care Facilities WASH: Increased proportion (%) of health facilities with access to adequate and equitable water supply facilities 1.1.4 Institutions and Public Places WASH: Increased proportion (%) of Institutions and Public Places with access to adequate and equitable water supply facilities 1.1.5 Water Quality: Increased proportion (%) of water samples taken at the point of water collection (use), waste discharge point that comply with national standards. 1.1.6 New water infrastructure developed - - Per Capita Investment Cost (US$ or ZMW): Average cost per beneficiary of new water supply system; and number of new water supply systems installed per year. 1.1.7 Increased water security - - the following dimensions will be observed relative to aspects: drinking water and human well-being; ecosystems, water hazards and climate change; and economic Activities and Development (see Appendix XIV for more details).
2: Sanitation and Hygiene	2.1 Sanitation and hygiene facilities	2.1.1 Increased % of population in rural areas using adequate and equitable sanitation 2.1.2 Open Defecation Free (ODF) – increased % of ODF areas. 2.1.3 Improved hygiene practices and behaviour by communities and people in rural areas. 2.1.4 School WASH: Increased proportion (%) of schools with access to adequate and equitable sanitation facilities 2.1.5 Health Care Facilities WASH: Increased proportion (%) of health facilities with access to adequate and equitable sanitation facilities and basic hygiene facilities 2.1.6 Institutions and Public Places WASH: Increased proportion (%) of Institutions and Public Places with access to adequate and equitable sanitation facilities and basic hygiene facilities 2.1.7 Increased number of demonstration sanitation facilities 2.1.8 Reduced diarrheal disease episodes.

Component	Sub-component	Outcome / Result
	2.2 Solid Waste Management	2.2.1 Increased % of rural households that safely dispose of household rubbish. 2.2.2 Increased number of communities with clean and safe environment, free from litter. 2.2.3 Per capita generation of municipal solid waste (MSW) (kg/person/day)
3: Sustainable Operation & Maintenance	3.1 Operations & Maintenance water (water systems & sanitation facilities)	3.1.1 Increased number of fully functioning water points and systems. 3.1.2 Increased number of fully functioning domestic and institutional sanitation facilities. 3.1.3 Decreased down time for non-functioning WSS facilities. 3.1.4 Increased number of water systems and sanitation facilities sustained and functioning until the end of their design life span. 3.1.5 Increased number of well function satellite spare parts shops in the district. 3.1.6 Increased number of competent APMs and masons. 3.1.7 Increased percentage of recurrent costs for water supply services provided by the community served, where recurrent costs refer to the full operating and maintenance costs of the water supply system which services the community 3.1.8 Increased Percentage of constructed water supply facilities maintained by the communities served.
	3.2 Water and Sanitation Infrastructure Rehabilitation	3.2.1 Water systems and sanitation facilities sustained and functioning until the end of their design life span. 3.2.2 Reduced rate of breakdowns of infrastructure.
4: Capacity Development	4.1 Human capital development	4.1.1 Improved efficiency and effectiveness in RWSS project delivery. 4.1.2 Functional water point committees with equitable women's representation. 4.1.3 Efficient and effective district training team in place. 4.1.4 Adequate competent and active APMs, community champions and masons in place 4.1.5 Active D-WASHE, increased % of active V-WASHEs/Water Point Committees 4.1.6 Increased % of WASHE knowledgeable communities. 4.1.7 Increased % of community members adequately contributing towards O&M.
	4.2 Provision of Support infrastructure	4.2.1 Adequate transport for implementation and monitoring of WASHE services in the district. 4.2.2 Well stocked and sustainably function spare parts shop; and satellite ones in the wards. 4.2.3 Well equipped RWSS Unit at the LA. 4.2.4 Reduced down time for WSS facilities. 4.2.5 Enhanced WASH database.
5: Governance, R&D, Sector Coordination and Cross-cutting issue	5.1 Governance, Management & Sector Coordination	5.1.1 Strengthened process towards the Annual Reviews and Master Plan Steering Committee meetings for improved coordination and harmonization among sector WASHE stakeholders. 5.1.2 Increased functionality of District WASH management systems, structures and procedures. 5.1.3 Improved multi-sector coordination related to RWSS at district and sub-district levels.

Component	Sub-component	Outcome / Result
		5.1.4 Greater CP willingness to communicate and coordinate with each other with the district. 5.1.5. Improving top-level decision-making. 5.1.6 Assuring internal controls - By implementing corporate governance correctly across the organisation, the organisation may be certain that an adequate and effective control environment is in effect.
	5.2 Research & Development	5.2.1 An effective research and development function leading to improved evidence-based decision making on RWSS services. 5.2.2 Widely shared lessons learnt/applied research and development results.
	5.3 Advocacy & Communication	5.3.1 Greater awareness of the RWSS district and sub-district levels amongst the public, stakeholders and within governmental institutions. 5.3.2 Greater political and media awareness on the need for improved RWSS and SWM services. 5.3.3 Improved awareness of the need for good environmental management and climate change. 5.3.4 Increased % of community members making adequate contributions towards WP capital contributions and O&M. 5.3.5 Increased % of sanitation coverage. 5.3.6 To ensure that people have access to, and use a toilet and practice good hygiene, including handwashing with soap after the toilet and before food. 5.3.7 Increased knowledge and perceived importance of sanitation and hygiene practices, with the long term objective of changing the way society thinks so that open defecation is no longer acceptable in Kawambwa.
	5.4 Climate Change	5.4.1 Climate change resilience designed into RWSS initiatives. 5.4.2 Increased proportion of households planting trees. 5.4.3 Reduced use of plastics by households. 5.4.4 Increased proportion of households using of renewable energy (more especially solar for lighting).
6: Planning Monitoring Evaluation, and Reporting and Learning(PMERL)	6.1 Planning, Monitoring, Evaluation & Reporting	5.1.1 Improved sector planning and coordination. 5.1.2 Improved sector monitoring and performance reporting. 5.1.3 Improved data management and usage. 5.1.4 Enhanced sharing of knowledge in the sector.
7: Financing	7.1 Funding of WASH	7.1.1 Effective and efficient financing of the WASH Master Plan

The total projected WASH Master Plan cost is **ZMW 230.7 million** to the year 2030. The breakdown by component is given in Table 0-2 below. Table 0-3 gives the proposed financing structure for the Master Plan.

Table 0-3: Total Projected WASH Master Plan Cost

Cost (ZMW'000)

Period	2021 - 2025	2026 - 2030	Total
Infrastructure Cap Dev	12,803	8,691	21,493
Training	12,264	14,256	26,519
PMERL	5,309	11,715	17,025
Sanitation	31,990	47,276	79,266
Water Supply	34,782	42,390	77,172
O&M	2,129	2,855	4,984
Governance, R&D and Cross Cutting	1,956	2,268	4,224
Total	**101,233**	**129,451**	**230,683**

Table 0-4: Proposed Financing Structure

Source	Amount (ZMW'000)	%
GRZ	57,671	25.00
Community	2,653	1.15
LA	11,534	5.00
CPs	158,825	68.85
Total	**230,683**	**100.00**

Key Subsector Indicators and Reporting Framework

Orientation of National Indicators and Reporting Framework to SDGs

The Joint Monitoring Program (JMP) uses drinking water, sanitation, and hygiene service ladders to benchmark and compare progress across countries; these have been updated (JMP 2017 Report) and expanded to facilitate enhanced monitoring. The new ladders build on the established improved/unimproved facility type classification, thereby providing continuity with millennium development goal (MDG) monitoring, while introducing additional criteria relating to the level of service provided to households. The JMP will continue to monitor all rungs on each ladder. There will be a particular focus on those that relate to progress towards the following Sustainable Development Goal (SDG) global targets;

- Ending open defecation (SDG 6.2)
- Achieving universal access to safely managed services (SDG targets 6.1 and 6.2)
- Achieving universal access to basic services (SDG 1.4)
- Build and Upgrade Educational facilities with access to basic services. (SDGs 4.a)

Table 0-5: JMP normative interpretation of terms used in SDG target 6.1

Target language	Normative interpretation By 2030, achieve
universal	Implies all exposures and settings, including households, schools, health facilities, workplaces and public spaces
and equitable	Implies progressive reduction and elimination of inequalities between population
access	Implies sufficient water to meet domestic needs is reliably available close to home
to safe	Safe drinking water is free from pathogens and elevated levels of toxic substances at all
and affordable	Payment for services does not present a barrier to access or prevent people from meeting other basic human needs
drinking water	Water used for drinking, cooking, food preparation and personal hygiene
for all	Suitable for use by men, women, girls and boys of all ages, including people with

Golden and Other Key Indicators

The priority or 'golden' indicators for Programme evaluation are selected from Water Supply, and Sanitation and Hygiene. These include:

- Access to both safely managed and basic water services.
- Access to both safely managed and basic sanitation services
- Proportion of population practicing Open Defecation (OD)
- Proportion of population with basic handwashing facilities with soap and water in household.
- Proportion of schools with access to adequate and equitable drinking water and sanitation services.
- Proportion of health facilities with access to adequate and equitable drinking water and sanitation services.
- Proportion of Institutions and public places with access to adequate and equitable drinking water and sanitation services.
- Proportion of Households with adequate Solid Waste Management (SWM) Services

Other Key Indicators, in addition to the Golden Indicators include:

- Financial
- O&M
- Water Quality
- Gender specific school sanitation access including menstrual hygiene
- Governance

Table 0-6 below gives examples the golden and other key indicators for Zambia. All the baseline figures were not all available at the time of publication. Therefore, the Local Authority must endeavour to obtain them. It is important to note that where the figures are provided in the below table, those figures are the national average figures, hence the district must obtain theirs which will be used as a baseline.

Table 0-6: Examples of Golden and Other Key indicators

Golden Indicators			Base 2015	Target 2030	Source
Access to Water: **Proportion (%) of population with access to safe water (aligned to SDGs – JMP 2017 and 7NDP)**	Safely managed drinking water services	Rural	-	-	ZamStats/MWDS/DPI/DWSS/M&E/NWASCO
		Urban	47%	100%	
		National	-	-	
	Basic drinking water services	Rural	44%	100%	
		Urban	86%	100%	
		National	61%	100%	
Access to Sanitation and Hygiene: **Proportion (%) of population with access to adequate and equitable sanitation**	Safely managed sanitation services	Rural	-	-	ZamStats/MWDS/DPI/DWSS/M&E/NWASCO
		Urban	-	100%	
		National	-	-	
	Basic sanitation services	Rural	19%	100%	ZamStats/MWDS/DPI/DWSS/M&E/NWASCO
		Urban	49%	100%	
		National	31%	100%	
	Open Defecation Free (ODF): Proportion (%) of Population practising OD	Rural	25%	0%	ZamStats/MWDS/DPI/DWSS/M&E
		Urban	1%	0%	
		National	15%	0%	
Hygiene Practices: **Proportion (%) of population with handwashing facilities with soap and water at home**	Basic: Hand washing facility with soap and water in the household	Rural	-	100%	ZamStats/MWDS/DPI/DWSS/M&E/NWASCO
		Urban	-	100%	
		National	-	100%	
School WASH: **Proportion (%) of schools with access to adequate and equitable water supply and sanitation facilities**	Basic drinking water services	Rural	-	100%	ZamStats/MoE/NWASCO
		Urban	-	100%	
		National	-	100%	
	Basic sanitation services	Rural	-	100%	
		Urban	-	100%	
		National	-	100%	
Health Facilities WASH: Proportion (%) of health facilities with access to adequate and equitable water supply and sanitation facilities	Basic drinking water services	Rural	-	100%	ZamStats/MoH/NWASCO
		Urban	-	100%	
		National	-	100%	
	Basic sanitation services	Rural	-	100%	
		Urban	-	100%	
		National	-	100%	
Institutions and Public Places WASH: Proportion (%) of Institutions and Public Places with access to adequate and equitable water supply and sanitation facilities	Basic drinking water services	Rural	-	100%	ZamStats
		Urban	-	100%	
		National	-	100%	
	Basic sanitation services	Rural	-	100%	
		Urban	-	100%	
		National	-	100%	
Access to SWM Services: **Proportion of Households with adequate SWM**	Basic Solid Waste Management Services	Rural	2%	50%	CSO/MLGRD
		Urban			
		National			

Assumptions and Risks

This WASH Master Plan was designed based on several assumptions and risks.

Assumptions

- The water supply and sanitation policy is in place and the supporting legal and institutional frameworks are established
- The decentralisation policy fully implemented
- The finance mechanism is established
- The GRZ and CPs will remain committed and actualise allocation of adequate resources to the sub-sector.
- A phase by phase regulation of rural water supply and sanitation is implemented.
- Domestic Borehole registering system by WARMA developed and in place.
- The regulator will develop and disseminate water security indicators
- By the year 2025; LpWSC will be totally responsible for providing WSS services in all the districts (urban, peri-urban and rural) in Luapula Province.

Risks

- CPs due to their particular policies are not willing to align to the NRWSSP approach and principles
- The GRZ will be unable to adequately fill approved positions at national, provincial, district and sub-district levels required for the implementation of the NRWSSP, consequently the WASH Master Plan
- Poor corporate governance at all levels.
- Higher level delegated decisions that are not well defined and communicated can pose a risk at various levels of programme implementation. Therefore, well-defined communication channels and thresholds are necessary for management of delegated strategic risks. The design of the programme can give rise to a range of risk types (technical, management, commercial and external risks). This can be as a result of the interface from programme components, implementation and management of the programme itself[5] .

[5] NRWSSP 2019 - 2030

1 INTRODUCTION

The provision of safe and adequate water supply and sanitation services is one of the key components for sustainable development. One of the key developmental outcome goals of the Zambian government is improved access to water supply and sanitation services for all by 2030[6]. The socio-economic development objective is for Zambia to attain middle-income status by 2030, among others being able to secure access to safe potable water sources and improved sanitation facilities to 100 percent of the population in both urban and rural areas[7].

The Kawambwa District WASH Master Plan is meant to respond to sector priorities and targets, and to strengthen the decentralized decision making for water and sanitation service delivery at local government level. The WASH Master Plan is a roadmap to achieve universal access to safely managed water and sanitation services in the rural areas of Kawambwa District by 2030.

1.1 Objectives of the Water, Sanitation and Hygiene (WASH) Master Plan

The main objectives of developing the District WASH Master Plan are:

- To assess the current situation of water supply and sanitation coverage,
- To determine the investments required to attain water supply and sanitation coverage for all by 2030,
- To identify key stakeholders or players in the District that can help contribute to WASH service provision and,
- To determine the sources of funding that will leverage the attainment of universal access to WASH by 2030.
- To integrate WASH information at local level in order to harmonize WASH funding profiles.
- To integrate solid waste management with WASH in order to safeguard water source from contamination.

1.2 Scope

The thematic focus of the District WASH Master Plan is:

- **Water supply and water quality**: Attainment of universal access to sustainable basic water supply for everyone by 2030.
- **Sanitation and hygiene:** Access to improved[8] sanitation facilities and services by 2030 for 90% of the population.
- **Sanitation and hygiene in schools and health facilities**: Access to improved sanitation services to all educational and health institutions.

6 Ministry of National Development Planning, 2017. Seventh National Development Plan 2017-2021 p102

7 Government of the Republic of Zambia, December 2006. Vision 2030 p iv

8 An improved sanitation facility is defined as one that hygienically separates human excreta from human contact.

- **Integrated Water Resources Management:** Support the implementation of water resources management in the district.
- **Partnerships and Implementation of WASH Master Plan:** Determine the role of various key stakeholders and the coordination mechanism for implementation of the WASH Master Plan.
- **Communication, Advocacy and Network:** Successful implementation of the District Master Plan will include advocacy and networking by sending critical messages to stakeholders and implement key strategic actions to all audiences.
- **Monitoring, Evaluation and Learning:** Provide the framework for monitoring, evaluation and learning for the WASH Master Plan and accountability.
- **Solid Waste Management**: support the successful management of solid waste hazards that pose a huge risk on water resources and supply through contamination.

1.3 Process of Developing the WASH Master Plan

1.3.1 Context and Gap Analysis

A Context and gap analysis was carried out to assess the existing WASH situation in the district and to identify gaps for full WASH coverage. Key areas of WASH delivery analysed included: the district profile, district capacity for WASH delivery, operational and service delivery aspects and challenges being faced. In addition, stakeholder identification was done in order to determine how the already existing stakeholder relationships of those carrying out WASH activities can be strengthened further and used to leverage support for the initiative. A stakeholder mapping was carried out in the district during the site visits, enquiries and interviews with key stakeholders and enhanced through the validation workshop.

1.3.2 Public Consultation

This District WASH Master Plan was developed by applying a participatory approach. It involved different key stakeholders at both the District, Provincial and National Levels:

- Representatives of the Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP) (now the Ministry of Water Development and Sanitation), at District, Provincial and National levels (at the Headquarter were the Departments of Planning and Information and; Water Supply and Sanitation),
- The Provincial Water Supply and Sanitation Officer (PWSSO) at Provincial level,
- District WASH staff and Local Authority staff at District level, including District Education Board Secretary (DEBS),
- Non-Governmental Organizations (NGOs) carrying out WASH activities in the district,
- Staff of rural schools and health centres, including Environmental Health Technicians (EHTs); and
- Community members and Community Champions for WASH in the communities in particular (sub district levels).

Consultation was undertaken through Public Consultations (Focus Group Discussions) and Key Informant Interviews (KII).

1.3.3 Service Monitoring Assessment

Water and sanitation services were assessed in order to ascertain the status of water and sanitation service provision. This was done through a review of the current District Health Information System 2 (DHIS2) database which is managed by the Ministry of Water Development and Sanitation (MWDS). MWDS collects data on types of water points, their functionality and population served. This data is collected with the help of District staff through the use of smart phones. The data is collected from community water points and sanitation facilities by volunteers who are part of the Sanitation Action Groups (SAGs). These submit the filled in SAG forms to Community Champions (CCs) who use their smart phones to submit the aggregated data collected from all villages and wards to the Environmental Health Technician (EHT). The EHT validates this data by conducting a verification exercise after which they enter this into the national District Health Information System 2 (DHIS2) database. The DHIS2 is used for both water point and onsite sanitation facilities monitoring.

1.3.4 Validation Workshop

The validation workshop was held on July 20, 2022 to validate the findings from the context analysis, confirm the district's needs and obtain more data and information for the development of the WASH Master Plan. The stakeholders discussed the vision, mission, strategies, implementation arrangements and funding mechanisms towards achieving full WASH coverage. The workshop participants received the draft WASH Master Plan about one (1) month before the validation work to enable them thoroughly go through the document. Furthermore, they were left with some questionnaire that they used to provide data for any gaps that were observed more especially on the challenges and opportunities of achieving full coverage for WASH in the District by 2030. The participants were drawn from the educational and health sectors, the local authority, CU, NGOs working in WASH sector in the District and staff from the line ministries, and the Provincial WSS office of the MWDS, the Ministry of Community Development and Social Services, and Provincial DHID of the Ministry of Local Government and Rural Development (MLGRD).

1.4 Limitations of the District Wash Master Plan Development Process

The tasks for developing the District WASH Master Plan was not without some challenges. The following were some of the challenges that were experienced:

- WASH statistics at district level was inadequate.
- The Covid 19 pandemic, which force government to rotate employees, in terms of working days. For some institutions employees were advised to work from home which made it difficult to contact some of them.
- It was difficult to hold focus group discussions due to the Covid 19 pandemic.
- Key Informant Interviews were not carried out with some critical staff as they were out of station at the time of field work.
- Statistical data on WASH was mainly found to be at national and provincial level. It was relatively difficult to find data at district level.
- Time was a limiting factor as more time was required to collect data in the districts given the distances between wards and the availability of key staff for KII.
- Most of the statistics used in the report are based on the:
    a) The NRWSSP 2019 - 2030
    b) MWDSEP 2018 – 2021 Strategic Plan

c) MWDSEP 2018 Annual Statistical Bulletin
d) WHO/UNICEF JMP, Progress on Drinking Water, Sanitation and Hygiene 2017
e) MLGRD. Kawambwa District Situation Analysis
f) GRZ Development Policy of 2006 - Vision 2030
g) Data collected during the visitation to the district in September/October, 2020. Some of it was submitted following the questionnaire(s) that were administered during the visitations and follow-up requests that were made.

1.5 The National and Global Planning Context

1.5.1 Introduction

The WASH Master Plan is a planning tool that provides the road map for Kawambwa to reach its WASH targets by 2030 of universal coverage for water supply and 90% coverage for sanitation. It is linked into the overall planning framework through the National Development Plan (NDP) and the National Long-Term Vision 2030. Water Supply and Sanitation is linked to 7NDP Pillar 4: Enhanced Human Development, with the Development Outcome 3: Improved Access to Water Supply and Sanitation. To achieve this outcome, the following strategies will be undertaken to address water and sanitation challenges:

- Enhance provision of adequate safe water and sanitation
- Improve availability of water and sanitation infrastructure
- Enhance research in water supply and sanitation services
- Promote alternate financing for water and sanitation.

1.5.2 Vision 2030

The Vision 2030 aspiration for Zambia is to become *"A Prosperous Middle-Income Nation by 2030"* (GRZ, 2006, p. 6)[9]**.** With regard to Water Supply and Sanitation, to achieve middle-income status Zambia's socio-economic development objectives are:

1. To attain and sustain annual real economic growth rates of between 6 and 10 percent
2. To attain and maintain a moderate inflation rate of 5 percent
3. To decelerate the annual population growth rate from its 2005 rate of 2.9 percent to a rate of less than 1.0 percent over the next 25 years
4. To reduce national poverty head count to less than 20 percent of the population and
5. To reduce income inequalities measured by a Gini coefficient of less than 40
6. To provide secure access to safe potable water sources and improved sanitation facilities to 100 percent of the population in both urban and rural areas. (GRZ, 2006, p. 11)[10]

The Vision 2030 sets the following targets regarding water, sanitation and the environment:

Table 1: Sector Vision, Targets and Goals

[9] Vision 2030 "A Prosperous Middle Income Country by 2030". (2006) GRZ.
[10] Ibid.

Sector	Sector Vision	Targets/Goals
Water and sanitation	Clean and safe water supply and sanitation for all by 2030	✓ Improve access to appropriate, environmentally friendly sanitation by all Zambians; ✓ Attainment of 80 percent access to clean water supply to all by 2015 and 100 percent by 2030; ✓ Attainment of 68 percent access to sanitation to all by 2015 and 90 percent by 2030; and ✓ Fully integrated and sustainable water resource
Water and sanitation Environment and natural resources	A productive environment and well conserved natural resources for sustainable socio-economic development by 2030	✓ Rehabilitation, re-construction of sewage treatment facilities in all major towns and cities; ✓ 80 percent of waste collected and transported; ✓ Develop Integrated Licensing System; ✓ 90 percent polluting industrial facilities comply with environmental legislation; and ✓ 80 percent of unplanned settlements upgraded and the residents have access to clean drinking water and sanitation facilities.

Source: Vision 2030 (GRZ, 2006, pp. 38 - 41)[11]

1.5.3 Sustainable Development Goals

1.5.3.1 Water Supply and Sanitation

The goal has eight targets that are relevant to the WASH Master Plan, the Ministry of Water Development and Sanitation (MWDS) and Kawambwa Town Council which is the implementer on the ground, of which five have indicators that are directly related to WSS; and these are targets 6.1, 6.2, 6.3,6.4, 6.a and 6.b. The goal also has targets and indicators which fall under the responsibilities of the departments of Water Resource Development (WRD) in the MWDS and Environmental Management (EM) in the Ministry of Green Economy and Environment (MGEE). These targets are provided in table 2 below.

Table 2: SDG Targets for water supply and sanitation

SDG Target No.	Target description
6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all;
6.2	By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and increasing recycling and safe reuse by x% globally
6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water

[11] Ibid.

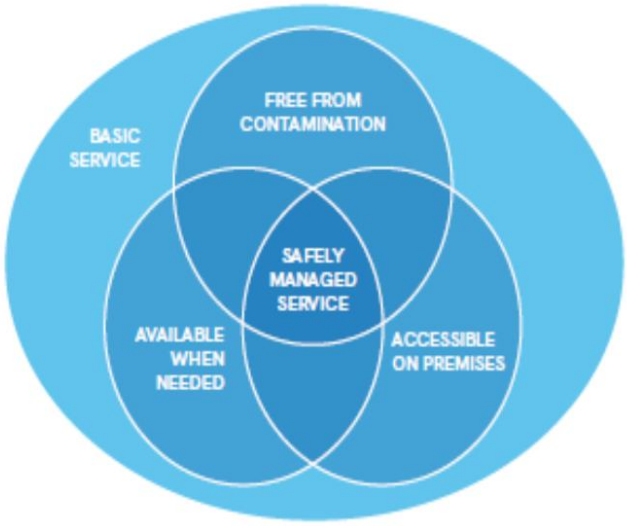
SDG Target No.	Target description
	scarcity, and substantially reduce the number of people suffering from water scarcity;
6.5	By 2030 implement integrated water resources management at all levels, including through transboundary cooperation as appropriate;
6.6	By 2020 protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes;
6.a	By 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies;
6.b	Support and strengthen the participation of local communities for improving water and sanitation management

In order to achieve goal No. 6 and other relevant SDGs, it is necessary for the government departments and other ministries to communicate, collaborate and coordinate their activities. At the District level, Kawambwa Town Council must do this with line ministries represented in the district and other government departments in the district and the Province who are involved in WSS.

The SDG approach to WSS and the associated targets has led to the development by WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) of new 'ladders' for drinking water, sanitation and hygiene as a tool for the progression of households and institutions to higher service levels. These are illustrated in:

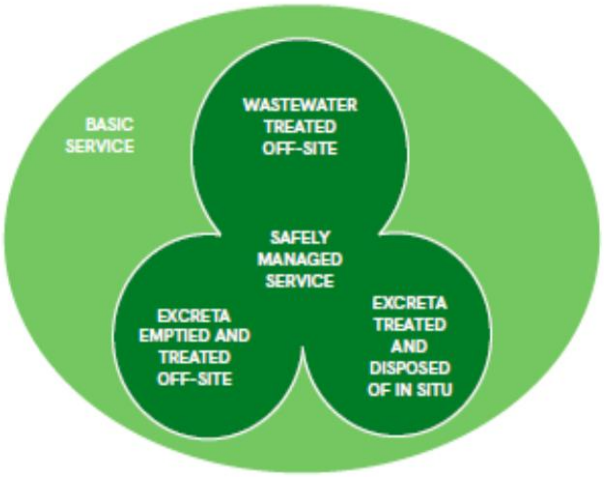
- Figure1 (JMP drinking water ladder for delivering the SDGs)
- Figure 2 (JMP sanitation ladder for delivering the SDGs) and
- Figure 3 (JMP hygiene ladder for delivering the SDGs).

The NRWSSP has adopted the JMP water, sanitation and hygiene ladders as an integral part of its approach to RWSS, which automatically Kawambwa must do as well.



Service Level	Definition
Safely managed	Drinking water from an improved water source which is located on premises, available when needed and free from faecal and priority chemical contamination
Basic	Drinking water from an improved source, provided collection time is not more than 30 minutes for a roundtrip including queuing
Limited	Drinking water from an improved source for which collection time exceeds 30 minutes for a roundtrip including queuing
Unimproved	Drinking water from an unprotected dug well or unprotected spring
Surface water	Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation canal
Note: Improved sources include: piped water, boreholes or tubewells, protected dug wells. Protected springs, rainwater, and packaged or delivered water.	

Figure 1: JMP drinking water ladder for delivering the SDGs. Source: JMP 2017 Report. WHO/UNICEF.12



Service Level	Definition
Safely managed	Use of improved facilities which are not shared with other households and where excreta are safely disposed in situ or transported and treated off-site
Basic	Use of improved facilities which are not shared with other households
Limited	Use of improved facilities shared between two or more households
Unimproved	Use of pit latrines without a slab or platform, hanging latrines or bucket latrines
Open defecation	

12 Ibid

	Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches and other open spaces or with solid waste.
Note: Improved sanitation facilities are those designed to hygienically separate excreta from human contact, and include: flush/pour flush to piped sewer system, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs.	

Figure 2: JMP Sanitation Ladder for delivering the SDGs.

Source: JMP 2017 Report. WHO/UNICEF.13

Service Level	Definition
Basic	Availability of a handwashing facility on premises with soap and water
Limited	Availability of a handwashing facility on premises without soap and water at home.
No facility	No handwashing facility on premises
Note: Handwashing facilities may be fixed or mobile and include a sink with tap water, buckets with taps, tippy-taps, and jugs or basins designated for handwashing. Soap includes bar soap, liquid soap, powder detergent, and soapy water but does not include ash, soil, sand or other handwashing agents.	

Figure 3: JMP hygiene ladder for delivering the SDGs.

Source: JMP 2017 Report.[14]

Furthermore, WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) of new 'ladders' for healthcare waste management in Healthcare Facilities, and Environmental Cleaning in Healthcare Facilities as a tool for the progression of healthcare institutions to higher service levels. These are illustrated in:

- Table 3 (JMP Healthcare Waste Management Ladders in Healthcare Facilities for delivering the SDGs); and
- Table 5 (JMP Environmental Cleaning Ladders in Healthcare Facilities for delivering the SDGs) and

Service Level	Definition
Advanced	To be defined at national level.
Basic	Waste is safely segregated into at least three bins, and sharps and infectious waste are treated and disposed of safely.
Limited	There is limited separation and/or treatment and disposal of sharps and infectious waste, but not all requirements for basic service are met.

13 Ibid

14 Ibid.

No Service	There are no separate bins for sharps or infectious waste, and sharps and/or infectious waste are not treated/disposed of safely.

Table 3: JMP Healthcare Waste Management Ladders in Healthcare Facilities for delivering the SDGs. Source: JMP 2019 Report.[15]

Service Level	Definition
Advanced	To be defined at national level.
Basic	Basic protocols for cleaning are available, and staff with cleaning responsibilities have all received training.
Limited	There are cleaning protocols and/or at least some staff have received training on cleaning.
No Service	No cleaning protocols are available and no staff have received training on cleaning

Table 4: JMP Environmental Cleaning Ladders in Healthcare Facilities for delivering the SDGs. Source: JMP 2019 Report.[16]

1.5.3.2 Solid Waste Management (SWM)

Solid Waste Management: a theme that was absent from the Millennium Development Goals (MDGs), are pertinent to NRWSSP. The SDGs have a set of goals directly for solid waste management (SWM) as listed below:

Goal 11 "make cities and human settlements inclusive, safe, resilient and sustainable" target 11.6 "by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality, and municipal and other waste management"

Goal 12 "ensure sustainable consumption and production patterns" target 12.5 "by 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse".

The Solid Waste Hierarchy

The **solid waste hierarchy** is shown in Figure 4. The hierarchy ranks the different ways of dealing with solid waste in order of desirability. At the top is waste **reduction,** which means not generating waste in the first place or minimising the amount of waste produced. Below that is waste **reuse** (for example, refilling of drinks bottles), followed by **recycling** (processing of wastes into new raw materials). A fourth option is the recovery of energy by burning or biological treatment. **Disposal**, ideally in a landfill site, is the final option for any wastes that cannot be dealt with in any other way. A **landfill** site is an area of land set aside for the final disposal of solid

15 WHO/UNICEF JMP (2020)
16 WHO/UNICEF JMP (2020)

waste. The top three stages of the hierarchy (reduction, reuse and recycling) are often referred to as the '**3 Rs**'. The ladders for solid waste are given in table below.[17]

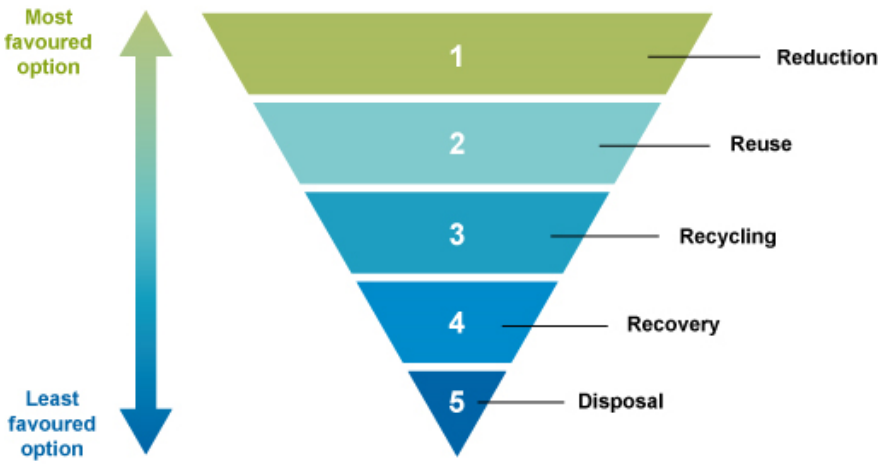


Figure 4: The Solid waste hierarchy.

Table 5: Solid Waste Ladders

Service Level	Containment	Collection	Disposal	Treatment	Reuse
High Service	Source sorting separate container for paper, glass, metal, etc. Safe container protected from flies, domestic animals'	Mechanical collection Community based management with system that avoids dispersion	Safe disposal on protected landfills Leachate containment	Incineration Recycling Compositing	Systematic productive re-use (compost, energy, etc.)
Improved Services	Safe container protected from flies, domestic animals'	Community based management with system that avoids dispersion	Safe disposal on protected landfill	Recycling Compositing	No or unsystematic productive re-use.
Basic Service	Safe container protected	Individual (household member is	Disposal on specific dumping site.	No treatment	No or problematic productive re-use

17 https://reliefweb.int/sites/reliefweb.int/files/resources/82C528A73F098803C12577B2004340CB-IRCWatSan_Sep2010.pdf

Service Level	Containment	Collection	Disposal	Treatment	Reuse
		responsible for collection			
No or Unacceptable Service	No container	No collection	No treatment	No treatment	No re-use

Source: JMP 2018 – Core Questions for Household Surveys 2

Note: Under the community management system, solid waste management is managed at household level.

2 OVERVIEW OF WASH AND WRM SECTOR

2.1 National Level

The Government of the Republic of Zambia (GRZ) embarked on public water sector reforms in the early 1990s as a way to improve access to water supply and sanitation (WSS) and improve water resources management (WRM). The sector reforms resulted in the adoption of the National Water Policy in 1994, and enactment of the Water Supply and Sanitation Act of 1997 and the 2010 National Water Policy which focuses on Water Resources Management (WRM), and the development of WRM Act No.21 of 2011.

The Water Policy of 1994 established seven sector principles:

- Principle #1: Separation of water resources functions from water supply and sanitation
- Principle #2: Separation of the regulatory functions form executive functions within the water supply and sanitation sector
- Principle #3: Devolution of authority to Local Authorities and the private sector
- Principle #4: Achievement of full cost recovery for water supply and sanitation services through user changes in the long run
- Principle #5: Human resources development leading to more effective institutions
- Principle #6: Technology appropriate to local conditions
- Principle #7: Increased GRZ spending priority and budget spending to the sector.

The policy changes resulted in the reorganization of sector institutions with emphasis on the devolution of responsibility for service provision to the Local Authorities (LAs) and increased participation and empowerment of the rural population in the planning, development and management of water service facilities through integrated Water Supply, Sanitation and Health Education (WASHE). Commercial Utilities (CUs) were formed, who are responsible for the development and management of water supply and sanitation services on a commercial basis overall, but until now mainly focus on the urban and peri-urban areas. The reforms have had a positive impact on the performance of the sector, predominantly in the urban and peri-urban areas.

The Government of the Republic of Zambia (GRZ) has set out national strategies for the sector with support from Cooperating Partners (CPs). These are the National Urban Water Supply and Sanitation Program (NUWSSP) (2011 – 2030) and the National Rural Water Supply and Sanitation Program (NRWSSP) (2006 – 2015). The NRWSSP 2019 – 2030 (NRWSSP II) which was finalised and launched in 2020. Under these guiding frameworks, three strategies have been developed:

- The National Water Supply and Sanitation Capacity Development Strategy,
- The National Urban and Peri-Urban Sanitation Strategy; and
- The Open Defecation Free (ODF) Zambia Strategy.

The water and sanitation sector has undergone changes over the years with policy reforms resulting in institutional reorganization in the sector. The most recent changes being the formation of the Ministry of Water Development, Sanitation and Environmental Protection in 2016, which was restructured in 2021 into the Ministry of Water Development and Sanitation (MWDS) and the Ministry of Green Economy and Environment (MGEE). The ministry (MWDSEP) went ahead and developed strategies that will help attain Vision 2030 and the developmental goal of the

Seventh National Development Plan (7NDP). Furthermore, the MWDS also had a decentralized structure with staff at national level, province and district levels.

The MWDSEP had the following regulatory bodies for the three subsectors under its mandate:

- Water Resources Management Authority (WARMA) - WRM,
- and,
- National Water Supply and Sanitation Council (NWASCO) water supply and sanitation.

The MWDS implementing the Rural Water Supply and Sanitation Program (RWSSP) through Local Authorities (LAs) and the National Urban Water Supply and Sanitation Program (NUWSSP) through the 11 Commercial Water Utilities across the country. All these functions have been transferred to the MWDS.

The interventions being implemented by the MWDSEP are anchored on the Seventh National Development Plan (7NDP) (2017-2021), the Sustainable Development Goals (SGD) and Vision 2030. Overall the sector is well organized and should be able to deliver on the full access to adequate and safe water supply and sanitation services. Furthermore, the sector gets assistance from cooperating partners such as the Kreditanstalte fuer Wiederaufbaus (KfW), the World Bank, Africa Development Bank (AfDB), Non-Governmental Organizations (NGOs) like WaterAid, UNICEF and other sector players.

The third regulatory institution - Zambia Environmental Management Agency (ZEMA) – that deals with environmental management is under the Ministry of Green Economy and Environment.

2.1.1 Institutions - National Level

The WASH sector has seen in the past sector reforms that resulted in the amendment and enactment of laws and development of policies and programmes, and the reorganisation of sector institutions and the formation of new institutions. The reforms also resulted in a defined institutional framework that would enable effective delivery of water and sanitation services for both rural and urban areas.

2.1.1.1 National Water Supply and Sanitation Council (NWASCO)

NWASCO is a national regulatory body for water supply and sanitation services. The Water Supply and Sanitation (WSS) Act No.28 of 1997, mandates NWASCO to:

- Section 4 (d): Develop sector guidelines for:
    (i) The provision of water supply and sanitation services;
    (i) The establishment of water supply and sanitation utilities;
    (ii) The technical and financial management of utilities and;
    (iii) The setting of tariffs for the provision of water supply and sanitation services.
- Section 4 (e): Establish and enforce standards for;
    (i) The water supply or sanitation services;
    (ii) The management of utilities and other service providers and;
    (iii) The design, construction, operation and maintenance of water supply and sanitation facilities.

NWASCO initiates the development of standards as required by the Zambia Bureau of Standards (ZABS) and the Zambia Environmental Management Authority (ZEMA). While ZABS develops the design and construction standards related to WSS facilities like water consumption design figures, ZEMA develops the environmental protection standards related to WSS facilities like limits for effluent and faecal sludge. One of the areas NWASCO needs to start regulating is the on-site sanitation and rural water supply and sanitation. NWASCO has also developed a strategic plan for 2021 – 2025 that will enhance its regulatory role in the WASH sector. Some of the challenges it faces are:

- The integrating DHIS2 with NWASCO Information System (NIS) to cover all districts;
- Inadequate water quality monitoring/water testing;
- Sustainability challenges;
- Inadequate enforcement of water and sanitation standards;
- Local Authorities rely on other institutions for coordination of interventions, data collection, maintenance and monitoring;
- Uncoordinated interventions;
- Inadequate infrastructure and personnel to cover RWSS
- Inadequate community contributions for O&M within community threshold and;
- Behavioural or change processes that influence the sustainability of interventions.

As part of this strategic plan; NWASCO has the following strategic objectives which are key to the success of WASH Master Plan:

- Strategic Objective 1: to strengthen the capacity of NWASCO in order to implement regulation for rural water supply and sanitation and onsite sanitation service delivery.
    - Output/outcome - 1. Regulatory framework for RWSS Implemented.

- Strategic Objective 2: to effectively regulate water supply and sanitation service delivery in order to ensure improved and inclusive service provision
    - Output/outcome - 1. Drive Improvement in WSS service coverage.
    - Key Performance Indicators
        - 95% access to water supply in urban areas
        - 85% access to water in Rural areas
        - 80% access to sanitation supply in urban areas
        - 70% access to Sanitation in Rural areas

These are the targets for 2025.

The successful implementation of these objective will directly affect the implementation of this WASH Master Plan.

2.1.1.2 Water Resources Management Authority (WARMA)

WARMA is an institution that has been tasked with managing Zambia's water resources, that is ground and surface water, both for quantity and quality. It is a regulatory body with a mandate to:

- Facilitate the establishment and support of Water Users Association;
- Support the operations of Catchment councils and Sub-catchment councils;
- Manage all water resources management infrastructure and monitor their use;
- Regulate the construction of surface and groundwater infrastructure;
- Preside over possible water conflicts/disputes;
- Monitor and regulate water use to ensure equitable allocation;
- Plan, review and approve water use plans for catchment and sub-catchment including inter-catchment and intra-catchment diversions;
- Exercise control over all water resources in Zambia;
- Allocate water entitlements and apportion water to various users after a decentralised decision making process has been undertaken;
- Define water resources management and disseminate to the public and;
- Take over the water resources management functions that were previously under the Department of Water Affairs and the functions of the Water Board.

2.2 Provincial Level

In the decentralised structure the Province is being streamlined because it is an important link between the centre (Central Government) and the district. The District shall be the focus for development and service delivery, thus empowering local communities to play an effective role in national affairs.

2.3 District Level

In November 2002 the Government of the Republic of Zambia (GRZ) approved the Decentralization Policy and it was reviewed in 2013 which covers aspects such as empowering the local people through setting up of sub-District structures and clearly defined roles and responsibilities for LAs, the provinces and the national government. The government's aim is decentralization through devolution. Devolution is the transfer of some powers and authority, functions and resources by legal and constitutional provisions to the lower levels.

According to the policy: At the district level, there shall be a system of Local Government based on democratically elected councils on the basis of universal adult suffrage. At the sub-district level there shall be any Ward Development Committee (WDC) with full linkage to and participation of village and traditional councils where appropriate.

The objective of the policy thus is to enhance governance by giving citizens more authority and power in decision-making at the local level. The Ministry of Local Government and Rural Development (MLGRD) is responsible for overseeing local government. It facilitates the provision of efficient delivery of quality housing, infrastructure, ***water supply and sanitation*** and other social services through the Local Authorities (LAs).

The country has ten provinces and a total of 116 districts as of 2018. See Figure 5 below.

2.4 District Administrative Structure

The District has three administrative structures: The Local Authority (District Council), District Administration and the Traditional Authority.

2.4.1 District Administration

2.4.1.1 The District Commissioner's Office

The District Commissioner is the head of Central Government in the District. The District Commissioner is responsible for coordinating all developmental activities in the District, through the District Development Coordinating Committee (DDCC). His/her office is the supreme decision-making body in the District. The role of central government in the District is to formulate local policies and approve District Development Plans. Local Authority (District Council)

The Town Council is the highest organ of authority in a District in accordance with the Local Government Act, No. 2 of 2019 and it is headed by the administrative head of the Local Authority, the Council Secretary.

The Council consists of 18 elected members, representing 18 wards in the District, and 1 Council chairperson. There are also Chiefs Representatives.

The LAs or Council's administrative wing is headed by the Council Secretary under which all heads of the different sectors e.g. agriculture, health, education report through the different committees. The Council Secretary works with the administrative staff that is recruited by the Local Government Service Commission. The functions of the local government are to provide; establish and maintain roads, bridges, ferries, watercourses, street lighting and public transport, as well as provide firefighting and prevention, and public and environmental health services. Councils must also ***provide and maintain supplies of water; maintain drains, sewers and roads; and dispose of sewage and refuse.*** They must maintain cemeteries, crematoria and mortuaries, parks, zoos, gardens, pleasure grounds, camping grounds, caravan sites, art galleries, libraries, museums and film services.

The Figure below (Figure 5) is the high-level organogram for a Town Council under the decentralised system; however, this structure is not fully implemented for Kawambwa Town Council, as all heads of departments for the devolved functions are not filled as at the time of writing this WASH master plan.

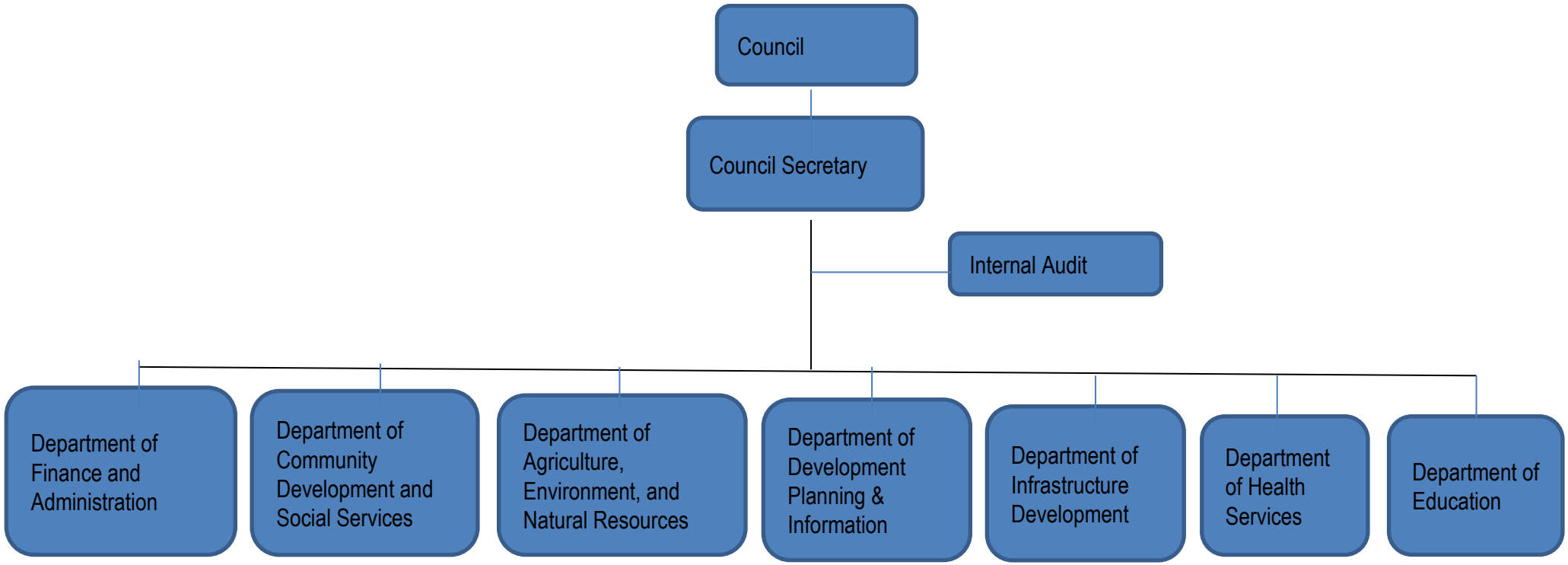


Figure 5: The Kawambwa High Level Organogram

The District Water, Sanitation and Hygiene (DWASHE) Coordinator is responsible for implementation of Water, Sanitation and Hygiene (WASH) activities. The office of the RWSS Coordinator is in the Department of Planning.

The D-WASHE feeds into the Provincial WASHE who equally feeds into the National Technical Working Groups.

2.4.2 Traditional Authorities

Traditional authorities are headed by chiefs who are responsible for overall administrative management of villages. The head of a village is the Headperson.

2.5 Challenges and Gaps

Although the institutions are well established at national level and provide direct support to districts on planning, policy formulation and regulation and capacity building, the sector faces challenges at different levels. The key challenges can be summed up into five main areas: Policy level, Institutional level, Operational level, water quality monitoring and, Data, and these are:

- The WASH sector has well elaborated policies and strategies but the challenge is in implementing them in terms of having adequate funds for operations, having effective monitoring mechanisms and having adequate investments in water supply and sanitation facilities.
- The District has a weak institutional capacity that makes it difficult for them to increase their customer base and attract support for WASH. The District has a high turnover of staff with new staff requiring training, however, due to inadequate funding available; making follow-ups on WASH activities and providing enough water points for all is a challenge.
- At an operational level, inadequate funds and transport makes it difficult to monitor activities within the district. Furthermore, ***Kawambwa has NO SOMAP Shop***, thereby adding to the cost of acquiring spare parts due to transport requirements. Location of SOMAP shops for the rural communities needs to be decentralized.
- The District uses local members of the community to collect and enter data into the DHIS2 database; and they do it on a voluntary basis. Related to this, is the frequency of data collection as some data might be collected after some months thereby making it difficult to monitor sanitation. Furthermore, in some instances data is not collected because the community champions are not provided with logistics (airtime) for their phones. The verification by District WASH staff is very crucial, however, they also have similar challenges of logistics.
- In terms of hygiene, the challenge has been with behavioural change from community members. Behavioural change is a process that takes time. Therefore, it is required that the current programmed approaches dealing with hygiene issues are implemented over a longer period of time for there to be significant change. Besides, for change in behaviour to happen there should be parallel programs running that empower people economically so that the quality of their lives is improved.
- Ownership of water infrastructure – Most communities do not understand that the water infrastructure is owned by them and must maintain it. This arises from the fact that the process used in providing the facilities in not participatory.

In order to ensure universal access to safe and affordable drinking water for all by 2030 as per Vision 2030, 90% coverage for sanitation, there needs to be investment in adequate infrastructure for both water supply and sanitation facilities as well as encouraging good hygiene practices through awareness campaigns continuously.

The awareness campaigns must be anchored in Communication Strategy with specific communication objectives. It must clearly define:

a) The audience receiving the information (the who);

b) The content of the information (the what);

c) The methods to be used to convey the information (the how); and

d) The approaches to promote action for change (the action).

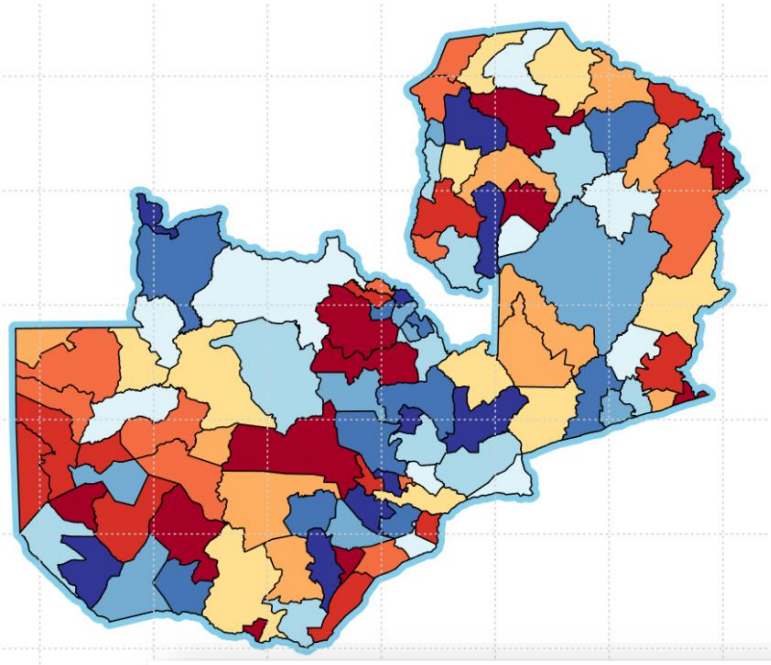
This will be achieved through advocacy, interpersonal communication and community mobilisation with overall multi-media support including mass media, digital media and social media.

To mitigate against water scarcity, there should be measures to protect and restore water related ecosystems like forests and wetlands.

As part of water security NWASCO has taken the initiative to monitor how the CUs, in this case Luapula Water Supply and Sanitation Company Limited (LpWSC) is dealing with this matter in its operational areas. At ***Appendix XIII****, is given the indicators used.*

The diagram/map and tables below summarise the LG set up and function s in Zambia[18].

[18] Local Government Legal Framework and Operations of Local Governments by AnCliCon Limited - 2019



LA Functions		
Category	**Section**	**Functions**
General Administration	1	3
Advertising	2	1
Agriculture	3	14
Public Street & Street	4	7
Community Development	5	20
Public Amenities	6	6
Public Health	7	4
Public Order	8	6
Registration	9	5
Sanitation & Drainage	10	14
Additional Devolved Functions	11	10
Total		90
First Schedule: Local Government Act No. No. 2 of 2019,		

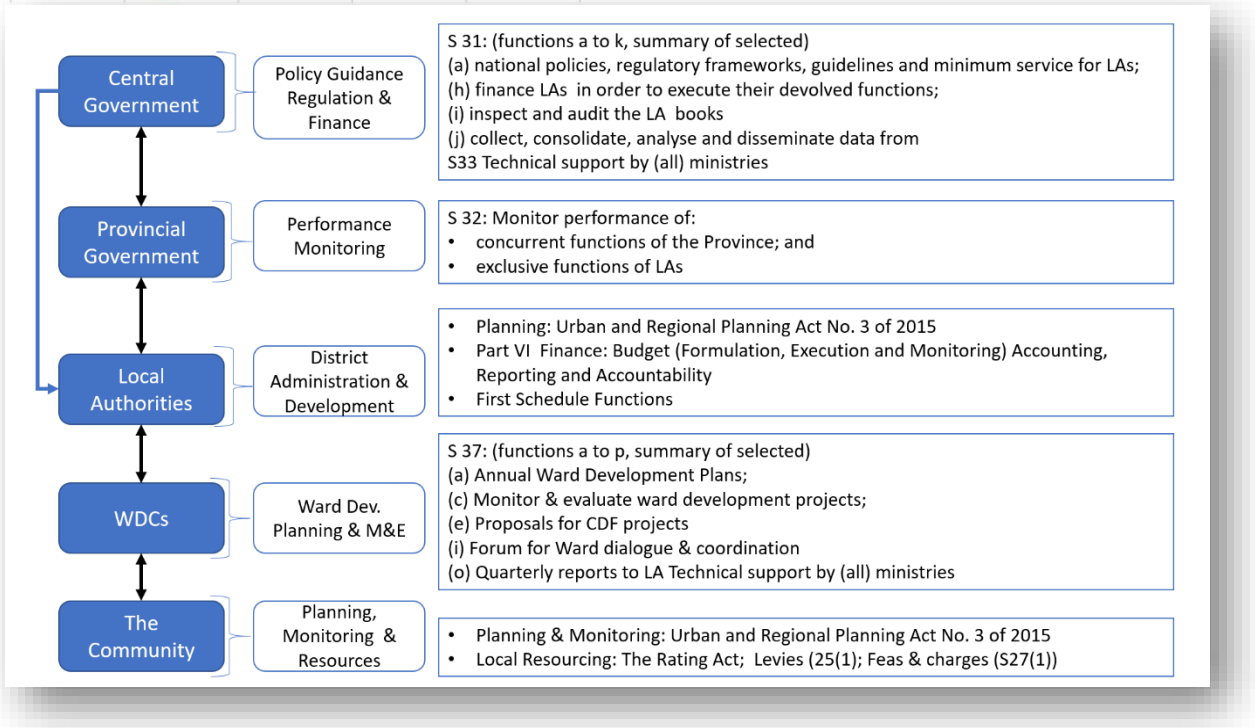


Figure 6: Local Government Legal Framework and Operations of Local Governments

3 VISION, MISSION AND STRATEGIC APPROACH

The WASH Master Plan will be implemented by the LA with support from the MWDS and its cooperating development partners, MLGRD, national and international NGOs, as well as the beneficiary communities. It is essentially a continuation of what the LA has been doing and builds on the achievements and lessons learnt from the past.

In this WASH Master Plan, it is important to maintain the gains made to-date, correct any shortcomings and build on the lessons learnt. In this way the LA will continue providing improved access to water supply and sanitation services in rural areas in a sustainable manner and achieve the set targets during its implementation to 2030. The WASH Master Plan will also ensure continuity of government engagement in RWSS service delivery.

The strategic approach of the WASH Master Plan is informed also by the 7NDP and its emphasis on the Theory of Change which is a model that articulates, in a systematic way, how programmes and strategies contribute to a set of specific outcomes through a series of intermediate results. It describes the pathway through which change will come about. This is in the context of how the WASH Master Plan is going to achieve its vision, mission and objectives; what results need to be attained to contribute to this achievement and what interventions/activities will bring about these results. It also describes the underlying assumptions and conditions necessary to bring about this change. The Theory of Change also provides a clear framework for stakeholder consultations. Figure 7 below elaborates this.

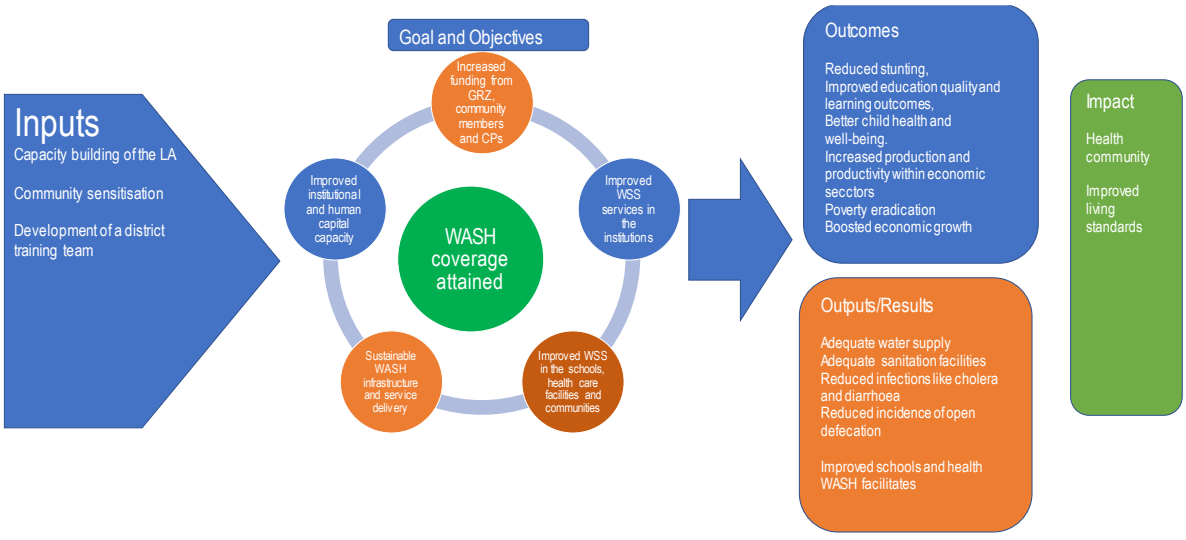


Figure 7: Theory of Change

The 7NDP was elaborated with a view to translate the Vision 2030 into strategic objectives, including the vision for clean and safe water supply and sanitation for all. These strategic national objectives related to the water sector have informed the vision, mission and objectives of this WASH Master Plan as one of the pathways for achieving the desired long-term national outcomes and targets.

3.1 Vision, Mission and Overall Objective

Since the central government implements its WSS programmes through the LAs, the national Vision, Mission and objectives will be adapted to the local level; hence for Kawambwa they will be:

Vision: All of Kawambwa District's rural population have sustainable and equitable access to safe water supply and adequate and equitable sanitation to meet basic needs for improved health and alleviating poverty.

Mission: Promoting sustainable provision and usage of affordable and socially acceptable safe water supply and proper sanitation facilities to the rural population in Kawambwa District.

Overall Objective: The overall objective of the 2021-2030 WASH Master Plan is:

"Sustainable and equitable access to safe water supply and adequate and equitable sanitation **to meet basic needs for improved health and poverty alleviation** for all of Kawambwa's rural population in line with the Vision 2030 and the Sustainable Development Goals for water supply and sanitation."

To achieve the above, the WASH Master Plan has five specific objectives:

1. Increased proportion (from the current 86% to 100% in 2030) of rural population has access to improved, functioning WS facilities in rural areas through systematic investments in new facilities, rehabilitation and effective O&M of existing facilities on the basis of a single, comprehensive district programme for RWSS;
2. Increased proportion (from the current 80% to 90% in 2030) of rural population has access to adequate and equitable sanitation facilities in rural areas though promotion of improved household latrine construction using sanitation marketing and strategic demonstration facilities, health/hygiene behaviour change promotion, involvement of traditional leadership and legal enforcement;
3. Increased proportion of rural population has access to improved, functioning institutional WASH facilities in rural areas;
4. Increased proportion of rural population has access to improved solid waste management (SWM) services;
5. Improved performance of the RWSS sub-sector in terms of efficiency and effectiveness of planning, implementation, O&M, Advocacy & Communication, M&E, budgeting and reporting through policy and institutional reforms, capacity development and use of a sustainable management information system (MIS).

3.2 Strategic Approach

The WASH Master Plan is based on a holistic and adaptive approach to achieve "*sustainable and equitable access to safe water supply and adequate and equitable sanitation".* The bedrock of the plan's approach is local level and community participation in defining *inter alia*, WSS technologies to be used, priorities, location of services and sustainable O&M of the facilities.

The MASTER Plan builds upon what the district did under the NRWSSP I (2006 to 2015) by providing guidance for RWSS activities based on the following principles, which are explained in detail in the following sections:

1. Community-based
2. Community ownership

3. Cost recovery
4. Investment choice evaluation
5. Technology development and knowledge management
6. Water security
7. Adaptability
8. Capacity development.

3.2.1 Community-based

Ensures that WSS interventions are community-based through the:

- Formation of inclusive and gender balanced water committees for effective co-ordination, management, operation and mobilisation of resources as well as in technology choices.
- Integration of community education, motivation, and health, hygiene, water and sanitation awareness activities in the development and O&M of WSS interventions that are socially inclusive, and with social inclusive and gender mainstreamed.
- Development of standardised educational materials and training of trainers (ToT).

In making the technology choices, and providing the water points; demand responsive approaches (DRA) will be used to inform the communities about the different technologies available and the ownership of the infrastructure. This includes the full assets life cycle costs involved so that they can choose the options they are willing to sustain and able to pay for. This will ensure that there is a solution for every community regardless of their socio-economic status. Further, regardless of the starting point, each community will then have an idea of available water supply and sanitation solutions further up the ladder and therefore can upgrade when they deem fit.

3.2.2 Community Ownership

In recognising that the infrastructure developed will have to be maintained, and in line with community choices implicit in the DRA espoused by the NRWSSP, the infrastructure that will be developed will be managed by the communities and institutions for whom they are developed. Where appropriate the management and / or maintenance of such infrastructure may be outsourced to third parties and / or become the responsibility of the CU. Management instruments will be developed to ensure sustainable operations.

3.2.3 Cost Recovery

For purposes of sustainability, and in line with the seven sector principles outlined in the National Water Policy, cost recovery considerations will be an integral part of the programme. In this regard, the WASH Master Plan proposes the development and deployment of strategies for:

- User communities to contribute part of the investment cost of WSS schemes and water points up front, (generally 5%) of the infrastructure development. The community is expected to meet 100% of the O & M costs. When a major part of the system needs replacement the LA or CU are responsible.
- User communities' involvement in the assessment of costs, establishment of revenue (fee and charges/community contributions) collection mechanisms and determination of contributions towards O&M of WSS schemes.

3.2.4 Investment Choice Evaluation

In view of changing rural demographic profiles, technology choices will be informed by situation specific considerations, which take into account location-specific hydrogeological, socio-economic and population conditions, among others. This process will be reviewed and kept up-to-date as technologies and demographics change. This will form part of the basis for appraisal and financing of projects. Others will include equity, as well as per capita cost considerations. The choice between new infrastructure and rehabilitation of existing infrastructure will also be informed by investment appraisal of those choices.

The full range of application methods, technology and appraisal procedures will be made available to all prospective communities as updated.

3.2.5 Technology Development and Knowledge Management

Due to technology developments, the MWDS will coordinate and cooperate with research institutions to adapt new technologies to local conditions and local manufacturers to produce the required locally adapted and appropriate technologies, which will be passed on to the LA and CU. This will be particularly important as GRZ strives to move up the water and sanitation ladders to Safely Managed Water and Sanitation Services.

Knowledge on such technologies, and other vital data and information, will continue to be collected, secured and disseminated regularly. Web-Based document storage and sharing platforms are being continually improved and developed as necessary. These will leverage the available Information Communication Technology (ICT) capacities, and will be at the centre of information and knowledge management.

Currently the MWDSEP has a 'The Resource Toolbox' on its web site, which contains comprehensive information relevant to the implementation and sustainability of the WASH. The Resource Toolbox is a document storage and sharing platform by GRZ in association with Smart Zambia.

3.2.6 Water Security

The United Nations (UN) defines water security "as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability" (United Nations University, 2013).

With increasing variability in climatic trends (mostly droughts) and increased anthropological activities (settlements and industrialisation) in watershed and recharge sites, water security considerations will be critical in the WASH Master Plan implementation. Water sources availability and level of pollution have direct impact on water supply and sanitation investments, which leads to poor hygiene and well- being of rural communities (domestic and institutional).

Under the MWDS, WARMA is responsible for Water Resources Management (and Regulation) and The Department of Water Resources Development is responsible for development of infrastructure such as dams, weirs, canals etc.

It is therefore necessary to establish clear communication and coordination mechanisms across various actors from the water user associations and catchment councils to the local government entities (Provincial and District levels). WRM aspects in the coordination agendas of the P-

WASHE and D-WASHE should be considered. This would be in line with the integrated and multi-sectoral approach of the 7NDP.

The definitions of water security explicitly recognise that water security has a:

- social component (risk to people)
- environmental component (risk to ecosystems)
- economic component (risk to economies)

An intrinsic element in water security is the capacity to manage water. Most parts of the district would experience water insecurity if it weren't being able to manage the storage, distribution and quality of our water supplies.

Water security is influenced by the resources available to communities or government authorities to manage water supplies, including investment finance and the knowledge, abilities and institutional structures for water management.

3.2.6.1 **Water Security Indicators**

Based on the United Nations definition of Water Security as given above definition, the Water security aspects found in most water security frameworks[19] are as given in Figure 8 below; and elaborated at **Appendix XIV**. These have been adopted by the consultant for use in the implementation of this WASH Master Plan. A combination of indicators must be used to assess and report on water security.

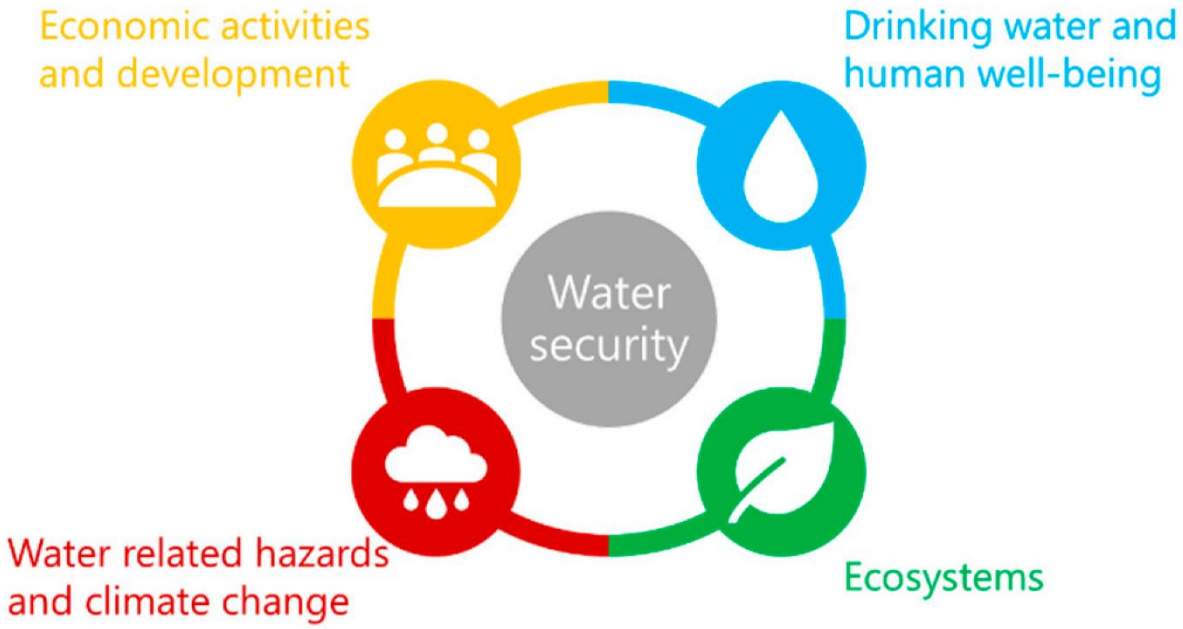


Figure 8: **Water security aspects found in most water security frameworks**

19 34. UN-Water. Water Security and the Global Water Agenda: A UN-Water Analytical Brief; UNU-INWEH, UN University: Hamilton, ON, Canada, 2013; p. 38. [Google Scholar]

3.2.7 Adaptability

During the WASH Master Plan implementation period up to 2030 there are likely to be changes in the operating environment of the plan. These may include global, regional, national and subnational social and economic changes, climatic conditions, population dynamics, and technological advancements among others. The plan provides goals and targets to be achieved. In order to achieve these goals and targets in changing environments; plan innovation and adaptability is required for the provision of time, location and situation specific solutions.

3.2.8 Capacity Development

Capacity Development efforts at National, Provincial, District, Ward and community levels will be undertaken in line with the approved Capacity Development (CD) Strategy for the WSS sector in order to improve RWSS service delivery. This CD strategy is operationalising the Capacity Development components of the National Water Supply and Sanitation Programmes (Urban and Rural) and is intended to guide all sector players, including *inter alia* MWDS, MLGRD, CUs, LAs, NGOs, CPs and learning institutions, in undertaking their roles in the WSS service delivery chain. This plan has provided for this as its key to sustainability.

3.3 The Thematic Areas of the Master Plan

The Master Plan has 6 main thematic areas which address the priorities of GRZ, the stated strategic approaches and the linkages between water supply, sanitation, health/hygiene, and poverty reduction/improved livelihoods. The WASH Master Plan components are as follows:

1. Water Supply
2. Sanitation and Hygiene Promotion
3. Sustainable O&M (related to both 1 and 2 above).
4. Capacity Development
5. Governance, R&D, Sector Coordination and Cross-cutting issues
6. Planning, Monitoring, Evaluation, and Reporting and Learning (PMERL)

3.3.1 Water Supply

Water Supply remains the first part of this WASH Master Plan. The investment in this area will be delivered as an integrated package with sanitation and hygiene promotion.

The O&M comprising repair and rehabilitation of existing non-functional water supply systems and construction of new water supply systems at community level, rural growth centres, health centres, schools, markets, bus stations and other public places will be part of the investments. These will include, but will not be limited to:

- Small scale piped water supply schemes
- Small network systems
- Boreholes and hand dug wells equipped with hand pumps and proper drainage facilities
- Spring protection, and
- Improved traditional water points.

The choice of technological options to be adopted will be based on informed community preferences and will take into account location specific assessments of the prevailing conditions. These will include, but will not be limited to demographic, socio-economic and hydrological, water quality and any other pertinent issues.

3.3.2 Sanitation and Hygiene

This component will focus on improving access to adequate and equitable sanitation through promotion of sanitation and hygiene practices. The key investment under this component is expected to cover the following:

- Community based sanitation and hygiene promotion
- Engagement of traditional leaders in sanitation and hygiene promotion in chiefdoms
- Sanitation marketing
- Improving access to adequate and equitable sanitation in schools, health facilities and other public institutions
- Promotion of hygiene behaviour change
- Legal enforcement, advocacy and publicity, and monitoring and evaluation

Given the 2030 vision of Zambia becoming a prosperous middle-income country by the year 2030 and the need to reduce possibilities of underground and surface water contamination, the WASH Master Plan aims to facilitate communities in Kawambwa in moving up the sanitation ladder.

3.3.2.1 Household and Institutional Sanitation and Hygiene Promotion

The WASH Master Plan will target and engage communities and institutions to raise the required awareness to foster behaviour change through clear advocacy messages aimed at creating linkages between good sanitation and hygiene promotion, and improved health and livelihoods.

The Kawambwa Town Council will work with the MWDS in close cooperation and collaboration with the Ministry of Health (MoH) and the Ministry of Education (MoE) in the district to ensure that schools, health facilities and other public institutions, as well as household sanitation will all have adequate, equitable sanitation.

3.3.2.2 Solid Waste Management

Solid Waste Management (SWM) is now gazetted under the Ministry of Local Government and Rural Development (MLGRD), nevertheless it cannot be separated from sanitation, particularly as most of the rural sanitation is on-site with few septic tanks and primarily latrines. SWM is aimed at ensuring the safe use, treatment, reuse, recycling and disposal of solid waste materials. The SDGs contain two targets related to solid waste. This highlights the growing global concern with SWM. These Goals are: SDG 11 (sustainable cities and communities) includes target 11.6, which focuses on reducing the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management issues. SDG 12 (responsible consumption and production) includes targets focused on environmentally sound management of all waste through prevention, reduction, recycling and reuse (targets 12.4 and 12.5) and reduction of food waste (target 12.3).

Furthermore, a Solid Waste Regulation and Management Act No. 20 of 2018 was passed as an Act to provide for the sustainable regulation and management of solid waste; general and self-service solid waste services ; the incorporation of solid waste management companies and define their statutory functions; the licensing and functions of solid waste service providers , operators and self-service solid waste providers and provide for their functions; the regulation, operation, maintenance and construction of landfills and other disposal facilities; the setting and approval of tariffs for management of solid waste and provision of solid waste services; and matters connected with, or incidental to, the foregoing. The Act is not fully operational, however, Kawambwa will use its provisions to manage solid waste.

The Local Authority (LA) will coordinate and collaborate with the MoE, MLGRD and MoH with regards to institutional and public places sanitation and hygiene, as well as solid waste management.

3.3.3 Sustainable O&M

3.3.3.1 Water Supply Schemes

The continuation and continuous improvement of the Sustainable Operation and Maintenance Programme (SOMAP) concepts will be a key part of keeping the water supply systems operational at optimum levels in the district. The applications of the principles of SOMAP are aimed at ensuring that between 90% - 100% of rural water supply facilities are operational all the time. Operation and maintenance (O&M) advocacy, communication and acceptance will be part of the pre-installation community buy-in processes. The LA will take an active role in ensuring adherence to set out rules across government and non-governmental actors. This applies to both water supply O&M and to sanitation O&M.

3.3.3.2 Sanitation Facilities

O&M for sanitation facilities will depend mainly at the household level on the ability by the family members to pay for the repairs and improvement of the facilities. With the potential increased and improved water supply in the community by small piped schemes, house connections would be possible which would lead to a climb up the sanitation ladder, this in turn could end up with small on-site systems such as de-centralised wastewater treatment system (DEWATS). This will be more likely to happen in schools and health facilities with more people using them in a relatively small geographical area.

3.3.3.3 Water Supply Infrastructure Rehabilitation

Repair and rehabilitation of water supply infrastructure is considered as part of the O&M component. It will be aimed at bringing the non-operational or partially operational water supply infrastructure to optimal operational levels. ***An inventory of existing functional and non-functional water supply systems, including their locations, will form the baseline for water supply systems for the 2021 -2030 WASH Master Plan for the district.*** A rehabilitation plan, to rehabilitate all viable non-functional water supply systems in the first 2 years of the plan will be created and implemented. It is expected that with properly designed, constructed and strong O&M, the new water supply systems developed under the plan might not need rehabilitation within the first 10 years.

3.3.4 Capacity Development

The CD strategy developed by the Ministry of Local Government and Rural Development (MLGRD) then, for the subsectors will create the basis for dismantling performance bottlenecks in the system. The major focus of this subcomponent will include:

1. Institutional and organisational development at national, provincial, district and sub-district levels. This will include definition of clear structures and definition of roles and responsibilities at all levels in line with the devolution process, as well as approaches to breaking the institutional silos that inhibit sectoral synergies.
2. Capacity building activities are to be undertaken at all levels including national, provincial, district and sub-district, (such as WDCs and community levels). This will include technical as well as managerial and leadership development and coaching,

hands-on training and in-house training courses in project planning and design, procurement, contract and financial management, IT and monitoring.

3. Creating synergies within the proposed devolved LA structures.

3.3.5 Sector Development

Kawambwa is part of the whole WASH system, therefore to ensure implementation efficiency, effectiveness, sustainability, transparency and accountability, various system support issues have to be addressed; among them the following:

3.3.5.1 Governance, Management & Sector Coordination

"Good governance being a precursor to accelerated development in the economy, the policies will also ensure that economic management conforms to the norms of good governance and accountability". [20] The Local Government Act highlights that good governance within Local Government aims to increase civil engagement with more members of the community in order to get the best options that serve the people.

The participatory and consultative processes of the DRA, the underlying theme of Decentralisation, local participation, and the SDGs theme of '***no one left behind***' will be promoted. Participation in, and access to development activities, has to be assured for all people with special needs including but not limited to women and girl children who bear most of the responsibility for domestic water supply and sanitation needs. Prioritising social inclusion and equity considerations is also important to ensure that vulnerable and hard-to-reach groups in the communities including the elderly, the disabled and the poor do not miss out on the benefits of WASHE interventions of the WASH Master Plan.

3.3.5.2 Research and Development

R&D forms the bedrock of improvements and learning. A number of issues have emerged in the WASHE sector in Zambia with regards to technology, water quality and behaviour change communication. The R&D will continue to be undertaken at all levels possible; and new technologies will be piloted and adopted whenever appropriate.

3.3.5.3 Advocacy and Communication

International experience demonstrates that advocacy and communication (A&C) remains essential to the successful implementation of RWSS programmes. A&C has applications in the Master Plan on a number of levels with a range of objectives and target audiences. For example:

- Behaviour change communication at the community level to sensitise and raise public awareness of health/hygiene issues.
- Promotion and adoption of WSS systems and facilities and their correct use, including sanitation marketing
- Awareness and understanding of relevant staff of LAs and central government about the Kawambwa WASH Master Plan objectives, results, activities, responsibilities, etc.

[20] Revised Sixth National Development Plan (R-SNDP) 2013-2016. (2014) GRZ MoF National Planning Department.

- Advocacy and lobbying with a range of target audiences about and for the plan and its components at both national and sub-national levels.

A&C will involve the use of a range of communication channels, media and other communication platforms according to the specific objectives and initiatives, and the needs of the target audiences. A&C activities and issues are part of the strategies of most of the other components and sub-components of the plan.

3.3.5.4 Other Cross-Cutting Issues

The focus of cross cutting issues for the plan includes:

1. Social inclusion and gender mainstreaming (SIGM)
2. HIV/AIDS
3. Good governance
4. Climate change and environmental protection.

Good governance and climate change and environmental protection are cross cutting in nature but are specifically included on their own herein because of their great impact.

Climate Change:

The National Development Plan (NDP) has highlighted the risks now posed by climate change and Zambia has been experiencing the effects of climate change resulting in extreme weather conditions, such as droughts, rising temperatures and unpredictable rainfall patterns. The frequency and intensity of climate events is expected to rise in future, with negative impact on the economy and consequently people's livelihoods.

Climate change adaptation and mitigation incorporated into the plan initiatives will, therefore, promote social wellbeing, including better health, as well reduce environmental risks associated with shortage of water, and other effects.

Issues of the environment and climate change are interlinked and climate change has become a major concern especially in view of its impact on water security.

Strategies developed and implemented by the plan will address climate change related water supply and sanitation challenges. These will include water conservation and water-related disaster management coordination to mitigate effects of climate change and variability while also improving the living conditions of households and communities.

3.3.6 Planning, Monitoring Evaluation, and Reporting and Learning

Planning, Monitoring, Evaluation, and Reporting and Learning (PMERL) create a framework for tracking progress towards the desired goals and provide the means for programme implementation control and mid-course corrections where these are due. Monitoring and evaluation (M&E) of plan performance and reporting and sharing of data collected and information generated is a critical part of the plan as it provides a key basis for transparency, accountability, both to national level stakeholders and, in terms of social accountability, to the beneficiary communities.

The development and implementation of a comprehensive plan/M&E framework is a critical success factor for implementing the Plan as it would produce the requisite information for continuous plan implementation improvement and accountability. This would provide the basis for sector coordination and for requisite reviews and assessments.

The LA will be involved in WSS data gathering, information generation activities and monitoring and evaluation to inform the district and for reporting WSS information upward to the provincial level for aggregation and onward transmission to the national level.

4 KAWAMBWA DISTRICT PROFILE

This section gives an overview of the characteristics of Kawambwa District in the key areas that affect the WASH sector. It covers the physical context and economic situation.

4.1 Population

Zambia's population was estimated to stand at 18,367,994[21] as at June, 2020 and it growing at an annual growth rate of 2.8%[22]. It is projected that the population will reach 24,325,505 by 2030 with 45.5% of these living in urban areas. Resultantly the growth in population will place a high demand on the available water and sanitation services especially in the urban areas given that Zambia is a rapidly urbanizing country.

Kawambwa District had a population of 100,905 as per 2010 census and it was estimated to be 132,998 as at the end of 2020. More details are given at **Appendix V**.

4.2 Geography

Kawambwa District is one of twelve Districts found in Luapula Province of Zambia. Kawambwa District borders with Nchelenge District on the North, Chipili District on the South, Mwansabombwe District on the west, Mporokoso District on the East. The District has a road network that links it to all the neighboring Districts. The map below shows the location of Kawambwa in Luapula Province relative to other districts.

It is located on the edge of the northern Zambian plateau above the Luapula valley at an altitude of 1300 m. Kawambwa sits at the junction of tarred roads to Nchelenge, Mporokoso, Mushota and Mansa, and Mbereshi linking with the Zambia Way, the main tarred highway of the Luapula Province through Kazembe (Mwansabombwe) and Mansa.

Kawambwa has some good soils for agriculture and has a lot of water bodies for various uses.

Zambia's largest tea plantation is situated 27 km from Kawambwa on the Mporokoso road.

Near to Kawambwa are three of Zambia's waterfalls Lumangwe Falls, Kabwelume 50 km to the north-east on the Kalungwishi River and the Ntumbachushi Falls on the Ngona River, 16 km west.

21 https://www.worldometers.info/world-population/zambia-population/

22 CSO 2010 Census for Population and Housing, 2010.

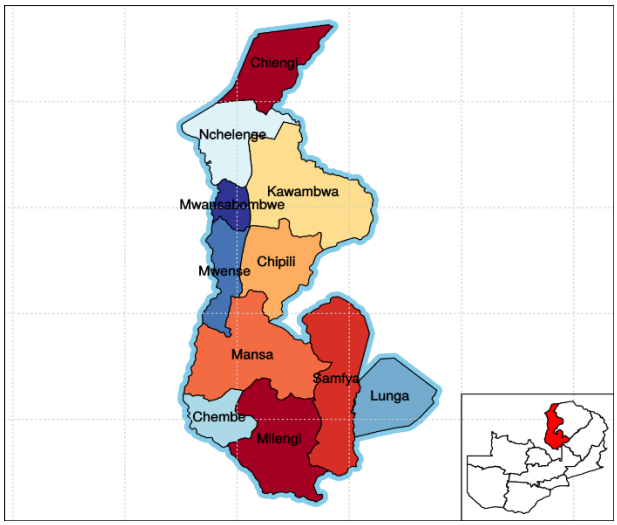


Figure 8: Map of Luapula Province showing the Districts (note: this map shows 11 districts instead of the 12 districts, of which no map could be obtained)

The District is endowed with gentle hills which are a feature of Kawambwa's topography. The land is also characterized by a number of hills, and dambo grasslands. The major vegetation type is the Miombo wood land of the savannah formation. Much of the Miombo exists on rocky hills. The most dominant tree species only lose their leaves for a short period in the late dry season. In drier areas, the trees may seem to be completely deciduous while in less dry areas, the trees may be virtually evergreen.

Generally, Kawambwa experiences a lot of rainfall and this supports a Miombo wood land that is evergreen. The district falls in agro-ecological region III of the country. The annual average temperature is 19.8◦c experiencing warm to hot summer, reaching 30◦c and more in September and October and warm winter days, but cold at night. It receives an average of nearly 1,300mm rain annually, with rainfall exceeding 0.1 mm on an average of 116 days a year. Summer rains start in late October and the bulk of rainfall occurs between November and March. Kawambwa District experiences an average relative humidity of 58% per annum, 62% of sun shine per year and an average of 9.4% sunshine hours per year.

Its climate is controlled by the North-South migration of the Inter Tropical Convergence Zone (ITCZ). The summer rains are brought by the southward migration of the ITCZ, and are characterized by thunderstorms, which are occasionally severe, with excessive lightning and sometimes hail.

The soil ranges from fine loamy and clay soils derived from acid rocks to coarse loamy and fine loamy soils and coarse textured soils derived from Kalahari sands. The soils have low pH, low base parturition and clay mineralogy and low cat ion exchange.

Figure 8: Map of Kawambwa District (note: this map shows 8 wards instead of the newly created 10 wards, of which no map exist yet)

Kawambwa had an estimated population of 100,905 as 2010 and projected at 132,998 as at the end of 2020, and the whole district is considered as rural. The growth rate for the District was 2.8%, and this has been used for the projected population up to 2030. The population as at 2020 is as shown in Table 4, and the projected population up to 2030 is given at **Appendix V**.

Table 4: Population of Kawambwa

Year	2010	2020
Ilombe	12,103	15,952
Pambashe	2,370	3,124
Mulunda	10,859	14,313
Chibote	2,773	3,655
Chimpili	2,506	3,303
Kabanse	7,050	9,292
Luena	3,296	4,344
Kawambwa Central	10,733	14,147
Senga	11,903	15,689
Ntumbachushi	2,493	3,286
Fisaka	5,987	7,891
Luongo	3,151	4,153
Iyanga	5,140	6,775
Ng'ona	13,777	18,159
Lubale	1,775	2,340
Filenge	2,702	3,561
Kala (New Ward)	1,454	1,916
Chikanda (New Ward)	833	1,098
Total	**100,905**	**132,998**

Source : CSO Census of 2010. Note the apportionment to the 2 new wards was done by management and the consultant projected the 2020 population based on the average national grow rate of 2.8% per annum.

4.3 Economic Context

Kawambwa District is mainly a farming, and fishing area. It is slowly becoming urbanized due to the growing mining activities there. Kawambwa District falls in agro-ecological region III of the country which receives rainfall above 1,000 mm per annum and is endowed with abundant arable land and a lot of water bodies and good pasture land, thus making it a high potential zone for crop and vegetable production, aquaculture and livestock farming as well as value-addition through agro-processing. The District requires partners to invest in aquaculture, tourism and agro-processing of crop & vegetable produce. These will create more jobs for its local residents leading to the growth of the local economy.

The main economic activity for the rural communities is crop farming and fishing. The district's produce: maize, and cassava. At a commercial level the district produces tea and bananas.

The main sources of revenue for the Local Authority are taxes, levies, fees, government grants and donor funding.

4.3.1 Growth Centres

In the rural areas there are two service clsuters defined as follows:

- Rural settlement with populations of 50 (10 households) to 500 (100 households); and
- Rural Growth Centres with populations of 501 (101 households) to 5,000 (1,000 households).

Going by the above classification, Kawambwa district has fifteen (15) growth centres – see Appendix XVII for more details. All these growth centres are serviced by boreholes with hand pumps for water supply and pit latrines for sanitation. There is a high risk of underground water pollution due to numerous pit latrines and individual boreholes scattered all over the growth centres.

In all the growth centres in the district there are schools, healthcare facilities and commercial activities such as trading.

The trend in the first programme (NRWSSP – 2006 to 2015) was that of drilling new boreholes in the community at the rate of one facility for every 250 people. To a lesser extent a few schemes were developed by either the government or NGOs for communities with more than 500 people. These schemes will be increased in the new programme (NRWSSP II), with high possibility of these being handed over to be run by the CUs and the LAs.

In order to cater for increasing population at growth centres, the NRWSSP II proposed to upgrade some of the existing water supply facilities to small piped systems to ensure adequate supply of water for growth centres[23].

In line with the NRWSSP II the town council will work towards putting up piped water supplies, and small network systems in growth centres.

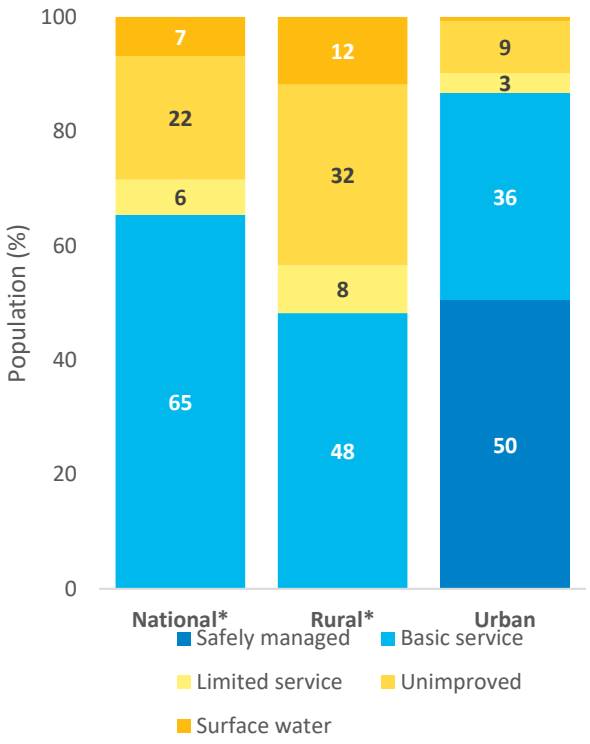
[23] National Rural Water Supply and Sanitation Programme (NRWSSP) 2019 – 2030

5 ANALYSIS OF WASH AND WATER RESOURCES MANAGEMENT ISSUES

This chapter provides an assessment of the WASH sector and the Water Resources Management (WRM) situation in the District. It presents the gaps in the following thematic areas: WASH at national level for Zambia, Water Supply services, Sanitation infrastructure and service level, Institutional water, sanitation and hygiene, Water resources management, Governance: Capacity and Performance of Service Providers, District WASH financing, and Resource mobilization.

5.1 WASH at National Level for Zambia

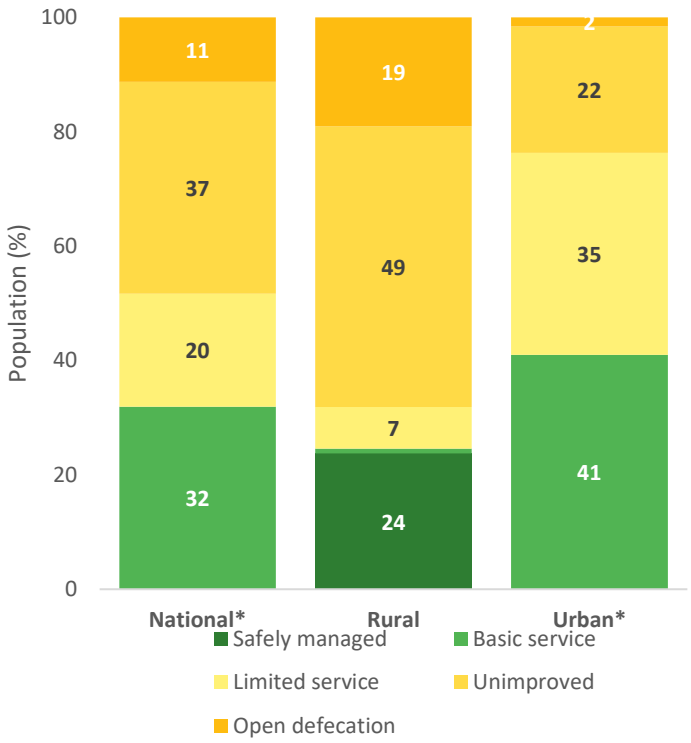
According to the WHO/UNICEF JMP (2021) Report on Sustainable Development Goals (SDGs), there is no estimate available for safely managed water at national level, but the estimate for the national level only for the urban areas is 50% (Figure 9). There is no estimate available for safely managed sanitation at national level either, but for the rural areas its estimated at 24%. However, access to improved sanitation is at 32% and 76% for rural and urban areas respectively as shown in figure 10. Figure 11 shows hygiene service levels at national level with the majority in rural areas having no facility at 62%.



*No safely managed estimate available"

Figure 9: Drinking Water Ladders at National Level for Zambia

Source: WHO/UNICEF JMP (2021) Report



***No safely managed estimate available"**

Figure 10: Sanitation Ladders at National Level for Zambia - 2020
Source: WHO/UNICEF JMP (2021) Report

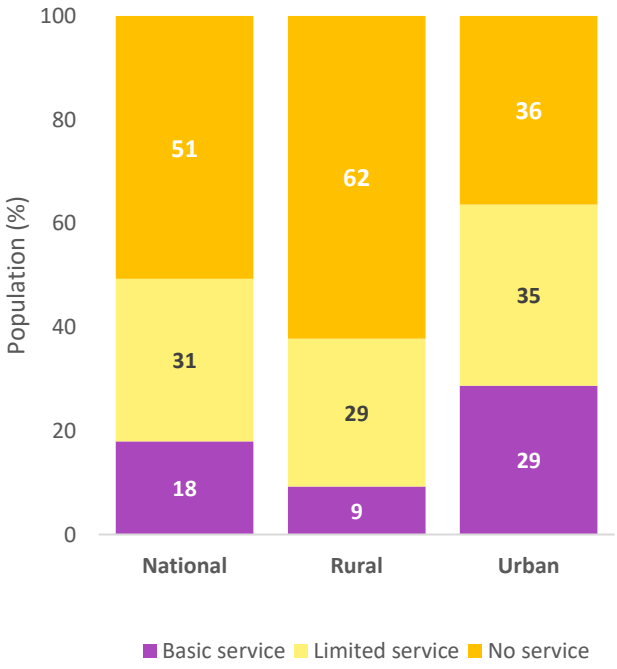


Figure 11: Hygiene Service Ladders at National Level for Zambia - 2020
Source: WHO/UNICEF JMP (2021) Report

Table 5: Water, Sanitation and Hygiene Coverage – Zambia 2020

Zambia	Drinking water			Sanitation			Hygiene		
	National*	Rural*	Urban	National*	Rural	Urban*	National	Rural	Urban
	2020	2020	2020	2020	2020	2020	2020	2020	2020
Safely managed	-	-	50	-	24	-	-	-	-
Basic service	65	48	36	32	1	41	18	9	29
Limited service	6	8	3	20	7	35	31	29	35
Unimproved	22	32	9	37	49	22	-	-	-
No service	7	12	1	11	19	2	51	62	36

Source: WHO/UNICEF JMP (2021)

5.2 Water Supply Services

This section provides the water supply infrastructure and the service delivery models. Included in the section is an analysis of the water service delivery based on the definitions applied by the World Health Organization (WHO) and UNICEF Joint Monitoring Program (JMP) for monitoring the Sustainable Development Goals (SDGs). At the end of the section the challenges and gaps are presented.

5.2.1 Water Supply Infrastructure

The infrastructure for water supply in the rural areas of the District currently (as at December, 2019) constitute the following water points shown in Table 6.

Table 6: Status of Water Points

Water Points	Rural	Functional	Non-functional
Number of boreholes with hand pumps	264	136	128
Number of water wells (unprotected)	14,721		
Number of water wells (protected)	2,780		
Number of springs	-		

Source: Kawambwa, December, 2020

Kawambwa District has a rural population of 86% of rural population (about 114,378) that is mainly served by boreholes with hand pumps and wells. The boreholes are mainly fitted with the Indian Mark II pumps. The boreholes were mainly provided by the Government of the Republic of Zambia, Japan International Cooperation Agency (JICA), Access Water and Global Empowered Zambia and UNICEF. CARE international is providing Capacity building of 132 Water point Committees.

. The district is mainly rural, however, Ng'ona and Kawambwa Central Wards are partly urban; however, for planning urpses, the whole district has been assumed to be rural.

Table 7 below provides an overview of the performance of water supply services based on the following indicators;

- Functionality: water points that are working;
- Reliability: working even if they were out of service for not more than 10 days,

- Accessibility: total time taken by water users to fetch water from the water supply which should not have been more than half an hour and;
- Quality of water delivered: how safe the water is as perceived by the users.

Table 7: Status of Water Service

No.	Indicator	Hand Pumps % Score
1.	Water supply coverage – % of population with access to improved water services	86%
2.	Functionality – % of functional rural water supply services	40%
3.	Reliability – % of facilities that are functional and were out of service for not more than 10 days	60%
4.	Accessibility – % of households that spend less than 30 minutes on a round trip fetching water	-
5.	Quality – % of water points perceived to have safe water by users.	-

Source: LA Management, 2021

5.2.2 Water Service Delivery Model (SDM)

There are three models for water service delivery in the rural areas of Kawambwa District:

- Community Managed – Village Water, Sanitation and Hygiene (V-WASH) Committee manages most of these;
- Self-supply Model and;
- Institution Managed.

Table 7 below gives a brief description of these models including their performance and the number of facilities under these models.

Table 7: Overview of Water Service Delivery Models

No.	Water SDMs	Main Variant	Description	No. of Facilities	Performance
1.	Community Managed	Water points with hand pump.	The water facility has been provided to the community as a whole. Community members contribute a certain amount for maintenance of the facility. They also elect a Village WASH Committee to be in charge of the water facility.	264	51.5% of these water points are functional with a reliability of 60%. There are few consistently paying for water.
		Water points with hand pump Hand dug wells (protected)	The water facility has been provided to the community as a whole. They elect a Village WASH Committee to be in charge of the water facility. Monthly money contributions from community is done.	Nil	-
2.	Self-Supply	Private wells	These are privately owned wells.	Nil	-
3.	Institution Managed	Water point with hand pump.	The facilities are mostly provided by a government department like MWDS under the Department of Water Affairs or the Local Authorities.	-	-.

Source: Kawambwa Management, 2020

5.2.3 Water Supply Coverage, Challenges and Gaps

The WHO/UNICEF JMP Report (2021) which monitors progress made towards the attainment of the SDGs, defines various levels of water services as provided under chapter 1, Section 1.5 that gives the water supply ladders.

It defines a source as improved if they meet the following criteria:

- Accessible on the premises;
- Water should be available when needed and:
- Water supplied should be free of contamination.

Basic services are defined as drinking water from an improved source from which a round trip takes 30 minutes or less to collect water, but if it takes more than 30 minutes for a round trip, then it is considered to be a limited service. Household survey data on water coverage is the main source for this type of analysis. Access to basic drinking water for the rural areas in Kawambwa stands at 86%[24]as at the end of 2020. This information was obtained from the self-administered questionnaire that was administered in September/October, 2020 through the questionnaire that was administered during the inception meeting, Further clarifications were obtained through follow-up communication.

The main challenges and gaps found in the water supply coverage are presented below. These are based on the analysis provided from secondary sources and findings from the field work including the Public Consultations that were carried out in Kawambwa.

- Low access to water services in rural areas.
- Water users unwilling to pay for water services.
- Reliability of existing water supply facilities is low due to poor operation and maintenance that results in frequent breakdowns.
- Inadequate community contributions for O&M.
- Lack of improved water services in some rural parts of the District especially in those areas which are difficult to serve due to inaccessibility to the areas.
- Frontline workers e.g. Community Champions not collecting Data.

5.2.4 Issues raised in Public Consultation – Key Informant Interviews and Focus Group Discussions

- Water perceived to be of poor quality as it comes out with a brown hue due to rust.
- High iron content in the water.
- Lack of SOMAP shops to buy spare parts for broken down boreholes.
- Some boreholes dry up in the dry season.
- Some boreholes do not yield enough water to meet the demand by community members.
- The use of galvanised iron (GI) pipes results in rust in the pipes and hence brown water. Need to replace metal pipes with plastic or stainless steel ones to prevent rust.
- Wells drying up due to mining activities being undertaken in their district.
- Community members not willing to contribute towards operation and maintenance of their boreholes.

[24] Kawambwa Town Council management

- Inadequate water points leading to long queues when drawing water from the water points. The boreholes are not enough for the growing population.
- Inconsistency in provision of chorine to treat water to make it safe for drinking.
- Lack of water testing kits to determine water quality.
- Boreholes are far for some households.
- The boreholes are not enough for the growing population.
- The Area Pump Menders (APMs) are not enough to attend to all borehole breakdowns in time.
- Frequent breakdown of boreholes due to insufficient servicing.
- Poor cellphone network coverage making communication with APMs for borehole fixing difficult.

Given at **Appendix II** are the statistics on the district population, water points, APMs, community champions (CCs), V-WAHEs and tool boxes. It can be seen from the same that the district has inadequate facilities to meet the WS needs of the district.

5.3 Sanitation and Hygiene

This section presents the main sanitation infrastructure found in rural areas of Kawambwa District along the sanitation service chain. This comprises mainly capture and containment. The section also provides an estimate of sanitation coverage and covers the status of hygiene service delivery. The figure below gives the overall sanitation chain.

Figure 12: Sanitation Service Chain

Sanitation is defined as the provision of facilities for the safe disposal of and treatment of human excreta to promote a sustainable healthy environment. There are 5 levels of sanitation as defined by the WHO/UNICEF JMP Report (the sanitation ladder). These are:

(i) Safely managed

(ii) Basic

(iii) Limited

(iv) Unimproved and

(v) Open defecation

The full details are given under section 1.5 in Chapter 1 of this document.

5.3.1 Sanitation Infrastructure and Service Level

The main facilities that are used for capture and containment of faecal waste in Kawambwa include traditional pit latrines and Ventilated Improved Pit (VIP) latrines. Kawambwa households in rural areas basically use traditional pit latrines with institutions (schools and health facilities) using VIP pit latrines. Households use pit latrines with structures made of burnt mud bricks with grass thatched roofs and with bathrooms made of the same local materials. These on-site facilities are usually buried once the pit latrines are full; and another suitable place is found within the residence to dig a fresh pit latrine. The pit latrines are not emptied.

Basic access to sanitation in rural Kawambwa is 80.0%. Further analysis of the sanitation infrastructure against parameters of improved services for pit latrines shows that that these are still basic sanitation facilities because they do not meet all the criteria for improved services.

5.3.2 Sanitation Challenges and Gaps

The sanitation challenges and gaps that have been identified are based on the analysis of sanitation service provision found in the district. These are as follows:

- There are still low levels of households using improved sanitation facilities with majority still using basic sanitation facilities.
- There are possibly still cases of open defecation in the District as basic access to sanitation is not 100% yet.
- The adoption of hand washing practices with clean water and soap or ash is very low, though the specific statistics are not available.. It can reach a higher percentage with a continuation of good hygiene practice awareness in the district through Community Led Total Sanitation (CLTS) approach under the Ministry of Health.
- Poor sanitation and hygiene conditions in schools

5.3.3 Issues raised in Public Consultation / KII and FGDs

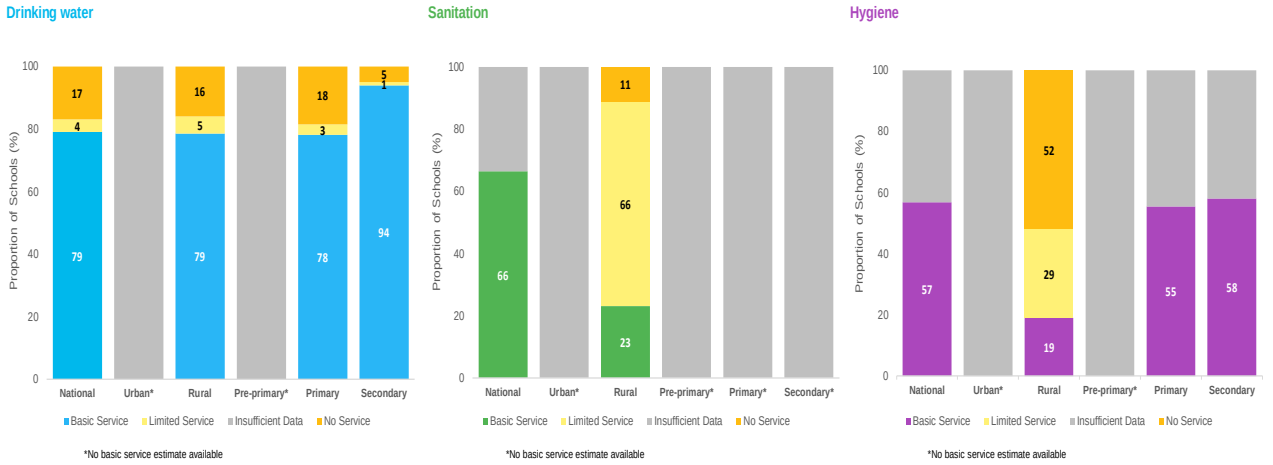
- Inadequate sanitation facilities leading to people practicing open defecation.
- Poor standard of toilet infrastructure.
- Some households still sharing sanitation facilities when each household is supposed to have their own toilet.
- Toilets not deep enough so they fill up in a short period of time.
- They do not have pit latrine emptying services. There are also no sludge treatment facilities.
- Sensitization on the importance of eradicating open defecation should continue.
- Need to learn skills to build permanent toilets and bathroom structures to avoid them collapsing in a few years.
- Due high water table and regular flooding in certain areas, it's expensive to have all weather toilets.
- Markets, churches and prisons do have poor WSS facilities.

5.4 Institutional Water Supply, Sanitation and Hygiene

This section of the report provides an assessment of institutional (schools and health facilities) WASH facilities. The assessment is based on the KII carried out, observations made during the field work trip by the team and the findings of the UNICEF baseline survey[25].

Institutions that are considered in the District WASH Master Plan are health centres and schools. It is important that these are included so as to ensure that safe drinking water, sanitation and hygiene services reaches everyone. Markets and prisons are not included.

The global effort to achieve sanitation and water for all by 2030 is extending beyond the household to include schools, healthcare facilities and workplaces. The WHO/UNICEF JMP 2018 Report gives the first comprehensive global assessment of WASH in schools and establishes a baseline for the SDG period. The definitions for the JMP service ladders for WASH in schools is as shown in table 11 below. The school age population in Zambia accesses WASH services as follows: 79% accesses basic water services, 66% accesses basic sanitation services and 54% accesses basic hygiene services[26]. This is at national level. The table below defines WSS facilities in public places.



Zambia	Water						Zambia	Sanitation						Zambia	Hygiene					
	National	Urban*	Rural	Pre-primary*	Primary	Secondary		National	Urban*	Rural	Pre-primary*	Primary*	Secondary*		National	Urban*	Rural	Pre-primary*	Primary	Secondary
	2019	2019	2019	2019	2019	2019		2019	2019	2019	2019	2019	2019		2019	2019	2019	2019	2019	2019
Basic Service	79	-	79	-	78	94	Basic Service	66	-	23	-	-	-	Basic Service	57	-	19	-	55	58
Limited Service	4	-	5	-	3	1	Limited Service	-	-	66	-	-	-	Limited Service	-	-	29	-	-	-
No Service	17	-	16	-	18	5	No Service	-	-	11	-	-	-	No Service	-	-	52	-	-	-
Insufficient Data	0	100	0	100	0	0	Insufficient Data	34	100	0	100	100	100	Insufficient Data	43	100	0	100	45	42

Source: WHO/UNICEF JMP (2020)

Figure 14: JMP Service Ladders for WASH in Schools
Source: Source: WHO/UNICEF JMP (2021)

Table 11: JMP Service Ladders for WASH in Schools

25 Op. Cit. Improvement of WASH Services to Refugees from Democratic Republic of Congo and Host Communities in Zambia: *Final Baseline Report*

26 WHO/UNICEF JMP, 2018. Drinking Water, Sanitation and Hygiene in Schools: *Global Baseline Report* p77

DRINKING WATER	SANITATION	HYGIENE
Advanced service: Additional criteria may include quality, quantity, continuity, and accessibility to all users	**Advanced service:** Additional criteria may include student per toilet ratios, menstrual hygiene facilities, cleanliness, accessibility to all users, and excreta management systems	**Advanced service:** Additional criteria may include hygiene education, group handwashing, menstrual hygiene materials, and accessibility to all users
Basic service: Drinking water from an improved source and water is available at the school at the time of the survey	**Basic service:** Improved sanitation facilities at the school that are single-sex and usable (available, functional and private) at the time of the survey	**Basic service:** Handwashing facilities with water and soap available at the school at the time of the survey
Limited service: Drinking water from an improved source but water is unavailable at the school at the time of the survey	**Limited service:** Improved sanitation facilities at the school that are either not single-sex or not usable at the time of the survey	**Limited service**: Handwashing facilities with water but no soap available at the school at the time of the survey
No service: Drinking water from an unimproved source or no water source at the school	**No service:** Unimproved sanitation facilities or no sanitation facilities at the school	**No service:** No handwashing facilities available or no water available at the school
Note: Improved sources include piped water, boreholes or tube wells, protected dug wells, protected springs and packaged or delivered water. Unimproved sources include unprotected wells, unprotected springs and surface water	***Note:*** Improved facilities include flush/pour flush toilets, ventilated improved pit latrines, composting toilets and pit latrines with a slab or platform. Unimproved facilities include pit latrines without a slab or platform, hanging latrines and bucket latrines	***Note:*** Handwashing facilities may be fixed or portable, and include a sink with tap water, buckets with taps, tippy-taps and jugs or basins designated for handwashing. Soap includes bar soap, liquid soap, powder detergent and soapy water but does not include ash, soil, sand or other handwashing agents.

Source: WHO/UNICEF JMP, Drinking Water, Sanitation and Hygiene in Schools: Global Baseline Report 2018

This section of the report provides an assessment of institutional (schools and health facilities) WASH facilities. The assessment is based on the data provided by management through the questionnaire that was administered during the inception visit.

There are 94 schools and 27 health facilities found in in Kawambwa District. The numbers for both schools and health facilities herewith presented are based what was provided to the consultant during the visit to the district by Kawambwa Town Council management.

The assessment of access to sanitation in schools and health facilities included an assessment of the number of pit latrines for both females and males. These are compared to the enrolment and measured against the established standards provided by the Ministry of Education of 25 male pupils per toilet and 20 female pupils per toilet. Sanitation assessment also included the presence of bathrooms at both schools and health facilities. The assessment further included the management and disposal of clinical waste in healthcare facilities, that is, the presence of incinerators. Assessment of water supply focused on the presence of a water supply system on the premises of both schools and health facilities.

Government schools and health facilities have access to basic sanitation facilities. They use VIP toilets separated for male and female. The teachers and health staff equally have their own VIP toilets. The recommended ratio of 25 male pupils to 1 toilet and 20 female pupils to 1 toilet is exceeded with ratios being well over 60 pupils to 1 toilet.

Table 10: Sanitation Situation in Schools

Number of schools	Number of pupils		Number of existing dropholes		Total No of dropholes required based on pupil/drophole ratio		Additional dropholes required	
95	Male	Female	Male	Female	Male	Female	Male	Female
	22,535	22,589	269	297	901	904	632	607

Table 12: Sanitation Situation in Healthcare Facilities

Total Number of Health Centres	Catchment Population		Number of existing drop holes		Total No of dropholes required based on standard drophole ratios		Additional dropholes required	
	Male	Female	Patients - Male	Patients - Female	Patients - Male	Patients - Female	Patients - Male	Patients - Female
	58,251	61,724	29	27	46	46	17	19

The above tables show that sanitation coverage in schools is 31.4% and 60.9% in health centres.

Investigations were made on the physical conditions of the sanitation facilities and the suitability for use. General observation of some government schools in rural areas indicate that they have poor superstructures with grass thatched roofs and mud smoothed slab floor and most of them do not have lids to cover the drop holes. They have no bathrooms and no proper facilities for the management of menstrual hygiene and safe disposal of materials. As for water, the schools are serviced with boreholes that have hand pumps.

With regard to health centre facilities they access water from boreholes with hand pumps. Water was found on the premises and according to the WHO/UNICEF JMP Report definitions, the institutions have basic water services.

Figure 13 below gives status of water supply in healthcare facilities. At **Appendix XV** is given national coverages for water, sanitation and hygiene as 2019 by JMP in schools. The basic service coverages at national level are: water – 79%, sanitation – 66% and hygiene – 57%; and in the rural areas: water – 79%, sanitation – 23% and hygiene – 19%.

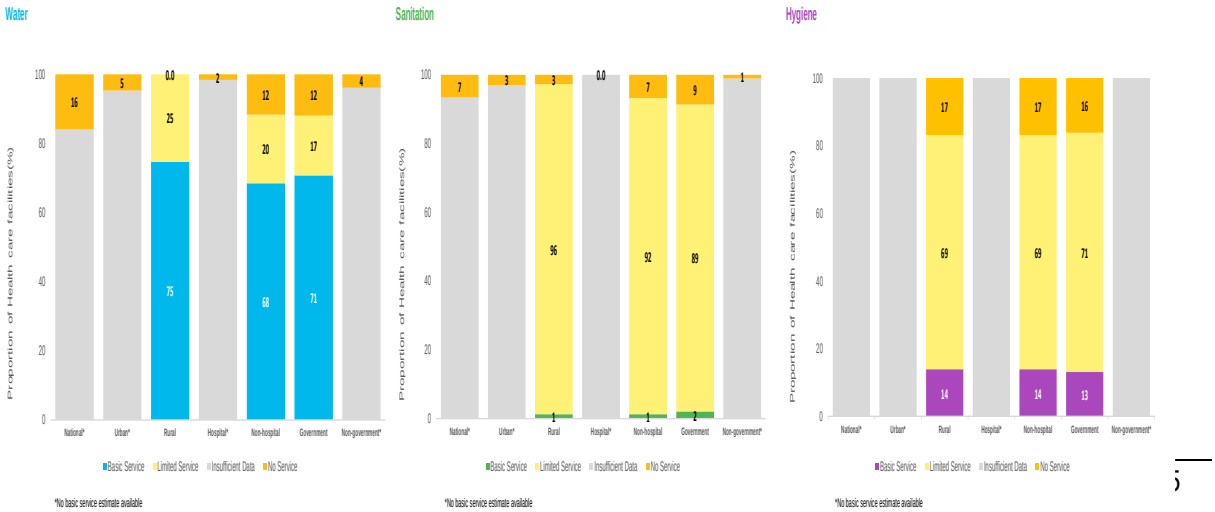


Figure 13: WASH services in health care facilities (2019)

Source: JMP 2021

At **Appendix XVI - Estimates on Water, Sanitation and Hygiene, in Health Care Facilities in Zambia;** are more details of the water, sanitation and hygiene status in health care facilities in Zambia as at 2019 as provided by the JMP. The report indicates that there are no estimates of coverage basic services for water, sanitation and hygiene. For the rural areas the estimates are as follows: Water: basic – 75% and limited 25%; sanitation: basic – 4% and limited – 96%; and hygiene: basic – 14% and limited – 69%.

With respect to healthcare waste management and environmental cleaning in health facilities, the country is not doing very well; Kawambwa too is not doing well as the figure and tables below show the summary for Zambia's situation as per the JMP report of 2021.

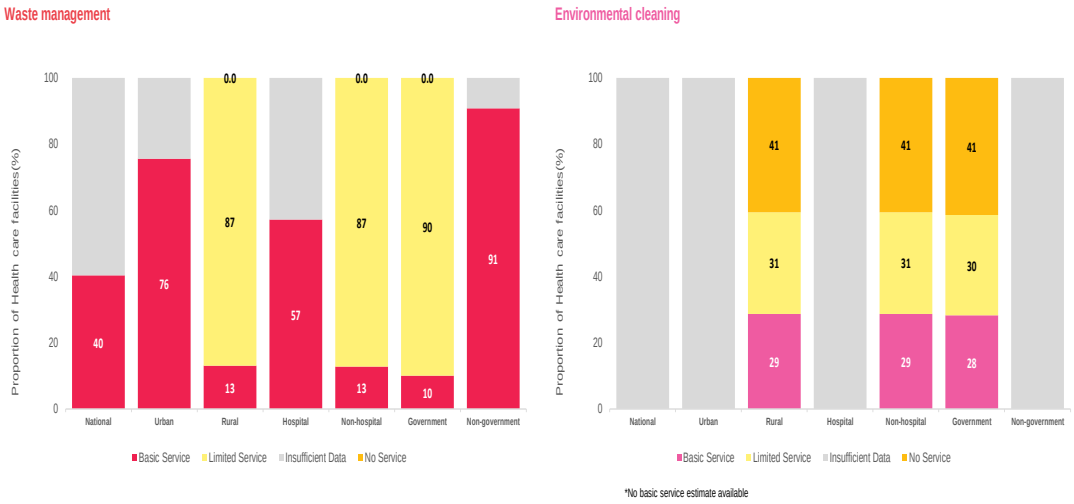


Figure 17: Waste Management and Environmental Cleaning in Healthcare Facilities (2019)

Source: JMP 2021

Table 14: Healthcare Waste Management in Zambia

Zambia	Healthcare Waste management						
	National 2019	Urban 2019	Rural 2019	Hospital 2019	Non-hospital 2019	Government 2019	Non-government 2019
Basic Service	40	76	13	57	13	10	91
Limited Service	-	-	87	-	87	90	-
No Service	-	-	0	-	0	0	-
Insufficient Data	60	24	0	43	0	0	9

Source: WHO/UNICEF JMP (2020)

Table 15: Healthcare Waste Management in Zambia

Zambia	Environmental cleaning						
	National*	Urban*	Rural	Hospital*	Non-hospital	Government	Non-government*
	2019	2019	2019	2019	2019	2019	2019
Basic Service	-	-	29	-	29	28	-
Limited Service	-	-	31	-	31	30	-
No Service	-	-	41	-	41	41	-
Insufficient Data	100	100	0	100	0	0	100

Source: WHO/UNICEF JMP (2020)

The report indicates that there are no estimates environmental cleaning at national level and urban areas. For the rural areas the estimates are as follows: basic – 29%, limited 31% and no service – 41. For healthcare waste management the status as at 2019 was: at national level: basic 40%; insufficient data 60%, urban areas: basic 76% and insufficient data – 24%, and rural areas: basic – 13%, limited – 87%.

5.4.1 Institutional WASH Challenges and Gaps

The challenges are identified as follows:

- Inadequate basic and improved sanitation facilities for rural schools.
- Inadequate basic sanitation facilities for rural schools.
- Schools do not have safe disposal of menstrual pads for girls.
- The rural schools do not have bathrooms for girls for menstrual hygiene management.
- Most institutions have hand washing facilities but face challenges with provision of water and soap.
- Inadequate investment in sanitation and water supply infrastructure.
- WASH data was not collected from all schools and health facilities.
- Inadequate water supply infrastructure.

5.4.2 Issues raised in Public Consultation – KII and FGDs

- Inadequate funds to build proper sanitation facilities.
- Water tends to reduce and/or dry up in the boreholes in the hot season especially between September and October.
- Some boreholes are non-functional.
- Inadequate number of water points to cater for the growing population around the institutions as community members draw water from the school and rural health facility.
- Toilets are not enough to cater for the pupils.
- The sanitation facilities at schools do not have menstrual hygiene management (MHM) services for the girl child.

- There are more pupils per toilet than the recommended ratio of 40 boys to 1 toilet and 25 girls to 1 toilet.

5.5 Water Resources Management

Surface water in Kawambwa comprises a series of major rivers and a lot of streams, and lakes.

Ground water is the most widely, but not extensively used water resource. It is used mainly for domestic purposes. There are reported cases of borehole water containing iron. The water wells tend to vary in quality because they are close to settlements and are open and widely used. Most communities still have challenges accessing clean water due to inadequate boreholes.

The water resources in the District are enough to cater for the economic activities that are undertaken which include mining, agriculture and crop farming. There has been some water resources management challenges that include:

- Climate change impacts: flooding or dry spells that affect the performance of the agriculture sector.
- Faecal contamination of some drinking water points especially in rural and peri-urban areas.
- Rapid population growth that has resulted in an increased demand for water

5.6 Governance: Capacity and Performance of Service Providers

5.6.1 Governance Institutions – Local Authority

The governance structure of the LA is as recommended by the MLGRD as per decentralised system; and is as given in Figure 5 under Chapter 2 section 2.4.1.2.

At the top is the Council which is made up of elected civic leaders (councillors) who provide oversight on the Town Council. Among the councillors are chiefs' representatives. The Council has 3 committees which look in details at thematic areas of the council's operations and these are:

- Plans, Works, Engineering Development and Social Services
- Audit Committee, and
- Finance, Human resources and General Purposes Committee

The day to day operations are under undertaken by the Council Secretary who is the Principal Officer and is assisted by Chief Officers who are heads of departments. The organogram as presented (Figure 5) herein is not fully implemented as personnel from the line ministries are not yet operating from the LA offices and the funds have not been devolved to the LA.

Office of the Council Secretary: The Council Secretary is the Chief Executive Officer of the Town Council and heads nine departments. **The departments are as follows:**

- **Community Development and Social Services Department** is responsible for promoting community participation in developmental affairs, provision of social welfare to the vulnerable and disadvantaged groups at the local level, security, community policing and prison (non-custodial) services. It also deals with chiefs affairs.
- **Education Services Department** is responsible for the management of institutions of learning for early childhood and primary education and; adult literacy.

- **Health Services Department** is responsible for the provision of primary health care, public health and pest control in order to improve the quality of life.
- Agriculture, Environment and Natural Resources Department is responsible for the provision of agriculture and livestock extension services and management and conservation of natural resources and environment.
- **Planning and Information Systems Department** is responsible for managing and coordinating policy formulation, preparation of district development plans, disaster management, gender mainstreaming, integrated management information system, and monitoring and evaluating the implementation of the council profile and programmes.
- **Engineering and Infrastructure Department** is responsible for rehabilitation, maintenance and construction of infrastructure and provision of engineering services.
- **Finance and Administration Department** is responsible for revenue mobilization, financial management and accounts, investment and valuation of property within the council area.

5.6.2 District Water, Sanitation, Hygiene and Education (D-WASHE) Committee

At district level, the D-WASHE Committee acts as an overall supportive inter-sectoral multi-stakeholder WASH technical platform (subcommittee) under the District Development Coordinating Committee (DDCC). The D-WASHE Committee is made up of staff from different government departments and sectors. The D-WASHE Committee meetings are chaired by the Council Secretary and hosts the secretariat.

The Rural Water Supply and Sanitation (RWSS) Coordinator is responsible for ensuring that Water, Sanitation and Hygiene (WASH) activities are implemented in the District. The DWASHE feeds into the Provincial WASH committee who equally feeds into the National Technical Working Groups.

Kawambwa District staff has basic knowledge, skill and capacity from the different departments and sectors that constitute the DWASHE Committee. However, the staff is not enough. Therefore the RWSS Coordinator works with staff from other departments within the council to implement WASH activities.

While the Kawambwa District staff has basic knowledge, skill and capacity from the different departments and sectors that constitute the D-WASHE Committee, there are some challenges related to planning, coordination, resource mobilisation and monitoring and evaluation and reporting. There is also inadequate staff to work with the RWSS Coordinator who relies on personnel from other departments within the council to implement WASH activities. In addition there were some concerns raised about the capacity of the D-WASHE in terms of skills and systems to manage school WASH[27].

The District Council has challenges with transport to carry out monitoring of activities. The funding for their activities is problematic because they rely heavily on central government for their funding and cooperating partners. The RWSS coordinator has the responsibility to ensure that pumps

[27] Op. Cit. Improvement of WASH Services to Refugees from Democratic Republic of Congo and Host Communities in Zambia: *Final Baseline Report p91*

are operational, but they face challenges in that community members are not consistent in their monthly contributions, hence the high number (48.5%) of non-operational boreholes . This poses a challenge in raising money for maintenance of water points in the communities. Another challenge is that in some areas APMs live far from the communities and they are few in number thus resulting in broken down boreholes taking long to be repaired.

However, despite these challenges the DWASHE committee is fully functional and it meets on a regular basis.

5.6.3 Challenges and Gaps

Based on the analysis of the situation as given in the above section and based on the Public Consultation and the KII on capacity and performance of service providers at the District, the following are the challenges and gaps that have been identified:

- There are not enough WASH staff numbers to carry out WASH activities in the district.
- The decentralisation policy implementation process is still in progress, hence inadequate staff and funding and dual reporting lines still in place.
- Weak sector coordination that results in duplication of efforts and wastage of resources because of overlapping roles and responsibilities. MWDS is the overall in charge of the water sector while MLGRD is responsible for Rural Water Supply and Sanitation services. With weak coordination, decision making is a challenge.

5.6.4 Community Committees

At the community level in terms of WASH organisation, there are Village Water, Sanitation and Hygiene Education (V-WASHE) and Ward Development committees (WDCs); these are found in some villages and wards respectively. They are composed of members of the community with the leadership including women. Their role is basically to ensure that the water points are in working conditions and if not, they are responsible for making sure that these are fixed by the Area Pump Menders (APMs).

Environmental Health Technicians (EHTs) are responsible for sensitising the community about the importance of having water and practicing safe hygiene practices. The key stakeholders in terms of water point /WASH committees and some of them are area pump menders (APMs). The EHTs and the health workers implement the hygiene awareness campaigns in the community with support from cooperating partners like UNICEF and implementing agencies.

5.6.5 Areal Pump Menders

APMs are locally trained community members who have the responsibility to fix the hand pumps every time they break down. They buy spare parts from SOMAP shops, from other districts as there is no SOMAP shop in Kawambwa District. The money used is from the monthly contributions of community members, and are paid a fee for their labour.

However, the V-WASHEs have challenges in maintaining and keeping the water points operational. The challenges include inadequate human resources and technical tools/equipment.

The Specific challenges are:

- The inability of some households to provide their monthly contributions as they are poor;
- Unwillingness to provide monthly contributions due to having other priorities like school fees or agricultural inputs especially if there is an alternative water source, even if its not safe;
- No SOMAP shop in the district;

- Difficulties in having transport money or transportation means to get to the spare parts shop in Mansai;
- Unavailability of spare parts to fix the borehole hand pumps.
- Difficulties in moving the toolbox from one point to another for fixing water points.
- Lack of appropriate service kits for fixing broken down water facilities.
- There are few trained and available APMs to service or fix all the water points.

As noted, the capacity challenges include both human resources and technical equipment/tools required for delivering improved WASH services.

5.6.6 Sustainable Operation and Maintenance Programme (SOMAP) Shops

The Sustainable Operation and Maintenance Programme (SOMAP) is an approach that has been adopted for Rural Water Supply and Sanitation (RWSS) by the Ministry of Local Government and Rural Development (MLGRD) under the National Rural Water Supply and Sanitation Program (NRWSSP). This is supported by Japan International Cooperation Agency (JICA). SOMAP shops are ideally meant to have spare parts in stock closer to the user communities so that they are accessible, available and affordable (3As) at all times. They are supposed to be easily accessible to community members as and when they need to replace and fix their broken down borehole pumps and other parts. The objective of having SOMAP shops is to reduce down time – that is, time between breakdown and repair of hand pumps in rural areas so that community members can access safe drinking water.

However, the challenges that community members have in relation to SOMAP shops were raised during public consultation with KIIs and FGDs. These were:

- There is NO SOMAP shop in the district. This creates transport challenges for APMs, which increases down time and repair costs.
- There is need to decentralise the location of SOMAP shops and let them be located closer to communities that need their products.
- There is need to have more SOMAP shops.
- Spare parts at SOMAP shops are too expensive. The communities cannot afford to buy them with the contributions they raise.

5.7 District WASH Financing

The District WASH financing is through the national budget which is prepared annually by the districts. The District budget is submitted to the province which later submits to the central government through the ministry (MLGRD). The budgets are consolidated at national level. The current budgeting system is Output Based Budget (OBB). This was changed from the previous Activity Based Budget (ABB) which was not linked to performance. OBB is linked to outputs and provides an oversight for Parliament to see how the budget performed. The budget includes sector partners' commitments to the budget. Finalised budgets are taken to parliament for approval. Table 10 shows the national budget allocation for WASH from the years 2014 to 2021.

Table 9: Financial Flow for WASH in National Budget 2014 – 2021

Funder & Contribution from the Government (in ZMW'000) **Calendar Year**							
2014	2015	2016	2017	2018	2019	2020	2021
416,247.4	540,992.1	285,000.0	391,703.3	542,743.0	1,990,257,615	2,500,000.0	2,100,000.0

Source: GRZ Yellow Books (2014 – 2021)

Table 9 indicates that the allocation to water supply and sanitation in the national budget has steadily grown over the last 4 years from 2017 to 2020 and declined in 2021. There is a sharp drop in budget allocation in 2016 of 47.32% from K540, 992,135 to K285, 000,000. "Over the past 2 years government has been releasing less than 40% of resources meant for WASH to the spending agencies. This analysis demonstrates that government funding to the sector has not been able to meet required investments and is not responsive to national and international commitments …. there is also an emphasis on supporting water supply and less emphasis on hygiene and sanitation[28]." The 2019 budget of K1, 990,257,615 is much higher. This is owing to loans and grants that have been honoured by Cooperating Partners – African Development Bank (AfDB) Group, UNICEF, African Development Fund (ADF), Exim Bank of China, The International Development Association (IDA), The OPEC Fund for International Development (OFID), KfW and various other donors. Unfortunately, the budget allocation and expenditure for Kawambwa District is NOT shown in the report as it was not provided at the time this report was being prepared.

It is hoped that with the creation of the MWDS whose role is to provide overall policy guidance on water resources management, government funding towards water supply and sanitation will improve particularly for the rural areas. It is envisaged that SDG 6 can be achieved in line with Vision 2030; universal access to water and sanitation for all.

5.7.1 Challenges and Gaps

The challenges and gaps that were identified based on the analysis of the section above are as follows:

- Inadequate financing of the WASH sector with less than 40% budget allocation to WASH being disbursed.
- Inadequate financing of WASH in rural areas.
- Partner commitments are sometimes not known at the time the budget is being prepared.

5.8 Resource Mobilization for the Master Plan

The District has less allocation of funds for WASH service delivery; and it has a huge gap of WASH infrastructure to put up to ensure universal access to WASH services by 2030.

The following strategies have been adopted to increase financing for WASH services:

- Identify district key players in the WASH sector and develop business cases for collaboration and funding in improving WASH service delivery in the district.
- Identify specific WASH activities or projects that can be undertaken by NGOs, Civil Society Organisations (CSOs) and other development partners in the private sector.
- Allocate locally raised revenues to help fund WASH interventions in the district.
- Liaise with financial institutions to provide loan products that will contribute to an increase in accessing WASH services by providing support to households to acquire appropriate sanitation infrastructure and for artisans to acquire tools and equipment needed for their work.

[28] WaterAid Zambia Country Strategy 2016 – 2020. P3

- Train more APMs and masons for the maintenance of water points and the construction of sanitation facilities on a sustainable basis.
- Lobby stakeholders so that reasonable amounts from CDF are allocated to WSS projects.

- Financially empower communities through income generating activities.
- Empower communities in terms of good governance.
- Formation and Training of School Health WASH clubs
- Training of School Health Coordinators in SLTS.

The LA will continue to place communities at the centre of its programming. Empowered communities will claim their rights, have capacity to actively engage with service provides and policy makers, and create and maintain social norms. The LA will support communities to:

- ✓ actively participate in WASH-related processes, including programme design and delivery, and have access to information, knowledge and tools – including monitoring – to hold service providers and local authorities accountable;
- ✓ obtain the necessary support and resources to have access to reliable services and increased resilience;
- ✓ establish and sustain healthy WASH practices by creating, changing or reinforcing social norms.

6 PROJECTIONS FOR ACHIEVING UNIVERSAL ACCESS TO WASH IN KAWAMBWA

This section provides population projections for the period 2021 to 2030 for Kawambwa District and the implications for addressing WASH needs in the district. It's assumed that the targets for WASH are from the medium term to long term - 2030. These cover the following thematic areas: water, sanitation, Capacity building, O&M, cross-cutting issues, M&E, etc. as earlier stated under Chapter 3.Consideration will be for WASH in communities and WASH in public institutions.

6.1 Population Projections

The Kawambwa District WASH Master Plan goals are expected to be attained over a period of 10 years. The rural population for Kawambwa District in 2010 was 100,905.This has been projected from 2010 to 2030 at a growth rate of 2.8% per annum, which is the national average growth rate. The Population has been projected per ward as given in Table 10 below. More details are given at **Appendix V.**

Table 10: Population Projections for Kawambwa 2010 – 2030

Year	2010	2020	2025	2030
Ilombe	12,103	15,952	18,314	21,026
Pambashe	2,370	3,124	3,586	4,117
Mulunda	10,859	14,313	16,432	18,865
Chibote	2,773	3,655	4,196	4,817
Chimpili	2,506	3,303	3,792	4,354
Kabanse	7,050	9,292	10,668	12,248
Luena	3,296	4,344	4,988	5,726
Kawambwa Central	10,733	14,147	16,241	18,646
Senga	11,903	15,689	18,012	20,679
Ntumbachushi	2,493	3,286	3,772	4,331
Fisaka	5,987	7,891	9,060	10,401
Luongo	3,151	4,153	4,768	5,474
Iyanga	5,140	6,775	7,778	8,929
Ng'ona	13,777	18,159	20,847	23,934
Lubale	1,775	2,340	2,686	3,084
Filenge	2,702	3,561	4,089	4,694
Kala (New Ward)	1,454	1,916	2,200	2,526
Chikanda (New Ward)	833	1,098	1,260	1,447
Total	**100,905**	**132,998**	**152,690**	**175,297**

There will be a huge population in the district by 2030 and it will require steady investment in all wash components in order to achieve the vision 2030 and SDGs for wash by 2030.water supply.

7 WATER SUPPLY

The population is Kawambwa is growing and it may grow faster than projected due to the commercial farming activities that are taking place in the area. According to the CSO 2010 census the district had a population of 100,905 people. There is also very high potential to increase the aquaculture subsector.

According to the data provided by the LA during the need's assessment, that was undertaken by the consultant the water supply coverage for the district was estimated at 86% as at the end of 2020. Therefore, there is need to increase coverage at an average of 1.4% per annum from 2021 to 2030 in order to achieve universal coverage by 2030. In view of the above, new water supply systems will be constructed, to extend access to the presently unserved rural population in the district, with priority being given to those areas with lowest coverage. Furthermore, it was noted during the needs assessment that a significant number of water supply systems are not functional, therefore, the investments will also include a rehabilitation programme as well as operations and maintenance activities to ensure improved and continuous operation of existing facilities, as well as to safeguard the investments already in place.

7.1 Objectives and Targets

7.1.1 Objectives

The overall objective of water supply is to achieve sustainable access to adequate and equitable potable water supply to meet basic needs for improved health and poverty alleviation for all of Kawambwa's rural population in line with the Country's Vision 2030 and the UN SDGs. The specific objectives of the water supply component are:

- Increased proportion (100%) of improved functioning WS facilities in rural areas through systematic investments in new facilities, rehabilitation and proper operations and maintenance of existing facilities on basis of a single comprehensive district RWSS programme.
- Increased proportion (100%) of improved functioning institutional WASH facilities in rural areas.

The set medium and long term targets[29] for the attainment of the desired WASH service levels have been set as a guide for the implementation of the WASH Master Plan.

7.1.2 Targets

In order to achieve the Vision 2030 goals, intermediate targets aligned to the National Development Plans (NDP) time lines, have been created to help track progress to 2030. It is expected that, as part of the implementation approach, detailed moving 5-year plans by the district will be developed and consolidated at regular and annual basis for reviewing progress and conducting corrections, especially as regards the key indicators. Furthermore, in line with the decentralisation policy, the district will have the primary responsibility to develop detailed implementation plans for consolidation at provincial and national levels.

[29] The medium and long term targets have been drawn from the MWDSEP 2018-2021 Strategic Plan and Vision 2030

Using the CSO rural population projections (see Appendix 1), and the needs assessment that was conducted by the consultant in 2020, the 2020 coverage was 86%, and the 2030 target of 100% (GRZ, 2006) coverage. This has been translated into a series of interim water supply targets as shown in the following table.

Table 11: Water Supply Coverage Targets and Population Projections

Year	2020	2025	2030	Total
Coverage	86%	93%	100%	100%
Rural Population	132,998	152,690	175,297	175,297
Period		2021 - 2025	2026 - 2030	2030
Total Population Covered by end of period	114,378	142,002	175,297	175,297
Additional Population To Be Covered During Period		27,624	33,295	60,919

Target Coverage has been pro-rated between the 2020 base year and 2030 target of universal coverage; Population covered and to be covered has been computed by the Consultant.

7.2 Implementation Strategy

In order to increase efficiency, effectiveness and sustainability and to leverage existing resources, the provision of water supply systems will be based on demand responsive approaches (DRA) in which the following four overarching principles are observed:

- Water should increasingly be managed as an economic as well as a social good;
- Management should be focused at the lowest appropriate level;
- A holistic approach to the use of water resources should be employed; and
- Women should play a key role in the management of water." (UNDP - World Bank, 1998)[30]
- The main characteristics of DRA are illustrated as in Figure 13 below, adapted from (Breslin, 2003)[31];

30 Community Water Supply and Sanitation Conference. (May, 1998) UNDP/World Bank. Retrieved from: https://www.wsp.org/sites/wsp.org/files/publications/global_proceedings.pdf

31 Demand Response Approach in Practice: Why Sustainability Remains Elusive. (2003) Breslin, E. D. WaterAid.

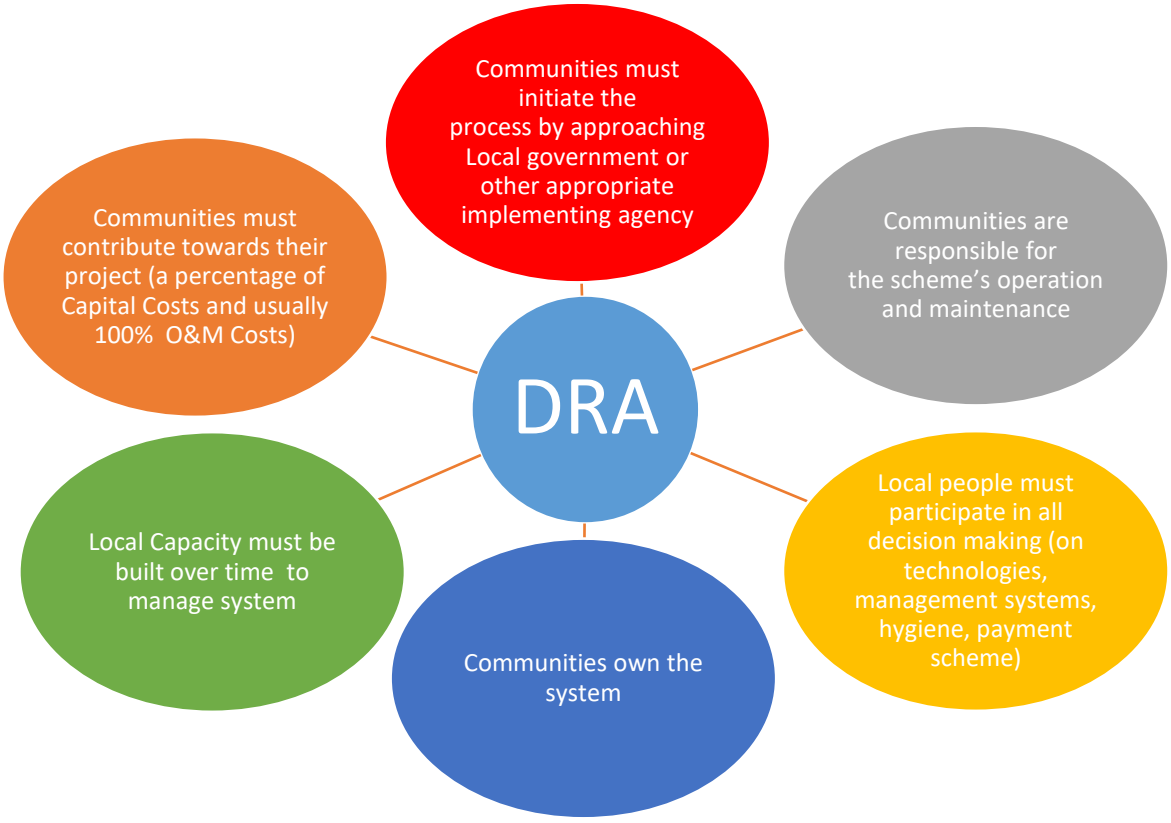


Figure 13: Characteristics of DRA.

It is expected that as a result of this approach the technologies used will be reflective of user choices and therefore will be situation specific within a range of available choices. Generically these will range from Hand Dug Wells with hand pumps in which the communities can contribute labour in developing, through boreholes with hand pumps to small piped networks. In all cases rehabilitation or upgrading of existing systems will be the preferred recommendation, subject to community approval, as this may have optimal per capita cost implications.

This recommendation arises from the baseline line study that was undertaken in 2019 for GRZ/UNICEF.[32]

7.2.1 Water Supply Development Approach

On the basis of the 86% coverage as at December 2020, the projected 175,297 additional people will be covered to 2030. This additional population will include those that were not covered in 2020 due to non-functional water supply systems. It has been assumed that the failure rate for water points in 10% per annum.

7.2.2 Water Supply Investments

Water Supply investments in the district will be delivered as an integrated package with sanitation and hygiene promotion, consisting of rehabilitation of existing non-functional water supply systems and construction of new water supply systems at community level, rural growth centres,

[32] Report for UNICEF compiled by PEGASYS Ltd and Development Data

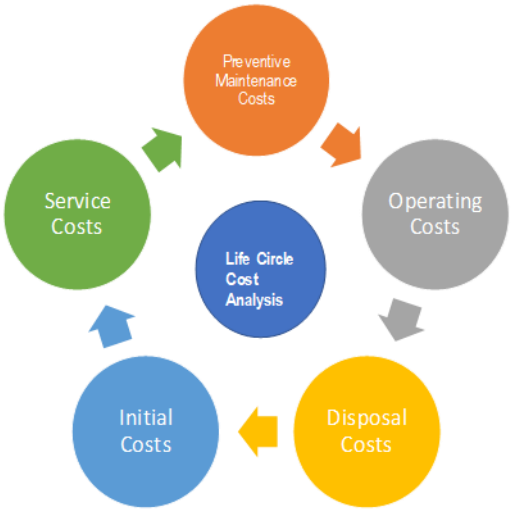
health centres, schools, markets, bus stations and other public places. The technology choice will be wide, and these will include, but will not be limited to: piped water supplies, small network systems, boreholes and protected hand dug wells equipped with hand pumps and proper drainage facilities and spring protection. The choice of technological options will be based on informed community preferences and will take into account location specific assessments of the prevailing conditions. These will include, but will not be limited to demographic, socio-economic and hydrological, water quality and any other pertinent criteria.

7.2.3 New Water Supply Systems

New water supply systems are aimed at expanding coverage. The choice of technology and service levels shall be commensurate with what the community is willing to pay for and able to maintain with some capacity building being provided by the LA to enhance competence levels. The investment will be based on district integrated development plan that reflect community priorities and commitments, to ensure continued operation of facilities in the district in line with the Urban and Regional Planning Act No. 3 of 2015

In providing choice to the communities, in line with DRA approaches, the full life cycle costs of the technologies and the cost sharing options will be explained to the communities to enable them make informed choices.

Full life cycle costs will be considered in technology choices, so that the technology that gives the lowest life cycle per capita cost, but providing the requisite quantity and quality of water will be selected. With respect to borehole hand pumps the manufacturers always provide the design lifespan and the servicing and maintenance schedule which can be used in determining the life cycle costs. The formula below is to be used and the accompanying diagram shows how life cycle cost analysis can be undertaken.



Life Cycle Costing Formula

$$LCC = \text{Initial Cost} + \text{Lifetime Operating Costs} + \text{Lifetime Maintenance Costs} + \text{Disposal Costs} - \text{Residual Value}$$

Figure 14: Life Cycle Cost Analysis

In order to ensure sustainability of the water supply infrastructure, strict guidance and compliance to new water supply systems Standard Construction Procedures developed by the MWDS as posted on its website will form the core requirements for procurement of service providers (contractors). The LA will be required to take an active role in supervising and signing-off acceptable delivery certification.

7.2.4 Small Piped Systems

The study undertaken by Gauff in 2019[33] showed that there are a number of piped water schemes mostly powered by solar systems, in the province. The schemes are mostly for institutions (schools and health centres) and to a lesser extent to communities with more than 500 people. These schemes will be considered as options under this Master Plan.

Furthermore, in order to cater for increasing population at growth centres, there may be need to upgrade existing water supply facilities to small piped systems to ensure adequate supply of water for growth centres, schools and health centres.

7.2.5 Rehabilitation of Old Systems

In addition to the above approaches, other measures targeting the rehabilitation and repairs of the existing water supply systems will be established

7.2.6 Operations and Maintenance

As provided for under chapter 1, it was found out during the baseline study that operation and maintenance (O&M) of the WS systems was poor. This has resulted in dilapidation of assets and thereby compromising service delivery at all levels. In order to arrest the situation, this WASH Master Plan aims at rolling out the SOMAP system. In this regard at least 3 SOMAP shops will have to be established in the district and of which 2 will be satellite shops and seedstock provided. This aspect is considered in a bit more detail in Chapter 12 - Sustainable O&M.

33 WASH Interventions for Institutions in Refugee Settlement, Host Communities and Border Posts report of October, 2019 for MWDSEP prepared by Gauff.

8 SANITATION AND HYGIENE PROMOTION

The main objective of a sanitation system is to protect and promote human health by providing a clean environment and breaking the cycle of diseases. In order for the sanitation system to be sustainable, it should not only protect and promote human health, but should also aim to minimise environmental degradation and depletion of the resource base, while being technically and institutionally appropriate and maintaining social acceptability and economic viability in the long-run.

The baseline survey carried out in late 2020 by the consultant showed that majority of Kawambwa's rural population lack access to safe, adequate and equitable sanitation facilities. The coverage at 80% as at the end of 2020 was estimated. In order to meet the country's vison of 90% coverage by 2030, a lot of investments have to be undertaken in the next 10 years of the implementation of this plan.

The plan is developed on the premise that the LA will continue to target and engage communities and institutions to raise the required awareness to foster behaviour change through clear advocacy messages aimed at creating linkages between good sanitation and hygiene promotion and improved health and livelihoods. It is hoped that, this will help create sustainable demand for adequate sanitation facilities and the practice of good hygiene behaviour.

8.1 Household Sanitation and Hygiene

Household sanitation facilities vary from ventilated improved pit latrines, simple ordinary pit latrines, to NO sanitation facility at all. To improve and increase access to household sanitation facilities a combination of investments in appropriate and affordable facilities, a concerted hygiene education campaign and promotion of improved sanitation facilities will be carried out.

A number of approaches like The Community Led Total Sanitation (CLTS) approach is being employed in the district to trigger communities towards taking action to address issues of open defecation (OD) and improve access to sanitation will be continued. This approach creates awareness and understanding of the dangers of faecal contamination, the importance of access to sanitation and the need for communities to become open defecation free (ODF). The communities and institutions will be encouraged to climb on the sanitation ladder.

Furthermore, traditional leadership plays an important role in influencing sanitation improvements and this is evident from the first programme (NRWSSP – 2006 to 2015) where Chiefs and Headmen were engaged through the Ministry of Chiefs and Traditional Affairs (MoCTA). In this plan it is recommended that the traditional leadership will continue to be fully engaged to accelerate and improve access to adequate sanitation and hygiene.

8.1.1 Objective

The main object of this plan with respect to sanitation and hygiene is: achieve sustainable access to adequate and equitable sanitation to meet basic needs for improved health and poverty alleviation for all of Kawambwa's rural population in line with the Vision 2030.

The two specific objectives of the sanitation and hygiene promotion component are:

- Increased access to adequate and equitable sanitation facilities in the district using promotion of improved household latrine construction through sanitation marketing and

strategic demonstration facilities, health and hygiene behaviour change promotion, involvement of traditional leadership and legal enforcement.

- Increased and improved number of functioning institutional sanitation facilities in the district.

The objectives of this component are aligned with the achievement of both the SDG and Vision 2030 goals/targets for sanitation and hygiene. These are given herebelow for reference.

SDG 6: "Attainment of universal access to adequate and equitable sanitation and hygiene by 2030."

Target:

- By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- Support and strengthen the participation of local communities for improving sanitation management.

Vision 2030: "Improve access to appropriate, environmentally friendly sanitation by all Zambians"

Target:

- Attainment of 68 percent access to sanitation to all by 2015 and 90 percent by 2030.

It can however be seen that the 2015 target of 68% coverage was not achieve, hence more resources will be required to fill the gap that was not achieve during the period to 2015 and address the needs the period 2016 to 2030 under this Master Plan, in the remaining 11 years.

8.1.2 Implementation Strategy

The WASH Master Plan aims at the following:

- Eliminate open defecation by 2030 and increase the number of people using improved sanitation facilities through the integration of CLTS and Sanitation marketing. CLTS will aim at creating demand for sanitation whereas sanitation marketing will inform the communities on the appropriate toilet technologies that are durable and hygienic, and cost effective.
- Improve the quality of sanitation and hygiene programming in the district to ensure that all communities are investing in improved sanitation facilities and move up the sanitation ladder. The District will promote behavioural change in sanitation and hygiene practices using mass media campaigns through the use of local radio stations, designing of local campaigns to disseminate information on handwashing, food hygiene, and menstrual hygiene management (MHM), safe disposal of faeces and safe handling of water.
- Engagement of traditional leadership in accelerating and improving access to sanitation and hygiene in chiefdoms, public institutions and communities.
- Strengthen capacities at district and sub-district level for sanitation and hygiene promotion in communities and schools, and ensure that sanitation and hygiene promotion is part of the school curricula. This will also be promoted through Parent Teachers Associations (PTAs)
- Support sanitation marketing innovations and approaches that will help improved sanitation and hygiene in rural communities, health centres and schools.

- Promote improved management of sanitation and hygiene information in the district for planning, monitoring and evaluation, and learning purposes.

8.1.3 The 2030 Targets

The district is lagging behind the Vision 2030 targets, therefore, in order to achieve the Vision 2030 targets for sanitation, annual targets have been formulated to help track progress to 2030. The table below summarises the projections and the full details are given at **Appendix VI**. It shows that an additional 51,370 persons will be covered during the period under consideration.

Table 12: Sanitation Coverage Targets and Population Implications

Year	2020	2025	2030	Total
Coverage	0.8	0.85	0.90	
Rural Population	132,998	152,690	175,297	175,297
Total Population Covered	106,398	129,786	157,768	157,768
Additional Population Covered for the period		23,388	27,982	51,370

8.2 Institutional Sanitation and Hygiene Promotion

Sanitation and hygiene in both schools and health facilities, including markets, bus stops and other public places is still low in the district. The investment in these places is solely done by GRZ, the LA CPs and NGOs.

8.2.1 Objective

The broad objective is to contribute towards the fulfilment of SDGs by 2030, that is "Universal coverage access to sanitation facilities" and the achievement of SDG targets for the following goals for health and education:

- SDG 3 - Ensure healthy lives and promote well-being for all at all ages
- SDG 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- SDG 5 - Achieve gender equality and empower all women and girls; and
- SDG 6 - Ensure availability and sustainable management of water and sanitation for all.

8.2.2 Implementation Strategy

The implementation of Sanitation and hygiene promotion in public institutions is a fundamental way of preventing hygiene related diseases and improving health. The full implementation of this part of the Master plan is designed at contributing to improving access to clean sanitation facilities and promote improved hygiene behaviours in public institutions, which is a very important element for a healthy and safe environment.

The LA will be responsible for the implementation of this plan. It will be directly responsible for the bus stops and markets; and it will work closely with the MoE and MoH structures at district level. Its projected that 4 institutional sanitation facilities will be constructed each year. The respective ministries will deal with facilities they are responsible for, that's MoH will deal with health care facilities and MoE will deal with schools.

The master plan focuses on contributing to the MoE and MoH efforts in addressing gaps in sanitation and hygiene in schools and rural health centres respectively. The proposed strategies are as follows:

- Establish and enforce a national standard for Institutional WASH.
- Development of Behavioural Change Communication (BCC) strategy for public institutions to target poor hygiene behaviours that require change and develop appropriate messages for the target audience.
- LAs to develop annual Sanitation and Hygiene Plans for effective and efficient service delivery through budgeting and implementing of district sanitation and hygiene activities for public institutions with close collaboration with MoE and MoH.
- The mobilization of resources for Institutional SH activities that will include construction of SH facilities, promotion of hand-washing programmes, MHM, treatment and safe water management.
- Schools will be responsible for the management of SH and ensure they are safe for children to use.
- For health centres, efforts will be made to rehabilitate, improve or construct appropriate sanitation and hygiene (SH) facilities in consultation with District Health Management Teams (DHMT). The responsibility for management of the new facilities will rest with the DHMT.
- For selected public places (bus stops, markets, etc.), the LA will plan for construction of appropriate SH facilities and management of the assets.

The actions to be undertaken will include but not limited to the following:

- Provide safely managed water services to all health centres, rural schools and rural health facilities.
- Provide all schools and health facilities with hand washing facilities with soap and water.
- Ensure sanitation facilities in schools have provisions for menstrual hygiene management.
- Provide disability friendly sanitation facilities in both schools and health facilities.
- Promote the construction and the use of toilet facilities that can easily be desludged at both schools and health facilities to ensure emptying and safe disposable of faecal sludge.
- Invest in the construction of adequate water and sanitation infrastructure in both schools and health facilities in both rural and urban areas, and growth centres.
- Ensure adequate water supply in both schools and health facilities.
- Facilitate the collection and transportation of waste from both schools and health institutions to final disposal site by the private sector.
- Provide bins in all schools.
- Provide bins in all health facilities for the safe disposal of sharps, non-infectious and infectious waste.
- Construction of demonstration facilities for pit latrines for capacity development.
- Promote sanitation marketing to increase awareness for different technologies that households can choose from to improve their level of service.
- Re-enforce the public health act on sanitation and hygiene.

- Escalate hygiene education through already existing approaches like Community Lead Total Sanitation (CLTS) awareness campaigns.
- Promote the construction and use of affordable toilet facilities at household level to ensure emptying and safe disposal of faecal sludge.
- Build capacity in private sector in the provision of sanitation services such as emptying and transportation of faecal sludge.
- Partnership for financing household toilets through revolving funds, loans etc.
- Develop and/or strengthen skills of artisan networks to improve toilet construction for households.

8.2.3 Targets

The following are the targets for Institutional Sanitation and Hygiene promotion:

- By the end of 2025, 80% of the schools should attain child friendly environments where children will have access to safe and clean sanitation facilities, practice good hygiene and SH incorporated in the school curricula.
- By 2030, 100% of the schools should attain child friendly environments where children will have access to safe and clean sanitation facilities, practice good hygiene and SH incorporated in the school curricula.

The plan targets to contribute to achieving 100% of rural health centres, bus stations and markets with safe and clean sanitation facilities by 2030.

9 CROSS CUTTING ISSUES AND SECTOR COORDINATION

The MWDSEP is responsible for policy mandate for the water sector, including water supply and sanitation. The WSS policy implementation and coordination is still the responsibility of MWDS, while MLGRD has actual responsibility of the provision of water supply and sanitation services to households through its LAs (Kawambwa in this particular case and (the commercial utility (CU) – Luapula Water Supply (LpWSC) and Sanitation Company Limited). Plans are already at an advanced stage that the CUs will also provide WSS services to the rural arears (LpWSC for Kawambwa).

The MWDSEP provides policy guidance, technical and financial control, and will facilitate mobilisation of foreign and local funds for capital development. The line ministries particularly related to the RWSS s are MLGRD, MoH, and MoE. MLGRD, through the LAs is responsible for the WSS service provision; MoH has a supportive supervisory responsibility over sanitation and hygiene promotion whilst MoE has responsibility over school sanitation facilities as part of school WASHE activities. The MLGRD through the traditional leaders help in the promotion of good sanitation and hygiene practices due to the influence traditional leaders have on their subjects.

Furthermore, for the efficient and effective provision of WASH services the following cross cutting issues have to be addressed:

- HIV/AIDS
- Social Inclusion and gender mainstreaming (SIGM)
- Climate change and environmental management
- Good governance
- Capacity Development; and
- Research and Development

9.1 Sector Coordination

The government in line with the Seventh National Development Plan (7NDP) is working on output base planning which is in sector clusters. WSS (MWDS) is in the cluster/Pillar 4 with the Ministry of (MoE) and MoH. In view of this the LA has to work closely with the district offices of the above ministries.

Furthermore, the MWDS has developed Sector Coordination Framework in December 2020[34]; whose overall objective is to: “consolidate and coordinate the joint efforts of the Ministry and all other Partners, including the private sector to guide the MWDS's Strategic Plan in line with Vision 2030 and 7NDP. It also aims to support strengthening of the Ministry's capacity to mobilise resources, analyse potential investment opportunities and optimise returns from investments.

The specific objectives are to:

(i) Strengthen the Ministry's ownership and leadership in programming and coordination;

(ii) Ensure effective management of resources for development results;

[34] Sector Coordination Framework - December 2020

(iii) Strengthen mutual accountability for all partners;

This framework will be used in the implementation of this master plan.

9.2 Good Governance

Governance in the sector covers a broad range of socio-economic, environmental, political, cultural and administrative systems that are put in place to provide and manage water supply and sanitation services. The key elements of water governance are:

- integrity
- accountability
- transparency
- Following the rule of law.
- Fairness
- Responsibility

These principles will be emphasised through various capacity development activities that will be undertaken along with the development and implementation of governance policies and regulations.

Amongst these regulations and policies, will be the need for service providers to have some of the following governance instruments[35]:

- Code of ethics
- Whistle-blower policy
- Disciplinary Code and Grievance Procedure
- Gift Policy
- Integrity Committee
- Any other Government governance instruments that may come into force during the implementation period of the Master Plan.

As part of good governance, the Governance structures in line with the Decentralisation Policy must be in place and be strengthened and reviewed on a regular basis. The structures include the P-WASHE, D-WASHE, WDCs, the LA and the Council and V-WASHE committees. The elements of good governance should take care of social inclusion and gender mainstreaming (SIGM) initiatives, participatory and consultative processes such as the DRA, which are the underlying theme of Decentralisation, local participation, and the SDGs theme of no one left behind, The plan is designed to ensure that women are adequately represented on the WSS governance bodies such as the WDCs, V-WASHEs, etc. and must be actively functioning and regularly evaluated.

35 NRWSSP 2019 – 2030 page 54

9.3 HIV and AIDS

Although HIV/AIDS is not a water-related disease, the issues are closely linked. Clean drinking water and appropriate sanitation and hygiene are especially important to people living with HIV and AIDS. In situations with inadequate WASH, people living with HIV and AIDS suffer disproportionately from the adverse effects of poor WASH, primarily because of their suppressed immune system. It has been observed that, many of the opportunistic infections that kill people living with HIV/AIDS are transmitted through contaminated water and unsanitary living conditions.

In view of the above the plan has provided for this aspect.

9.4 Capacity Development

Capacity Development for the purpose of this document is defined as: "the process through which societies, organisations and individuals, acquire, strengthen, maintain and renew the capabilities to set and achieve their own development objectives over time".

The successful implementation of the WASH Master Plan is dependent on the capacity of the system to plan, mobilize resources, implement, monitor, report and evaluate progress and adapt to any changes in the environment in a proactive manner, and timely manner. The capacity development will include aspects of transport and logistics and ICT that will ensure that the LA is able to deliver in full all the aspects of the WASH Master Plan.

In this regard training of key stakeholders will be undertaken and the following assets will be acquired:

- Motor vehicles
- Bicycles
- Motor bikes;
- Construction and stocking of SOMAP shops
- Construction of sanitation demonstration facilities
- Computers with all the accessories, and
- GPS equipment.

9.5 Research and Development

Though most R&D is done at central government level there are a number of other things that will be done at the LA level, some of which will involve data collection and submission to central government on the high iron content, the drilling technology, O&M systems, etc. The other aspects will be on sanitation technologies in view of flooding areas.

9.6 Advocacy and Communication

This section lays out the Communication, advocacy and network strategy for the Kawambwa District WASH Master Plan. The strategy focuses on creating awareness, engaging local communities towards improved WASH behaviour and attitudes as well as targeting advocacy activities.

The goal of the Communication Strategy is to work towards obtaining key stakeholder buy in to the WASH Master Plan, create an interest and support for the successful implementation of the Plan at District level. This will be by using the District WASH Master Plan as an implementation tool for planning and coordinating investments for WASH and by adoption of attitudes, behaviours and knowledge by beneficiaries that will help attain WASH objectives in the district. See

Appendix IV - A for the Communication Strategy Action Plan and **Appendix IV-B** for the Communication Strategy Matrix.

The Ministry (MWDS) has a National WASH Communication Strategy 2019–2030[36] in place, which has provided it with a platform upon which to build and implement the country's behaviour change programmes to improve the WASH conditions and well-being of all our people. The LA will apply the strategies and principles articulated in the National WASH Communication strategy.

9.6.1 Objectives and Activities

The objective of the strategy is to create a forum that will support WASH through engagement and advocacy that will in turn influence a change in attitude and behaviour of communities towards WASH. The key activities will include the following:

- Raise awareness of the WASH Master Plan, its aim is to contribute to universal access to WASH by 2030 and drum up support from key stakeholders across sectors.
- Promote institutional partnerships and synergies to manage the implementation of the WASH Master Plan in the district.
- Monitor the implementation progress of the Master Plan and disseminate such information to all stakeholders in the district.
- Mobilize the support of WASH champions to help raise additional funds for the Master Plan from the private sector, development partners, non-profit making organizations and central government.
- Create community interest and support for all WASH activities.
- Carry out stakeholder engagement to influence behaviour change towards WASH in the district.
- Publicize the strategic activities of the Plan through media and documenting and sharing with the wider sector stakeholders.

All messages will be developed with an intent to inform, inspire and influence stakeholders and various audiences. The messages will be tailored depending on the target group for the message and will take into consideration emerging issues and specific information needs of various groups. The messages will aim to stimulate behavioural and attitude change towards WASH and encourage participation.

The purpose of the Communication Strategy is to document and share achievements, lessons learned and best practices to inform policy formulation and review and replication in other areas. The key messages will be underpinned by the following themes: financial accountability of account bearers; behaviour and attitude towards WASH; funding and prioritization of WASH; business opportunities in WASH and; equity and inclusion in WASH.

The channels of communication that will be used during the implementation of the District WASH Master Plan in order to reach a wide audience will include but not be limited to the following; Newspaper, Flyers/brochures, community meetings, Television, Radio, Social media and Drama.

[36] Zambia National Water, Sanitation and Hygiene (WASH) Communication Strategy 2019–2030

9.7 Climate Change and Environmental Protection

This part will focus on developing approaches to mitigate the impact of climate change on vulnerable rural communities with respect to water supply and sanitation. Issues of the environment and climate change are interlinked, and climate change has become a major concern for GRZ, especially in view of its impact on water security. There is a National Climate Change Policy in place which the LA has to follow.

Furthermore, there is a National Climate Change Response Strategy (MTENR, 2010) which was developed to support and facilitate a coordinated response to climate change issues in the country. With specific reference to water, it provided for the following:

- The impacts of climate change on Zambia's water resources can be summarised as either too much or too little rain.
- Floods carry pollutants including fertilizers and other chemicals into water bodies, thus negatively impacting water quality, especially for human consumption.
- An increase in the frequency and severity of drought episodes has also been observed. If this trend continues then we are likely to see a reduction in the volume of water bodies
- These conditions (floods and droughts) have major socio-economic impacts.
- Recent research into climate variability, economic growth and poverty, found that the accumulated GDP losses due to climate variability over the ten-year period (2007-2016) could reach US$4.3 billion (or on average US$430 million per year). This is equivalent to lowering Zambia's annual GDP growth by 0.4 percentage points each year between 2007 and 2016. Source: (Thurlow, Zhu, & and Diao, 2008, p. 3)

9.8 Social Inclusion and Gender Mainstreaming

9.8.1 Social Inclusion

Social Inclusion and Gender Mainstreaming (SIGM) is an approach to deploying the WASH resources in a way that maximises the potential benefits to people who have experienced or are experiencing the greatest impacts of barriers to access an opportunity. Social inclusion refers to the inclusion of inter alia, people living with HIV/AIDS, other chronic illnesses, the poor, differently abled people and the hard to reach.

Participation in, and access to development activities, has to be assured for all people with special needs including but not limited to women and girl children who bear most of the responsibility for domestic water supply and sanitation needs. Prioritising social inclusion and equity considerations is also important to ensure that vulnerable and hard-to-reach groups in the communities including the elderly, the disabled and the poor do not miss out on the benefits of WASH interventions to be deployed by the LA.

This is in line with the theme of the 7NDP; "Accelerating development efforts towards Vision 2030 without leaving anyone behind". The SIGM strategy, with specific reference to rural water and sanitation, and its application will be developed and deployed as a key part of the operationalisation of the WASH Master Plan in the district.

In this regard the programme should support efforts to strengthen monitoring systems to better identify the most vulnerable and disadvantaged groups, and take care of their needs. These may be women and girls, groups marginalised on the basis of geography (very remote, rough terrain, etc.), climate change and emergency-affected communities (ie the refugees), people with

disabilities and the poorest households. Special attention must be given to those experiencing multiple disadvantages such as girls in poor households, or children with disabilities living in isolated communities. These issues were brought out in the KIIs during the visit in the district.

Social inclusion also implies taking into consideration children's opinions and concerns by providing improved opportunities for their participation. Children are also agents of change and in both rural and urban setting, their schools should be the focal points for facilitating water, sanitation and hygiene education.

The LA should ensure that social inclusion and accountability, and therefore systems will have to be strengthened for local sub-district level participation. National and Provincial level structures, should support the LA in managing the RWSS processes.

9.8.2 Gender Mainstreaming and Gender Equality

A key theme of the Sustainable Development Goals (SDGs) is "no one left behind" and within its six essential elements "the inclusion of women and children" is prominent.

According to the 7NDP, it is stated that: "As a commitment to promoting gender equality, the Government will maintain and accelerate efforts by facilitating organisational transformation to enhance responsiveness in all dimensions. To achieve this, the Government will enhance capacity for gender mainstreaming and engender policies, plans, programmes, projects, activities and budgets by coordinating and monitoring implementation of the National Gender Policy. With regard to women's empowerment, the Government will engender the planning and budgeting processes, especially in the key sectors driving national development. This will ensure equitable distribution of national resources between women and men, girls and boys and have meaningful impact in the medium and long-term on poverty reduction among women and girls."

The 7NDP refers to the National Gender Policy of 2014. In the policy it is clearly stated that: "Gender mainstreaming ensures women, men, girls and boys benefit equally from the development process by highlighting the impacts of policies, programmes and laws on the real situation of women, men, girls and boys". Therefore, the LA must mainstream gender in its operations and this should cascade downwards to the communities. This will help in the sustainability of WASH service provision.

SDG Goal 5 Target 5.5 includes ensuring women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life.

The LA can contribute to this target in a number of ways including but not limited to the following:

- improved selection of water committee training participants on various management and technical skills;
- improved participation in O&M skills training;
- socio-economically reflective tariffs/community contributions;
- improved site selection and management;
- promotion of gender responsive WSS facility designs; and
- improved hours of water supply and availability for menstrual management and family care.

Furthermore, a commitment can be made to improving economic participation of women in water and sanitation projects and interventions.

10 RISKS AND MITIGATION

This section presents the risks that might occur during the implementation of the WASH Master Plan. It includes the likelihood of their occurrence and the corresponding mitigation measures to minimize them. Table 13 below presents the risks, likelihood of occurrence and mitigation measures.

Table 13: Anticipated Risks and Mitigation Measures

Thematic Area	Risks or Challenges	Probability	Mitigation Measures
Water Supply	Rapid rate of urbanization with low WASH coverage.	High	Encourage private sector participation in provision of WASH Services in urban and peri-urban areas.
	Low levels of willingness to pay for operations and maintenance which discourages private sector participation in provision of WASH services.	High	Encourage pre-payment methods – metering. Explore flexible payment methods like pay as you fetch. Strengthen community sensitization on the value of safe drinking water Formation and strengthening of village WASH committees to help manage the water points Promotion of income generating activities (such as Village Banking , SILC)
	Dilapidated WASH infrastructure some of which are approaching the end of their life span.	Medium	Develop asset management plan to ensure gradual replacement of worn out infrastructure. Frequently update asset inventory. Training and equipping of area pump minders Opening a SOMAP shop and seed stock
	High investment costs for WASH infrastructure thereby making it difficult to provide for hard to reach places.	High	Promote appropriate alternative WASH delivery models for each specific context. Encourage public private partnerships (PPPs)
	High contamination of water due to pit latrines collapsing during rainy season	medium	Provision of chlorine and adaptation of pit latrines according to a specific soil type.
Sanitation and Hygiene	Inadequate capacity to support safe collection, transportation, treatment and disposal of faecal sludge.	High	Support local authorities to develop and implement District sanitation plans. Develop local capacity of the private sector. Encourage private sector participation in provision of WASH services. Improve solid waste management in households, schools, health facilities and other public places like markets. Provision of safe and secure dump site to avoid scavengers and animals.
	Increased number of people living in fishing camps with limited sanitation and hygiene facilities	High	Engage traditional leadership and local authority to allocate suitable land for the settlers

Thematic Area	Risks or Challenges	Probability	Mitigation Measures
Water Resources Management	Chemical pollution of water sources and environmental mismanagement	Medium	Collaborate with other government institutions (ZEMA) to enforce laws on protection of water resources. Support the implementation of catchment management plans. Support integrated water resources management information system center.
	Low levels of sanitation services and environmental management at both household and institutional level.	Medium	Improve solid waste collection and practices in households, schools, health facilities and other public spaces like the markets. Encourage private sector participation in provision of WASH services. Promote Health education on waste management at HH level through Radio programs Create a Toll call Waste management Line at the local Authority to ensure efficiency and effectiveness of Waste management at institutional level
Finance	Inadequate financing to deliver WASH services at District level.	High	District to implement strategy for resource mobilization from development partners. Share the resource mobilization strategy with all relevant stakeholders
Local Government	Inadequate capacity management, coordination and implementation of WASH Service delivery.	Medium	Strengthen local authority capacity and systems for WASH delivery services.
Attitudes and Behaviour	Poor application of appropriate water, sanitation and hygiene practices.	High	Partnerships with the CSOs, NGOs, the media and the traditional leaders to create awareness and understanding of WASH issues in communities. Strengthen health promotion on the importance of appropriate WASH through CLTS and SLTS approaches towards behavioural change Formulate and enforce By-Laws
Equity and Inclusion	Low coverage of WASH services in remote and hard to reach areas.	Medium	Subsidies for vulnerable populations. Promote the use of innovative mix of technologies for remote and hard to reach communities.

11 PARTNERSHIPS AND IMPLEMENTATION OF WASH MASTER PLAN

This section presents the roles that different stakeholders will play in the implementation of the District WASH Master Plan.

11.1 District Actors

The District WASH Master Plan strategic activities will be integrated into the district Integrated Development Plan (IDP) for implementation. The IDPs encompass all sector development plans for the District and are the tool that will be used to have integrated sector development in the district. There will be no longer segmented plans for each sector. The District can obtain the costed plans from the Master Plan on an annual basis and implement the activities in line with their Annual Work Plan and budget (AWPB). However, the budget allocation for each financial year should be taken into account when implementing WASH activities from the Master Plan.

The Local Authority under the leadership of the Council Secretary will be the lead and have the overall oversight in the implementation of the Kawambwa District WASH Master Plan. The LA will work with the D-WASHE Committee which comprises members from different sectors – agriculture, education, health, V-WASHE, community development, NGOs, ward development committees, CSOs, etc. The Council Secretary being the chairperson of the D-WASHE Committee will ensure that the District WASH Master Plan is aligned with the district Integrated Development Plan for Kawambwa and that it is financed and that the required partnerships are established to ensure that there is no duplication of efforts. The Local Authority will endeavour to mobilize additional resources outside what will normally be available from the central government and its internal resources and ensure that an appropriate governance and accountability mechanism is put in place.

Luapula Water Supply and Sanitation Company Limited – the commercial utility's licence has since be changed to include the provision of WSS to the whole district; that's urban, peri-urban and rural areas. This development implies that during the implementation of this master plan, the CU will assume total responsibility for the provision of WSS services to the rural communities; hence it will take over the responsibility of implementation of this WASH master plan.

The V-WASHE Committees will be instrumental in the implementation of the Master Plan activities. These will work with the Area Pump Menders (APMs), traditional leadership and the Community Champions to continue reaching out to community members to support behaviour change campaigns associated with sanitation and hygiene improvement. These will be instrumental in community resource mobilization for operation and maintenance of WASH facilities in their communities.

Civil Society Organizations (CSOs) including Non-Governmental Organizations (NGOs) and their respective networks will work with the Council to assist in implementing the District WASH Master Plan by providing direct support through advocacy, action and engagement in a transparent manner.

The private sector will be involved. These will include artisans involved in operation and maintenance of water and sanitation facilities, providers of water and sanitation services, financial institutions that may provide loan products for WASH services or facilities and other small-scale enterprises involved in the operational management of water and sanitation services.

11.2 Provincial and Central Government Actors

The following are the key institutions that will be relevant to the implementation of the District WASH Master Plan:

- Ministry of Water Development, and Sanitation and Environment – Policy and strategy formulation for WASH
- Ministry of Local Government and Rural Development – mandated to provide water and sanitation services
- Ministry of Finance and National Planning – provision of financial resources and other related services.
- Ministry of Health – Facilitate WASH linkage through implementation of CLTS campaigns
- Ministry of Education – Responsible for WASH facilities for the educators and pupils
- Ministry of Community Development and Social Services
- Ministry of Green Economy and Environment - Policy and strategy formulation for Climate change and environment
- NWASCO – Regulator of water and sanitation services and facilities
- WARMA – Community water users associations
- ZEMA – Regulators of environmental issues including water supply and sanitation related issues

11.3 Development Partners and Non-Governmental Organizations (NGOs)

The District will work closely with development partners that will include both local and international NGOs and multilateral agencies to mobilize resources and support the implementation of the Master Plan. These will help in expanding the existing network of development partners and the private sector organizations. The existing list of development partners is as presented below:

- UNICEF – This is a United Nations Agency which strives to defend the rights of children, save their lives and help to fulfill their full potential. They also work to provide access to WASH services for children by providing direct financial support to districts.
- AfDB – Provides financing for public sector infrastructure projects in different sectors including water supply and sanitation, agriculture, energy and social sectors.
- KfW – Development aid bank that provides financial cooperation in different sectors that include water supply and sanitation, solid waste management, health and energy among others.
- Access Water – an NGO which facilitates access to increased access to reliable, safe, clean drinking water supply and sanitation facilities to rural and peri-urban communities and schools including promotion of health and hygiene education to rural and peri-urban communities.
- Catholic Relief Services (CRS)/ GIZ
- CARE International
- Lukwanga Radio Station

11.4 Implementation of the Kawambwa District Wash Master Plan

The District WASH Master Plan is multi-sectoral. It is intended to bring on board all stakeholders involved in the provision of WASH services and Integrated Water Resources Management. Thus it is important that the organizational arrangement within the Local Authority or Council in the District is strengthened with the aim to reach full WASH coverage in the district. The Council will take leadership and ensure to manage the coordination of all stakeholders for the successful delivery of the District WASH Master Plan activities in the district. It is also expected that the Council will work out a mechanism to ensure that development partners' support is aligned with the Plans implementation. Table 14 shows the key stakeholders in the district that might have the power and influence on the successful implementation of the WASH Master Plan in Kawambwa.

Table 15: Stakeholder Matrix

Stakeholder	Role	Influence and Interest
Local Authority	Interest and duty to provide water and sanitation services.	High power and are the local authority responsible for its implementation. Responsible for the supply of WASH facilities and services to all rural households.
LpWSC	Interest and duty to provide water and sanitation services.	High influence and interest.
Community members	Beneficiaries of WASH facilities and services.	High power and can contribute to success or failure of implementation of WASH Master Plan.
MoH	Provision of WASH facilities to all health institutions. Responsible for water quality	High power and responsible for WASH facilities and services to all health centers. High and responsible for ensuring that CLTS is implemented successfully.
MoE	Provision of WASH facilities to all schools.	High power and responsible for ensuring WASH facilities provided in all primary and secondary schools. Ensure hygiene messages to pupils are disseminated through their school activities.
MWDS	Provision of policy guidance on WASH. Mobilization of financial resources for WASH	High power and influence. Responsible for policy direction in the WASH sector and has regulatory bodies under their mandate.
MGEE	Policy formulation on environment	High power and influence. Responsible for policy direction on environmental issues and has ZEMA as regulatory body under its mandate.
WaterAid	Support in provision of WASH facilities.	Medium power and support by providing water points like boreholes.
AfDB and KfW	Support in provision of finances.	High power. Support by provision of finances to ensure the success of WASH programs in rural districts like Kawambwa District.
Faith based organizations	Promotion of WASH behavioural change	High Power. responsible for facilitating WASH information dissemination to church members.
UNICEF	Support in provision of WASH facilities.	High power. Support in provision of WASH facilities in schools and households of refugees.

Stakeholder	Role	Influence and Interest
Traditional leaders	Facilitate maintenance of WASH facilities and services.	High power. Facilitates WASH information dissemination in their communities as the beneficiaries of WASH are their community members.
Access Water for Zambia (AW4Z)	Support in provision of WASH facilities	High power. Support in provision of WASH facilities in schools and households
Catholic Relief Services /GIZ	Support in provision of WASH facilities.	High power. Support in provision of WASH facilities in households
Lukwanga Radio Station	Support in provision of WASH facilities.	High Power. Support information dissemination
CARE International	Support in provision of WASH facilities	High power. Support in provision of WASH facilities in schools and households

12 PROJECTED PLAN COSTS AND FINANCING STRUCTURE

In order to achieve the desired outcomes of WSS of 100% coverage for and 90% coverage for sanitation by 2030, various activities and tasks have to be undertaken and financed between 2020 and 2030. This chapter provides the estimated costs and the proposed financing mechanism. It has been broken-down into the various components which together will ensure the delivery of the objectives.

The various components are as given in Chapter 3 and they comprise:

- Sanitation
- Water Supply
- Solid Waste Management
- Capacity Building
- Operations and Maintenance (O&M)
- Research and Development
- Cross cutting issues
- Planning, Monitoring, Evaluation, Reporting and Learning
- Capacity Development Infrastructure

12.1 Projected Costs

12.1.1 Sanitation

The sanitation coverage was estimated at 80% as at December, 2020; hence in order to reach 90% coverage by 2030, total of 51,370 people have to be covered between 2020 and 2030 as per the table below. The 2020 coverage was provided by the stakeholders at the stakeholders' during the visit to the district in October, 2020.

Table 16: Projected population coverage

Year	2020	2025	2030	Total
Coverage	0.80	0.85	0.90	
Rural Population	132,998	152,690	175,297	175,297
Total Population Covered	106,398	129,786	157,768	157,768
Additional Population Covered for the period		23,388	27,982	51,370

It is estimated that the total cost to achieve 90% coverage will be ZMW79.3 million in the next 10 years. As per government policy the cost of household sanitation infrastructure estimated at ZMW26.0 million will be financed by the community; however the costs of related health and hygiene promotion, institutional sanitation infrastructure and the related health and hygiene costs will be financed by GRZ/LA and the CPs. The cost of SWM management will also be catered for by GRZ. The table and figure below give the cost breakdown. The full details are given at **Appendix VI.**

Table 16: The Population covered and Projected Sanitation Costs

Year	2021 - 2025	2026 - 2030	Total
Additional Population Covered	23,388	27,982	51,370
House Hold Infrastructure Cost (by Households)	ZMW9,903,600	ZMW16,076,200	25,979,800
Related HH Sanitation Promotion Costs	ZMW3,961,440	ZMW6,430,480	10,391,920
Total Cost of Sub Component	**ZMW13,865,040**	**ZMW22,506,680**	**ZMW36,371,720**
Institutional Sanitation	ZMW11,960,000	ZMW16,048,000	28,008,000
Related HH Sanitation Promotion Costs	ZMW4,784,000	ZMW6,419,200	11,203,200
Total Cost of Sub Component	**ZMW16,744,000**	**ZMW22,467,200**	**ZMW39,211,200**
Solid Waste Management	ZMW1,380,643	ZMW2,302,566	ZMW3,683,209
Total Sanitation Component	**ZMW31,989,683**	**ZMW47,276,446**	**ZMW79,266,129**

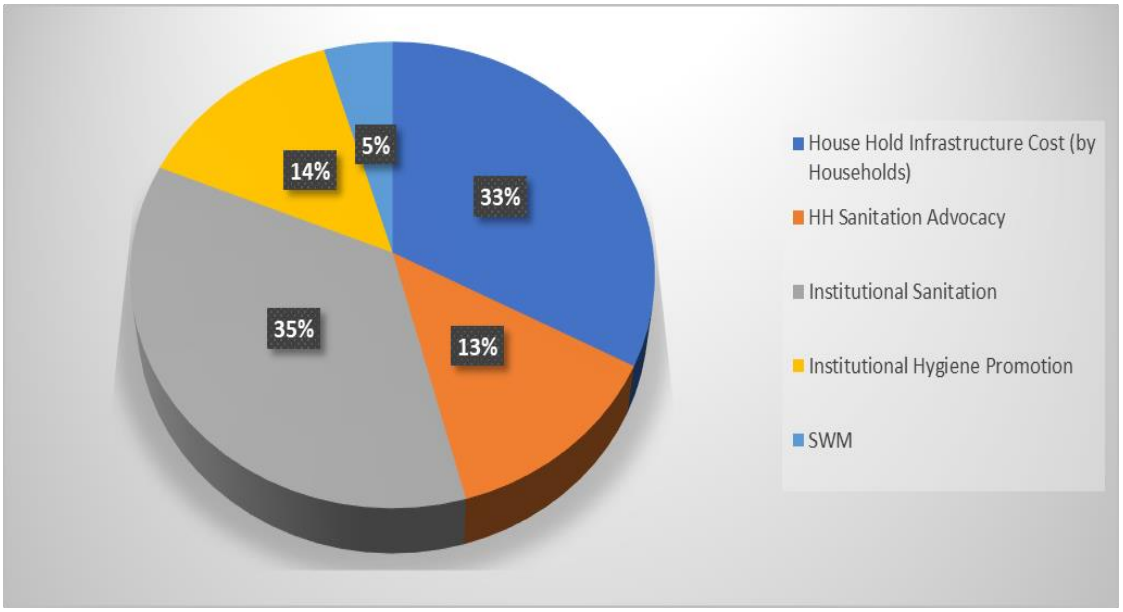


Figure 15: Breakdown of Sanitation Costs

12.1.2 Water Supply

The water supply coverage was estimated at 86% as at December 2020, hence and additional 60,919 persons have to be covered by 2030 in order to reach the 100% coverage by 203. The table below shows the population coverage implication over the period. The full details are given at **Appendix V**.

Table 17: Projected population for Water Supply Coverage

Year	2020	2025	2030	Total
Coverage	86%	93%	100%	100%
Rural Population	132,998	152,690	175,297	175,297
Period		2021 - 2025	2026 - 2030	2030
Total Population Covered by end of period	114,378	142,002	175,297	175,297
Additional Population To Be Covered During Period		27,624	33,295	60,919

The investment into water supply infrastructure is estimated at K77.2 million, as shown in Table 18 below. This cost includes the costs for both new systems and rehabilitations. The full details are at Appendix VII and figure 16 below gives

Table 18: Projected Cost of Water Supply Infrastructure (ZMW)

ZMW'000			
Period	**2021 - 2025**	**2026 - 2030**	**Total**
New Supply Systems	ZMW20,718	ZMW24,971	ZMW45,690
Rehabilitated Systems	ZMW14,064	ZMW17,418	ZMW31,482
Sub Total	**ZMW34,782**	**ZMW42,390**	**ZMW77,172**
CD for O&M of Systems	ZMW0	ZMW0	ZMW0
Total Cost Water Supply	**ZMW34,782**	**ZMW42,390**	**ZMW77,172**

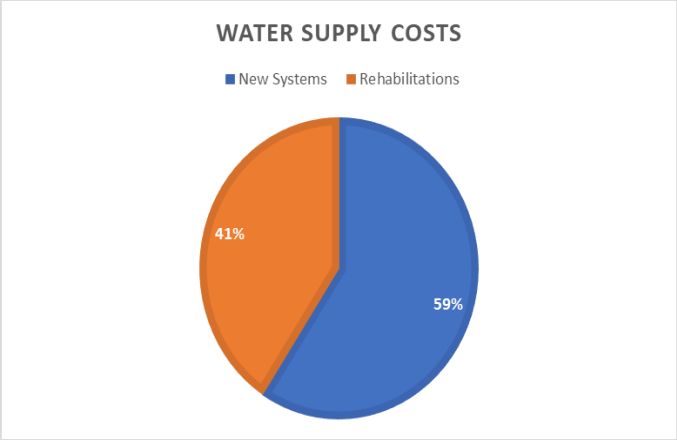


Figure 16: Cost Breakdown between New Systems and Rehabilitations

12.1.3 Capacity Building

Capacity building will involve the training of various people involved in the WASH services supply chain. A total of 5,679 people are expected to be trained in the next 10 years as per the table below.

Table 20: The various Persons to be trained

Category	Total number trained
V- WASHE	764
D-WASHE	30
District Training Team	60
Council & Management	24
Ward Development Committees	396
P-WASHE	20
Area Pump Menders	1,462
Masons	1,096
Community Champions	1,827
Total	**5,679**

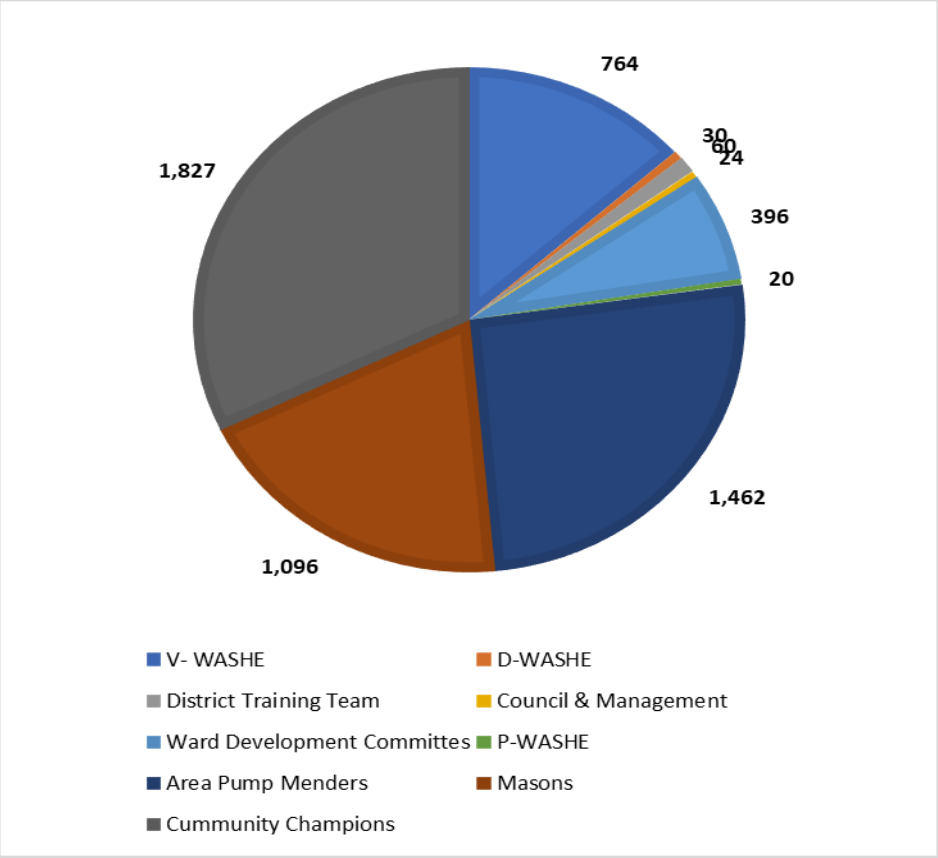


Figure 17: The Number of Persons in various Skills to be trained

The capacity development programme is expected to cost K 26.52 million as per table 20 below.

Table 20: CD Costs

Cost Centre	Total Cost (ZMW'000)
Consultants	1,650
Venue	4,164
Transport - Participants	4,164
Allowances - participants	8,329
District Training Team	8,212
Total	**26,519**

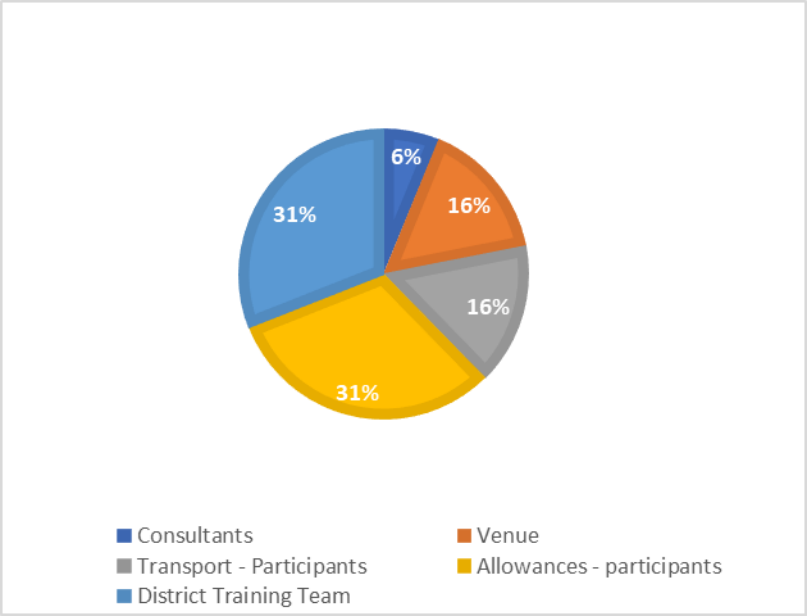


Figure 18: Capacity Development Costs

12.1.4 Operations and Maintenance

The O&M Costs have been estimated at 5% of the capital costs. Table 22 below shows the summary fixed investment costs in WSS infrastructure.

Table 21: The Projected WSS Capital Costs

Year	2021 - 2025	2026 - 2030	Total
Water Cap Cost	ZMW20,718,100	ZMW24,971,400	ZMW37,734,200
Sanitation CC	ZMW21,863,600	ZMW32,124,200	ZMW41,255,000
Total	**ZMW42,581,700**	**ZMW57,095,600**	**ZMW78,989,200**

The O&M costs are estimated at K4.98 million over the next 10 years as summarized in table 22 below.

Table 22: The Projected O&M Costs

Period	2021 - 2025	2026 - 2030	Total
Water Supply Capital Cost	ZMW1,035,905	ZMW1,248,570	**ZMW2,284,475**
Sanitation CC	ZMW1,093,180	ZMW1,606,210	**ZMW2,699,390**
Total	**ZMW2,129,085**	**ZMW2,854,780**	**ZMW4,983,865**

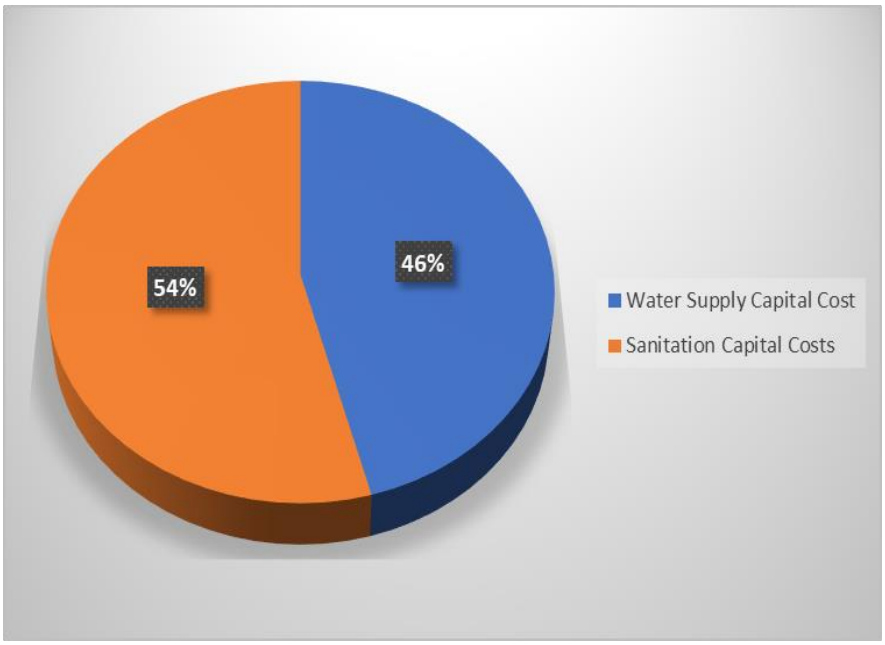


Figure 19: Breakdown of O&M Costs

The full details for Operations and Maintenance Projected Costs are given at **Appendix VIII.**

12.1.5 Governance, Sector Coordination and Management, and Research and Development

These components of the master plan will cost K4.22 million over the next 10 years as shown in the table below. More details are given at Appendix IX. These have been grouped into three main groups:

- cross cutting issues (HIV/AIDS, Environmental management and climate change, social inclusion and gender mainstreaming (SIGM) – 36%,
- Research and Development (R&D) – 31%, and
- Governance, management and coordination - 33%

Table 23: The Projected Costs for Governance, R&D, Sector Coordination and Cross Cutting Issues

Period	2021- 2025	2026 - 2030	Total
Governance, Management & Sector Coordination	ZMW660,000	ZMW732,000	**ZMW1,392,000**
Research and Development	ZMW576,000	ZMW696,000	**ZMW1,272,000**
Cross Cutting	ZMW720,000	ZMW840,000	**ZMW1,560,000**
Total Component Cost	**ZMW1,956,000**	**ZMW2,268,000**	**ZMW4,224,000**

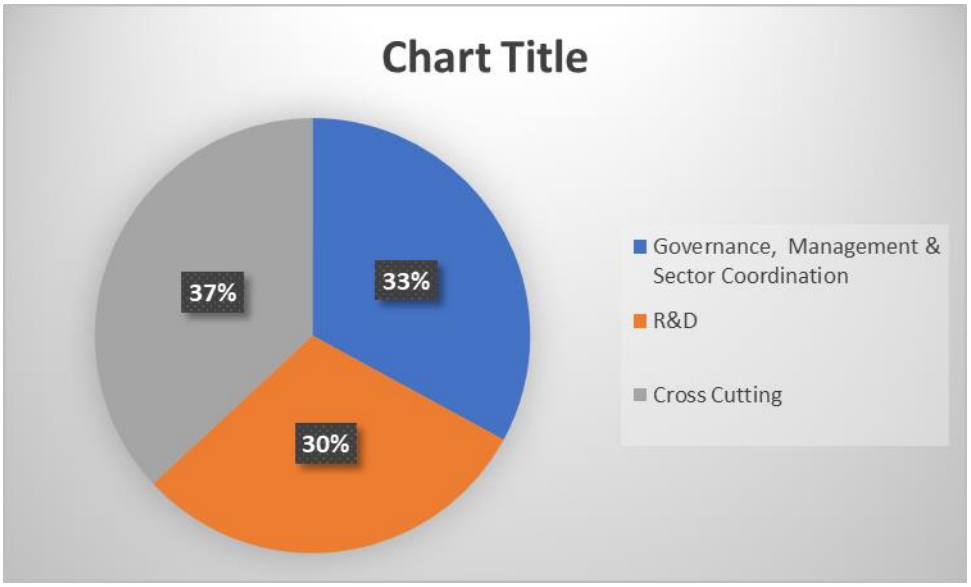


Figure 20: Support Components to WSS

12.1.6 Monitoring, Evaluation, Reporting and Learning

The monitoring, evaluation, reporting and learning component is expected to cost K17.03 million as shown is the table below. The full details are at Appendix X.

Table 25: Projected Monitoring, Evaluation, Reporting and Learning Costs (ZMW'000)

Period	2021 - 2025	2026-2030	Total
Development of M&E & Reporting Framework	250	-	**250**
Planning	487	1,078	**1,565**
Data Collection & Reporting	3,553	7,869	**11,421**
Review of planning and reporting processes	520	2,139	**2,659**
Update of systems	500	630	**1,130**
Total	**5,309**	**11,715**	**17,025**

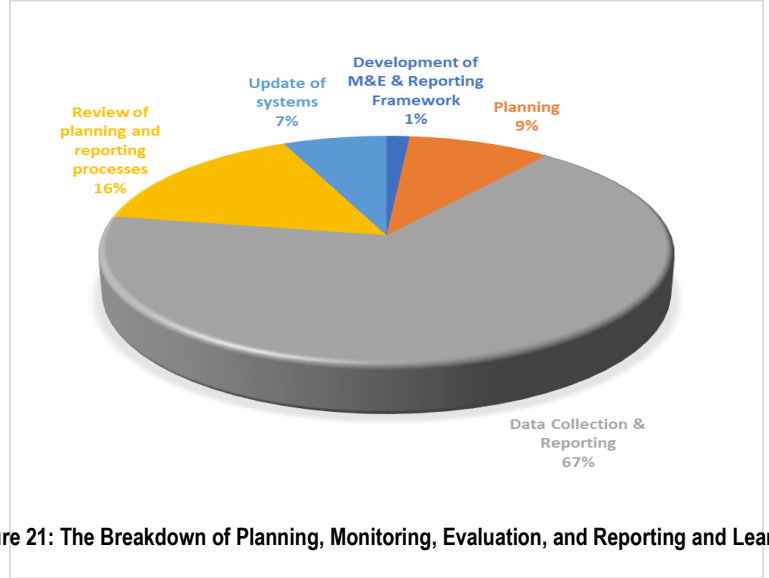


Figure 21: The Breakdown of Planning, Monitoring, Evaluation, and Reporting and Learning

12.1.7 Capacity Development Infrastructure

The fixed investment into infrastructure for support services is estimated to cost K21.5 million. The cost includes the cost of establishing of 3 SOMAP shops (construction and seedstock). The key item is the construction of sanitation demonstration facilities in each ward'. The full details for Support Infrastructure Costs are given at Appendix XI.

Table 25: Master Plan Logistical Support Initial Investment Costs

Period	2021 - 2025	2026 - 2030	Total Cost (ZMW'000)
Motor vehicles	3,666	3,666	**7,332**
Bicycles	897	598	**1,496**
Motor Cycles	2,933	2,933	**5,866**
SOMAP Shops	733	-	**733**
Seed stock - spare parts	2,444	-	**2,444**
Computer with accessories	978	489	**1,466**
GPS Equipment	858	858	**1,716**
Sanitation demo facilities	293	147	**440**
Total	**12,803**	**8,691**	**21,493**

The Figure below gives more details. The detailed projections are given at Appendix XI.

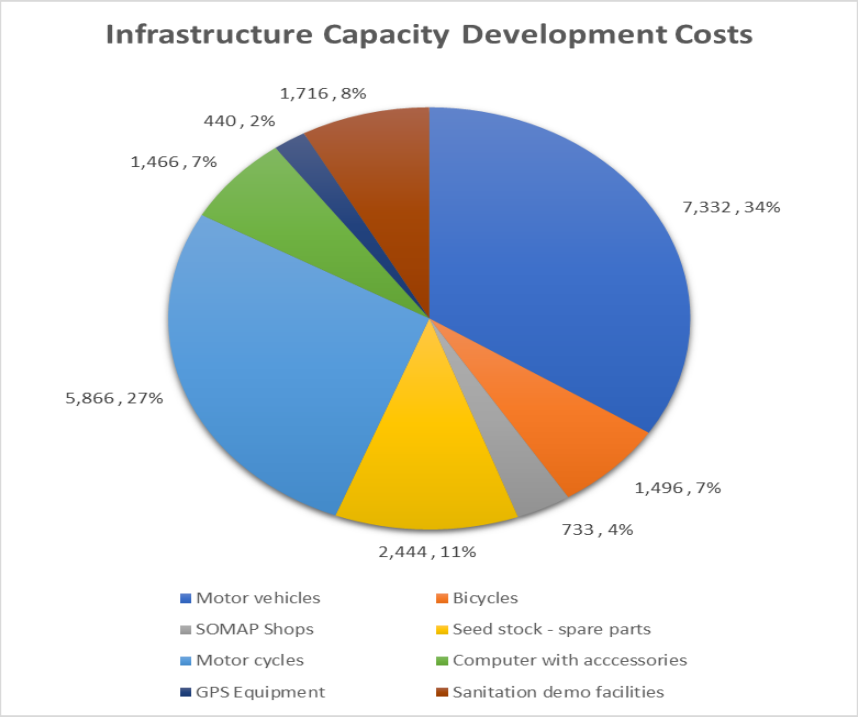


Figure 22: Support Infrastructure Capital Costs

12.1.8 Summary of WASH Master Plan Costs

The Master Plan implementation is estimated to cost K230.7 million as shown in the table below.

Table 26: The Overall WASH Master Plan Costs

Cost (ZMW'000)

Period	2021 - 2025	2026 - 2030	Total Cost (ZMW'000)
Infrastructure Cap Dev	12,803	8,691	21,493
Training	12,264	14,256	26,519
PMERL	5,309	11,715	17,025
Sanitation	31,990	47,276	79,266
Water Supply	34,782	42,390	77,172
O&M	2,129	2,855	4,984
Governance, R&D and Cross Cutting	1,956	2,268	4,224
Total	**101,233**	**129,451**	**230,683**

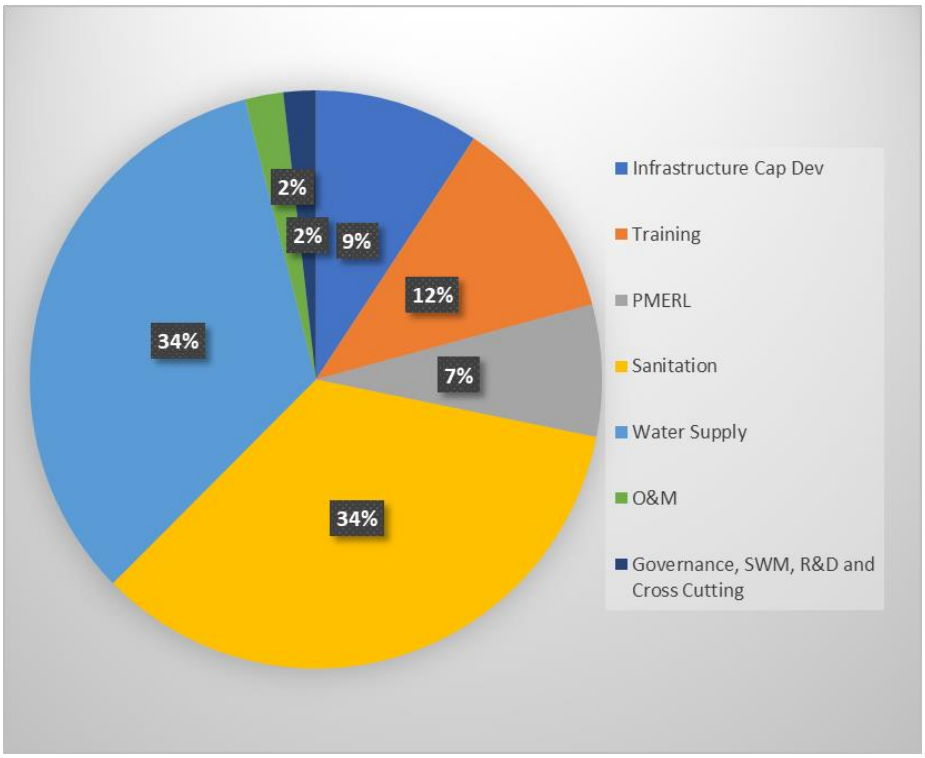


Figure 23: Overall Plan Costs

12.1.9 Master Plan Financing

The master plan is to be financed by a number of stakeholders which include GRZ, CPs, the LA and user communities as per table 27 below.

Table 27: The Financing Structure

Source	Amount (ZMW'000)	%
GRZ	57,671	25.00
Community	2,653	1.15
LA[37]	11,534	5.00
CPs	158,825	68.85
Total	230,683	**100.00**

[37] The funds will be mainly CDF, Equalisation Fund

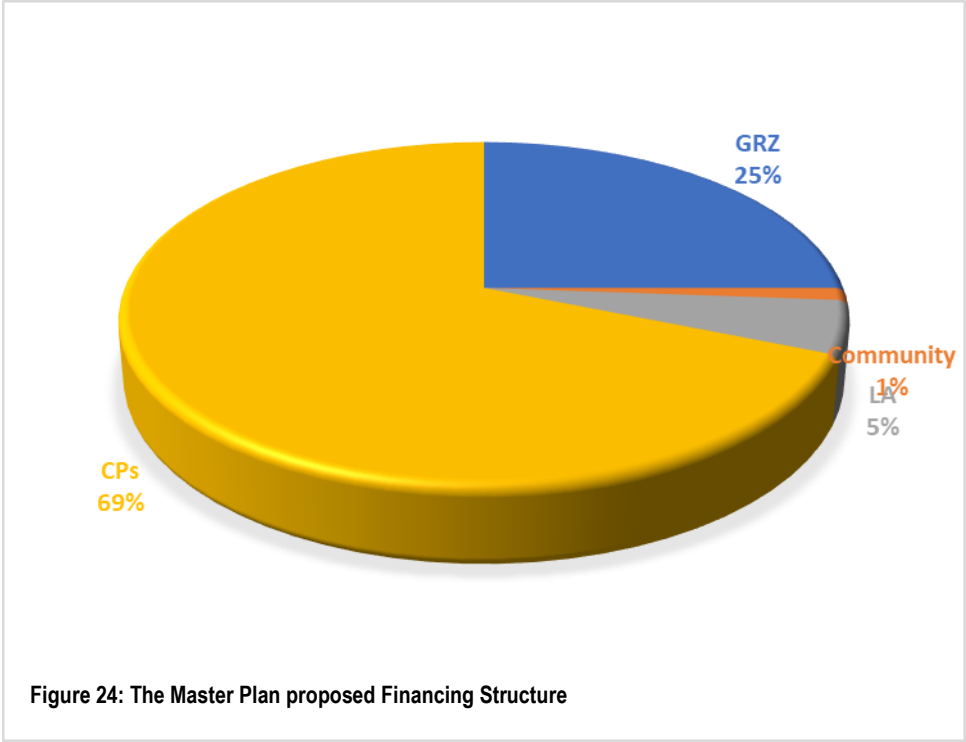


Figure 24: The Master Plan proposed Financing Structure

The table below gives the spread of costs over the project implementation period.

Table 29: Overall Project costs in 5 Year Periods (ZMW'000)

Period	2021 - 2025	2026 - 2030	Total
Infrastructure Cap Dev	12,803	8,691	21,493
Training	12,264	14,256	26,519
PMERL	5,309	11,715	17,025
Sanitation	31,990	47,276	79,266
Water Supply	34,782	42,390	77,172
O&M	2,129	2,855	4,984
Governance, R&D and Cross Cutting	1,956	2,268	4,224
Total	**101,233**	**129,451**	**230,683**

13 PLANNING, MONITORING, EVALUATION AND LEARNING (MEL)

This section presents the framework for planning, monitoring, evaluation and learning (MEL). It introduces the mechanism for monitoring the Sustainable Development Goal (SDG) No.6 on water and sanitation – Ensure availability and sustainable management of water and sanitation for all; and progress achieved towards the medium term projections and targets.

Data is the lifeblood of decision-making and the raw material for ensuring accountability. Investment and Operation & Maintenance (O&M) decisions on WASH must be based on evidence to allow for effective allocation of resources and better Water Supply, and Sanitation and Hygiene

The purpose of planning, monitoring, evaluation and learning practices is to apply knowledge gained from evidence and analysis to improve development outcomes and ensure accountability for the resources used to achieve them. Effective PMERL is a key component for bringing about lasting change and also for developing and implementing successful WASH projects. It will help LA, the target beneficiaries, and financiers to make better decisions before, during, and after project implementation for each of the WASH projects. In general, before the LA plans its WASH activities, it needs to know what it's trying to do and what it needs to learn to ensure that the data it collects will help it make informed decisions.

With growing emphasis on participatory approaches towards development, there has been recognition that monitoring and evaluation (M&E) should also be participatory. Conventionally, M&E involved outside experts coming in to measure performance against pre-set indicators, using standardised procedures and tools. On the other hand; participatory monitoring and evaluation (PM&E) involves primary stakeholders as active participants and offers new ways of assessing and learning from change that are more inclusive, and reflects the perspectives and aspirations of those most directly affected (WORLD BANK 2010b).

Participatory monitoring & evaluation (PM&E) is a process through which stakeholders at various levels engage in monitoring or evaluating a particular project, program or policy, share control over the content, the process and the results of the monitoring and evaluation (M&E) activity and engage in taking or identifying corrective actions. PM&E focuses on the active engagement of primary stakeholders (WORLD BANK 2010a).

Figure 25 overleaf elustrates how participatory monitoring and evaluation works.

The stakeholder groups typically involved in a participatory M&E activity include: the end users of project goods and services (communities, refugees), including both men and women at the community level; intermediary organisations, including NGOs; private sector businesses involved in the WASH project; and government staff at all levels (National, Provincial and District, including at sub-district level).

This model has the following advantages:

- Involving beneficiaries in evaluation increases its reliability and provides the opportunity to receive useful feedback and ideas for corrective actions
- PM&E allows for flexibility — activities should be stopped or adapted when evaluation makes it clear that they are not contributing to the intended improvements
- Strengthens ownership regarding successful outcomes of planned initiatives

- Widens the knowledge base necessary for assessing and — if required — correcting the course of action
- Increases the motivation of stakeholders to contribute ideas to corrective actions
- Creates trust in Local Government policy and action (provided that the stakeholders' input is genuinely taken into account); and
- Contributes to the learning of all involved

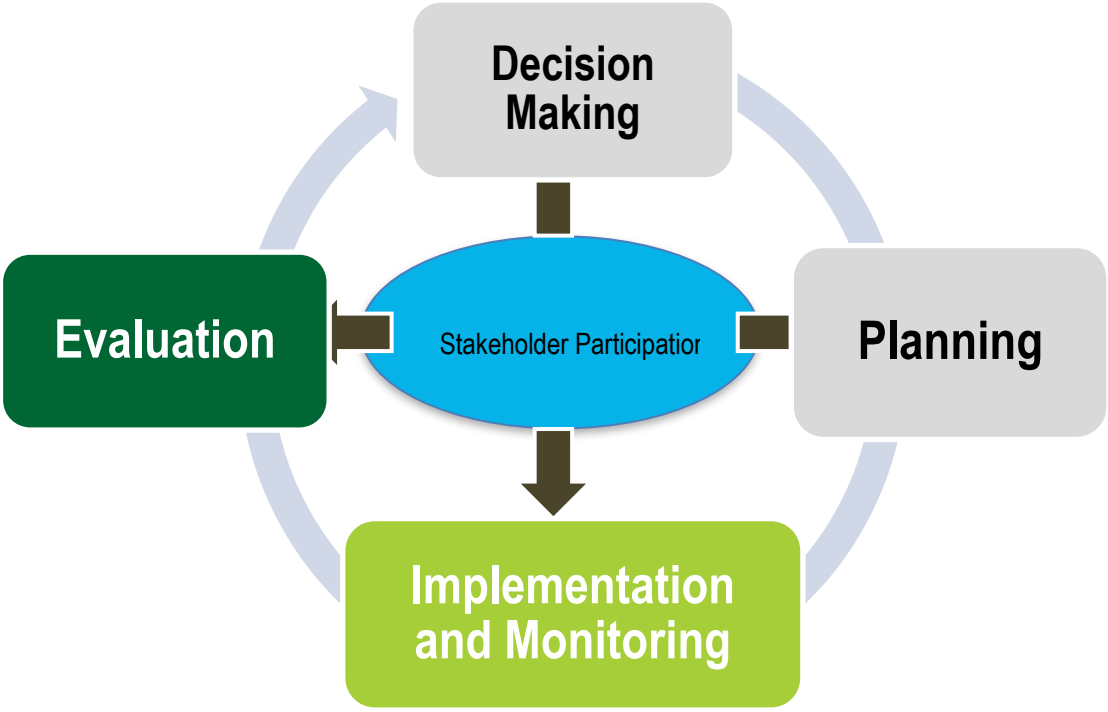


Figure 25: Participatory Monitoring and Evaluation

The system has its own disadvantages such as:

- It needs skilled facilitators to ensure everyone understands the process and is equally involved
- Can be dominated by strong voices in the community (for example, men dominating women in discussions, political, cultural or religious leaders dominating discussions and decision making)
- Can be time consuming - needs genuine commitment.

In the current environment, the system (PM&E) has more benefits than costs, hence it should be used as it can be cheaper. As part of the capacity building programme, there must be training in PM&E and it should be implemented.

13.1 Monitoring Framework

Monitoring of the District WASH Master Plan will be a continuous process that will be aligned with the District annual planning and resource allocation process to ensure that it is integrated into the already existing LA functions and activities. It will facilitate progress made in implementation, identifying challenges that might need to be addressed, adjustments that will need to be made to the plan and also the effectiveness of the Master Plan. As part of developing the Master Plan, an initial monitoring framework has been prepared. It presents key performance indicators, methods of measurement, means of verification and targets which are at goal and objective level. The indicators have been adapted from the 2018 – 2021 Strategic Plan of the

Ministry of Water Development, Sanitation and Environmental Protection but contextualized SDG No. 6.

A baseline survey[38] has been conducted by UNICEF that provides a comprehensive status of SDG No.6 indictors. The findings from the baseline survey will serve as a bench mark against which progress attained by the Kawambwa District WASH Master Plan can be measured. In addition, in order to have a robust monitoring system, the District will include the WASH indicators for water and sanitation into the already existing DHIS2 data base so that they can comprehensively capture data that cover all SDG No. 6 indicators and Vision 2030.

The sustainability of the WASH systems will depend to a great extent on the effectiveness of the monitoring, evaluation and reporting systems. The Ministry has DHIS2 WASH information management system that is being used for this; however, its dependent on community champions, who are volunteers, hence their reporting is irregular.

The monitoring frameworks that are still under development must include explicit targets and measures for sustainability.

Regulatory oversight must be exercised by mandated entities (NWASCO) and capacity building must be provided by MWDS and MLGRD to the LA, LpWSC and sub-district structures to enhance service provision.

Collecting and sharing knowledge is at the heart of how the sustainability of the WASH facilities will be enhanced. The LA should pool together its expertise, amplifying shared successes, learning from challenges, and sharing widely, to change and improve the WASH service delivery. The LA should undertake the following as part of its MER systems:

1. comprehensive feasibility studies to guide construction of water supply and sanitation infrastructure including borehole siting and environmental assessment
2. the baseline assessments (it's good that one was done for this project by UNICEF and must be shared with the LA and the CU).
3. Organise quarterly and bi-annual review meetings/workshops.
4. the mid-line and end-line assessments for any programmes undertaken by the District, and share the results widely.

13.2 Reporting

The D-WASHE Committee will be the main entity that will monitor and report progress on the implementation of the District WASH Master Plan on an annual basis. It will coordinate all key stakeholders' actions towards the attainment of the WASH Master Plan goals and objectives. It will also be responsible for submitting annual progress reports to the Local Authority who will oversee the implementation of the District WASH Master Plan.

Once the LpWSC takes over the provision of WSS in the rural areas, it will then be responsible for reporting and it will report through the NWASCO Information System (NIS).

38 UNICEF, 2021. Improvement of WASH Services for six Districts in Luapula

It is also expected that the continuous monitoring and baseline survey results will be used in the joint annual review meetings of stakeholders that will be organized by the Local Authority to see the progress made in the implementation of the WASH Master Plan. The review meetings will enable re-planning and adjusting the Master Plan accordingly in order to achieve the outcomes. The review findings will be shared with the Ministry of Water Development, Sanitation and Environmental Planning, MLGRD, MoE, MoH and other key stakeholders.

13.3 Evaluation

Mid-term reviews of the District WASH Master Plan will be done at the end of 2.5 years, hence the first one will be done 2.5years from the base year, which will be in tandem with the District development plans cycle of 5 years. Another evaluation will be carried out at the end of 5 years to determine the impact of the District WASH Master Plan in contributing to the national WASH goal in line with Vision 2030 and the 7NDP. The evaluations will review the implementation strategies, emerging issues including lessons learned, failures, successes and progress made towards set targets. The evaluations will assist in improving the implementation of the District WASH Master Plan over time.

The mid-line evaluation will be undertaken in 2024/25 and the end line evaluation will be undertaken in 2030 at the end of the plan implementation period.

13.4 Learning, Sharing and Adaptive Capacity

Learning and knowledge management will be mainstreamed during the implementation of the District WASH Master Plan. The learning process will involve documentation and sharing of lessons learned, best practice and new insights on how best to improve the planning in the next review phase of the Master Plan. This will result in an improved performance of the Plan. The sharing will be done both at local and national platforms that are already in existence. These will include:

- Print and websites: District website or MWDSEP website and social media like Facebook.
- Annual stakeholder meetings to coordinate and review the implementation of the WASH Master Plan.
- Sector events at national, provincial and District levels such as at the District commercial shows.

Given at Appendix I are the references that have been used in the preparation of this Master Plan, of which some have not directly referred to in the document. Other references have been cited in the main document as footnotes.

APPENDICES

APPENDIX I: REFERENCES

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Appendix II WASH Statistics as at December, 2020

S/N	Name of Ward	Population		No. of Water Points		Number of toilets	Number of APMs	Number of Masons	No. of CCs	No. of tool boxes		Number of V-WASHEs	
		2010 (As per census)	2030 (projected)	Functional	Non-functional					Standard	Special	Active	Not Active/ Not in place
1	Ilombe	12,103	15,952	7	6	-	1	1	4	0	0	0	0
2	Pambashe	2,370	3,124	9	6	-	0	0	5	0	0	0	0
3	Mulunda	10,859	14,313	11	13	-	0	0	3	0	0	0	0
4	Chibote	2,773	3,655	7	19	-	1	0	3	0	0	0	0
5	Chimpili	2,506	3,303	7	8	-	1	0	4	0	0	0	0
6	Kabanse	7,050	9,292	13	9	-	2	0	5	0	0	0	0
7	Luena	3,296	4,344	11	7	-	0	0	3	0	0	0	0
8	Kawambwa Central	10,733	14,147	11	5	-	1	0	0	0	0	0	0
9	Senga	11,903	15,689	15	13	-	0	0	3	0	0	0	0
10	Ntumbachushi	2,493	3,286	5	6	-	0	0	0	0	0	0	0
11	Fisaka	5,987	7,891	6	14	-	0	0	4	0	0	0	0
12	Luongo	3,151	4,153	4	6	-	1	0	4	0	0	0	0
13	Iyanga	5,140	6,775	11	5	-	0	0	2	0	0	0	0
14	Ng'ona	13,777	18,159	19	11	-	0	0	5	0	0	0	0
15	Lubale	1,775	2,340										
16	Filenge	2,702	3,561										
17	Kala (New Ward)	1,454	1,916										
18	Chikanda (New Ward)	833	1,098										
	Total	**100,905**	**132,998**										

APPENDIX III: THE LOGICAL FRAMEWORK

Overall Objective/Goal

Sustainable and equitable access to safe water supply and proper sanitation to meet basic needs for improved health and poverty alleviation for all of Kawambwa's rural population in line with the Vision 2030 and the Sustainable Development Goals (SDGs) for water supply and sanitation.

Global Goals

SDG 6: Ensure availability and sustainable management of water and sanitation for all

SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

SDG 12: Ensure sustainable consumption and production patterns

Specific Objectives

1. Increased proportion of rural population has access to improved, functioning WS facilities in rural areas through systematic investments in new facilities, rehabilitation and effective O&M of existing facilities on the basis of a single, comprehensive district programme for WASH;
2. Increased proportion of rural population has access to adequate and equitable sanitation facilities in rural areas though promotion of improved household latrine construction using sanitation marketing and strategic demonstration facilities, health/hygiene behaviour change promotion, involvement of traditional leadership and legal enforcement;
3. Increased proportion of rural population has access to improved, functioning institutional WASH facilities in rural areas;
4. Increased proportion of rural population has access to improved Solid Waste Management services;
5. Improved performance of WASH in the district in terms of efficiency and effectiveness of planning, implementation, O&M, advocacy and communication, M&E, budgeting and reporting through policy and institutional reforms, capacity development and use of a sustainable MIS.

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
Water Supply				
1.1 Water supply facilities	1.1.1 Domestic: Increased % of rural population accessing safe water supply. (At least basic drinking water services)	1.1.1.1 % of population using safely managed drinking water services by province and district. 1.1.1.2 % of population using basic drinking water services by province and district.	ZamStats/MWDS/DPI/DWSS/M&E/NWASCO/LA annual reports. ZamStats statistics, Human Demographic Surveys, etc. JMP Reports. NRWSSP progress reports. NRWSSP Evaluation Reports	Government and CPs will remain committed and actualize allocation of adequate resources to the sub-sector (rural focus) Policy environment will remain supportive of the sector Appropriate and effective water supply technologies will be promoted There will be adequate sector coordination. There will be adequate good governance systems in place. By 2020 all districts are reporting to WASH MIS.
	1.1.2 School WASH: Increased proportion (%) of schools with access to adequate and equitable water supply facilities	1.1.2.1% of rural schools with basic drinking water services by province and by district.		
	1.1.3 Health Care Facilities WASH: Increased proportion (%) of health facilities with access to adequate and equitable water supply facilities	1.1.3.1 % of rural health care facilities with basic drinking water services by province and district.		
	1.1.4 Institutions and Public Places WASH: Increased proportion (%) of Institutions and Public Places with access to adequate and equitable water supply facilities	1.1.4.1 % of rural Institutions and Public Places with basic drinking water services by province and district.		
	1.1.5 Water Quality: Increased proportion (%) of water samples taken at the point of water collection (use), waste discharge point that comply with national standards.	1.1.5.1 district to have water safety plans 1.1.5.2 Number of water quality samples submitted for testing. 1.1.5.4 % of water samples taken at the representative point of water collection that comply with national standards. 1.1.5.5 % of water samples taken at the waste discharge point that comply with national standards.		
	1.1.6 New water infrastructure developed.	1.1.6.1 Number of new infrastructures developed to meet water demand		

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
	1.1.7 Increased water security.	1.1.7.1 Number of wards with increased water security established		
	1.1.8 Design life span of water points (hand pumps): Increased proportion (%) of water points (hand pumps) that remain functional for the rest of their design life span.	1.1.8.1 Number of water points (hand pumps) in continuous use for their design life span.		
Sanitation & Hygiene Promotion				
2.1 Sanitation facilities	2.1.1 Increased % of population in rural areas using adequate and equitable sanitation	2.1.1.1 % of population using safely managed sanitation services in rural areas by province and by district. 2.1.1.2 % of population with basic sanitation services by province and district	Reports and data from relevant Ministries. Provincial and LA reports. Reports and data from other stakeholders and CPs, e.g. NGOs, UNICEF. WDC reports. NWASCO Annual Sector Reports. ZEMA Annual Sector Reports. NRWSSP progress reports. NRWSSP MIS. Knowledge Attitudes & Practices study reports. NRWSSP Evaluation reports	Government and CP will remain committed and actualize allocation of adequate resources to the sub-sector (rural focus). The policy environment will remain supportive of the sector. Appropriate and effective sanitation technologies will be promoted. The will be adequate sector coordination.
	2.1.2 Open Defecation Free (ODF)	2.1.2.1 % of population practicing open defecation (OD) by province and district. 2.1.2.2 % of Wards that are ODF		

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
	2.1.3 Improved hygiene practices and behaviour by communities and people in rural areas.	2.1.3.1 number of incidences of WSS related diseases the district. 2.1.3.2 % of households that demonstrate the desired behavioural changes. 2.1.3.3 % of households with hand washing facilities with both soap and water at or near toilets.	NRWSSP MIS NWASCO Information System ZEMA Environment Management Reports	Communities will be willing to support initiatives. All sector stakeholders and CPs will be willing to support and abide by set standards. Decentralization will be fully implemented. By 2020 all districts are reporting to WASH MIS. WASH MIS captures both water and sanitation information including on institutional facilities.
	2.1.4 School WASH: Increased proportion (%) of schools with access to adequate and equitable sanitation facilities	2.1.4.1 % of rural schools with basic sanitation services by ward meeting national standards. 2.1.4.2 % of rural schools with basic hygiene facilities. 2.1.4.3 % of rural schools with access to adequate and equitable sanitation facilities meeting national standards for boys 2.1.4.3 % of rural school with access to adequate and equitable sanitation facilities meeting national standards for girls 2.1.4.4 % of rural schools with menstrual hygiene facilities. 2.1.4.5 % of rural school pupils who are aware of key risks from poor sanitation and hygiene practices		
	2.1.5 Health Care Facilities WASH: Increased proportion (%) of health facilities with access to adequate and equitable sanitation facilities and basic hygiene facilities	2.1.5.1 % of rural health care facilities with basic sanitation services. 2.1.5.2 % of rural health care facilities with basic hygiene facilities.		
	2.1.6 Institutions and Public Places WASH: Increased proportion (%) of Institutions and Public Places with access to adequate and equitable	2.1.6.1 % of rural Institutions and Public Places with basic sanitation services. 2.1.6.2 % of rural health care facilities with basic hygiene facilities.		

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
	sanitation facilities and basic hygiene facilities			
	2.1.7 Increased number of demonstration sanitation facilities	2.1.7.1 Increased number of demonstration sanitation facilities per ward.		
2.2 Solid Waste Management	2.2.1 Increased % of rural households that safely dispose of household rubbish.	2.2.1.1 % of population with access to adequate SWM services		There will be strong enforcement of regulation on waste disposal.
	2.2.2 Increased number of communities with clean and safe environment, free from litter.	2.2.2.1 Increased number of wards with clean and safe environment, free of litter 2.2.2.2 % of waste collected and transported for safe disposal or recycling 2..2.2.3 Number of sanitary inspections per ward per year. 2.2.2.4 Number of approved, safely managed refuse dumps per ward.		There will be public and private investment supportive policies in waste recycling. Solid Waste Management regulations will be developed and disseminate.
Sustainable Operations & Maintenance				
3.1 Operations & Maintenance water (water systems & sanitation facilities)	3.1.1 Increased number of fully functioning water points and systems.	3.1.1.1 Increased proportion (%) of fully functional water points and systems. 3.1.1.2 % of V-WASE committees with contributions towards O&M costs as agreed amounts 3.1.1.3 % cost covering of O&M costs of actual budgets 3.1.1.4 Availability of functioning spare parts shops.	Reports and data from relevant Ministries. Provincial and LA reports. Reports and data from other stakeholders and CPs, e.g. NGOs, UNICEF. WDC reports. NWASCO Annual Sector Reports. ZEMA Annual Sector Reports. NRWSSP progress reports. DHIS2.	There will be adequately trained APMs in the country. There will be readily available spare parts in all districts through LA and private shops. The DHIS2 will be fully implemented
	3.1.2 Increased number of fully functioning domestic and institutional sanitation facilities.	3.1.2.1 Increased proportion (%) of fully functional domestic and institutional sanitation facilities.		There will be a robust monitoring system that will inform and trigger

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
	3.1.3 Decreased down time for non-functioning WSS facilities.	3.1.3.1 % of repaired water points within response time as per agreed service levels by ward.	Knowledge Attitudes & Practices study reports. NRWSSP Evaluation reports NRWSSP MIS.	early preventative rehabilitation processes. By 2020 all districts are reporting to WASH MIS
	3.1.4 Increased number of wards with water systems and sanitation facilities sustained and functioning until the end of their design life span.	3.1.4.1 % of water systems that reach design life span by ward. 3.1.4.2 % of sanitation facilities that reach design life span by ward.		
3.2 Water Infrastructure Rehabilitation	3.2.1 Water systems and sanitation facilities sustained and functioning until the end of their design life span.	3.2.1.1 % of rehabilitated water points against non-functional water points by ward. 3.2.1.2 % of rehabilitated water sources that are functional at time of spot-check. 3.2.3 Per capita beneficiary cost of rehabilitated water infrastructure.		
Sector Development				
4.1 Governance, Management & Sector Coordination	4.1.1 Strengthened process towards the Annual Joint Water Sector Reviews and Programme Steering Committee meetings for improved coordination and harmonization among sector CPs and stakeholders.	4.1.1.1 Presence of functioning, GRZ led, multi-sectoral WASH sector coordination mechanism. 4.1.1.2 CUs and LAs have Integrity Committees that scrutinize RWSS projects and related issues.	Reports and data from relevant Ministries. Provincial and LA reports. Reports and data from other stakeholders and CPs, e.g. NGOs, UNICEF. WDC reports. NWASCO Annual Sector Reports. ZEMA Annual Sector Reports. NRWSSP progress reports. DHIS2. Regular monitoring	The Decentralization Policy will be fully implemented. WDCs will be fully established and operational.
	4.1.2 Increased functionality of government management systems, structures and procedures.	4.1.2.1 Increased number of wards with improved government management systems, structures and procedures		
	4.1.3 Improved multi-sector coordination related to RWSS at provincial and district levels.	4.1.3.1 D-WASHE fully functioning with improved multi-sector coordination 4.1.3.2 DDCC regularly receiving satisfactory D-WASHE quarterly reports.		

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
	4.1.4 Greater CP willingness to communicate and coordinate with each other.	4.1.4.1 Structures and systems for CP communication amongst each other established (e.g. regular consistent meetings, exchange formats/tools to enable sharing of experiences and information) at national level, provincial and district levels		
4.2 Capacity Development	4.2.1 Improved efficiency and effectiveness in WSS project delivery.	4.2.1.1 Number of wards in which WSS delivery is achieved 4.2.1.2 Number of wards in which WSS delivery is achieved meeting targets 4.2.1.3 Percentage of socially marginalized groups with access to safe clean water and adequate sanitation. 4.2.1.4 Bylaws WSS (including SWM) Policy supporting Strategies approved and in use. 4.2.1.6 % of implementing agency staff trained in component modules/topics (admin management; project planning; policy development; procurement; contract and financial management) by gender and place of work. 4.2.1.7 % of trained APMs 4.2.1.8 % of trained community champions. 4.2.1.9 Number of awards to champion institutions and communities.		Government and CP will remain committed and actualize allocation of adequate resources. Decentralization policy will be fully implemented leading to more harmonization and improved resources allocation based on need. Research will produce relevant evidence and technologies that will lead to improved water and sanitation sector. Higher education institutions will develop appropriate curricula that will produce the required qualified personnel for the sector. Government will deliberately engage training institutions and students in Higher learning institutions to undertake R&D on water and sanitation
	4.2.2 Functional water point committees with equitable women's representation.	4.2.2.1 Proportion of functional water committees against the total number of water points. 4.2.2.2 Proportion of women in decision making positions at all levels in the WASH sector.		
4.3 Research & Development	4.3.1 An effective research and development function leading to improved evidence-based decision making on WSS services.	4.3.1.1 Proportion of budgetary allocation to R&D by central government. 4.3.1.3 % adoption of new technologies resulting from evidence-based research.		

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
		4.3.1.4 Increased number of institutions that are involved in WASH research and are producing useful reports/ applications/results. 4.3.1.5 Research in water supply and sanitation to mitigate the impact of climate change		
4.4 Advocacy & Communication	4.4.1 Greater awareness of NRWSSP , the RWSS sector and MWDSEP district and sub-district levels amongst the public, stakeholders and within governmental institutions.	4.4.1.1 Number of launch events at district and sub-district levels. stakeholders and CPs, aware of the launch of the WASH Master PLan. 4.4.1.2 Number of sensitization and mobilization initiatives undertaken at district and sub-district levels. 4.4.1.3 Increased number of advocacy and communication interventions funded. 4.4.1.4 % of staff who understand how their role leads to frontline service delivery.		Budget allocated for advocacy and communication is sufficient and used for the intended purposes. Qualified government staff are available for managing the implementation of advocacy and communication initiatives.
	4.4.2 Greater political and media awareness on the need for improved WASH services.	4.4.2.1 Number of wards with councilors with awareness of the need for improved WASH services 4.4.2.2 Increased proportion of major media houses aware of the need for improved RWSS and SWM services 4.4.2.3 Number of NGO/CSO WASH & environmental lobbying networks engaged in political influencing. 4.4.2.4 Increased media coverage of WASH issues and initiatives.		
4.5 Climate Change	4.5.1 Climate change resilience designed into RWSS initiatives	4.5.1.1 The province having climate change resilience designed into RWSS initiatives 4.5.1.2 The district having climate change resilience designed into RWSS initiatives		Government will take a lead and coordinate the Climate Change adaptation initiatives. There will be robust Framework & Actions on DRR implementation.

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
		4.5.1.3 Existence of government plans valuing natural resources assets and factoring values into national planning and budgeting processes. 4.5.1.4 Existence and effectiveness of national and local coordination mechanisms on climate adaptation. 4.5.1.5 Existence of water-related disaster preparedness plans and contingency plans at all administrative levels that consider RWSS issues. 4.5.1.6 Early warning systems for all major WASH hazards developed and operationalized at all levels of government and with outreach to communities. 4.5.1.7 Measures for water conservation and water-related disaster management coordination developed and designed into RWSS systems. 4.5.1.8 Climate resilience is integrated into approved WSS policies, strategies and plans. 4.5.1.8 % of new RWSS projects, systems and facilities which integrate climate resilience.		Communities will be willing to adapt Climate Smart Knowledge, Attitudes and Practices.
Planning, Monitoring, Evaluation & Reporting				
5.1 Planning, Monitoring, Evaluation & Reporting	5.1.1 Improved sector planning and coordination.	5.1.1.1 Improved sector planning and coordination structures and systems at national level established 5.1.1.2 Increased number of provinces with improved sector planning and coordination 5.1.1.3 Increased number of districts with improved sector planning and coordination 5.1.1.4 Presence of functional Planning Units and MIS at all levels (District and Sub-districts).	Reports and data from relevant Ministries. Provincial and LA reports. Reports and data from other stakeholders and CPs, e.g. NGOs, UNICEF. WDC reports. NWASCO Annual Sector Reports.	Government will support a robust information management and dissemination system Coherent and easier to use sector information systems at national, provincial, district and sub-district levels

Key Sector Components	Sub-component	Key Measurable Indicators	Means of verification	Key Assumptions
	5.1.2 Improved sector monitoring and performance reporting.	5.1.2.1 Improved sector monitoring and reporting structures and systems established at district and subdistrict level	ZEMA Annual Sector Reports. NRWSSP progress reports. DHIS2. Knowledge Attitudes & Practices study reports. NRWSSP Evaluation reports. WARMA Annual Report	Sector information will be easy to access by intended users (Partners and public) Government institutions at all levels have the human resources for the data collection requirements of the improved MIS. M&E Framework is approved and implemented.
	5.1.3 Improved data management and usage.	5.1.3.1 Improved data management and usage systems (M&E, MIS and others) established at district levels. 5.1.3.2 Increased number of wards with improved data management and usage. 5.1.3.7 Number of Community Champions making consistently timely reports.		
	5.1.4 Improved Knowledge management	5.1.4.1 Improved documentation of lessons learnt 5.1.4.2 Number of knowledge management dissemination meetings/workshops held.		Availability of funding
Financing				
6.1 Funding of the WASH Master PLan	6.1.1 Effective and efficient financing of WASH Master Plan	6.1.1.1 Proportion of funds actually disbursed against budgeted. 6.1.1.2 Per capita beneficiary cost of new water schemes. 6.1.1.3 Per capita beneficiary cost of institutional and public sanitation schemes. 6.1.1.4 Number of capital water supply and sanitation projects undertaken by ward 6.1.1.5 Number of water points rehabilitated 6.1.1.6 Per capita beneficiary cost of rehabilitated water schemes/points.	Reports and data from relevant Ministries. Provincial and LA reports. Reports and data from other stakeholders and CPs, e.g. NGOs, UNICEF. WDC reports. NWASCO Annual Sector Reports. ZEMA Annual Sector Reports. NRWSSP progress reports. DHIS2. Knowledge Attitudes & Practices study reports. NRWSSP Evaluation reports.	Government and CP will remain committed to funding of the water sector Implementing agents such as CU, LA shall have capacity to implement the NRWSSP II and utilize the funds for improved service delivery Financing mechanism for the water sector shall be established.

Area of Focus	District Long Term Objective	Target 2030	Indicators for Measurement at District Level	Method of Measurement	Means of Verification
Water Services	Ensure basic water access for everyone and safely managed water to at least % of District population.	Increase access to safely managed water on premises from 25.2% basic water services in 2019 to 100% for rural households by 2030.	Proportion of population using safely managed drinking water[39]. Proportion of population using basic drinking services.	Water service monitoring.	Annual Progress Report
Sanitation Services	Improve access to sanitation services by 2030.	Increase access to safely managed sanitation facilities from 13.4% basic sanitation in 2019 for rural households to 90% by 2030. Increase access to basic hygiene facilities from 31.1% in 2019 to 90% by 2030.	Proportion of population with access to basic sanitation. Proportion of population using safely managed sanitation services, including handwashing facility with soap and water.	Sanitation service monitoring using DHIS2 data base and Sanitation household survey.	Annual Progress Report
WASH in Schools and Health Facilities	Increase basic access to water, sanitation and hygiene services on site in all schools and health institutions	Increase access to basic water services in schools from to 100% by 2030. Increase access to basic water supply in health facilities to 100% by 2030. Increase access to basic hygiene services in schools to 100% by 2030. Increase access to basic hygiene services in health facilities to 100% by 2030. Increase access from basic in 2019 to 90% safely managed sanitation facilities for schools and health facilities by 2030. Ensure all schools have safely manage MHM facilities.	Number of schools with access to basic water services[40]. Number of health facilities with access to basic water facilities. Number of schools with access to basic hygiene services separated for staff. Number of schools with menstrual hygiene provisions. Number of health facilities with access to basic hygiene services. Number of schools with access to basic sanitation services separated for girls, staff and	Water and sanitation services monitoring	Annual Service monitoring Report

39 Safely managed drinking water service: An improved drinking water source located on premises, available when needed and free from contamination.

40 Basic drinking water services is defined as drinking water from an improved source, provided collection time is not more than 30 minutes for a round trip. Improved water sources include piped water, boreholes or tube wells, protected dug wells, protected springs, and packaged or delivered water.

Area of Focus	District Long Term Objective	Target 2030	Indicators for Measurement at District Level	Method of Measurement	Means of Verification
		Ensure all institutions have safe disposal and treatment of waste.	boys, and meeting with the needs of the people with limited mobility. Number of institutions with facilities for safe disposal and treatment of waste.		
WRM	Catchment management is well coordinated and plans implemented to ensure sustainable water quality.	Water resources are managed sustainably to guarantee water availability of acceptable quality for commercial, industrial and domestic use. No pollution of surface and ground water resources from agrochemicals.	Number of functional catchment management committees. Proportion of catchment institutions operational by type. Proportion of transboundary hydrological stations operational. Proportion of water quality assessments undertaken. Proportion of surface water monitoring stations expanded. Proportion of groundwater monitoring stations expanded. Number of integrated water resources management information system centers established.	Monitoring of basins by WARMA	Annual Progress Report
District Capacity	Improve both human and logistical capacity of the district's management of WASH.	Local Authority with adequate requisite skilled staff and adequate logistics to manage District WASH services. Sub-district personnel (V-WASHE, WDCs, CCs, APMs, etc.) With adequate requisite competences. Adequate support infrastructure (motor vehicles, motor bikes, water transport, spare parts shops well stocked, etc.)	Level of coordination by heads of departments Master Plan implementation. Sources and types of technical assistance for the WASH Master Plan implementation. Stock levels Available transport facilities, stocks, etc.	Local government District WASH assessments systems.	Functional organizational tools. Stocktake
WASH Systems	Improve systems for WASH delivery services	Strengthen frameworks and mechanisms for planning, coordination, financial tracking,	Coordination and partnership Proportion of policies, guidelines and strategies applied in Master Plan implementation.	Local government WASH system	Annual Report

Area of Focus	District Long Term Objective	Target 2030	Indicators for Measurement at District Level	Method of Measurement	Means of Verification
		social accountability and monitoring progress for SDG No.6 at the district.	Number of NGOs, CSO and private sector partners involved in the Master Plan implementation. Proportion of partner activities aligned with the objectives of the WASH Master Plan. Finance District sources and amount of revenue raised. Proportion of expenditure by District on WASH activities in comparison to other sectors. Amount of expenditure by development partners on WASH Master Plan implementation. Monitoring Level of functionality of WASH District database and its linkage to the national database system. Proportion of use of monitoring data for policy and decision making by the district. Number of SDGs No.6 indicators being tracked and data provided from the District level.	assessment and budget tracking	
Inequalities and Exclusion w	Reduce inequalities and exclusion in the delivery of WASH services	Every community including remote areas to have access to basic water and sanitation services.	Proportion of excluded and vulnerable population (geographic, gender, differently abled, poverty, location etc.) with basic water and sanitation services.	Surveys	WASH Master Plan Annual Progress Report District Annual Report
Behavioral and Attitude	Improve the behaviour and attitude of communities and stakeholders towards WASH.	Strong stakeholder forum for lessons learned, improved transparency, shared resources and increased communication capacity. Provide ongoing feedback on the implementation work supported by advocacy, engagement and networking.	Number of NGO, CSO and government meetings, engagements and campaigns on behaviour and attitudes towards WASH.	Surveys	Stakeholder forum progress report

APPEDIX IV – A: ADVOCACY AND COMMUNICATION STRATEGY

Goal: To work towards obtaining key stakeholder buy in to the WASH Master Plan, create an interest and support for the successful implementation of the Plan at District level.							
	Problem behaviour	**Behaviour to promote**	**Communication objectives**	**Communication strategy**	**Activities to implement**	**Output indicators**	**Impact indicators**
1.	Inadequate knowledge on WASH Master Plan by district policy makers	Increase knowledge base on WASH Master Plan	Raise awareness of the WASH Master Plan	Production of briefs on WASH Master Plan	Identify specific government departments/ ministries, NGOs, CSO, cooperating partners, implementation partners etc. Identify communication/media specialist to conduct training Design and prepare materials to be used Carry out advocacy meetings and workshops. Fact sheets, basic messages, Frequently Asked Questions WASH T-Shirts, caps Stakeholder roles and responsibilities Summaries of current WASH studies Preparation of Annual Work Plan Monitor and evaluate activities	Number of organizations identified and trained. Media specialist identified and hired Number of Materials prepared, printed and distributed Number of workshop/meetings conducted.	Number of media reports on WASH Number of policy makers identifying and making statements on WASH policies and WASH district Master Plan

Goal: To work towards obtaining key stakeholder buy in to the WASH Master Plan, create an interest and support for the successful implementation of the Plan at District level.							
	Problem behaviour	**Behaviour to promote**	**Communication objectives**	**Communication strategy**	**Activities to implement**	**Output indicators**	**Impact indicators**
2.	Inadequate knowledge on Kawambwa WASH Master Plan by community members	Increased knowledge base for community members	Create community interest and support for all WASH activities	Community awareness through community meeting	Annual work plan Preparation of flyers Preparation of pictorial messages on WASH Hire drama groups to perform sketches Hire musicians to help disseminate messages on WASH	Number of communities visited by drama groups Number of communities visited by musicians Number of pictorial messages sent out in communities Number of communities that have received pictorial messages Number of flyers distributed to communities Number of communities that received flyers on WASH Master Plan	Community members aware of WASH Master Plan activities. Community supports WASH activities by e.g. willingness to pay for fixing borehole pumps.
3.	Inadequate financial resources to implement the Kawambwa WASH Master Plan	Adequate finances to implement	Mobilize additional funds for the WASH Master Plan.	Mobilize financial resources from the private sector, development partners and NGOs.	Preparation of annual work plan. Engaging development partners, the private sector, NGO. Advocacy workshops to provide detailed information about the WASH Master Plan Proposals for funding from development partners, NGOs and private sector	Number of development partners, private sector players, NGOs funding WASH Master Plan Number of advocacy workshop carried out Number of proposals for funding approved Number of development partners, NGOs and	WASH Master Plan activities funded.
4.	Inadequate monitoring of WASH Master Plan activities	Ensure monitoring of WASH activities being implementation	Monitor the implementation progress of the Master Plan.	Progress reports of WASH Master Plan activities	Prepare annual work plan Carry out visits to areas of WASH Plan activities Prepare field visit reports	Number of visits to areas of WASH Plan activities Number of reports on visits conducted	WASH Master Plan activities continuously monitored.

Goal: To work towards obtaining key stakeholder buy in to the WASH Master Plan, create an interest and support for the successful implementation of the Plan at District level.							
	Problem behaviour	**Behaviour to promote**	**Communication objectives**	**Communication strategy**	**Activities to implement**	**Output indicators**	**Impact indicators**
					Budget for visits to areas for WASH activities.	Budget allocation for monitoring activities	
5.	Lack of dissemination of WASH Master Plan activities achievements, lessons learned and challenges	Dissemination of all WASH Master Plan activities, achievements, lessons learned and challenges	Publicize WASH Master Plan activities, achievements, lessons learned and challenges	Information brief on WASH Master Plan activities, achievements, lessons learned and challenges	Prepare information brief on WASH Plan activities and achievements, lessons learned and challenges Dissemination workshop for all stakeholders in the WASH sector in Kawambwa District Dissemination community meetings.	Number of dissemination workshops done. Number of information briefs produced. Number of dissemination community meeting conducted Number of communities where dissemination meetings done.	Publicized WASH Master Plan activities, achievements, lessons learned and challenges

APPENDIX IV – B: COMMUNICATION STRATEGY MATRIX

No	Current Problem/Behaviours	Behaviour to Promote	Communication Channels	Targets	Implementers	Approaches	Message Concept	M&E Indicators	Communications Materials	Time Frame	Budget
1.	Issue 1: Not using Policy document as framework for WASH Master Plan Implementation										
1.1	Policy and law makers at district level: Not knowledgeable and supportive of WASH Master Plan Lack access to policies	Use of policy to guide implementation of WASH Master Plan	Preparation and distribution of policy documents. Advocacy workshops.	Government officials at the district and various key stakeholders in WASH sector in the district.	Local Authority	Advocacy work: Workshops, Policy dialogues and stakeholder meetings.	Appreciate the full implementation of policy documents and the District WASH Master Plan	No. of policy maker making public policy statements on WASH. No. of WASH advocacy briefings conducted in the district.	Information, Education and Communication (IEC) materials, District WASH Master Plan document and policy documents.	3 visits over 6 months period	
1.2	Traditional Leaders, religious leaders and community leaders: Not knowledgeable and supportive of WASH Master Plan Lack access to policies	Involvement in sensitization of community members on WASH Master Plan activities.	Advocacy workshops. Preparation and distribution of promotional materials e.g. flyers, fact sheets, pictorial messages etc.	Religious and traditional leaders	Local Authority	Advocacy work: Workshops, Policy dialogues and stakeholder meetings.	Appreciate the full implementation of policy documents and the District WASH Master Plan	No. of community sensitization meetings held. No. of times WASH issues included in sermons.	IEC materials, District WASH Master Plan document and policy documents.	Quarterly visits	
2.	Issue 2: Not having adequate Financial Resources to Implement WASH Master Plan Activities										
2.1	Local Authority/District Council: Inadequate financial and human resources	Funding of District WASH Master Plan activities.	Annual Work Plans Budget	MLGRD MoF Cooperating partners Development partners, NGOs etc.	Local Authority	Stakeholder meetings	Appreciate the importance of finances on successful implementation of the District WASH Master Plan	Budget allocation to District WASH Master Plan No. of cooperating partners, NGOs ad development partners funding the District WASH Master Plan	Yellow book MoU AWP District Budget	Annually	

APPENDIX V: POPULATION PROJECTIONS BY WARD – 2010 – 2030

Year	2010	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Ilombe	12,103	15,952	16,399	16,858	17,330	17,815	18,314	18,827	19,354	19,896	20,453	21,026
Pambashe	2,370	3,124	3,211	3,301	3,394	3,489	3,586	3,687	3,790	3,896	4,005	4,117
Mulunda	10,859	14,313	14,713	15,125	15,549	15,984	16,432	16,892	17,365	17,851	18,351	18,865
Chibote	2,773	3,655	3,757	3,862	3,971	4,082	4,196	4,314	4,434	4,559	4,686	4,817
Chimpili	2,506	3,303	3,396	3,491	3,588	3,689	3,792	3,898	4,007	4,120	4,235	4,354
Kabanse	7,050	9,292	9,552	9,820	10,095	10,378	10,668	10,967	11,274	11,590	11,914	12,248
Luena	3,296	4,344	4,466	4,591	4,720	4,852	4,988	5,127	5,271	5,418	5,570	5,726
Kawambwa Central	10,733	14,147	14,543	14,950	15,369	15,799	16,241	16,696	17,163	17,644	18,138	18,646
Senga	11,903	15,689	16,128	16,580	17,044	17,521	18,012	18,516	19,034	19,567	20,115	20,679
Ntumbachushi	2,493	3,286	3,378	3,472	3,570	3,670	3,772	3,878	3,987	4,098	4,213	4,331
Fisaka	5,987	7,891	8,112	8,339	8,573	8,813	9,060	9,313	9,574	9,842	10,118	10,401
Luongo	3,151	4,153	4,269	4,389	4,512	4,638	4,768	4,902	5,039	5,180	5,325	5,474
Iyanga	5,140	6,775	6,964	7,159	7,360	7,566	7,778	7,996	8,220	8,450	8,686	8,929
Ng'ona	13,777	18,159	18,667	19,190	19,727	20,280	20,847	21,431	22,031	22,648	23,282	23,934
Lubale	1,775	2,340	2,405	2,472	2,542	2,613	2,686	2,761	2,838	2,918	3,000	3,084
Filenge	2,702	3,561	3,661	3,764	3,869	3,977	4,089	4,203	4,321	4,442	4,566	4,694
Kala (New Ward)	1,454	1,916	1,970	2,025	2,082	2,140	2,200	2,262	2,325	2,390	2,457	2,526
Chikanda (New Ward)	833	1,098	1,129	1,160	1,193	1,226	1,260	1,296	1,332	1,369	1,408	1,447
Total	**100,905**	**132,998**	**136,722**	**140,550**	**144,485**	**148,531**	**152,690**	**156,965**	**161,360**	**165,878**	**170,523**	**175,297**

APPENDIX VI: SANITATION COST PROJECTIONS

Scode	Description of Technology	Short Description	Cost (US$)	Appropriate Number of people serviced	O&M (as % of cost)	Per Capita Cost
SS 1	Improved traditional pit latrine with slab; hand washing device	Improved Traditional	500	8	5	62.5
SS 2	Single VIP Latrine; lined; hand washing device	Single VIP	1,800	10	5	180
SS 3	Double VIP Latrine, Lined; hand washing device	Double VIP	3,500	20	10	175
SS 4	Communal/School Ablution Block complete with septic tanks	Communal/School	20,000	500	20	40
Source: UNICEF						
	2020 Base	80%				
	2030 Target	90%				
	Gap	10%				
	Annual Increase	1.0%				

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Rural Population	132,998	136,722	140,550	144,485	148,531	152,690	156,965	161,360	165,878	170,523	175,297	
Coverage	0.80	0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.90	
Total Covered	106,398	110,745	115,251	119,923	124,766	129,786	134,990	140,383	145,973	151,765	157,768	
Additional		4,347	4,506	4,672	4,843	5,020	5,204	5,393	5,590	5,792	6,003	51,370

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Household Sanitation												
Unit Cost	ZMW1,750	ZMW1,860	ZMW1,980	ZMW2,100	ZMW2,230	ZMW2,370	ZMW2,520	ZMW2,680	ZMW2,850	ZMW3,030	ZMW3,220	
Total Cost	ZMW0	ZMW1,617,200	ZMW1,784,400	ZMW1,962,400	ZMW2,160,000	ZMW2,379,600	ZMW2,623,000	ZMW2,890,800	ZMW3,186,400	ZMW3,510,000	ZMW3,866,000	ZMW25,979,800
Related HH Sanitation Promotion Costs	ZMW0	ZMW646,880	ZMW713,760	ZMW784,960	ZMW864,000	ZMW951,840	ZMW1,049,200	ZMW1,156,320	ZMW1,274,560	ZMW1,404,000	ZMW1,546,400	ZMW10,391,920
Institutional Sanitation												
Units	4	4	4	4	4	4	4	4	4	4	4	
Unit Cost	ZMW500,000	ZMW530,000	ZMW562,000	ZMW596,000	ZMW632,000	ZMW670,000	ZMW711,000	ZMW754,000	ZMW800,000	ZMW848,000	ZMW899,000	
Total Cost	ZMW2,000,000	ZMW2,120,000	ZMW2,248,000	ZMW2,384,000	ZMW2,528,000	ZMW2,680,000	ZMW2,844,000	ZMW3,016,000	ZMW3,200,000	ZMW3,392,000	ZMW3,596,000	ZMW28,008,000
Related HH Sanitation Promotion Costs	ZMW0	ZMW848,000	ZMW899,200	ZMW953,600	ZMW1,011,200	ZMW1,072,000	ZMW1,137,600	ZMW1,206,400	ZMW1,280,000	ZMW1,356,800	ZMW1,438,400	ZMW11,203,200
Waste Management	ZMW576,000	ZMW126,000	ZMW204,161	ZMW217,431	ZMW463,128	ZMW369,923	ZMW435,277	ZMW279,718	ZMW297,899	ZMW634,525	ZMW655,147	ZMW3,683,209
Component Total	**ZMW2,576,000**	**ZMW5,358,080**	**ZMW5,849,521**	**ZMW6,302,391**	**ZMW7,026,328**	**ZMW7,453,363**	**ZMW8,089,077**	**ZMW8,549,238**	**ZMW9,238,859**	**ZMW10,297,325**	**ZMW11,101,947**	ZMW79,266,129

	Base Amounts $	Base Amount ZMW	Frequency (Years)	
Solid Waste Management				
Strategy Development	$7,000	ZMW126,000	5	
Strategy Deployment	$5,000	ZMW90,000	1	After development
Strategy Monitoring	$5,000	ZMW90,000	1	
Strategy Impact Evaluation and Review	$10,000	ZMW180,000	5	After deployment
Strategy Update	$5,000	ZMW90,000	5	Undertake year after reviewAfter initial deployment

Solid Waste Manageme	Base Year 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Strategy Development	ZMW126,000	ZMW126,000					ZMW172,631					ZMW298,631
Strategy Deployment	ZMW90,000		ZMW102,080	ZMW108,715	ZMW115,782	ZMW123,308	ZMW131,323	ZMW139,859	ZMW148,950	ZMW158,631	ZMW168,942	ZMW1,197,590
Strategy Monitoring	ZMW90,000		ZMW102,080	ZMW108,715	ZMW115,782	ZMW123,308	ZMW131,323	ZMW139,859	ZMW148,950	ZMW158,631	ZMW168,942	ZMW1,197,590
Strategy Impact Evaluatio	ZMW180,000				ZMW231,564					ZMW317,263		ZMW548,827
Strategy Update	ZMW90,000					ZMW123,308					ZMW317,263	ZMW440,570
Total	ZMW576,000	ZMW126,000	ZMW204,161	ZMW217,431	ZMW463,128	ZMW369,923	ZMW435,277	ZMW279,718	ZMW297,899	ZMW634,525	ZMW655,147	ZMW3,683,209

APPENDIX VII: WATER SUPPLY

	ZMW					
Average Exchange rate, US$ 1	25					
Assumptions Water Supply						
Average Per Capita Cost Computation	**US $**	**ZMW**				
New Water point	$7,500	ZMW187,500				
Rehabilitation	30%		of new water point			
Therefore Rehabilitation Cost	$2,250	ZMW56,250				
Average user per Water point	250		Using NRWSSP I Standard			
Therefore Average per capita Cost of New Water point	$30	ZMW750				
Consultative Workshop Revised to:	**$40**	ZMW1,000				
Therefore Average Cost of Rehabilitated Water point	$12	ZMW300				
Failure rate of NRWSSP I	3.0%					
Consultative Workshop Revised to:	10.0%		**of annual investment per year**			
Population Covered 2020	114,378		Total population covered by the end of the period			
Annual Rehab	15,000		10%	of covered		
CD for O&M of Water supply Systems	10%	of Infrastucture costs				
Targets	Coverage					
2020 Base	86%					
2030 Target	100%					
Gap	14%					
# of 5 Year Steps	2					
Increase per 5 Year step	7%					
Per year	1.4%					

Per Capita Costs											
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
New	ZMW750	ZMW750	ZMW750	ZMW750	ZMW750	ZMW750	ZMW750	ZMW750	ZMW750	ZMW750	ZMW750
Rehab	ZMW225	ZMW225	ZMW225	ZMW225	ZMW225	ZMW225	ZMW225	ZMW225	ZMW225	ZMW225	ZMW225
Population and Targets											
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Rural Population	132,998	136,722	140,550	144,485	148,531	152,690	156,965	161,360	165,878	170,523	175,297
Coverage	0.86	0.87	0.89	0.90	0.92	0.93	0.94	0.96	0.97	0.99	1.00
Total Covered	114,378	119,495	124,808	130,326	136,054	142,002	148,175	154,583	161,234	168,136	175,297
New	-	5,117	5,313	5,518	5,728	5,948	6,173	6,408	6,651	6,902	7,161
Rehabilitated	-	11,438	11,950	12,481	13,033	13,605	14,200	14,818	15,458	16,123	16,814
Cumulative	-	11,438	23,387	35,868	48,901	62,506	76,706	91,524	106,982	123,106	139,919
Total	**-**	**27,993**	**40,650**	**53,867**	**67,661**	**82,060**	**97,080**	**112,749**	**129,091**	**146,131**	**163,894**
Infrastructure Costs											
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
New Supply Systems	ZMW0	ZMW3,837,800	ZMW3,984,800	ZMW4,138,500	ZMW4,296,000	ZMW4,461,000	ZMW4,629,800	ZMW4,806,000	ZMW4,988,300	ZMW5,176,500	ZMW5,370,800
Rehabilitated Systems	ZMW0	ZMW2,573,600	ZMW2,688,700	ZMW2,808,200	ZMW2,932,400	ZMW3,061,300	ZMW3,195,100	ZMW3,334,000	ZMW3,478,200	ZMW3,627,800	ZMW3,783,100
Sub - total	ZMW0	ZMW6,411,400	ZMW6,673,500	ZMW6,946,700	ZMW7,228,400	ZMW7,522,300	ZMW7,824,900	ZMW8,140,000	ZMW8,466,500	ZMW8,804,300	ZMW9,153,900
CD for O&M of Systems	ZMW0	ZMW0	ZMW0	ZMW0	ZMW0	ZMW0	ZMW0	ZMW0	ZMW0	ZMW0	ZMW0
Total Cost Water Supply	**ZMW0**	**ZMW6,411,400**	**ZMW6,673,500**	**ZMW6,946,700**	**ZMW7,228,400**	**ZMW7,522,300**	**ZMW7,824,900**	**ZMW8,140,000**	**ZMW8,466,500**	**ZMW8,804,300**	**ZMW9,153,900**

APPENDIX VIII: OPERATIONS AND MAINTENANCE PROJECTED COSTS

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Water Cap Cost	ZMW0	ZMW191,890	ZMW199,240	ZMW206,925	ZMW214,800	ZMW223,050	ZMW231,490	ZMW240,300	ZMW249,415	ZMW258,825	ZMW268,540	ZMW2,284,475
Sanitation CC	ZMW0	ZMW186,860	ZMW201,620	ZMW217,320	ZMW234,400	ZMW252,980	ZMW273,350	ZMW295,340	ZMW319,320	ZMW345,100	ZMW373,100	ZMW2,699,390
Total O&M	**ZMW0**	**ZMW378,750**	**ZMW400,860**	**ZMW424,245**	**ZMW449,200**	**ZMW476,030**	**ZMW504,840**	**ZMW535,640**	**ZMW568,735**	**ZMW603,925**	**ZMW641,640**	**ZMW4,983,865**

APPENDIX IX: GOOD GOVERNANCE, MANAGEMENT, SECTOR COORDINATION, R&D, AND CROSSCUTTING ISSUES

Governance, Management & Sector Coordination	Base Year 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Strategy Development	ZMW120,000	ZMW120,000					ZMW120,000					ZMW240,000
Strategy Deployment	ZMW60,000		ZMW60,000	ZMW60,000	ZMW60,000	ZMW60,000	ZMW60,000	ZMW60,000	ZMW60,000	ZMW60,000	ZMW60,000	ZMW540,000
Strategy Monitoring	ZMW12,000		ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW108,000
Strategy Impact Evaluation and Review	ZMW180,000					ZMW180,000					ZMW180,000	ZMW360,000
Strategy Update	ZMW12,000					ZMW12,000					ZMW12,000	ZMW24,000
Sector Coordination	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW12,000	ZMW120,000
Total	ZMW396,000	ZMW132,000	ZMW84,000	ZMW84,000	ZMW84,000	ZMW276,000	ZMW204,000	ZMW84,000	ZMW84,000	ZMW84,000	ZMW276,000	ZMW1,392,000
Research and Development	Base Year 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Strategy Development	ZMW120,000	ZMW120,000					ZMW120,000					ZMW240,000
Strategy Deployment	ZMW72,000		ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW648,000
Strategy Monitoring	ZMW24,000			ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW192,000
Strategy Impact Evaluation and Review	ZMW48,000					ZMW48,000					ZMW48,000	ZMW96,000
Strategy Update	ZMW36,000					ZMW48,000					ZMW48,000	ZMW96,000
Total	ZMW300,000	ZMW120,000	ZMW72,000	ZMW96,000	ZMW96,000	ZMW192,000	ZMW216,000	ZMW96,000	ZMW96,000	ZMW96,000	ZMW192,000	ZMW1,272,000
Cross Cutting	Base Year 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Strategy Development	ZMW72,000	ZMW72,000					ZMW72,000					ZMW144,000
Strategy Deployment	ZMW72,000		ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW72,000	ZMW648,000
Strategy Monitoring	ZMW24,000			ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW24,000	ZMW192,000
Strategy Impact Evaluation and Review	ZMW144,000					ZMW144,000					ZMW144,000	ZMW288,000
Strategy Update	ZMW132,000					ZMW144,000					ZMW144,000	ZMW288,000
Total		ZMW72,000	ZMW72,000	ZMW96,000	ZMW96,000	ZMW384,000	ZMW168,000	ZMW96,000	ZMW96,000	ZMW96,000	ZMW384,000	ZMW1,560,000

APPENDIX X: PMERL

ZMW'000													
Year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**		**Total**
Development of M&E & Reporting Framework	250	250											250
Planning	100	108	117	126	136	147	159	171	185	200	216		**1,565**
Data Collection & Reporting	730	788	851	920	993	1,073	1,158	1,251	1,351	1,459	1,576		**11,421**
Review of planning and reporting processes				250	270	292	315	340	367	397	428		**2,659**
Update of systems					500				630				**1,130**
Total	**1,080**	**1,146**	**968**	**1,296**	**1,899**	**1,511**	**1,632**	**1,763**	**2,533**	**2,056**	**2,220**		**17,025**

APPENDIX XI: SUPPORT INFRASTRUCTURE COSTS (ZMW'000)

Year	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
Motor vehicles		3,666				3,666					**7,332**
Bicycles	299		299		299		299		299		**1,496**
Motor cycles	1,466			1,466			1,466			1,466	**5,866**
SOMAP Shops	733										**733**
Seed stock - spare parts	2,444										**2,444**
Computer with acccessories		489			489			489			**1,466**
Sanitation demo facilities		858					858				**1,716**
GPS Equipment		147			147			147			**440**
Total	**4,943**	**5,160**	**299**	**1,466**	**935**	**3,666**	**2,624**	**635**	**299**	**1,466**	**21,493**

APPENDIX X: PMERL (ZMW'000)

ZMW'000													
Year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**		**Total**
Development of M&E & Reporting Framework	250												250
Planning	100	108	117	126	136	147	159	171	185	200	216		**1 665**
Data Collection & Reporting	600	648	700	756	816	882	952	1 028	1 111	1 199	1 295		**9 987**
Review of planning and reporting processes				250	270	292	315	340	367	397	428		**2 659**
Update of systems					500				630				**1 130**
Total	**950**	**756**	**816**	**1 132**	**1 722**	**1 320**	**1 426**	**1 540**	**2 293**	**1 796**	**1 940**		**15 691**

APPENDIX XI: SUPPORT INFRASTRUCTURE COSTS (ZMW'000)

Year	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
Motor vehicles		1 902				1 902					1 902	**5 706**
Motor cycles	1 014			1 014			1 014			1 014		**4 058**
Computer with acccessories		507			507			507			507	**2 029**
Sanitation demo facilities		495					495					**989**
Construction of Spare Parts		254										**254**
Seed stock - spare parts			3 804									**3 804**
GPS Equipment		101			101			101			101	**406**
Total	**1 014**	**3 259**	**3 804**	**1 014**	**609**	**1 902**	**1 509**	**609**	**-**	**1 014**	**2 511**	**17 246**

APPENDIX XII: THE SUSTAINABLE DEVELOPMENT GOALS RELEVANT TO WSS

GOAL 1 : 'End poverty in all its forms everywhere.'	
TARGET	INDICATOR
1.4. By 2030, ensure that all men and women in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services including microfinance.	1.4.1. Proportion of population living in households with access to basic services.
GOAL 4 : 'Ensure inclusive and equitable quality education and promote lifelong learning opportunities'	
TARGET	INDICATOR
4.a. Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.	4.a.1. Proportion of schools with access to (a) electricity ; (b) the internet for pedagogical purposes ; (c) computers for pedagogical purposes ; (d) adapted infrastructure and materials for students with disabilities ; (e) basic drinking water ; (f) single-sex basic sanitation facilities ; and (g) basic handwashing facilities(as per the WASH indicator definitions)
GOAL 5 : 'Achieve gender equality and empower all women and children'	
TARGET	INDICATOR
5.5. Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.	5.5.1. Proportion of seats held by women in (a) national parliaments and (b) local governments
	5.5.2. Proportion of women in managerial positions
5.c. Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	5.c.1. Proportion of countries with systems to track and make public allocations for gender equality and women's empowerment
GOAL 6 : 'Ensure availability and sustainable management of water and sanitation for all'	
TARGET	INDICATOR
6.1. By 2030, achieve universal and equitable access to safely and affordable drinking water for all.	6.1.1. Proportion of population using safely managed drinking water services.
6.2. By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.	6.2.1. Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water.
6.3. By 2030, improve water quality by reducing pollution, eliminating, dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1. Proportion of wastewater safely treated
	6.3.2. Proportion of bodies of water with good ambient water quality
6.4. By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1. Change in water-use efficiency over time
6.a. By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water	6.a.1. Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan.

harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	
6.b. Support and strengthen the participation of local communities in improving water and sanitation management	6.b.1. Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management
GOAL 11 : 'Make cities and human settlements inclusive, safe, resilient and sustainable'	
TARGET	INDICATORS
11.6. By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	11.6.1. Proportion of urban solid waste regularly collected and with adequate final discharge out of total solid waste generated, by cities
GOAL 12 : 'Ensure sustainable consumption and production patterns'	
TARGET	INDICATORS
12.5. By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	12.5.1. National recycling rate, tons of material recycled

*Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

APPENDIX XIII **NWASCO SCORING CRITERIA – WATER STEWARDSHIP**

Criteria	Indicator	Scoring	Expected score	Observations
Commercial Utility Commitment Documentation incorporating principles and demonstrating commitment	a) The CEO has officially committed to water stewardship and the company has a budget towards water stewardship/ WSP and compliance	• Official company document with WS/WSP/EMPs aspects (1) • Budget in place for the year 2021 (1)	• Official document available = 1, else = 0 • Budget from official document available = 1, other budget = 0.5, else = 0	•
Ecosystem protection	a) Identification of ecosystems, flora and fauna, hydrogeological, b) Identification of all catchment stakeholders, c) Have knowledge of catchment management plans were available e.g. from WARMA, water resource areas from WWF, d) Identified the challenges, threats, risks (physiological, social-economical), e) Documented control measures with M&E plan	• Identified flora and fauna in all catchments (0.4) • Identified catchment stakeholders documented and engagement in view of WSPs. Water Safety Plan Team in place and evidence of meetings/ action plans (0.4) • Catchment management plans available (0.4) • Risk management plan in place (0.8)	• Flora and fauna identified in all catchments = 0.4, in some catchments = 0.2, in non = 0 • Stakeholders identified and engagement = 0.4, identified only = 0.2, not identified = 0 • Catchment management plans available = 0.4, else = 0 • Risk register per district in place = 0.4, corporate risk register = 0.2, no risk register = 0 • Control measures available = 0.4, else = 0	•

Pollution prevention Demonstratable participation in catchment governance	a) Participatory stakeholder engagement for upstream and downstream stakeholders, b) Proof of compliance with ZEMA regulations (including effluents – discharge permits), c) Showcasing activities that the company has initiated or significantly supported d) Documented control measures with M&E plan	• At least two evidence of stakeholder engagement activities (0.25) • ZEMA permits and effluent results meeting ZEMA standards (0.25) • At least two activities initiated/ supported/ participated (0.25) • Implementation of risk management plan (0.25)	• Two stakeholder engagement activities held = 0.25, one activity held = 0.1, none = 0 • Valid ZEMA permit = 0.15, no permit = 0 • Percentage compliance x 0.1 • Two activities initiated/ supported/ participated = 0.25, one activity = 0.15, none = 0 • Percentage implementation of RMP x 0.25	•
Energy Efficiency	Energy reduction strategies and implementation	• Energy reduction strategies in place (0.5) • Documented evidence of implementation (0.5)	• Energy reduction strategies in place = 0.5, not in place = 0 • Percentage implementation of strategy x 0.5	
Demand management	a) Water demand assessment b) NRW reduction strategies and implementation	• NRW reduction strategies in place (1) • Documented evidence of implementation (1)	• NRW reduction strategies in place = 1, not in place = 0 • Percentage implementation of strategy x 1	•

Catchment Governance and visibility	a) Proactive in setting up participatory stakeholder platforms and engagement on Water stewardship, e.g. the Commercial Utility has the Water Safety Plan Team in place b) Documents and shares water security best practices/stories to the public through different platforms including social media, digital and print media.	• Other stakeholder platforms of engagement e.g. water user associations, stewardship programmes, (0.5) • Evidence of documentation and sharing of water security best practices (0.5) 4.	• Two stakeholder platforms of engagement participated in = 0.5, one stakeholder platforms of engagement participated = 0.25, none = 0 • Evidence of documentation and sharing = 0.5, none = 0	•

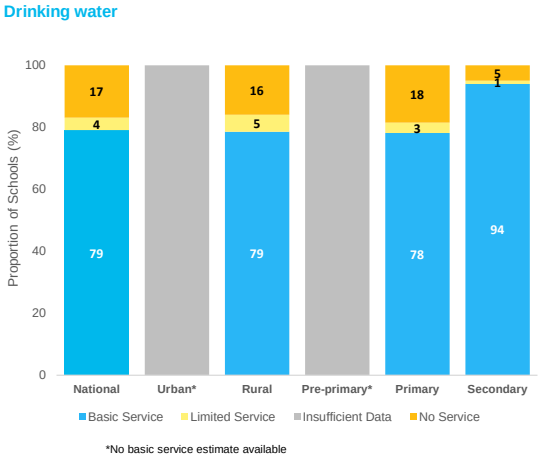
Appendix XIV **Water Security aspects found in Water Security Framework**

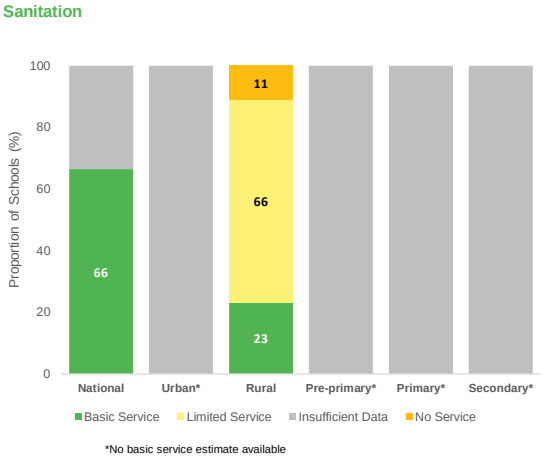
Dimension	Categories	Indicators/Aspects
Drinking water and human well-being	Water quantity	Water availability, adequate quantity for basic needs, demand and consumption; diversity of sources; precipitation and water balance; water storage; exploitation of resources; water stress and usage efficiency.
	Water Quality	Quality of water for human consumption (meeting standards); aesthetic, perception and quality acceptability; water treatment practices.
	Access to water services	Access to improved drinking water source; improved sanitation; piped water or water supply connection; accessibility of water points; affordability of services; wastewater collection/sewage connection.
	Infrastructure reliability	Asset management and maintenance; infrastructure condition/age and capacity; reliability (complaints/blockages/interruptions); service level; service continuity (hours of service); water leakage, non-revenue water.
	Reuse/recycling	Water/wastewater reuse; energy or nutrient recovery; rainwater harvesting; solid waste/recycling.
	Hygiene and public health	Water-related diseases; incidence of diarrhoea; adequacy of water for housework and hygiene; other health problems.
	Wellbeing	Emotional stress, fear, frustration; safety or dispute; deprivation or lost opportunity; recreational opportunities.
Ecosystems	Environment	Surface and groundwater water quality; river health; wastewater generated and adequacy of wastewater treatment; biodiversity; environmental flows; environmental protection actions; pollutants discharge (harmful substances, pollution loading); soil erosion; wildfires; vegetation cover and land use.
	Sustainability	Energy use/efficiency; renewable energy; sustainable natural resources use; sustainable water use; water sensitive urban design.

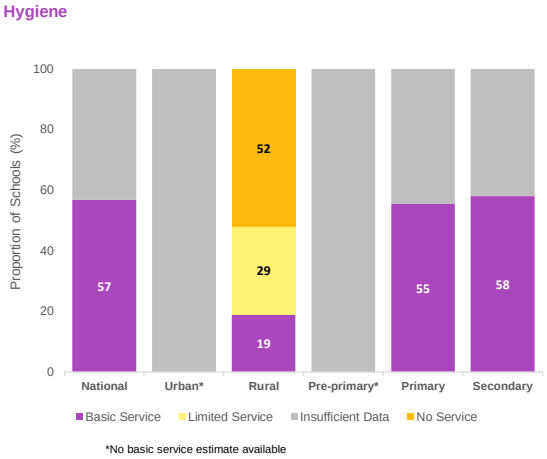
Dimension	Categories	Indicators/Aspects
Water hazards and Climate change	Water-related hazards	Floods (frequency, affected area and population, hazard and vulnerability, protection infrastructure); droughts (frequency/vulnerability/area affected); economic loss; landslides; prevention, preparedness and response; water pollution accidents.
	Climate Change	Climate change response; greenhouse gas emissions; and temperature.
Economic Activities and Development	Economic Activities	Water for agriculture, manufacturing; commerce, energy production; broad economic development; water-related business opportunities; food production and demand; water footprint; water use/GDP or GDP/water use.
	Governance	Institutional organization and capacity; accountability and corporate governance; data availability, multi-level and multi-stakeholder participation/engagement; communication and transparency; investment/funding and financial management; legal and regulatory aspects; science, knowledge and innovation; strategic planning; transboundary and international collaboration.
	Socio-economic aspects	Education and awareness; GDP; income/unemployment rate; informal dwellings; population density; social and cultural aspects; urbanization rate.

Appendix XV

Water, Sanitation and Hygiene Ladders for Schools







Zambia	Water					
	National	Urban*	Rural	Pre-primary*	Primary	Secondary
	2019	2019	2019	2019	2019	2019
Basic Service	79	-	79	-	78	94
Limited Service	4	-	5	-	3	1
No Service	17	-	16	-	18	5
Insufficient Data	0	100	0	100	0	0

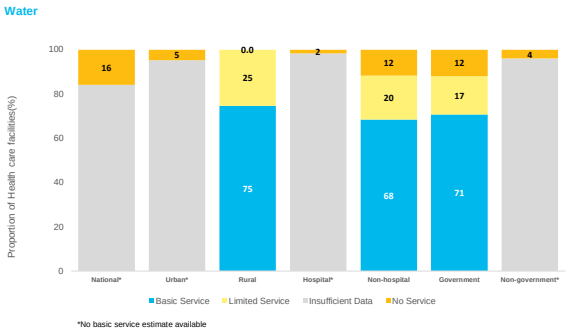
Zambia	Sanitation					
	National	Urban*	Rural	Pre-primary*	Primary*	Secondary*
	2019	2019	2019	2019	2019	2019
Basic Service	66	-	23	-	-	-
Limited Service	-	-	66	-	-	-
No Service	-	-	11	-	-	-
Insufficient Data	34	100	0	100	100	100

Zambia	Hygiene					
	National	Urban*	Rural	Pre-primary*	Primary	Secondary
	2019	2019	2019	2019	2019	2019
Basic Service	57	-	19	-	55	58
Limited Service	-	-	29	-	-	-
No Service	-	-	52	-	-	-
Insufficient Data	43	100	0	100	45	42

Source: WHO/UNICEF JMP (2020)

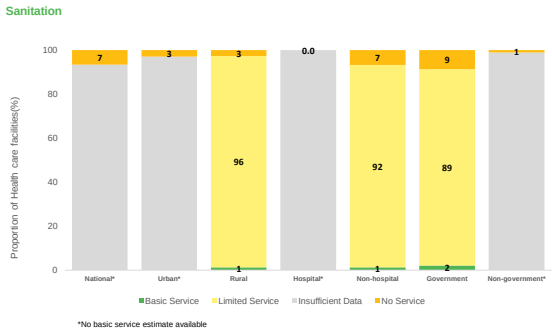
Appendix XVI

Estimates on Water, Sanitation, and Hygiene, in Health Care Facilities in Zambia



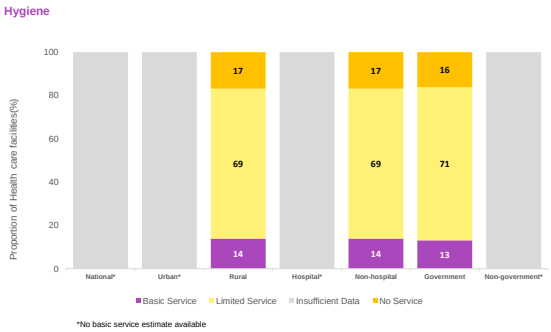
Zambia	Water						
	National*	Urban*	Rural	Hospital*	Non-hospital	Government	Non-government*
	2019	2019	2019	2019	2019	2019	2019
Basic Service	-	-	75	-	68	71	-
Limited Service	-	-	25	-	20	17	-
No Service	16	5	0	2	12	12	4
Insufficient Data	84	95	0	98	0	0	96

Source: WHO/UNICEF JMP (2020)



Zambia	Sanitation						
	National*	Urban*	Rural	Hospital*	Non-hospital	Government	Non-government*
	2019	2019	2019	2019	2019	2019	2019
Basic Service	-	-	1	-	1	2	-
Limited Service	-	-	96	-	92	89	-
No Service	7	3	3	0	7	9	1
Insufficient Data	93	97	0	100	0	0	99

Source: WHO/UNICEF JMP (2020)



Zambia	Hygiene						
	National*	Urban*	Rural	Hospital*	Non-hospital	Government	Non-government*
	2019	2019	2019	2019	2019	2019	2019
Basic Service	-	-	14	-	14	13	-
Limited Service	-	-	69	-	69	71	-
No Service	-	-	17	-	17	16	-
Insufficient Data	100	100	0	100	0	0	100

Source: WHO/UNICEF JMP (2020)

Appendix XVII **Growth Centres**

S/N	Growth Centres	Water Supply	Sanitation	Developments
1	Chimpempe	Bore holes, wells and streams	Ordinary latrines	Schools and Health Facilities
2	Mushota	Bore holes, wells and streams	Ordinary latrines	Schools commercial and Health Facilities
3	Chibote	Bore holes, wells and streams	Ordinary latrines	Schools, commercial and Health Facilities
4	Kabanda	Bore holes, wells and streams	Ordinary latrines	Schools and Health Facilities
5	Chama	Bore holes, wells and streams	Ordinary latrines	Schools, Commercial and Health Facilities
6	Chisembe	Bore holes, wells and streams	Ordinary latrines	Schools, commercial and Health Facilities
7	Nachampama	Bore holes, wells and streams	Ordinary latrines	Schools and Health Facilities
8	Ntulo	Bore holes, and wells	Ordinary latrines	Schools and Health Facilities
9	Mawaya	Bore holes, well and streams	Ordinary latrines	Schools, Commercial and Health Facilities
10	Sitandi/Chibwe/ Chitimukulu	Bore holes, and wells	Ordinary latrines	Schools and Health Facilities
11	Kaunda kote	Bore holes, and wells	Ordinary latrines	Nil
12	musuku	Bore holes, and wells	Ordinary latrines	School
13	Mufwaya	Bore holes, and wells	Ordinary latrines	Schools, commercial and Health Facilities
14	Chisheta	Bore holes, and wells	Ordinary latrines	Schools, commercial and Health Facilities
15	Katugulu	Bore holes, and wells	Ordinary latrines	Schools and Health Facilities