REPUBLIC OF ZAMBIA

MINISTRY OF LOCAL GOVERNMENT AND RURAL DEVELOPMENT

KAWAMBWA TOWN COUNCIL

WASH SUSTAINABILITY PLAN

Rural Water Supply and Sanitation

MEMBER OF GOPA CONSULTING GROUP

October, 2021

FOREWORD

The Town Council has been making concerted efforts of investing in Rural Water Supply and Sanitation Services in the District ever since the reforms in the water sector started in the late 1980s in Zambia. The investments are in line with the National Policies and the National Rural Water Supply and Sanitation Programmes. It has been observed that the full benefits of these investments are not enjoyed to the full extent by our residents because the assets do not last up to their design and/or economic lives. In this regard we would like to also focus on sustainability which is a very welcome response to the growing recognition that newly delivered WASH services provision facilities too often fail to provide continuing benefits to our residents. This document will guide us in this respect. It addresses sustainability from the following key thematic areas: technological, financial, institutional, environmental and socio-cultural; which must be considered simultaneously.

Among the National policies and programmes that the district is following which informed this Sustainability Plan include: The National Vision 2030, which provides that by the year 2030 there will be 100% access to safe clean water and 90% access to proper sanitation by Zambian citizens. 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); and the National Rural Water Supply and Sanitation Programme (NRWSSP) 2019 to 2030

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 and sanitation. The Ministry's (MWDS) overarching vision is to enhance the effective and sustainable provision of adequate safe water and sanitation in line with the policy on Decentralisation; and this is done through the Local Authority.

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

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

It is with great pleasure and honour that I officially launch this Sustainability Plan 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 Sustainability Plan for the period 2021 – 2030, the Town Council appreciates the hard work and dedication shown by the Rural Water Supply and Sanitation Unit and the Departments of Planning and Engineering.

The Local Authority acknowledges and appreciates the contributions and active participation of all the stakeholders and private sector institutions who participated and provided valuable contributions that supported the development of this Sustainability 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 this Sustainability Plan.

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 Sustainability 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
AWPB	Annual Work Plan and Budget
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
DWASHE	District Water, Sanitation and Hygiene Education
EHT	Environmental Health Technician
ESIA	Environmental and Social Impact Assessment
ESHS	Environmental, Social, Health and Safety
FGD	Focus Group Discussion
GRZ	Government of the Republic of Zambia
IDP	Integrated Development Plan
JICA	Japanese International Cooperation Association
JMP	Joint Monitoring Program
JMP	Joint Monitoring Program
KfW	Kreditanstalte fuer Wiederaufbaus
KII	Key Informant Interview
LA	Local Authority
LED	Local Economic Development
LpWSC	Luapula Water Supply and Sanitation Company Limited
MCDSS	Ministry of Community Development and Social services
MGEE	Ministry of Green Economy and Environment
MoE	Ministry of Education
MHM	Menstrual Hygiene Management
MLGRD	Ministry of Local Government and Rural Development
MoH	Ministry of Health
MWDS	Ministry of Water Development and Sanitation
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

SNDP	Sixth National Development Plan
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

Technical sustainability - Technological sustainability of WASH services is reached when the technology or hardware needed for the services continues to function is maintained, repaired and replaced by local people and it is not depleting the (natural) resources on which it depends for its functioning.

Appropriate technology - technology that is suitable to the social and economic conditions of the geographic area in which it is to be applied, is environmentally sound, and promotes self-sufficiency on the part of those using it.

Institutional sustainability - Institutional sustainability in the WASH sector means that WASH systems, institutions, policies and procedures at the local level are functional and meet the demand of users of WASH services. Households and other WASH service users, authorities and service providers at the local and the national level are clear on their own roles, tasks and responsibilities, are capable of fulfilling these roles effectively and are transparent to each other. WASH stakeholders work together in the WASH chain through a multi-stakeholder approach.

Social sustainability - Social sustainability refers to ensuring that the appropriate social conditions and prerequisites are realized and sustained so the current and future society is able to create healthy and liveable communities. Social sustainable intervention is demand-driven, inclusive (equity), gender equal, culturally sensitive and needs-based.

Environmental sustainability - The element of environmental sustainability implies placing WASH interventions in the wider context of the natural environment and implementing an approach of integrated and sustainable management of water and waste (-water) flows and resources. WASH interventions connect to and affect the natural environment and hence people's livelihood.

Financial sustainability - Financial Sustainability means that continuity in the delivery of products and services related to water, sanitation and hygiene is assured, because the activities are locally financed (e.g. taxes, local fees, local financing) and do not depend on external (foreign) subsidies.

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.

A **Stakeholder** is any individual, group or organization that can affect, be affected by, or perceive itself to be affected by a programme. Actors who hold at least a potential stake in a project and its change objective are termed stakeholders.

The term "**actor**" is used to refer to all collective public and private groups within a society who are linked by their respective shared needs and values, and act publicly as organised groups. The term "stakeholder" is applied to those actors who hold a vested interest in a project[1].

"**Secondary stakeholders**" are actors whose involvement in the project is only indirect or temporary, as is the case for instance with intermediary service organisations.

Primary Stakeholder - People directly benefiting from or affected by a particular business activity (project), such as the distribution of a product or a change to a service agreement. Primary stakeholders may include

[1] Capacity WORKS - The Management Model for Sustainable Development (GIZ Manual – 2011)

customers, employees, creditors, suppliers, or anyone else with a functional or financial interest in the product or situation (project)[2].

Key stakeholders are those actors without whose support and participation the targeted results of a project normally cannot be achieved, or who may even be able to veto the project, in which case they are termed "veto players"

Participatory Approach - A participatory approach is an approach in which the end users of a sanitation or water system are involved in the planning of the system from the start.

Information Asset - An **information asset** is a body of knowledge that is organized and managed as a single entity. Like any other corporate asset, an organization's information assets have financial value. That value of the asset increases in direct relationship to the number of people who are able to make use of the information.

Community Management - community management means that the beneficiaries of water supply and sanitation services have responsibility, authority and control over the development of their services:

- **Responsibility** – the community takes ownership of the system, with all its attendant obligations
- **Authority** – the community has the legitimate right to make decisions about the system
- **Control** - the community has the power to implement its decisions regarding the system.

The Water, Energy and Food Security Nexus - The water, energy and food security nexus according to the Food and Agriculture Organisation of the United Nations (FAO), means that water security, energy security and food security are very much linked (connected) to one another, meaning that the actions in any one particular area often can have effects in one or both of the other areas. The nexus approach is deemed necessary to design future, inherently interlinked systems from the starting point of planning in a holistic manner. This approach identifies the future systems as inherently interconnected. The nexus approach aims to highlight potential synergies and identify critical conflicts to be dealt with.

Water Security - Water security has been defined as "the reliable availability of an acceptable quantity and quality of water for health, livelihoods and production, coupled with an acceptable level of water-related risks"[3].

Energy Security - Energy security has been defined as "access to clean, reliable and affordable energy services for cooking and heating, lighting, communications and productive uses" (United Nations), and as "uninterrupted physical availability [of energy] at a price which is affordable, while respecting environment concerns".

Food Security - Food security is defined by the Food and Agriculture Organization (FAO) as "availability and access to sufficient, safe and nutritious food to meet the dietary needs and food preferences for an active and healthy life". Adequate food has also been defined as a human right.

The emphasis on access in these definitions (water, energy and food security) also implies that security is not so much about average (e.g., annual) availability of resources; it has to encompass variability and extreme situations such as droughts or price shocks, and the psychological resilience of the poor.

[2] http://www.businessdictionary.com/definition/primary-stakeholder.html
[3] https://en.wikipedia.org/wiki/Water_security

"**Gender equality**, equality between men and women…does not mean that women and men have to become the same, but that their rights, responsibilities and opportunities will not depend on whether they were born male or female.

Gender equity means fairness of treatment for men and women according to their respective needs. This may include equal treatment or treatment that is different but which is considered equivalent in terms of rights, benefits, obligations, and opportunities." –United Nations Educational, Scientific and Cultural Organization (UNESDOC)

EXECUTIVE SUMMARY

BACKGROUND AND CONTEXT

The Government of the Republic of Zambia (GRZ) has the National Planning and Budgeting Policy, which requires Ministries, Provinces and Spending Agencies (MPSA) to have plans. Furthermore, the Regional and Urban Planning Act, requires Local Authorities (LAs) to have Integrated Development Plans (IDPs). The IDPs are not only a legal requirement but are a prerequisite to sustainable and meaningful socio-economic development. Integration is the best way of not leaving anyone behind. The purpose of planning and budgeting is to provide a benchmark on which to measure performance. It's against this background that the Town Council developed this WASH Sustainability Plan. In the past the LA has been preparing annual work plans and budgets (AWPBs); however, they did not explicitly address the issue of sustainability of WASH services provision.

The Sustainable Development Goals (SDGs), which have the same end date as both the Vision 2030 and NRWSSP, 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, from which this WASH sustainability plan in anchored.

The 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), and the NRWSSP 2019 - 2030 within the period to 2030.

THE SUSTAINABILITY 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 Sustainability 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 Sustainability Plan has the following specific objectives:

1. The plan aims to sustainably improve access to, and use of, safe drinking water for at least 175,297 people, sanitation for at least 157,768 people before the end of 2030.
2. Increased proportion of rural population that has access to improved, functioning water supply facilities 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;
3. Increased proportion of rural population that has access to adequate and equitable sanitation facilities through promotion of improved household latrine construction using sanitation marketing and construction of strategic demonstration facilities, health/hygiene behaviour change promotion, involvement of traditional leadership and legal enforcement;
4. Increased proportion of rural population that has access to improved, functioning institutional WASH facilities;
5. Increased proportion of rural population that has access to improved solid waste management (SWM) services;
6. 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, reporting and learning through policy and institutional reforms, capacity development and use of a sustainable management information system (MIS).

THE WASH SUSTAINABILITY PLAN OUTCOMES AND ESTIMATED BUDGET

The Sustainability 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 Sustainability Plan. The objectives and priorities of the Sustainability 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 WASH Sustainability Plan. The Sustainability Plan has three (3) main parts:

1. Part I – Background and Situational Analysis
2. Part II – Specific Objectives and Strategies
    a. Community mobilisation
    b. Water quality
    c. Social inclusion and gender mainstreaming
    d. Technology accessibility
    e. Asset Management
    f. Capacity Building
    g. Environmental Management and Climate Change
    h. Project and Risk Management
    i. Financing; and
    j. Knowledge Management
3. Part III - Implementation

The objectives and key outcome / results of the WASH Sustainability Plan as provided for in its three parts are listed below. The district water supply and sanitation coverages were estimated as 86% and 80% respectively as at the end of 2020.

The overall objective of the sustainability plan is: ensure sustainability of WASH service provision.

The five thematic specific objectives and some of the outputs are:

a) **Technical sustainability** – mechanisms/appropriate technology to ensure sustainable provision of WASH services is in place including spare parts supply and technical support, with following outputs:

- Improved functionality - ≥ 95%
- Demand driven choice of technology

b) **Institutional sustainability** – policies, strategies and management are in place and implemented. These should cover PWSSO, the LA, PDHID, D-WASHE, WDCs, NHCs and the V-WASHEs, with following outputs:

- Sub-district structures in place and functioning well
- Developed policies and strategies
- Succession plans/human resources strategies
- Adequate staff levels at the Local Authority

c) **Financial sustainability** – to ensure WASH services are financially viable over a long time, with following outputs:

- Available financial resources
- Adequate community contributions (as per GRZ policies/guidelines)

d) **Environmental sustainability** – to ensure WASH services provision does not negatively impact the environment and is not negatively impacted by the environment/climate change, with following outputs:

- Environmental and Social Impact Assessment (ESIA) reports
- Environmental, Social, Health and Safety (ESHS) management plans

- ESHS monitoring and evaluation reports

e) **Socio-cultural sustainability** – measures to ensure that everyone can befit are in place and implemented, with following outputs:

- Involvement of women and children in WASH affairs/decision making
- Development/review of policies, i.e. social inclusion and gender mainstreaming (SIGM), gender equality and equity.
-

In order to ensure sustainability of the WASH service provision; stakeholders play a vital role and these were identified during the inception visit in September/October, 2020 as provided in Figure 0-1 below; and the relationships and dealings with them should be in line with their status on the power/interest matrix.

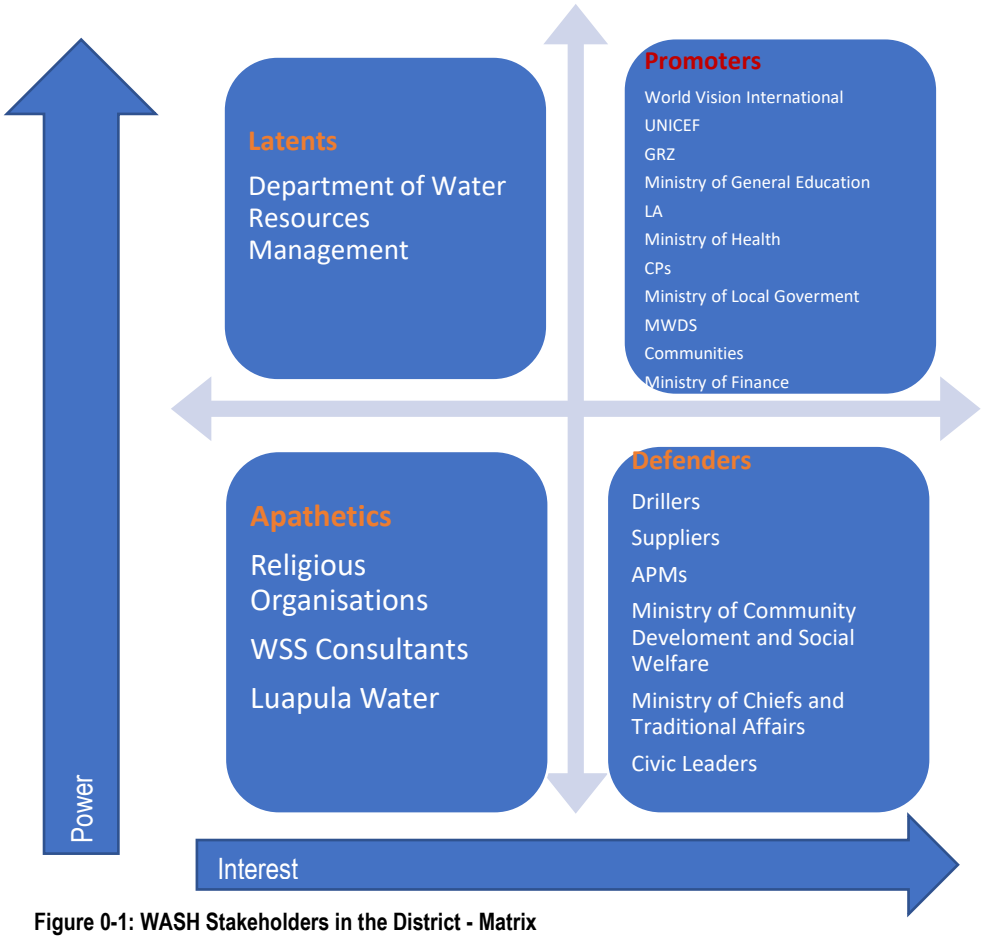


Figure 0-1: WASH Stakeholders in the District - Matrix

The Water, Food and Energy (WEF) Nexus

The linkage between water, energy (firewood/charcoal) and food was observed to be weak; and to ensure sustainability of WASH infrastructure, it's important that the link is observed and all projects implemented must take that into account. A Nexus approach will help the LA to better understand the complex and dynamic interrelationships between water, energy and food, so that they can use and manage their limited resources sustainably. It will force the LA to think of the impacts a decision in one sector (WSS) can have not only on that sector, but on others (energy and food).

As water resources become more stretched, the energy and food sectors' dependence on water, and the fact that all three underpin several of the Sustainable Development Goals, means that decision-makers in all three domains should now increasingly focusing on water resource management, ecosystem protection and water supply and sanitation as part of their policy and practice.

As the D-WASHE is composed of members from the LA and line ministries (Agriculture, Lands, Health, Green Economy and Environment, and Water Development); addressing the WEF nexus will be an ongoing process.

Implementation

There is no "specific" budget and financing structure for the sustainability plan; as all the costs and financing plan/structure are as provided for in the WASH Master Plan[4] for the period 2021 to 2030.

Some cross –cutting issues addressed in the plan include the development of good business relationships between the LA, and the cooperating partners, drillers, suppliers, the community, etc. The other cross-cutting issues include project and risk management, asset management, and knowledge management.

The overall budget for the WASH Master Plan[5] implementation for the period 2021 – 2030 is estimated at K 230.68 million as per Table 0-1 below. The proposed financing structure is as given in Table0- 2 below.

Table 0-1: Estimated WASH Master Plan Costs – 2021 to 2030

Cost	Amount (ZMW'000)
Infrastructure Cap Dev	21,493
Training	26,519
PMERL	17,025
Sanitation	79,266
Water Supply	77,172
O&M	4,984
Governance, SWM, R&D and Cross Cutting	4,224
Total	**230,683**

Table 0-2: Estimated WASH Master Plan Costs – 2021 to 2030

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**

[4] Kawambwa District WASH Master Plan for the period 2021 - 2030
[5] Kawambwa District WASH Master Plan – 2021 to 2030

PREFACE TO THE SUSTAINABILITY PLAN

The WASH sustainability plan covers the whole district. Its development has been informed by the baseline study that was undertaken in September/October, 2020 by the consultant; the NRWSSP 2019 – 2030; and the WASH Master Plan[6].

The Sustainability Plan is divided into three parts.

Part I – Background and Situational Analysis

Part II – Sustainability Objectives and Strategies; and

Part III - Implementation

[6] WASH Master Plan for Kawambwa by Gauff - 2020

Part I Background and Situational Analysis

1. BACKGROUND

The Vision and Mission

According to the Country's Vision 2030 Policy, the vision for WASH is: "**Clean and safe water supply and sanitation for all by 2030**", aiming to achieve 100% and 90% coverage for water and sanitation respectively. This is in line with the United Nations – Sustainable Development Goal (UN SDG) No. 6, although the SDG calls for 100% universal coverage for both water and sanitation.

The Ministry of Water Development and Sanitation's (MWDS's) mission statement is: "*To promote and ensure adequate water availability and a clean and safe environment for all*"[7]. It can be deduced from here that the Mission Statement for Kawambwa Town Council for provision of WASH services should be: **"To promote and ensure adequate potable water, adequate sanitation, and a clean and safe environment for all the people of Kawambwa District". This statement implies that these services must be provided on a sustainable basis.**

Defining Sustainability

According to the **World Bank**: Sustainability Planning and Monitoring in Community Water Supply and Sanitation; A Guide on the Methodology for Participatory Assessment (MPA) for Community-Driven Development Programs – 2000; Edited by: Nilanjana Mukherjee and Christine van Wijk; sustainability in water supply and sanitation is defined with respect to the following five dimensions. These dimensions include equity. The five dimensions are detailed as follows:

a) **Technical sustainability** - the reliable and correct functioning of the technology and, for water supplies, the delivery of enough water of an acceptable quality. Equity aspects relate to the technology meeting the demands of all user groups. Requirements for technical sustainability include: a technically good design, which is adhered to in construction and operation, and first-rate workmanship and materials.
b) **Financial sustainability** - Systems can only function if financial resources meet at least the costs of operation, maintenance, and common repairs. Equity elements relate to who pays for all this and how fairly payments are shared between and within households.
c) **Institutional sustainability** - To keep systems operational, accessible and widely used, communities need institutions. Institutions have cultural characteristics, agreed and valued procedures and rules for operation, and varying capacities for management and accountability. Equity considerations require looking at the extent of voice of all the user groups, especially the poor and the women, in organizations that manage and control the services.
d) **Social sustainability** - Users will only sustain services that satisfy their expectations. This means services which they can easily access, that are in accordance with their socio-cultural preferences and practices, and services that they consider worth the cost they incur to obtain them. Equity aspects include

[7] MWDSEP Strategic Plan for 2018 - 2021

looking at how fairly the burdens and benefits from the services are shared across different socio-economic, gender, and ethnic or caste groups.

e) **Environmental sustainability** - Water resources face multiple threats. Over extraction and contamination of water sources from irrigation, industrialization and waste disposal threaten reliable and safe drinking water supplies. Water supplies and sanitation facilities themselves threaten the environment through the unsafe disposal of wastewater and human and solid waste. In dry areas, lack of drainage of wastewater has created new risks of insect breeding that have brought outbreaks of malaria, dengue, and filariasis. Equity aspects include fair sharing of responsibility among users for the protection of their environment and water resources.

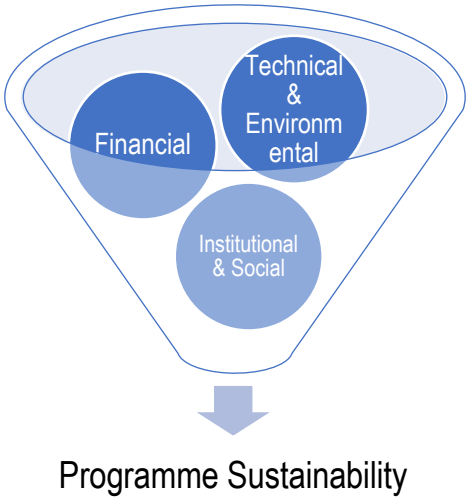


Figure 1: Sustainability Components for WASH Programme

For a programme to be sustainable, it has to be sustainable in all the above listed five facets: financial, environmental, technical, institutional and social. Programme sustainability is all about continuous, satisfactory functioning and effective use of WSS services after the funding period is over. Effective use can be defined as the use of WASH services in a health-promoting and environmentally sound manner while the aspect of equity is essential: everyone (e.g., women and men, rich and poor, social minorities, and majority groups) has equal voice and choice in decision making, equal access to information/external inputs/benefits from projects, and shares burdens and responsibilities fairly.

The health of communities is dependent on good water supply, sanitation and hygiene systems. Water, sanitation and hygiene not only improve the quality of life but also bring tangible health, environmental and economic benefits, and contribute to poverty reduction. ***It is estimated that for every US$ 1 spent on water and sanitation approximately US$ 4-10[8] are gained through reduced patient medical costs, reduced health service costs, deaths averted, school days and productive days gained.***

In order to ensure **sustainability of the WASH facilities**, especially in light of growing population in Zambia and Kawambwa District in particular, it is essential to note and take care of the following:

- That water is a finite and vulnerable resource.
- The implementation of a participatory approach.

[8] UNICEF, 2010

- The importance of the role of women in WASH.
- Acceptance of the social and economic value of water.
- Integration of the 3Es: economic efficiency, social equity and ecosystem sustainability.

1.1 Objectives of the Sustainability Plan

The Sustainability Plan developed for Kawambwa District aims to ensure that WASH related projects / programmes for the rural areas are implemented taking into account the aspects essential to ensure their sustainability as discussed above.

1.1.1 The Theory of Change Model

The MWDS intervention logic, implicit in its specific objectives above is depicted in its theory of change model reproduced in Figure 2 below, by the consultant.

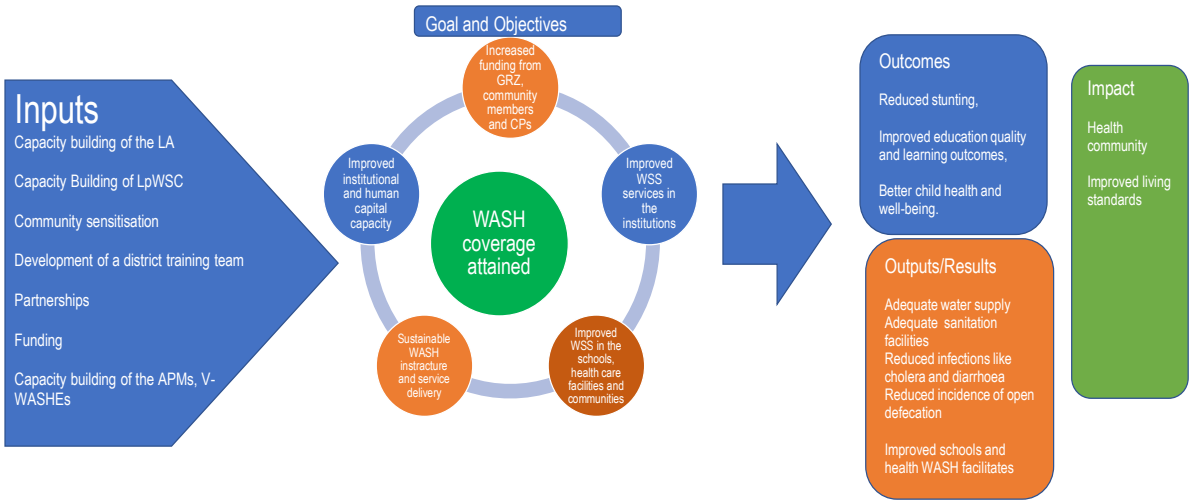


Figure 2: WASH Theory of Change Diagram

The project's intent and expectation was to put up some WASH infrastructure and build capacity of the LA, Luapula Water Supply and Sanitation Company Limited (LpWSC) and communities, which will lead to improved livelihoods through the sustainable use of the WASH infrastructure. The capacity that will be built in the LA, LpWSC and the all communities will be shared in the whole district through monitoring, evaluation, reporting and learning (MERL).

1.2 Data and Information

The following data and information supported the development of this document:

- Baseline study compiled by the consultant
- MWDSEP report of October, 2019[9] by Gauff,
- The NRWSSP 2019 – 2030, and
- The WASH Master Plan[10] for the district.

[9] WASH Interventions for Institutions in Refugee Settlement, Host Communities and Border Posts.

[10] Kawambwa District WASH Master Plan – September, 2020

1.3 Institutional Framework

The Seventh National Development Plan (7NDP) calls for multi-sectoral coordination, therefore the provision and sustainability of the WASH Projects / Programmes in the District have to utilise the same principle.

The main players in the provision of WASH services to the residents of Kawambwa District are:

- MLGRD through the Local Authority
- LpWSC
- Line Ministries:
    - Ministry of Green Economy and Environment
    - Ministry of Water Development and Sanitation
    - Ministry of Education,
    - Ministry of Community Development and Social Services,
    - Ministry of Lands and Natural Resources, and
    - Ministry of Health

The Constitution of Zambia (Amendment) No. 2 of 2016 provides under ANNEX (Article 147 (2)) following functions of National, Provincial and Local Levels of devolved Government:

A. Concurrent national and provincial functions

- Environmental management
- Pollution control
- Urban and rural development

B. Local Authorities exclusive functions

- Pollution control
- Storm water management systems in built-up areas
- Water and sanitation services limited to potable water supply systems and domestic waste-water and sewage disposal systems
- District planning
- District health services
- Local spatial planning
- Refuse removal, refuse dumps and solid waste disposal (solid waste management)

With regards to WASH the following parties are involved in providing services to the district and the Zambian citizenry (Figure 3):

- at National level: government ministries.
- at Provincial level: PWSSO, and LpWSC
- the P-WASHE committee under the Provincial Permanent Secretary provides formal provincial-level WASH governance and coordination supported by the Ministry of Local Government and Rural Development (MLGRD) through the Department of Housing and Infrastructure Development (DHID). The MLGRD is solely responsible for solid waste management (SWM). The P-WASHE Committee provides oversight over the D-WASHE Committee at District level.
- at District level: LA and LpWSC.
- at Sub-district level: the WDCs, V – WASHEs/Water Point Committees, and the APMs and masons.
- at Community level: the community members who are also the consumers of WASH services, and the APMs and masons.

The regulators – NWASCO, WARMA and ZEMA are under two ministries (the MWDS – WARMA and NWASCO, and ZEMA is under the MGEE) and look at WSS, water resources management and environmental management respectively.

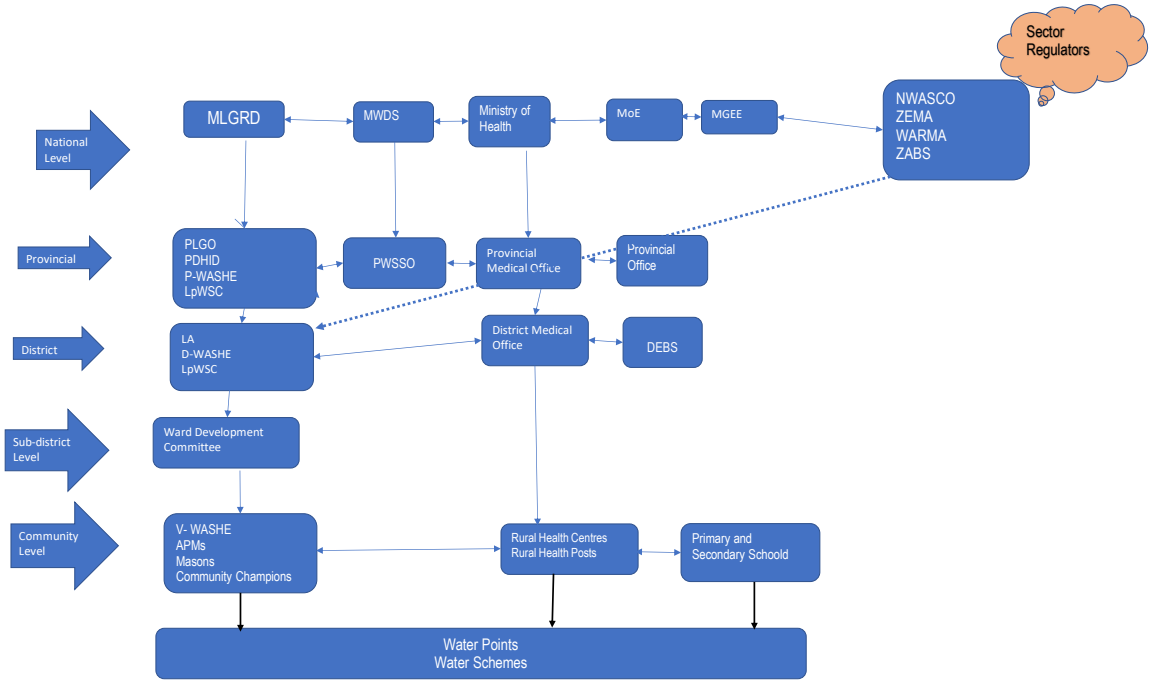


Figure 3: Institutional Framework for WASH in the District

1.3.1 Local Authority

The LA is responsible for the provision of water supply and sanitation services to all the community members in both the urban and rural areas. Currently this is done through LpWSC for urban and peri-urban, and for the rural areas this is directly done by the LA. The LA has a rural water supply and sanitation unit in the Department of Planning headed by the Rural WSS Coordinator; who is a water engineer and the only employee there. He is supported on the sanitation by personnel health experts within the LA from public health section. For Community mobilisation he draws support of community development officers within the council.

Technically, the unit is understaffed as it was supposed to have a minimum of two officers: a water specialist and a sanitation specialist[11]. One other key person required is a community development specialist.

The dependence on officers from other departments who have their own roles and responsibilities according to their appointments is not sustainable.

[11] National Rural Water Supply and Sanitation Programme; 2006 - 2015

1.3.2 Luapula Water Supply and Sanitation Company Limited

LpWSC is currently providing water supply and sanitation services in urban and peri-urban areas of Kawambwa district. Its represented on the D-WASHE. The company personnel/structure are very lean and as such it cannot take on the responsibility of RWSS in the district; which it has to takeover during the implementation period (2021 to 2030) of this sustainability plan.

1.3.3 Regulatory Bodies

The four main regulators in the water sector who will have a role in the implementation of this plan are:

- NWASCO for water supply and sanitation
- WARMA for water resources management
- ZEMA for environmental protection
- ZABS for water quality standards.

NWASCO's functions include:

- ✓ Licensing service providers
- ✓ Developing sector guidelines
- ✓ Establishing and enforcing standards
- ✓ Advising government on WSS
- ✓ Advising LAs on institutional arrangements
- ✓ Disseminating information to consumers.

The regulatory mandate of NWASCO includes RWSS service provision. Specific guidelines which were developed in 2018 for regulation of the RWSS sub- sector will be implemented during the period of this sustainability plan.

1.4 Legislation, Policies and Guidelines

The country has a number of pieces of legislation, policies and guidelines for the sector. The main pieces of legislation, polices and guidelines dealing with RWSS and WASHE, including solid waste management are given the table below. Table 1 below gives the extracts of the laws/regulations/guidelines that are relevant to sustainability of WASH services.

Table 1: Extracts of Acts/Policies and Programmes relevant to WASH services provision Sustainability

S/N	Acts/Policies and Programmes	Extract
1	Water Resources Management Act - 2011	The preamble states: "An Act to establish the Water Resources Management Authority and define its functions and powers; provide for the equitable, reasonable and sustainable utilisation of the water resource; ensure the right to draw or take water for domestic and non- commercial purposes, and that the poor and vulnerable members of the society have an adequate and sustainable source of water free from any charges; create an enabling environment for adaptation to climate change; provide for the constitution, functions and composition of catchment councils, sub-catchment councils and water users associations; provide for international and regional co-operation in, and equitable and sustainable utilisation of, shared water resources;
2	Water Policy - 2010	Vision "To optimally harness water resources for the efficient and sustainable utilisation of this natural resource to enhance economic productivity and reduce poverty."
3	National Water Supply and Sanitation Act, 1997	The preamble to the Act states: "An Act to establish the National Water Supply and Sanitation Council and define its functions; to provide for the establishment, by local authorities, of water supply and sanitation utilities; to provide for the efficient and ***sustainable supply of water and sanitation services*** under the general regulation of

S/N	Acts/Policies and Programmes	Extract
		the National Water Supply and Sanitation Council; and to provide for matters connected with or incidental to the foregoing".
4	The Solid Waste Regulation and Management Act, 2018	Article 14 (q) – general powers of solid management company; provides "do all things that are necessary for the provision of effective and ***sustainable*** solid waste management services and access to the services"; and Article 6 (5) (d) – Management of solid waste by the Local Authorities provides "create an enabling environment and appropriate incentives for the delivery of reliable, ***sustainable*** and affordable solid waste services";
5	The Local Government Act, 2019	Article 37 (g) on the Functions of the Ward Development Committee (WDC) provides "facilitate the identification of potential areas of investment and promote ***sustainable*** local economic development; Furthermore, Article 10 provides: (k) provide and maintain supplies of water and, for that purpose, establish and maintain waterworks and water mains; and (l) take and require the taking of measures for the conservation and the prevention of the pollution of supplies of water.
6	The Environmental Management Act, 2011	The preamble to the Act states: "An Act to continue the existence of the Environmental Council and re-name it as the Zambia Environmental Management Agency; provide for integrated environmental management and the protection and conservation of the environment and the ***sustainable management*** and use of natural resources; provide for the preparation of the State of the Environment Report, environmental management strategies and other plans for environmental management and ***sustainable development***"; Article 6 on the Principles governing environmental management states that: "equitable access to environmental resources shall be promoted and the functional integrity of ecosystems shall be taken into account to ensure the ***sustainability*** of the ecosystems and to prevent adverse effects";
7	National Policy on Climate Change, 2016	One of the Guiding Principles provides: a) Sustainable Climate Change response: All climate change actions shall be environmentally sustainable and positively contribute to national economic growth and social development objectives, including poverty alleviation, access to natural resources and basic amenities, gender equality and equity and infrastructure development.
8	RWSS Framework for provision and Regulation in Zambia, 2018	The regulation states: "The objective of this publication is to assist in the creation of a regulatory framework for RWSS service provision that that supports sustainability of services in the rural areas.
9	7NDP	Development Outcome 7: Improved Water Resources Development and Management Water resources infrastructure is a critical component in the provision of sustainable water resources management and services for engineered irrigation, drainage, water supply and sanitation, hydropower generation, flood control and food security.
10	NRWSSP	The NRWSSP 2006 – 2015 identified one of the key sector issues as: "Inadequate policy and institutional framework to facilitate sustainable provision of water supply and sanitation. Aspects of community ownership of assets, community contributions, definition of basic service levels, and regulation of service provision are not clear".
11	National Water Supply and Sanitation Policy – July, 2020	The Vision of the National Water and Sanitation Policy is to have "a country's population that has *sustainable* and equitable access to safe water supply, adequate sanitation and improved services" – page 14.
12	Zambia National Water, Sanitation and Hygiene (WASH) Communication Strategy; 2019 -2030	Communication Goal: To improve knowledge and perceptions, transform social norms, and change behaviours in order for all Zambians to attain better quality of life through *sustainable and equitable* access to and utilisation of WASH services by 2030 – page 22.
13	The Republican Constitution	Article 43 provides. (1) A citizen shall — (c) protect and conserve the environment and utilise natural resources in a sustainable manner;

S/N	Acts/Policies and Programmes	Extract
14	Open Defecation Free Zambia Strategy; 2018 - 2030	One of the guiding principles is: Low Cost Technologies: Contextualized affordable low cost technologies for sanitation and hand washing facilities promote universal access and environmental sustainability and allow for efficient, effective and sustainable service provision.
15	National Water Supply and Sanitation Capacity Development Strategy (2015 – 2020)	Objective 2.3: To develop the Capacities of LAs in resource mobilisation, resource allocation prioritisation, resource utilisation and shareholder responsibilities for sustainable WSS service delivery.
16	The Vision 2030 Policy – December, 2006	Under the Vision of the Policy it provides under 2.2 (n) . "Development policies consistent with sustainable environment and natural resources management principles.
17	National Rural Water Supply and Sanitation Programme – 2019 to 2030	The overall objective of NRWSSP 2019 to 2030 is to ensure "sustainable and equitable access to safe water supply and adequate sanitation to meet basic needs for improved health and poverty alleviation among Zambia's rural population in line with the Vision 2030 and the Sustainable Development Goals."
18	The Standards Act, No. 4 of 2017	An Act to continue the existence of the Zambia Bureau of Standards and re-define its powers and functions; provide for standardisation and quality assurance of products and services through the setting of national standards and provision of conformity assessment services for products and services; repeal the Standards Act, 1994; and provide for matters connected with, or incidental to, the foregoing.

There is need for policy change with regards to volunteer services provided by community champions (CCs). There is need to have them incentivised. This will ensure consistency in reporting and improvement in data quality.

2. SITUATIONAL ANALYSIS

The supply and sustainability of WASH services in the district (Communities, health centres, schools, stations (harbours), markets, etc.) are affected by a number of factors both internal and external. The Baseline survey and the WASH Master Plan covered most of these factors, whilst some were picked during the need's assessment of the Local Authority and the other stakeholders, and during the validation workshop that was held on July 20, 2022. These factors are looked at in this chapter.

2.1 Water Supply

The existing water supply coverage in the rural parts of district was estimated at 86% for the district as at December, 2020 and that some people take more than 30 minutes to go and draw water from safe sources. Furthermore, some communities are not able to draw water from the water points throughout there year; this is because of flooding that happens during the rainy season. The Communities in these areas don't have any clean safe water except for those staying near schools and health facilities.

With regards, to community contributions for O&M, some members were not contributing. It was observed that the supply of water infrastructure was supply driven as some communities did not know who financed the facilities or how they came about.

The LA has a water engineer and it does not have a sanitation expert, which makes the work load a bit heavier, on the RWSS Coordinator. In this regard competences for both water supply, and sanitation and hygiene may not be adequately covered by the water expert, however, due constant changes in the environment, the officers will require continuous capacity development.

In terms of support infrastructure, the LA lacks ownership of its own vehicle for use for transport for the RWSS Unit. It also lacks ICT and GPS equipment.

The district has inadequate APMs. It currently has very few APMs, which might appear reasonable relative to the number of the existing borehole. It needs more APMs to operate efficiently and effectively, and the number has to be increasing as the number of boreholes increase. See Appendix VI for more details. The APMs were lastly trained a few years ago. Their competence levels are relatively high. The district does not have a spare parts shop, however, the community buys its hand pump spares from a spare parts shop in Mansa District which makes them expensive because of the transport cost.

2.2 Sanitation and Hygiene

The sanitation coverage was at 80% for the rural areas of district as a whole as at December, 2020. There are still some cases of open defecation (OD) in the district more especially amongst men and boys. ***The government policy on rural sanitation is that the communities must construct their own facilities with design provided by the government.*** For public institutions (schools and health centres) and public places (markets and bus stations), these facilities are provided by government through the line ministries, of Education and Health respectively; however, in some cases these facilities are provided by the Ministry of Local Government and Rural Development through Local Authorities (LAs).

Some of the schools, their sanitation facilities do not meet the set standards of 20 girls per toilet and 25 boys per toilet.

In terms of guidelines, there is an ODF Zambia Strategy 2018 - 2020[12] which guides the country towards achieving an Open Defecation Free (ODF) status for the country by 2030. Though it's too early to state how well overall, the implementation is, the information on the ground indicates that Kawambwa District is lagging behind in this area.

The district needs more masons as the current levels are low, and their competency levels are low.

There is need for research and development (R&D) in the area of sanitation for the places that flood during the rainy season. The same needs to be done for potable water.

2.3 Solid Waste Management

Solid waste management (SWM) is relatively poor, despite the development of *The Solid Waste Regulation and Management Act No. 20 of 2018.* The Act is not being fully implemented as the Regulations are not yet developed.

The domestic waste generated in rural households of Zambia is increasingly becoming an issue of serious concern. Though solid waste generated in rural areas, Kawambwa included, is predominantly organic and biodegradable, it is becoming a major problem as the waste generated is not segregated *in-situ*. Inconsiderate littering is causing poor environmental sanitation resulting in unhealthy quality of life. Therefore, domestic-refuse should be handled responsibly. In order to manage solid waste in a desirable way, there should be a functional waste management system in place, put by the local authority.

Furthermore, plastic pollution is becoming a very serious problem in the rural parts of Kawambwa. The earlier mitigation measures are developed and implemented the better for the district.

2.4 Institutional Situation

The LA provides all the WASH services as mandated by the Zambian Constitution and the Local Government Act, however, decentralisation is not fully implemented, more especially fiscal decentralization.

Luapula Water Supply and Sanitation Compnay Limited only supplies water and provides sanitation services in the urban and peri-urban areas in the district.

The Provincial Water Supply, Sanitation and Hygiene Education (P-WASHE), District Water Supply, Sanitation and Hygiene Education (D-WASHE) and Ward Development Committees (WDCs) are in place though they do not have adequate resources to run their affairs.

The office of Provincial Water Supply and Sanitation Officer (PWSSO) has been established in the province, however, it lacks the following personnel, and office equipment, fittings and fixtures:

- Three officers (Senior Sanitation Engineer, Senior Water Engineer and Senior Community Development Officer);
- Office space, and
- ICT equipment, office furniture and fittings.

At national level, most offices are filled in the department of Water Supply and Sanitation, however, there are still some vacancies.

[12] ODF Strategy 2018 -2030

Private Sector

The private sector continues to provide services, supplies, expertise and support. Private sector participation plays a cardinal role in designing structures, construction, quality control and provision of services. Private sector actors include consultants, vendors, drillers, Area Pump Menders (APM), masons, etc. The stakeholder map (Figure 6: Stakeholder Map), gives more details.

2.5 Monitoring and Evaluation (M&E)

The Ministry of Water Development and Sanitation (MWDS) has a Monitoring and Evaluation framework which was and launched in 2021. The M&E Framework has been prepared to track the performance of programmes for Water, Sanitation and Environmental Management. The framework will contribute in taking stock of progress and measurements of results towards achieving the objectives of Ministerial Strategic Plan, National Development Plans and programmes related to Water, Sanitation and Environmental Management.

The framework is aimed at supporting the generation of data to improve efficiency in service delivery, strengthen transparency and accountability by all players in the implementation of programmes. The framework is aligned to the Ministerial Strategic Plan, National Development Plans (NDPs) and Vision 2030. The M&E framework therefore provides mechanisms for communication and information sharing among stakeholders that include: Line Ministries, Statutory bodies, Civil Society Organizations (CSOs), Cooperating Partners (CPs), Faith Based Organizations (FBOs), Non-Governmental Organizations (NGOs), Private Sector, Academia and Research institutions through platforms such as National Development Coordinating Committee (NDCC), Cluster Advisory Groups (CAGs) and Technical Working Groups (TWGs)[13].

Kawambwa Town Council and Luapula Water Supply and Sanitation Company Ltd will use this framework when reporting on the implementation and operationalization of this sustainability plan.

The ministry also has DHIS2 management information system which it is using for monitoring and reporting on water and sanitation in the rural areas. The data to input into the system is collected monthly by community champions (CCs), who are equipped with smart phones and talk-time provided to electronically send data through a web-based platform. The CCs do their work as volunteers and this may compromise their commitment to the work. The data they collect is normally validated by the Environmental Health Technicians (EHTs) from the Ministry of Health (MoH), who are in the respective areas. At times these CCs do not send any data, as such the data on the system is not up to date at times.

Kawambwa district RWSS Coordinator and the PWSSO have access to the DHIS2 database.

The system is used mainly for monitoring, evaluation and reporting, and not used for learning. The purpose of 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.

The district has very few CCs whose skill levels are moderate on the scale of: low- moderate – high.

[13] MWDSEP Monitoring and Evaluation Framework 2020 – 2030

2.6 Water Quality

According to the baseline survey/enquiry by the consultant of September/October, 2020 the majority of the residents never treat their water in any way; however, a very small proportion does boil water for drinking.

The rural water quality monitoring has not been very good due to a number of factors, including the following:

- inadequate oversight by NWASCO;
- inadequate testing facilities,
- inadequate transport and logistics by the LA; and
- lack of a RWSS Framework for provision and regulation (developed in 2018 and now awaiting implementation by the regulator – NWASCO).

2.7 Water Supply Sources

The baseline study by the consultant showed that a relatively significant percentage (14%) of the households is accessing water from un-improved water sources, increasing the risk of water related diseases especially noting that treatment of water was not prevalently practiced.

2.8 The Water, Energy and Food Security Nexus

It was observed by the consultant during the needs assessment that the link between water, energy (mostly wood fuel/charcoal) and food is weak. The water, energy and food security (WEF) nexus according to the Food and Agriculture Organisation of the United Nations (FAO), means that water security, energy security and food security are very much linked to one another, meaning that the actions in any one particular area often can have effects in one or both of the other areas[14].

The nexus approach is deemed necessary to design future, inherently interlinked systems from the starting point of planning in a holistic manner. The nexus approach aims to highlight potential synergies and identify critical conflicts to be dealt with. The approach is important if WASH services provision is to be sustainable.

Water-food-energy connections lie at the heart of sustainable, economic and environmental development and protection. The demand for all three resources continues to grow for various reasons among them the growing population.

2.9 Information and Communications Technology (ICT)

The country has an ICT Policy which was developed in 2006. Its vision statement is: “A Zambia transformed into an information and knowledge-based society and economy supported by consistent development of, and pervasive access to ICTs by all citizens by 2030”. This policy is guiding the country with regards to ICT. As a result of this the government created Smart Zambia in 2016. Smart Zambia is an initiative established under Gazette No. 836 of 2016 as an E-government division in the Office of the President. The initiative is aimed at transforming the country through information and communications technologies and deployment of electronic government services and processes for effective public service delivery.

The Smart Zambia initiative has a mandate of coordinating and harmonising the implementation of electronic government services and processes in order to improve service delivery across all government ministries,

[14] "Water-Energy-Food-Nexus". Food and Agriculture Organization of the United Nations. Archived from the original on 2019-03-11. Retrieved 2019-09-15.

provinces and spending Agencies (MPSA). Furthermore, the government created the Ministry of Technology and Science, as per the government gazette of September 24, 2021, Gazette No 7039, further underscoring government's commitment to technological adaption for efficient and effective service delivery to the people of Zambia.

Kawambwa Town Council is lagging behind in this area, for example the RWSS Coordinator is using a personal computer for council work. As the ICT infrastructure is weak, even its information asset management systems are relatively weak.

2.10 Conclusion

It's clear from the above that a lot has been done, however, more work needs to be done to ensure that the infrastructure developed is utilised to its fully design life span and that additional infrastructure in developed so that by 2030, there will be 100% water supply coverage and at least 90% coverage for sanitation.

In order for communities in the whole district to have sustainable supplies of WASH services; there is need to develop and implement some sustainability strategies in the areas of: technology, finance, institutional, social/community and environment. This plan has been developed to deal with these issues.

In order to make informed decisions, there is need for up to date data, however in certain instances the CCs do not provide the data on to the DHIS2.

The district needs an increased number of APMs, CCs, Neighbourhood Health Committees (NHCs) and masons with enhanced competency levels.

A deep understanding of the nexus between water, energy and food will provide for the informed and transparent framework that is required to meet increasing demands for water, energy and food in the district without compromising sustainability. The nexus approach will also allow decision-makers to develop appropriate policies, strategies and investments, to explore and exploit synergies, and to identify and mitigate trade-offs among the development goals related to water, energy and food security in the district.

Part II – Objectives and Strategies

3. OBJECTIVES

3.1 Overall Objective

The Overall Objective is: To sustainably provide WASH services to the people in all the Communities; and meet the Vision 2030 of Universal Coverage (100%) for Water and 90% coverage for sanitation in Kawambwa District. (To make clean water, decent toilets and good hygiene normal for everyone, everywhere in Kawambwa District by 2030).

3.2 Specific Objectives

There are five specific objectives that this Sustainability Plan would like to achieve and they are as follows:

a) **Financial Sustainability -** To mobilise financial resources for the O & M of the WASH facilities, rehabilitation of the broken down/non-functional WASH facilities and for the development of new ones to meet 100% coverage by 2030.
b) **Institutional Sustainability -** To build institutional and personal capacity of institutions and persons involved respectively in WASH service delivery so as to enhance the health and living standards of the all communities.
c) **Social Sustainability -** To deliver demand driven wash services.
d) **Technical Sustainability** - To use appropriate technology for WASH services provision and for M&E.
e) **Environmental Sustainability -** To provide WASH services with Environmental Sustainability. This will involve a long-term, integrated approach to developing and achieving a healthy community by jointly addressing economic, environmental, and social issues, whilst avoiding the over consumption of water resources and polluting the environment due to poor sanitation and solid waste management. Over-abstraction of water will be avoided or minimised

At **Appendix I is** given the logical framework (logframe) that addresses the above objectives.

In order to address the specific objectives as developed above; and to ensure sustainability of the WASH facilities; a number of strategies have been developed as given in the next sections (Chapters 4 – 8). The strategies provided are not following a defined order and some strategies will cut across a number of objectives.

Capacity Building is of the uttermost importance for the five facets of sustainability. Therefore, a separate Capacity Building Plan has been developed for the district, including specific details and with a separate financial plan for implementation of the recommended measures. The issues of sustainability, are provided for in the District WASH Master Plan, though at a high level.

4. SOCIAL SUSTAINABILITY

4.1 Community Mobilisation

Community involvement in planning, operation and maintenance has been key to the successful provision of water and sanitation services. This part has been recognized as very important in the last decades, as it became more and more clear that without the support of the community, many projects have no chance of survival. If the community does not feel ownership of the project, even with a well thought out financing strategy, the project will probably fail. This comes out of the common saying '**nifya BOMA**'; meaning it's for government and receives less care from the community. The community believes that when infrastructure breaks down the government will come to repair it or replace it.

The situational analysis confirmed that community involvement in project planning, development, etc. has been happening in Kawambwa district. A good way to ensure community sustainability is to **include beneficiaries through participatory methods in the planning, implementation, operation and monitoring of the project**. Furthermore, there is need to provide feedback on the operations of the projects/facilities so that learning can take place. Therefore, **participatory methods** should be employed as they are very helpful for this. **The WASH sponsors should consult with all stakeholders all the time to make sure that the community feels ownership for the project and that their preferences are implemented with the project.** There are a number of participatory approaches and they include: Community mapping, transect walks, focus group discussions, gender role analysis, use of drawings, posters, role-play, theatre, and songs.

Participatory methods are designed to build self-esteem and a sense of responsibility for one's decisions. They are designed for planning at community level and can be useful for identifying positive and negative behaviours related to WASH. Participants learn from each other and develop respect for each other's knowledge and skills. In this regard the following should be done:

1. Guidelines on community mobilisation developed by government, and found on the MWDS website should be used; thus, the communities must apply for water points.
2. The application must be accompanied by minutes of a community meeting that was held with all the names of the participating community members, with **a resolution to apply for a water point**.
3. Once a number of applications are received; the LA must engage in desk appraisal using the water point (WP) ranking tool which takes into account all the variables for giving a water point (WP) as provided for in the NRWSSP. The ranking tool will prioritise the projects/applications.
4. The applications that will be shortlisted through the desk appraisal will then be subjected to a field appraisal, where LA staff and D-WASHE members will visit the specific sites and verify the information and data in the applications.
5. After the field appraisal the applications should then be ranked/prioritised. The prioritisation should take into account other elements such as the community's willingness and ability to make contributions towards the project capital investment and O&M, sanitation status, etc.
6. An evaluation of the community's ability to organise itself and setting up an appropriate, effective and representative organisation (the V-WASHE/water point committee) to manage the system.
7. The visits should also be used for community sensitisation, and Community participation in the monitory and evaluation must be promoted.

This process will avoid the 'nifya BOMA' effect because its **demand driven** instead of **supply driven**. It is of prime importance to understand that people will only apply those sustainable water and sanitation practices and technologies properly that they really want themselves. Furthermore, communities will only accept solutions when they understand them and see their benefits. Demand for sustainable sanitation and water management systems is only created when **end-users** have **motivation**, **opportunity** and **ability** to invest in sanitation and water systems, which **suits their needs and aspirations**.

The box below (Figure 4) summaries the demand responsive approach to be used as proposed in the WASH Master Plan – 2021 to 2030[15].

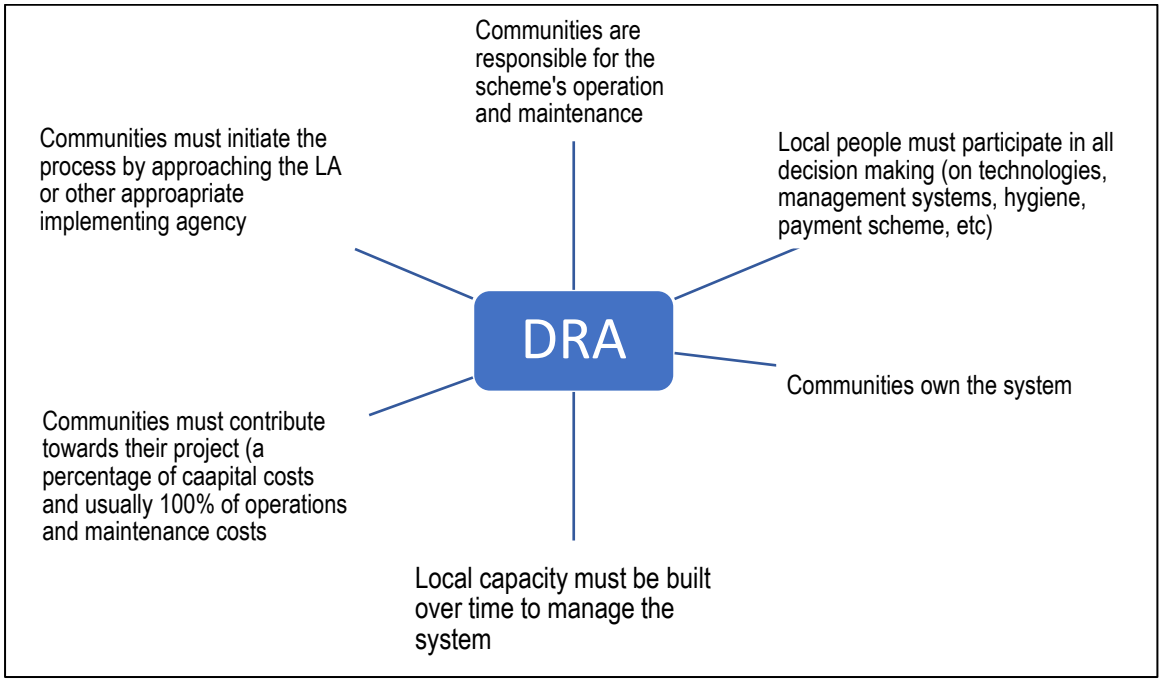


Figure 4: Characteristics of DRA

The DRA principles that must be applied as summarised in Figure 4 above are:

- Water is an economic and social good and needs to be managed as such;
- Management should be focused at the lowest appropriate level, i.e. community or water point users (V-WASHE/Water Point Committees);
- Women are critical players and not just water collectors. As the main users, women generally respond much quicker to technical problems at water points, and have more capacity than is generally acknowledged within the WSS sector. This capacity needs to be acknowledged and integrated into water supply and sanitation services.
- Water resources should be managed in a holistic manner.

4.2 Community Management

The community must fully participate in all WASH activities, informing them and other concerned stakeholders is not enough. They must be included in all the steps of the planning and programming cycle, namely Exploration, Demand Creating, Decision Making, Implementation and Ensuring Sustainability. In this process of water

[15] Kawambwa District WASH Master Plan; 2021 - 2030

management women must be involved more especially in the V-WASHEs. This process is depicted in Figure 5 below.

There are a number of participatory planning methods that the LA can employ, however all these approaches have one thing in common – **participants should be involved in the whole process**. The demand creation is embedded in the process of participatory planning. It is done after the exploring stage within a participatory planning process when there is a lack of demand amongst the local people. Exploring is a preliminary assessment of the current situation (baseline survey; transect walk). When demand for the sanitation and water system, has been created, then decision making step can be dealt with. The whole cycle is briefly explained in the table 2 below. **The LA must follow this process as it was observed to be a weak link in the sustainability of the WASH facilities.**

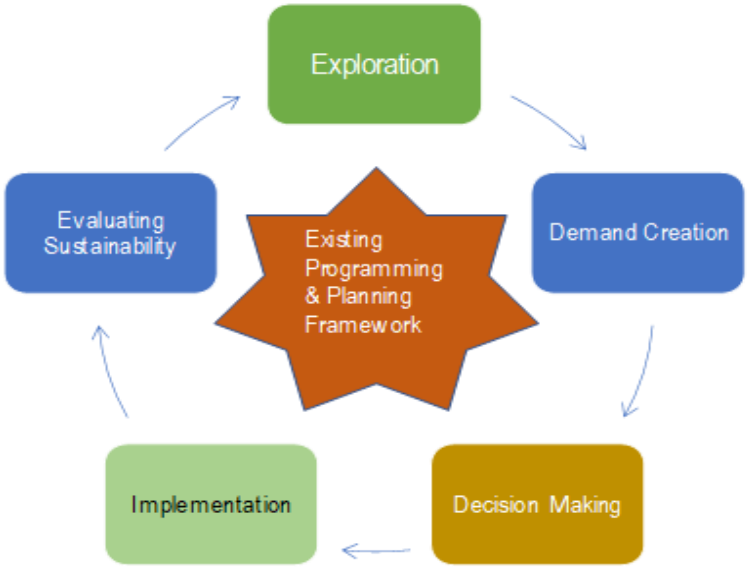


Figure 5: Participatory Planning for WASH

Table 2: Participatory Planning Process for WASH

S/N	Step	Tool/Process
1	Exploring	Baseline assessments; Stakeholder analysis
2	Demand creation	Community led total sanitation (rural); awareness raising tools (media)
3	Decision-making	Gathering ideas; analysing situation
4	Implementation	Conceptualising; Financing
5	Sustainability evaluation	Operation & Maintenance; Follow-up

4.3 Social Inclusion and Gender Mainstreaming

4.3.1 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. ***As part of the baseline, the LA should undertake a survey to identify these groups and prioritise them for support.***

Participation in, and access to development activities, has to be assured for all people with special needs including but not limited to women and girls in general, 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 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 (i.e. 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 Baseline Survey of 2020 referred to above.

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.

4.3.2 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, the LA should make a commitment to improving economic participation of women in water and sanitation projects and interventions.

5. INSTITUTIONAL SUSTAINABILITY

5.1 Institutional Framework and Governance

5.1.1 Roles and Responsibilities

All institutional roles and mandates must be clearly defined, including at different sub-district levels, without overlap or duplication. Each and every person involved, must be aware of their responsibilities; in this regard, it's recommended that **cards** must be printed in both English and the local language for the roles and responsibilities of both the communities and GRZ/LA, including line ministries; and shared at the time of handing over water points.

5.1.2 Communication and Stakeholder Management

The following institutions are key: LA, Ministry of Local Government and Rural Development (MLGRD), MWDS, Ministry of Education (MoE), MGEE, Ministry of Community Development and Social Services (MCDSS), CPs and MoH for provision of WSS services in the project area and the district in general. The Ministry of Community Development and Social Services is key in providing and facilitating the provision of equitable social protection services to communities in order to contribute to sustainable human development." It contributes to poverty reduction and improved quality of life of citizens in order to foster national development. The stakeholder map given in Figure 6 below shows the identified stakeholders and classified according to how they are affected or can affect/influence the project (WASH project in Kawambwa). The stakeholders are many and all have different interests, hence their information needs are different. They need to be managed and communicated to accordingly.

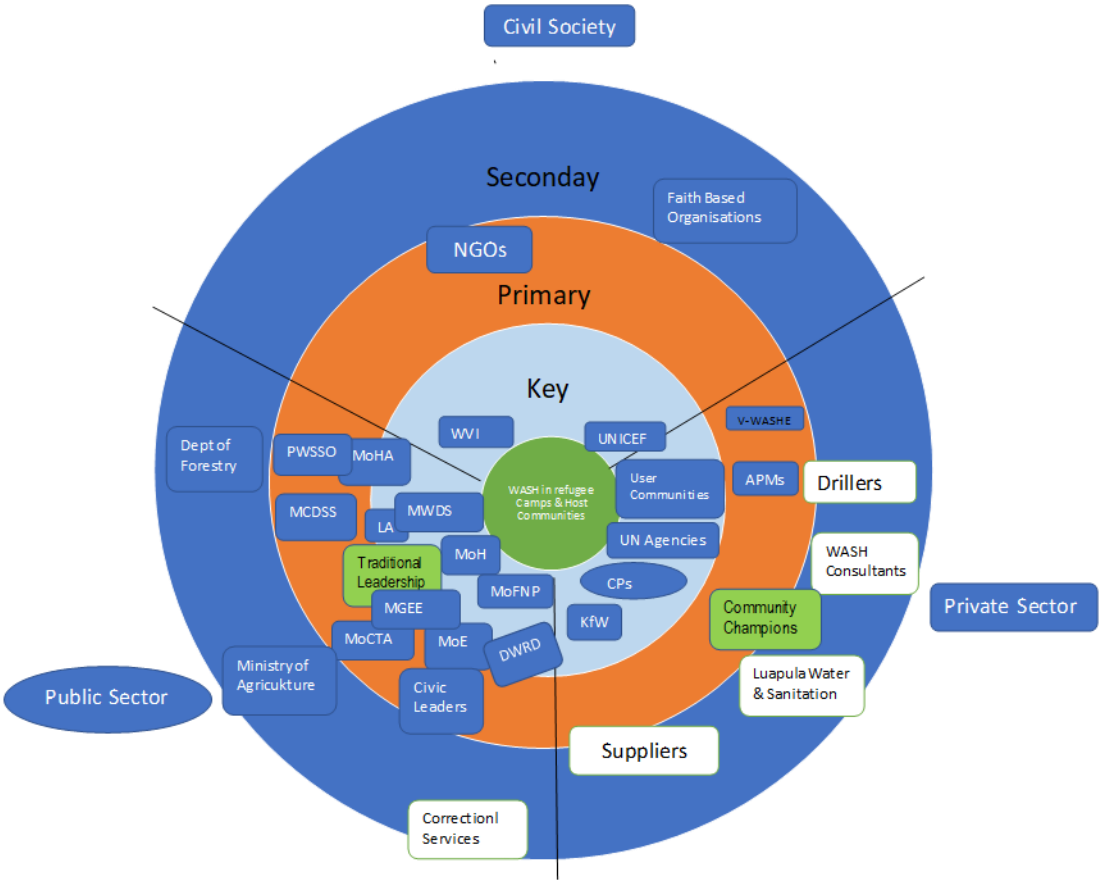


Figure 6: Stakeholder Map

The stakeholders have to be managed well based on their influence and interest in the WASH programme. Figure 7 - The Power – Interest Matrix below illustrates how to communicate with different stakeholders after identification and classification is done. The following generic strategy must be used. The power/influence and interest matrix should be reviewed annually at the time the annual work plan and budget for the forth coming fiscal year is done. In reviewing the matrix, a template at **Appendix II** can be used.

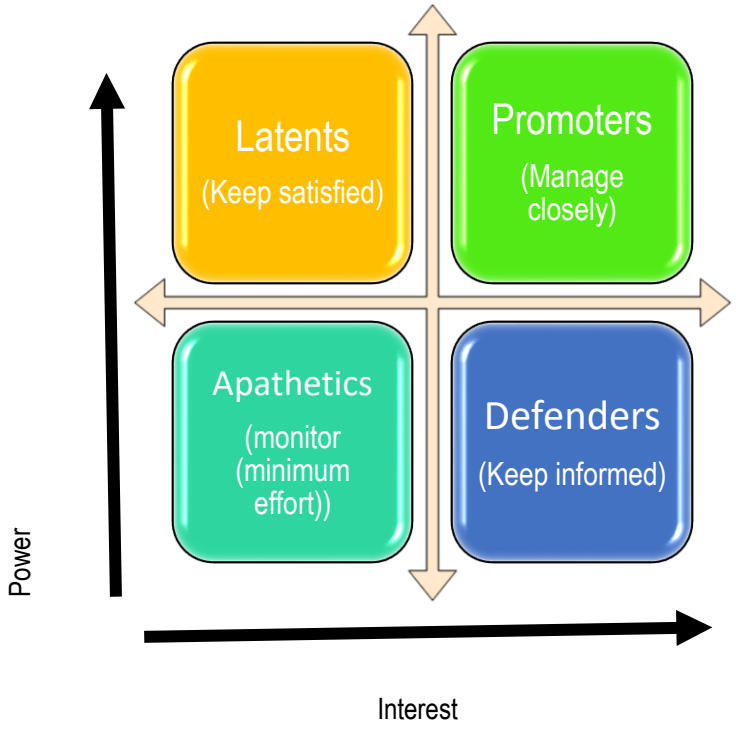


Figure 7: The Power – Interest Matrix

The position of the stakeholders on the matrix shows the actions the LA must take with the stakeholders. It's important to take care of each individual stakeholder even if they may be in the same quadrant as their needs may be different. The definitions of the various stakeholders are given below.

- **Promoters:** High power, high interest stakeholders - these should be fully engaged and a strong effort to satisfy them all the time must be made.
- **Latents:** High power, less interest stakeholders - keep these stakeholders satisfied.
- **Defenders:** Low power, high interest stakeholders - keep these stakeholders adequately informed, talk to them from time to time to ensure that there are no major issues cropping up.
- **Apathetics:** Low power, less interest stakeholders - keep in contact with these stakeholders, but do not frequently communicate with them or on matters that do not matter to them so much.

Attached as **Appendix III** is the matrix that was generated during the interaction with the LA staff and subsequent questionnaire that was done between October 2020 and October, 2021. This matrix must be updated annually at the time the WASH AWPB for the forthcoming period is prepared.

The Capacity Building Plan (separate document) has been developed to take care of the capacity development needs of the identified stakeholders.

6. TECHNICAL SUSTAINABILITY

6.1 Water Supply Infrastructure

Technology is very important for the sustainable provision of potable water and adequate sanitation.

In most instances for RWS, boreholes are drilled and equipped with hand pumps, and in a few cases, there are some protected wells which are also in most cases equipped with hand pumps. Furthermore, there are some which are powered by solar pumps with overhead tanks (water schemes), mostly for schools and health centres where the population served is relatively higher.

The approach to safe water access must reflect the realities of the places where the facilities are installed, just as provided for in the NRWSSP which advocates for ***feasibility studies*** to determine the best suitable mode/technology to provide RWS. Some areas have unique natural environments, cultural priorities, and technical challenges, and these must be addressed through technology selection. *The baseline survey indicated that the groups of people in the community that reported difficulties in accessing water from the main sources, were the people with disabilities including the elderly, and children.* Therefore, in selecting the technology, these factors must be taken into account.

There are a variety of water sources to choose from over and above the underground water sources/technologies mentioned above; these include rain water harvesting, sand dams, earth dams, and other surface water sources. Some can be used in combination, i.e. use rain harvested water in the rain season, when it runs out use other sources.

Furthermore, with climate change, it will be important to find cheap means of measuring the quantity of water that is consumed/abstracted from the various water sources/points.

The LA should always undertake feasibility studies to find the best technology to use for RWS; and this must include the sources of power for water schemes.

6.2 Sanitation Infrastructure

The baseline survey done in September/October, 2020 for the district by the consultant revealed a number of challenges faced by communities with regard to sanitation; and these challenges are also found in the whole district. These included the following:

- Specific technology required for squat pans for people living with disabilities.
- Specific technology required for the blind to locate the squat hole
- Specific technology for latrines in flood areas as those become unusable and heavily pollute underground water when some areas flood or the water table is very high.

There is therefore need for research and development (R&D) to address the technology challenges as highlighted above.

It is recommended that, for schools with waterborne toilets, the toilets must be connected to biodigesters, that will generate biogas that could be used in the school feeding programme as a source of energy (methane gas) for cooking. This could also be used by members of staff depending on the number of persons/sizes of the biodigesters. The sewage can be augmented by animal waste, where there are animals such as cattle and pigs, and poultry (chicken), and any market vegetable and kitchen waste. The bioslurry from the biodigesters should be used for agricultural purposes, as organic fertiliser. In this case schools should be encouraged to have orchards, gardens, etc. and ***these will be sources of income to part finance the O&M costs.***

6.3 Information and Communication Technology (ICT)

ICT is very important for the sustainability of the WASH facilities and for the drive to meet the country's Vision 2030 WASH targets. The Country has a centralised database for WASH: DHIS2. The system was originally designed for sanitation and hygiene, and it has since been upgraded to include water supply. The data updates are supposed to be given monthly by the community champions (CCs) who are equipped with smart phones and use a mobile to web platform to transmit the data.

The LA accesses this database; however, its frequency of updating is irregular as volunteer CCs do not always updated, at times there isn't talk time to access the website.

It is recommended that Kawambwa Town Council for its M&E for monitoring the operations of the WSS services provision in the district; it must create its own simple excel system as a backup. This can also be used for disaster recovery and business continuity (DR/BC). **The following recommendations have been developed with regards to Information and Communication Technology:**

- The CCs should be incentivized, and numbers increased so that the radius of coverage per CC is smaller to improve the quality of reporting into the DHIS2 system in the District.
- The RWSS Unit in the LA must have its own dedicated computers and accessories and should establish its own simple database say in excel or access.
- The V-WASHE representatives or water point caretakers should be trained to be submitting data through SMS or any simpler way. The parameters to be updated will be few such as functionality/breakdowns, repairs/maintenance, water quantity and quality, etc.
- The database must include the details of APMs and Masons in certain areas, so that once a report is made of a breakdown or need for maintenance, the RWSS coordinator can inform the APM and check whether adequate information is given, i.e. if there will be need for a spare part, then a check in the SOMAP shop will be done. If the stock is out, emergency measures will be undertaken to ensure the spare part is delivered as soon as possible.
- Technical issues related to data collection and transmission to MWDS headquarters for input into the DHIS2 can then be dealt with by EHTs and the RWSS Coordinator bimonthly or quarterly.
- As skills and competences are gained, the system can be upgraded to a level of real-time reporting/updating. This will reduce down time of water points.
- Furthermore, with adequate information on the database and adequate reporting, targeted promotional work on WASH can be undertaken which eventually will reduce the cost-of-service delivery.
- The ministry to carry out a due diligence study on how the DHIS2 system failed in the district and decide on the best way forward.

Furthermore, as indicated in the WASH Master Plan for Kawambwa District, there is need to have participatory monitoring and evaluation.

6.3.1 Information Assets

The LA has a lot of information, processes, procedures, etc. that relate to WASH; however, they are not adequately compiled, shared and used by all that need it in the LA and the district as a whole; hence the need to review and organise it properly. Capabilities for managing information assets include identification, linking assets to business process, documenting ownership and use, assessing value, understanding and mitigating risks relating to the asset, and enabling access throughout the lifecycle.

The LA should develop an Information Asset management system by defining the issue to be resolved which is to ensure sustainability of WASH services provision, identifying the needed Information, capturing the Information through a documentation process and constructing a framework to allow easy access to the Information for the groups who would most benefit. The needed information is mainly:

- Water supply facilities and coverage

- Sanitation facilities and coverage
- Procedures and processes for the provision of WASH services
- The human capital available: LA and CU staff, CCs, APMs, masons, etc.

6.4 Water Quality Monitoring

In order to ensure the community gets good quality water/assured of good quality water; the water should be tested (biological test) at least once every month during the rainy season and once every three months during the dry season. For public institutions (schools and health centres/facilities), due to the high number of people accessing the water points/schemes, the frequency of water quality monitoring must be higher than for the individual/community water points. Chemical and physical tests must be conducted at least once every six months, say one during the middle of the rain season (February) and the other during the dry season (September/October).

The LA must keep a permanent record of water quality monitoring updates on a regular basis for each water point or water scheme.

The first data on the record (water quality) must be the water quality test results done by the contractor (who drilled the water point) and verified by an independent laboratory as required by government regulations immediately after drilling, before handover. According to RWSSP guidelines, the test must cover all the three aspects: biological, chemical and physical quality aspects of water. A copy of the borehole completion report must also be kept on file.

The LA must acquire simple and portable water quality testing equipment to use for simpler tests and take samples for comprehensive testing to Luapula Water Supply and Sanitation Limited (LpWSC) at long intervals and randomly selected water points.

6.5 Fixed Assets

6.5.1 New Water Supply Infrastructure

The situational analysis showed that there is need to invest in new infrastructure and this must be demand driven as earlier mentioned. The provision of additional infrastructure will reduce the rate of wear and tear on the existing facilities.

6.5.2 Buildings (SOMAP Shops) and Stock

To ensure availability, access and affordability of spare parts for the hand pumps and other pieces WSS plant and equipment there is need for:

- Construction of 3 x Spare parts shop (1x main in Kawambwa Central Business District (CBD), and the two satellite ones)
- Acquisition of seedstock for the two satellite shops

6.5.2.1 Sustainable Supply Chain

The following are the Principles of Sustainable Supply Chain which must be followed as per guidelines[16]:

[16] National Guidance for Sustainable Operations and Maintenance of Hand Pumps in Rural Areas - MLGH - 2007

The revolving system for spare parts supply is essentially aimed at promoting sustainability in the provision of RWSS services by enabling users to procure spare parts on their own, facilitated by a revolving fund system. From a broader perspective, the following principles will enhance the sustainability of the revolving system of spare parts supply:

- **Availability:** Spare parts should be available at the outlets at all times. This can be achieved by establishing an effective supply chain to be coordinated by the Ministry of Local Government and Housing (*now MLGRD*) in collaboration with the Ministries of Commerce Trade and Industry, Works and Supply (*now Transport and Logistics)*, Finance and National Planning (Zambia Revenue Authority) and the National Water Supply and Sanitation Council (NWASCO). The collaboration will enhance the timely movement of the spare parts along the chain links down to the outlets.

- **Accessibility:** The spare parts should be made accessible to the users at all times.
  Appropriate and conducive spare parts shops/warehouses should be located in areas where customers can easily reach and procure the spare parts. Their existence can be publicised through the media or posters and billboards; *and social/electronic media*.

- **Affordability:** While it is a known fact that the ultimate aim of any business is to make profit, the issue of affordability by communities to procure the spare parts should be taken into consideration. This is particularly important considering the high poverty levels among user communities. A balance has therefore to be struck to make the spare parts affordable to the communities. This could be achieved by subsidizing the spare parts by Government in the initial stages of establishing outlets and passing on the full costs to the user communities by gradual reduction in the subsidy. Alternatively, the Government should consider waving duty in order to make the spare parts more affordable.

- **Appropriateness:** The spare parts that are supplied should be those of the standardised technology in this country (*in the district*[17]). In addition, the replenishment of stocks should be dictated by the rate at which particular spare parts are moving. The fast-moving parts should frequently be replenished rather than having bulk replenishments that include non-fast moving spare parts. In short, the replenishment should be planned based on data that has been generated.

6.5.3 Transportation and Logistics

To ensure adequate monitoring, evaluation and reporting; that include water quality; there is need to acquire the following for the district specifically for the RWSS Unit:

- 2 x four-wheel drive motor vehicles
- 6 x motor bikes
- 72 bicycles

6.5.4 Information and Communications Technology (ICT)

The RWSS Units must be provided with the following ICT equipment (the costs and financing plan for the items are provided for in the Capacity Building Plan):

- 2 x laptops (one each for the water specialist and the sanitation specialist)
- 1 x printer
- 2 x GPS equipment

[17] The items in italics added by the consultant.

- Internet facilities

6.5.5 Sanitation Demonstration Facilities

Though the communities build their own sanitation facilities, the government carries out hygiene promotion and training of masons through the LA. The LA, should therefore construct demonstration sanitation facilities spread out well in the district to be used for training of masons and the community members. It will be good if each ward will have its demonstration/training facilities to reduce the travel cost for trainees (masons and community members).

6.6 Operations and Maintenance

6.6.1 Water Supply

In order to improve the sustainability of service for hand pumps and water schemes, a few things must occur:

- There must be long-term maintenance plans for the service and funding allocated for these plans.
- The community and users of the service must be involved in these plans and know to whom to communicate lapses in service if one occurs.
- There must be a network of people who have been trained to maintain the service when lapses in service occur (the APMs and LA staff for 'complicated' works).

The spare parts shops must be constructed with seedstock provided. Furthermore, it must stock water treatment chemicals like chlorine, more especially in the rainy season when the likelihood and impact of water contamination is very high. The spare parts shops should:

- Have all fast-moving spares at all times.
- price the spare parts as per national guidelines (available, accessible, appropriate and affordable).
- Have some of the basic tools for the repair and maintenance of hand pumps.

The community

- The community must be involved in the planning, development, implementation and operation of the water supply systems.
- Make capital contribution towards the water points.
- Must contribute financial resources for O&M on a regular basis. The resources must fully cover these costs.

The water supply indicators are provided at **Appendix V**, and these are extracts from the 7NDP Implementation Plan. Other indicators can be obtained directly from there.

Luapula Water Supply and Sanitation Company Ltd

LpWSC is likely to take over the provision of water supply services in the rural areas during the implementation period of this Sustainability Plan. It may earlier start with water schemes in the district as its currently operating 5 water schemes in Mwense District. The current schemes being operated are running at a loss and to sustain them, there is indirect support from the central government.

Furthermore, to ensure sustainability LpWSC will require additional staff to extend its service provision to the rural areas, and it will be a good idea to second the Rural Water Coordinator to LpWSC at the time of transitioning.

6.6.2 Sanitation

There is need to build adequate capacity for masons. The suggestion should be twinned with the training of area pump menders to provide knowledge on repairs with the support and oversight from the Local Authority and sub-district structures.

The community must be sensitised and informed that the responsibility for constructing sanitation facilities is theirs, government will only provide the knowhow. **In this regard government must construct demonstration sanitation facilities in strategic places in all the wards to be used for capacity building.**

The sanitation indicators are provided at **Appendix V**, and these are extracts from the 7NDP Implementation Plan. Other indicators can be obtained directly from there.

6.7 Asset Management

Asset management is defined as a systematic process of developing, operating, maintaining, upgrading, and disposing of assets in the most cost-effective manner (including all costs, risks and performance attributes).

Infrastructure asset management is the combination of management, financial, economic, engineering, and other practices applied to physical assets with the objective of providing the best value level of service for the costs involved. It includes the management of the entire life cycle costs —including design, construction, commissioning, operating, maintaining, repairing, modifying, replacing and decommissioning/disposal—of physical and infrastructure assets. Operation and maintenance of assets in a constrained budget environment requires a prioritization scheme. See Section 10.2 for more details.

The Government and other partners in WASH, invest huge sums of money in fixed assets for the provision of WASH services, and in most instances they do not function to their design life span due to a number of factors among them poor construction, poor O&M, inadequate appreciation of the infrastructure by the user communities, etc. For example, the design life span of an India Mark II hand pump is about 15 years, and that for an Afridev is about 20 years however, the actual average life spans observed for some it is less than that.

Once a water point is created, a file must be opened where all actions on the water point must be recorded. The first details on the file must be those contained in the water point construction completion report. The following information/data must be updated in the file, whenever an event takes place on the water point, including:

- Comparison of the design specs with the actual,
- Water quality test results,
- Maintenance and repairs which must include who undertook the work – at Appendix VIII is given a sample of the Water Point Repair Form prepared by APM[18],
- Estimates of water drawn on a monthly basis,
- O&M contributions, and
- Number of households drawing water from the WP.

The table below is for an India Mark II hand pump and similar ones must be created for Afridev, and any other models of pumps the district may have. The same must be done for water schemes.

Table 3: Summary Pump Maintenance Report / Spare Parts Replacement Chart

S/N	Name of hand pump part	Design life span (yrs)	Actual Dates of Replacements				
	Date of Installation: June 2, 2020						
1	Chain	4	2021-04	2021- 12	2022-05	2024 - 01	2025- 09
2	Valve	4					
3	Piston seals	5					
4	Handle bearings	5					

[18] National Guidance for Sustainable Operations and Maintenance of Hand Pumps in Rural Areas - MLGH - 2007

S/N	Name of hand pump part	Design life span (yrs)	Actual Dates of Replacements				
5	Pump rod	10					
6	Riser pipes	12					
7	The India Mark II Pump was designed to be operational for at least 1 year without maintenance.						

Note: the first part of the date is the year and the second part after the 'dash' is thee month in which the replacement was done.

As an example (Table 3), if the actual dates are as presented in the table, then an investigation must be undertaken to find out why the life span of the chain is far shorter than the design life span (here it's about 1 year instead of 4 years).

The roles and responsibilities should be clearly defined, and tools and guidance must be in place and used for effective asset management. These should be mainly between the LA, V-WASHE, APMs and user communities.

There must be a plan for asset renewal and finance of capital maintenance based on asset life cycle costs and contractual responsibilities. These plans must be made initially as provided by the original equipment suppliers, thereafter modified according to the experience that will be obtained from the use of the equipment.

6.7.1 Strategy/Action

At National Level – MWDS should:

- Ensure that legislation and policies assign ownership of rural water assets to specific entities (V-WASHE, Water Point Committee, Water Scheme Committee or the CU). In this case it should be made clear water points are owned by user communities, so are the water schemes. A sample MoU is given at **Appendix VII**.
- Carry out districtwide asset inventories, under leadership of NWASCO and MLGRD, as a pre-condition for asset management, to inform evidence-based investment planning and learning
- Define the costs for the regular updating of water asset inventories and assign responsibilities to do so to the LA.
- Provide national guidelines and template agreements between LAs, V-WASHEs and NWASCO that clarify responsibilities for asset operations and maintenance.
- Ensure that asset ownership is clear for V-WASHE/water point committees through communications on national policy.
- Ensure that the LA has a good knowledge of the water assets (by supporting the development of inventories and maps/GPS coordinates)
- Support the LA to sign agreements or contracts with service providers (APMs, masons, V-WASHE and CCs) that:
    - specify asset ownership
    - define responsibilities for maintenance and replacement regimes (distinguishing between minor and major repairs)
    - identify the source of financing for asset maintenance (as per tariff guidelines/community contributions as per NRWSSP)
    - Roll out adequate planning tools, guidance, and training for service providers

Service Providers should:

- Reinforce service providers' technical capacity to operate and maintain assets and develop O&M and asset management plans. This should be done in close collaboration with CPs like GIZ who are working on piped water schemes in some districts like Mwense in the Luapula Province.
- Build capacity of V-WASHEs and other service providers (schools, health centres, water schemes) to implement agreements and execute their asset management plans. This is to make sure that revenues (community contributions) and subsidies for capital maintenance (possibly through UNICEF, GRZ, CPs, etc.) cover all O&M costs including major repairs.

Project sites should be in clusters wherever possible. Project implementation is logistically difficult and costly with scattered project sites, so in future, clustering project areas based on geographic locations should be considered and encouraged when selecting sites in order to improve economy, efficiencies, and subsequently sustainability.

7. ENVIRONMENTAL SUSTAINABILITY – ENVIRONMENTAL MANAGEMENT AND CLIMATE CHANGE

7.1 Environmental Management

The aim of sustainable development is to balance our economic, environmental and social needs, allowing prosperity for now and future generations. Sustainable development consists of a long-term, integrated approach to developing and achieving a healthy community by jointly addressing economic, environmental, and social issues, whilst avoiding the over consumption of key natural resources.

Sustainable development encourages us to conserve and enhance our resource base, by gradually changing the ways in which we develop and use technologies. The district must be allowed to meet its basic needs of employment, food, energy (wood fuel), water and sanitation. If this is to be done in a sustainable manner, then there is a definite need for a sustainable level of population. Sustainable water resources management entails the following:

- Through WARMA (Water Resources Management Authority), national basin, and local level water resources management mechanisms must function effectively.
- Rural water service providers and users must participate in local water management platforms as provided for in the Water Resources Management Act of 2011.
- The LA should implement (through the guidance of WARMA) water source and catchment protection and water safety measures.

Following actions must be implemented by 'MWDS/WARMA:

- Fully implement the Water Policy and Water Resources Management Act to ensure that water allocation is done as per regulations, prioritizing domestic drinking supplies.
- Support WARMA (water resource management regulator) with all the resources it needs for licensing and permitting instruments and monitoring tools.
- Improve compliance of rural water sector actors with water abstraction and licensing requirements.
- Strengthen representation of the interests of rural water supply users in sub-basin or local water management bodies (Water Users Associations (WUAs))
- Support the coordination between local stakeholders responsible for rural water supply, agriculture, livestock, and other relevant water using sectors as part of water catchment management plans and local water management initiatives
- Involve the local authority (and service providers) in these platforms to improve planning, allocation, and management for different competing water uses, especially in water-scarce areas with groundwater supplies.
- Provide technical support to V-WASHEs and LA to obtain water permits and participate in local water management initiatives
- Train WUAs in undertaking catchment protection measures and water safety planning.

The water resources management indicators are provided for in the 7NDP Implementation Plan.

Following actions must be implemented at the District/Ward Level:

- Ensure that the designs and construction of sanitation facilities have minimum impact on underground water quality (pollution of the aquifers).
- Water sources are sited in such a way that the probability of them being polluted by agricultural activities and sanitation facilities, and solid waste disposal facilities is minimised or eliminated.
- As water points (WPs) are generally done in big numbers within a certain area (say ward) it must be mandatory that an environmental and social impact assessment (ESIA) is done.
- LA staff must be trained on how to undertaken 'basic' ESIA, that they provide some oversight over the siting and construction of water points and sanitation facilities.

7.2 Climate Change

To enable workable and effective adaptation measures, ministries and central government, as well as the LA, and institutions and non-government organizations, must consider integrating climate change in their planning and budgeting in all levels of decision making, in line with the national policy on climate change. Water is predicted to be the primary medium through which early climate change impacts will be felt by people, ecosystems and economies. The impacts of climate change on water availability and water quality will affect many sectors, including energy production, infrastructure, human health, agriculture, and ecosystems.

The National Policy on Climate Change – April, 2016; provides guidance on climate change and adaptation. The following extracts from the policy should be implemented by the LA:

- Promote climate change related public health plans and interventions;
- Promote the communities' ability to develop physical and social infrastructure that are resilient to the adverse effects of climate change. **Social infrastructure** is defined as the construction and maintenance of facilities that support social services. Types of social infrastructure include healthcare (hospitals), education (schools and universities), public facilities (community housing and prisons) and transportation (railways and roads).and
- Promote the protection of water catchment areas, including the development of environmentally friendly infrastructure for bulk water transfer (water ways), storage, management and utilization of water resources.

The Climate Change indicators are provided for in the 7NDP Implementation Plan.

7.3 Water, Energy and Food Nexus

The Climate Change effects discussed under 7.2 above have a great effect on water resources/supply, energy and food (WEF) security; and this nexus is reviewed briefly in this section. The interactions among water, energy and food are numerous and substantial; and the LA must deal with these holistically when dealing with WASH to ensure sustainability.

Improved water, energy, and food security at a district level can be achieved through a nexus approach—an approach that integrates management and governance across sectors and scales. A nexus approach can support the transition to a Green Economy, which aims, among other things, at resource use efficiency and greater policy coherence. The following are the impacts of climate change that will have to be addressed through the nexus approach.

a) Impacts on Water Security:

- Reduced availability of ground water recharge.
- River flow reduction will impact water supply.
- Reduction in stream flow will impact soil moisture availability.
- Crop water requirements will increase; therefore, more competition for water resources among sectors.

b) Impacts on Food Security:

- Decrease of crop yields
- Crop water requirements will increase
- Extreme weather can be devastating to agriculture

c) Impacts on Energy Security

- Climate change can alter our energy generation potential and energy needs. For example, changes to the water cycle have an impact on hydropower, and warmer temperatures increase the energy demand for cooling in the summer, while decreasing the demand for heating in the winter
- Draught will reduce the rate of reforestation, hence reduce the amount of wood fuel
- Extreme weather can be devastating to agriculture/natural forests

The diagram below (Figure 7) illustrates the links amongst the three elements.

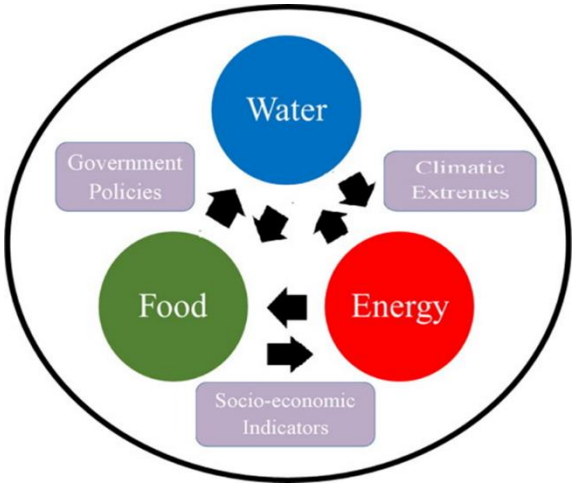


Figure 8: Interconnectedness of the various elements of the WEF nexus[19]

In conclusion, more extreme weather and heat waves can be expected and will have economic implications as well as health and environmental consequences. Climate change impacts on water, energy and food securities are significant; therefore, a nexus approach to adaptation and mitigation is needed.

Addressing climate change and its impacts on water and energy require a multi-stakeholder and a multiscale approach to policymaking. As the P-WASHE and D-WASHE comprise people from the line ministries, implementing the nexus approach will be easy and must be done.

[19] https://www.sciencedirect.com/science/article/pii/S2588912521000059?via%3Dihub#f0015

8. BUSINESS RELATIONSHIPS

In order to ensure sustainability of service provision there is need to maintain very good business relationships with all the stakeholders involved. The roles of each stakeholder must be clear to all other stakeholders, more importantly to the communities, the LA, GRZ and all its agents.

Business relations can be defined as: connections that exist between entities involved in the business process, in this case the provision of WASH services to the district communities. The term business relations refer to the connections formed between various stakeholders in the business environment, including relations between employers (LA) and employees, employers and business partners (CPs, NGOs, CSOs, etc.), and all the entities with which the LA is associated with in the provision of WASH services.

The relationships are so important in WASH services provision that without them facilities will not be sustainable. There is need to build good relationships with all stakeholders. Vendors, contractors, employees, clients, CCs, APMs, masons, etc. are all part of ensuring sustainability of the WASH service provision. The strategies should include:

- Communicate frequently,
- Offer rewards to CCs, APMs and masons,
- Hold special events for stakeholders,
- Build two-way communication,
- Enhance WASH service delivery to the community (schools, health centres, and the community), and
- Visit your clients on a regular basis (schools, health centres, and the community) – old, current and potential.

The Relations may be established through a number of means including:

- Social media,
- Emails, where applicable,
- Phone calls,
- Face-to-face meetings, and
- Virtual meetings, etc.

Furthermore, it's proposed that:

a) MoUs be signed between the Council with stakeholders (CPs, GRZ, Private Sector institutions, masons, APMs, CCs, etc.) on roles and responsibilities for WASH services provision'
b) To effectively deal with masons, CCs and APMs, it will be a good idea to assist them form an association, then the LA enters into an agreement with the Association.
c) Mobilize communities early in the project; and assess stakeholder capacity. Community mobilization should be conducted early so that beneficiaries are fully aware of all aspects of the project and can participate effectively. While NGOs are effective at community mobilization and raising awareness, their technical capacity is comparatively strong though in some cases weak, so future project formulation should include capacity assessment of all stakeholders; and capacity development undertaken wherever there is established need. These NGOs and other stakeholders should be worked with effectively and efficiently for community benefit.
d) Involve marginalized members of the community - Women and representatives of caste and ethnic minorities should sit in user-committees (V-WASHE, WUAs, etc.), including executive positions, proportionate to their populations. This ensures their equal access to project benefits.
e) Involve government counterparts'/line ministries, etc. during the project design stage. Involving government counterparts in the procurement planning at the design phase of the project, results in improved procurement outcomes.

9. PROJECT AND RISK MANAGEMENT

Project and risk management is a skill which the LA needs notwithstanding the fact that for some of the WASH projects implemented in the district by the MWDS; contracts for both the contractor and the supervising engineer are procured and implemented by the ministry directly. However, to ensure successfully implementation of the projects, the LA should also be involved in the whole process. In certain instances, the LA undertakes the whole process or is left to supervise the contractor once the Ministry finalises the contracting process, hence the need to build its capacity in the area of project and risk management. In the area of risk management, the capacity building should extend to risk management in the routine operations of the LA.

The LA staff, more especially those in the Engineering/Works, planning and Finance Departments must the trained in project management, contract management and risk management. They should also be fully involved in the project planning, implementation and handover to the user communities. This will also help with technology and knowledge transfer.

9.1 Project Management

Project management is the practice of initiating, planning, executing, controlling, and closing the work of a team to achieve specific goals and meet specific success criteria at the specified time. The primary challenge of project management is to achieve all of the project goals within the given constraints.

The project management objectives are the successful development of the project's procedures of initiation, planning, execution, regulation and closure as well as the guidance of the project team's operations towards achieving all the agreed upon goals within the set scope, time, quality and budget standards.

9.2 Risk Management

It is the process used by project managers to minimize any potential problems that may negatively impact a project's timetable. Risk is any unexpected event that might affect the people, processes, technology, and resources involved in a project. Unlike issues, which are certain to happen, risks are events that could occur, and you may not be able to tell when. Because of this uncertainty, project risk requires serious preparation in order to manage them efficiently.

9.3 Contract Management

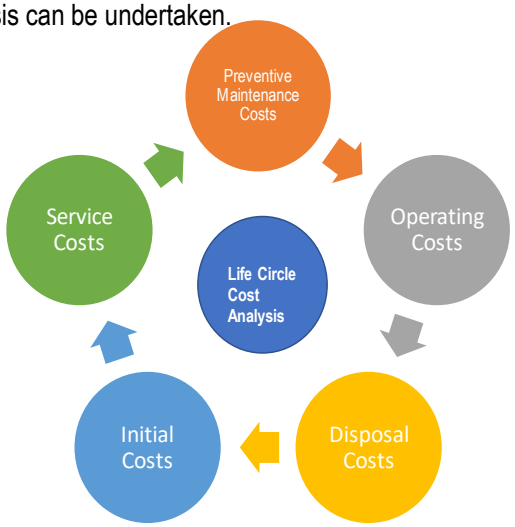
Contract management is the process of managing contract creation, execution, and analysis to maximize operational and financial performance at an organization, all while reducing financial risk. Organizations, in this case the LA and other stakeholders involved in developing WASH infrastructure encounter an ever-increasing amount of pressure to reduce costs and improve the organisation's performance; hence the need to enhance their capacity in this area.

9.4 Programme Procurement

Procurement is the process of finding, agreeing terms and acquiring goods, services or works from an external source, often via a tendering or competitive bidding process as provided for in the Public Procurement Act. The process is to ensure the buyer (the LA) receives goods, services or works at the best possible price, when aspects such as quality, quantity, time, and location are compared.

When acquiring goods, services and works, it is important that the whole life cycle cost (LCC) is considered, and only goods, services and works that provide the least life cycle cost should be procured. Life cycle cost is the sum of all recurring and one-time (non-recurring/capital) costs over the full life span or a specified period of a good, service, structure, or system. **It includes the purchase price, installation cost, operating costs, maintenance and upgrade costs, and remaining (residual or salvage) value at the end of ownership or its**

useful life, and the cost of disposal. 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 (Figure 7) shows how life cycle cost analysis can be undertaken.



Life Cycle Costing Formula

LCC = Initial Cost + Lifetime Operating Costs + Lifetime Maintenance Costs + Disposal Costs - Residual Value

Figure 7: Life Cycle Cost Analysis

At all levels of government (National, Provincial, District) there will be procurement of goods, services and works for the Programme, even at village/community level.

It is envisaged that at National, Provincial and District levels, the procurement processes as provided in the Public Procurement Act will be followed to ensure value for money. Among the key elements of this process is that an **Annual Procurement Plan** must always be in place and be approved by the relevant authority prior to spending.

At community level, the procurement will be mainly for spare parts; it is therefore envisaged that through the SOMAP system, the spare parts shops in the district will be constructed and function very well as well as other places, close enough to the user communities for them to accesses them (spares) at reasonable prices. This will be in line with the Programme principles of the 3As (**accessibility, availability and affordability**). The LA should explore the possibility of taking some spare parts for far flung areas to schools or Rural Health Centres where communities can access them cheaply and on time, whenever need arises..

For high value tenders for goods, services and works; (i.e. boreholes drillings, consulting engineers for supervision of works, etc.), the preliminary evaluation must be based on the following criteria (check whether the bidder has the valid documents):

- National Council for Construction Certificate with the correct grade for the job bid for,
- Power of Attorney (if included in the request for proposals),
- Company Registration (verify with PACRA and ask for latest PACRA return),
- Value Added Tax Registration,
- Current Tax Clearance Certificate from Zambia Revenue Authority (ZRA),
- Valid Engineering Institution of Zambia registration/Engineering Registration Board Practicing Licence for all engineering professionals,
- Bid security if requested in the Request for Proposals;
- Track record/experience in the area;
- Compliant with the Workers Fund Compensation Fund Control Board and NAPSA, and
- Financial standing.

The evaluation criteria should be made earlier and included in the request for proposals.

10. FINANCIAL SUSTAINABILITY

10.1 The Sustainability Plan Implementation Costs for the period 2021 – 2030

The costs for implementing the sustainability plan are an integral part of the overall WASH Master Plan for the district and cannot be disaggregated from the overall WASH provision costs, as such they are not presented herein separately. The total projected WASH Master Plan cost is **ZMW230.68 million** from 2021 up to the year 2030. The breakdown by component is given in Table 4 below. These are the projected costs that will ensure that the district meets the water supply coverage of 100% and sanitation coverage of 90% by the year 2030 as per the Government's Vision 2030. Full details are given at **Appendix III**.

Table 4: WASH Costs for the Period 2021 – 2030

Cost	Amount (ZMW'000)
Infrastructure Cap Dev	21,493
Training	26,519
PMERL	17,025
Sanitation	79,266
Water Supply	77,172
O&M	4,984
Governance, SWM, R&D and Cross Cutting	4,224
Total	**230,683**

10.2 Financing of WASH Facilities

Financing WASH Services sustainably, that's securing service delivery after implementation – has proven to be a challenge. Considerable effort has been done towards scaling-up coverage of WASH services in recent years by the government. Sustaining these services in the long-term is crucial. Supplying water as well as providing sanitation and hygiene services incur financial costs not only with regards to initial capital investments, but also during operation and maintenance, rehabilitation, upgrading and expansion phases. Providing sustainable WASH services requires sound strategic financial planning to ensure that existing and prospective resources are appropriate for the investment needs and costs of operation and maintenance (O&M) services. The investment plans and financing strategy should address full life-cycle costs (LCCs) of service delivery as articulated under section 9.2 above.

The LA will greatly benefit from LCC considerations as follows:

- Increases (financial) sustainability of WASH services
- Helps to identify gaps in the system regarding financial aspects
- Costs are clear, therefore planning and allocation of responsibilities becomes easier
- A more objective and realistic debate on tariffs (community contributions) is possible
- Better communication base with financing institutions (e.g. government, CPs, NGOs, community based organisations (CBOs), etc.)
- Responsibilities are set, which assures continuity
- Commitment is assured

The above can also be used as a basis for the memoranda of understanding (MoUs) with specific stakeholders.

Financial sustainability is very important for the overall sustainability of the WASH services, other than the effects of climate change. At **Appendix I** is the programme logframe. With the above in mind, the following strategies are proposed:

- The financing plan should include public, private partnerships (PPPs)
- GRZ should consider giving extremely poor households partial subsidies for construction of sanitation facilities and resources for their O&M contributions. Furthermore; building of community solidarity (community members must assist the needy) for extremely poor households on the construction of sanitation facilities and resources must be encouraged.
- Financing mechanisms should enable full life cycle costs to be met, especially capital maintenance and post construction support. A Clear tariff (community contributions for O&M) policy and guidelines which are in place must be reviewed and fully implemented. The guidelines must be fully disseminated to the user communities and MoUs must be signed in this respect.
- A clear policy on subsidy (mechanisms to protect poorest) for the needy should be developed/enhanced/reviewed and implemented.
- Revenues from tariffs (community contributions) should enable full operational cost-recovery, plus capital maintenance and increasing share of capital replacement. This is meant to cover capital costs at the time the hand pump and/or water supply system will need replacement and when the population drawing water from the water point increases beyond 250 people, so that a new borehole will be required.

Since a substantial amount of work and resources normally come from and/or are done at national level by the MWDS it is recommended that:

- The NRWSSP which has identified investment needs should be rollout as soon as possible.
- Dedicated national funds in support of the Local Authority should be made available to subsidize the needy's' contributions towards O&M and capital contributions.
- Through NWASCO, set up a national tariff policy (community contributions) for rural water supply, with cost recovery provisions for different contexts and pro-poor measures
- The development and implementation of the Financing Mechanism for the Water Sector should be expedited. The mechanism must explore innovative mechanisms to finance capital maintenance, for example, options such as pooled funding and insurance schemes.
- Improve public-private partnership (PPP) framework to attract private actors in the rural water sector. A start should be made with spare parts supply, hand pump repairs, etc.

10.2.1 User Communities

Awareness and Determining the Cost for O&M - The community needs to know the necessary cost to operate and maintain their facility. The cost is determined by the cost of spare parts and labour. Estimates may be made based on previous experience, or on manufacturers' guidance. Care must be exercised in using manufacturers' figures, as the needs for spare parts will vary according to circumstances, such as how the communities handle the facility and the number of users. For example, a poorly handled pump will have a reduced life span.

The National Guidelines on RWSS state that the user communities must contribute financial resources regularly to meet O&M costs for the water points. Furthermore, communities are required to contribute at least 5% of the capital cost towards the construction on any new water point. These provisions are not strictly followed. In order to ensure financial sustainability, it's therefore recommended that:

a) Where GRZ, CPs or any other sponsor pays fully for the capital investments for the water points, the user communities, should still be asked to make their capital contribution of 5% and the funds must be deposited in a ring-fenced bank account. The funds will then be used for either O&M or for rehabilitation.
b) Communities must contribute towards O&M on a regular basis and the funds must be either kept in a special account to which the LA and the Community are signatories, or the communities (V-WASHEs) must keep the money in the best way possible and the LA should be auditing these funds/accounts on a regular basis.

The formula below can be used to estimate the annual community contributions for O&M.

Assume:

- The life span of the hand pump is X years.
- The life cycle costs (excluding) the initial costs is Y (Kwacha)
- Number of households drawing water from the water point is Z

Therefore, annual cost for O&M = Y/X = AC

Annual contribution per household = AC/Z = HC

Example. From the details in table 5: Annual Cost of O&M = K150, 000/15 years = K10, 000 per year. Annual contribution per household (HC) = K10, 000/50 = K200/year/household. Depending on the sources of income for individual households, they can contribute: monthly, quarterly, semi-annually or annually.

Table 5: Sample data for Calculating Community Contributions

S/N	Item	Value/Quantity
1	X	15 Years
2	Y	K150,000
3	Z	50

10.2.1.1 The Need for Communities to Contribute

Recurrent funding from Central Government for O&M has generally been absent or insufficient to protect the capital investments made in the water supply systems, as its government policy that O&M must be fully paid for by user communities. The result has been a high percentage of broken down water point facilities. As a consequence, funds have been spent on rehabilitation or replacing rather than increasing the percentage of people being supplied with new safe water supply facilities.
The communities should be encouraged to contribute towards O&M of their facilities for the following reasons:

- ✓ The public funds that are currently made available are inadequate to meet the capital cost for new facilities and recurrent costs for sustaining existing facilities.
- ✓ Subsidies reduce the decision-making power of users. When users pay a higher percentage they will have a greater voice in decision-making.
- ✓ Subsidies discourage cost-efficiency and the development of low-cost solutions. If subsidised, communities may not be very careful in handling the facility and may choose higher technologies that they are unable to sustain.
- ✓ Properly regulated user charges allow the provision of better services at a lower cost to the poor.
- ✓ Community payment in most cases increases members' commitment to the sound management and use of the facility.

10.2.1.2 **Ability and Willingness to Pay**

Communities can make contributions for O&M when they are able and willing to pay for water supply services. The issue of ability to pay is a complex issue as circumstances in the district and communities differ.

There are many factors that might influence communities' willingness to pay as indicated in Table 6 below, which the LA/CU must constantly monitor and address.

Table 6: Factors Influencing Willingness to Pay

Factor	Influence
Income	If users cannot afford to pay they will clearly be unwilling to pay.
Service level	Users may be able and willing to pay for a hand pump (water source) with a higher/reliable service level.

Factor	Influence
Standard of service	People are unlikely to pay for a poor service (frequent breakdown of facilities or facilities producing low yields, poor water quality, etc.).
Perceived Benefits	Users may place a higher priority on more immediate social and economic benefits. Perceived benefits may vary within a community. For example, men may be attracted by commercial opportunities involving greater quantities while women may be more interested in convenience of supply. Convenience, amenity, and economic benefits (time savings) are usually the most important for recipients.
Opportunity cost of time	Men and women may value the time saved in collecting water differently and women may be more willing to pay than men.
Acceptability of the existing source	If users perceive their existing source is better than the newly constructed facility, they may be unwilling to pay for a new supply.
Community cohesion	Individuals in a divided community may be unwilling to pay into a common fund.
Policy environment	Previous policies have encouraged the belief that access to safe water should be free. People may be unwilling to pay for something that they feel should remain free.
Perception of ownership and responsibility	People may be unwilling to pay for the upkeep of a facility that they feel belongs to the government. Such a feeling may persist even when a system has been formally handed over to a community.
Accountability	People may be unwilling to pay due to lack of accountability of the Treasurer or Water committee members.
Distance	People may be unwilling to pay due to long distance to the water point.
Institutional framework	Community management structures that either bypass traditional authority or do not give users a reasonable say in the running of schemes may not be supported.
Water point management framework	Failure by the V-WASHE Committee members to make contributions towards O&M of water points results into other members not to make contributions as well (Failure to lead by example).
Perceived health benefits	Perceived quality of water is important. Perceived quality is determined by taste, odour, colour, and tradition and usually not by bacteriological quality.
Existence of alternatives	Where alternatives exist (household shallow wells in the district, access to a reliable spring, etc.), willingness to pay for “improved service” is low.

Factor	Influence
Different uses, different determinants	Even where people pay a substantial charge, they may still perform some tasks at a traditional source (for example, laundry by the natural water bodies).
Family size	Water use practices depend on family size. In some places smaller families do laundry at home; larger families, however, continue to wash at the nearest stream/river or pond/lake.
Price	Willingness to pay, sometimes abbreviated as WTP, is the maximum price a customer is willing to pay for a product or service. Therefore, this is related to water quality and level of service and perceived benefits.

In order to solve the negative aspects of willingness to pay there should be awareness campaigns, promotion of productive use of water and conflict resolution. Furthermore, there must be consistency in the implementation of government policies in WASH.

10.2.2 Private Sector

Sustainable and inclusive private sector-led growth that contributes to reducing poverty does not happen of its own accord. To make this happen, the private sector needs to be encouraged and supported so it can produce high and inclusive growth while still generating the profits needed to succeed and grow.

The private sector is critical to economic growth and poverty reduction, but it cannot and does not act alone. Government plays a central role in supporting economic growth and reducing poverty. It needs to provide good policy, strong institutions and efficient public goods and services to ensure the private sector can thrive and the benefits of growth reach all citizens. As well as developing and implementing policies which promote growth, government must also commit to developing and sustaining the institutions that implement, oversee and regulate those policies. This is the enabling environment that encourages the private sector to invest.

Once the private sector in thriving in the district, the communities will have the requisite resources to support the O&M requirements of their WASH facilities.

10.2.2.1 Local Economic Development (LED)

The Zambian Local Economic Development (LED) Guidelines for Local Authorities which were developed in 2016 aim to support LED planning, coordination and implementation within all districts[20].

LED refers to a “bottom-up” development process where local and external actors – public, private and civil society - come together through a common understanding of the challenges facing a locality and a shared vision and set of development objectives for its future. A LED process identifies and uses the comparative and

[20] Zambian Led Guidelines for Local Authorities – MLGH, 2016

competitive advantages of a locality and proactively addresses constraints to business and community development.

A LED approach is multi-faceted, progressively tackling development blockages, such as gaps in: infrastructure, service delivery, planning, regulations, business services, environmental management, education and skills. The goal is for LED to contribute to job creation, economic growth, a reduction in poverty and inequality, environmental sustainability and increased social trust.

The LA should use this strategy to encourage and work with the private sector to ensure the sustainability of hand pumps spare parts supply in the district, and any other spare parts that would be required for WSS.

The LA should engage in a campaign to promote LED and deliver messages as per table 7 on the next page (LED Communication Strategy).

Table 7: LED Communication Strategy

Sector	Stakeholder Grouping	Key Messages	Communication mechanism
Public	Central Ministries Parastatals and Agencies Provinces District Administration	• LED is a key instrument of the National Development Plans (NDP) • All tiers of government & parastatals to align plans & budgets with Council IDPs/ DDPs and LED Strategies	National Development Coordinating Committtee (NDCC), PDCC and DDCC platforms Other inter-governmental platforms National legislation and policy
	Local Authorities	• LED is to be local authority-driven and co-ordinated • DDP/IDP is the government-wide planning and budgeting instrument at district-level • Local authorities have inter-governmental and cross sectoral co-ordination roles in terms of the Constitution • Local authorities must align the performance of their powers and functions to LED outcomes	Local government legislation and policy reviews Review of the fiscal architecture of government LGSC local authority structures MLGRD circulars to local government MLGRD platforms of engagement with local authorities Special LED information sessions Chalimbana LED courses Councillor orientation sessions
Private	Sector bodies Financing institutions Business Chambers Research and training/education Institutions	• Local authorities are committed to driving LED in partnership with the private and civil society sectors • LED will increase the responsiveness of Councils to business needs and result in improved service delivery • Local authorities need the private sector to partner with them through: sharing and generating knowledge and skills; partnerships and investment.	NDCC, PDCC and DDCC forums LED Programme Steering Committees Business chambers and networking platforms Social media, such as: Local authority websites, Text messaging Radio Sector meetings
Civil Society	Communities Ward committees NGOs and associations	• Local authorities are committed to driving LED in partnership with civil society • LED planning will be bottom-up and inclusive	NDCC, PDCC and DDCC forums LED Programme Steering Committees

Sector	Stakeholder Grouping	Key Messages	Communication mechanism
	Faith-based organisations Traditional authorities	• Local authorities will be transparent and open in their dealings with communities • LED will increase the responsiveness of Councils to community needs and result in improved service delivery • Local authorities would like to partner with civil society in the meeting of a shared district vision and set of development goals.	Ward Development Committees Ward councillors Social media such as: Local Authority websites, text messaging Radio
Donors	Donors	• Government is committed to decentralisation and the strengthening of the local tier of government • LED is regarded as an intended outcome of this process • A LED approach is regarded as a key instrument of the SNDP and of achieving government's social and economic development objectives • Donors are required as partners in the implementation of government's programme	NDCC, PDCC and DDCC forums Donor bilaterals

10.2.3 The Local Authority

The Constitution of the Republic of Zambia, states that it's the responsibility of the Ministry of Local Government (MLG) to provide water and sanitation services to the Zambian people; and this is done through the LA. It is required that the LA should also allocate resources for the provision of WASH services.

It is recommended that a proportion (say 5%) of Constituency Development Fund (CDF) and equalisation fund must be allocated to WASH. In addition, the LA must also allocate some financial resources towards WASH from its own internally generated resources.

10.2.4 The Ministry of Local Government and Rural Development

The Constitution of the Republic has mandated the Ministry to provide WASH services to the Zambian Citizenry, hence it must always allocate financial resources to this function. As it is responsible for approving the LA's annual work plans and budgets, it must ensure that adequate resources are allocated for WASH. It should also engage the Ministries of Finance and National Planning, and Green Economy and Environment, to ensure that the sector has adequate resources. Table 8 below shows the proposal of how the financing of O&M should be done. The table below which is an extract from the WASH Master Plan shows the proposal of how the overall financing of WASH will be done for the period 2020 - 2030. It includes capital investments, O&M, etc., which includes all the aspects of sustainability[21].

Table 8: Financing Structure for WASH – 2021 - 2030

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

The line for GRZ represents central government (MWDS, MLGRD, and other line ministries).

As earlier mentioned, there are policies on financing WASH in rural areas[22] and they provide that there must be cost sharing with communities as follows:

a) Sanitation – 100% infrastructure costs must be met by the communities. For public institutions, the cost is met by government.
b) Water supply
    i) Government – 95% on initial infrastructure development
    ii) Community
        - 100% cost for O&M
        - 5% capital costs
        - 5% of rehabilitation and replacement costs

The above financing structure should be maintained; as in the past this has not been the case. Where the capital cost is fully met by GRZ or CP, the community must still pay its 5% capital contribution and

[21] Kawambwa WASH Master Plan – 2021 to 2030
[22] National Guidance for Sustainable Operations and Maintenance of Hand Pumps in Rural Areas - MLGH - 2007

the funds must be kept either by the community or the council depending on what has been agreed upon; and must be ring fenced. These funds will then be used for O&M and rehabilitation and/or replacement of the water point whenever need arises.

10.3 Financing of the MERL of the Sustainability Plan

This Sustainability plan's implementation has some costs related to it. The costs include those that will be incurred to monitor, evaluate and report, and learn from the implementation during the period 2021 – 2030. All these costs are included in the overall WASH Master Plan for the period 2021 – 2030.

10.4 Conclusion

In order to ensure O&M is Sustainable, the following requirements are recommended by the guidelines[23]:

- **Skills**: Capacity building of communities to ensure that they are effective in their participation at the various stages of the RWS programmes. Considerable investment should be made in terms of time and funding to effectively carry out capacity building initiatives.
- **Awareness**: User communities' appreciation of the advantages of reliable and adequate safe water supply. This will see the manifestation of economic and social benefits and improvement in their health status. This is achieved through public campaigns.
- **Availability of spare parts:** The necessary materials and equipment should easily be available for communities to keep the systems operational using the skills imparted during the capacity building process. Sustainable supply chains should be established at the district level for providing necessary spare parts and materials at a reasonable market price. *Where necessary satellite shops must be setup in other places within the district.*
- **Adequate fundraising by communities:** Community financing towards O&M activities at the community level should be developed and enhanced. This should include accurate cost determination of O&M for different available technologies.
- **Making funds available for O&M:** Identification and facilitation of income generating activities will have to be undertaken by the Government, *LA*, *communities* and support agencies. The establishment of loan schemes could be a bridge towards community financial independence in effectively managing their RWS systems.
- **Legal provisions:** Appropriate legal provisions such as statutory instruments, by-laws, regulations and other similar initiatives should be introduced. This will prompt communities to be committed and to establish clear ownership of the facilities. Local Authorities may have to formulate by-laws to enforce these Guidelines.
- **Monitoring and evaluation:** There should be effective monitoring of the entire set up of the O&M systems to ensure sustainable O&M is achieved. *This aspect is currently not adequately dealt with by the LA. (The statement in italics added by the consultant. This was observed during the baseline survey).*
- **Mechanism of quality control:** Mechanisms should be developed that will ensure good workmanship of the water supply installations. Poor workmanship is a recipe for failure of efficient and effective O&M systems. *Though this is in place, the council is constrained by resources in terms of personnel and logistics. (The statement in italics added by the consultant. This was observed during the baseline survey).*

[23] National Guidance for Sustainable Operations and Maintenance of Hand Pumps in Rural Areas - MLGH - 2007

11. Knowledge Management

Knowledge management is a discipline that promotes an integrated approach to **identifying, capturing, evaluating, retrieving**, and **sharing** all of an organisation's (LA's) information assets. These assets may include databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers.

In short; "Knowledge Management is the process of capturing, distributing, and effectively using knowledge."

The MWDS has placed a lot of WASH facilities management materials on its website; therefore, the LA must train/orient all its staff who have something to do with WASH on how to use the website and what is contained therein. Some of the materials that is used quite frequently may be downloaded and kept on the LA's computers.

The LA has its own databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers; therefore, it must create its own knowledge management system. Knowledge Management facilitates the creation, consolidation, transformation, sharing, distribution, and application of knowledge that the LA has and continues to acquire. Once created it should be updated on a regular basis, at least once a year; and it should be regularly shared with staff.

11.1 The Strategy

The LA should follow the following steps in creating its WASH knowledge management system:

Identifying Knowledge – the LA needs to identify all sources of the knowledge and information so that it can be consolidated, stored in the centralized or distributed repositories, and shared and distributed when required.

Organizing Knowledge - Once the knowledge sources are identified, the next step is to organize and provide structure to knowledge into organizational taxonomy. It helps not only in removing unnecessary and redundant information but also provides structured navigation to the information. In this step, the LA needs to understand boundaries of explicit and tacit knowledge.

Transforming Knowledge - Knowledge needs to be transformed in a way so that it facilitates in making decisions and building new strategies. The knowledge needs to be internalized, socialized and externalized so that it is shared and applied in the most efficient manner.

Measuring Knowledge B**enefits** - No process can be improved if it is not measured for success. The key to success of knowledge management is the ability to measure the effectiveness of the implementation and narrowing it down to returns through revenue and/or sustainability of WASH service provision. The monitoring and control on processes are necessary to identify opportunities for eliminating redundancy and allow for continuous improvement.

Dispose of Knowledge – once the knowledge is no longer needed it should be disposed off.

Part III – Implementation

12. IMPLEMENTATION

12.1 Implementation Framework

The provision of WASH services in the communities in the district is part of the government's NRWSSP. It is guided by national programmes and policies.

It is therefore expected that the LA will lead the process of WASH sustainability in the district, however, all line ministries in the district will have to play their roles. It is also expected that decentralisation will be fully implemented so that required resources: financial, human, etc. will be made available to the LA through decentralisation to enhance its capacity.

At provincial level, PWSSO, PDHID and PLGO will also have to perform their roles and responsibilities with respect to WASH in the district.

The LA must undertake an inventory of all stakeholders implementing WASH in the district, so that it knows who is doing what, where, for how long and the required resources to be made available. This will enhance coordination and will help in developing and signing of MoUs with the specific stakeholders.

12.1.1 Non-Governmental Organisations

The NGOs are key implementing partners for the provision of WASH services and several NGOs have considerable experience from implementing community-based RWSS and Area-Based Projects (ABP) projects. A number of these operating in the district were identified during stakeholder mapping and are documented in the Sustainability Plan. The list of NGOs needs to be updated on a regular basis as some will be leaving and some coming in during the implementation period of this plan. Their resources and skills must be harnessed.

12.1.2 Cooperating Partners

The district is supported by a number of CPs in the WASH sector among the UNICEF and KfW. These play a critical role in the sector and should be engage quite closely as they may be financing some components of this sustainability plan, that's the capacity building component, and/or the WASH Master or the WASH Sustainability Plan.

The LA should use this sustainability plan to source for support from other CPs.

12.1.3 Line Ministries

A number of line Ministries have a role to play whether decentralised to the LA or not. The ministries are: Health, Education, Green Economy and Environment, Ministry of Lands and Natural Resources, Ministry of Community Development and Social Services, etc.

12.1.4 Community-Based Organisations

Community based organizations (CBOs) are present in many communities in the district and take the form of local NGOs and/or Community Management Committees (e.g. traditional, or specialised). The existence of CBOs is normally rooted in community members' participation in activities such as community mobilization, awareness, sensitization and strengthening. This is a resource that can benefit the implementation of WASH services in a sustainable manner.

12.1.5 Private Sector

The private sector in RWSS in the district is heavily involved in providing works, services, supplies, expertise and support. Private sector participation plays a cardinal role in designing structures, construction, quality control and

provision of services. Private sector actors include consultants, vendors, drillers, Area Pump Menders (APMs), masons, community champions (CCs), etc.

At an individual level, APMs and masons provide personal services in construction and repairs of the hand pumps and sanitation facilities. They also do on the job training for community members in the operation and maintenance of hand pumps and the construction, operation and maintenance of sanitation infrastructure. They will continue to play a major role in the implementation of the plan and in achieving the increased coverage and ensuring sustainability. Their proximity to the customer/users helps keep the downtime of facilities at a minimum.

12.2 Implementation Budget

This plan will be implemented continuously over the next 10 years' period from 2020 to 2030, and it will need resources in terms of human capital and financial resources. The costs for infrastructure development are provided for in the WASH Master Plan, an extract of which is provided in Chapter 10 of this document and at Appendix III.

There is no specific budget for the sustainability plan as the processes involved are an integral part of WASH services provision, hence they are part of the overall cost of providing WASH services in the district and are provided for in the WASH Master Plan.

12.3 Risk Management

Risks are the opportunities and dangers associated with uncertain future events. The Risks can have an adverse ("downside exposure") or favourable impact ("upside potential") on the organisation's objectives. Risk in WASH is the chance that future events or results may not be as expected.

Therefore, the LA must manage the down side of risk. Risk management is the identification, assessment and prioritisation of risks (defined as the effect of uncertainty of objectives/outcomes, whether positive or negative) followed by coordinated and economical application of resources to minimise, monitor, and control the probability/likelihood and/or impact of unfortunate events or maximise the realization of opportunities.

A question now arises: What are the likely sources of risk for the LA in WASH provision? Risks can come from:

- Uncertainty in financial markets,
- Project failures (at any phase in design, development, production or sustainment life-cycles),
- Legal liabilities,
- Accidents, natural causes and disasters,
- Deliberate attack from an adversary or events of uncertain or unpredictable root cause,
- Water pollution, and
- Climatic changes (draught, flooding, severe heat, etc.).

How does the LA manage risks? The management of risks involves trying to ensure that:

- Exposure to severe risks is minimized.
- Unnecessary risks are avoided.
- Appropriate measures of control are taken.

Furthermore, the LA must undertake the following whenever, it has WASH projects:

- Undertake comprehensive feasibility studies to guide construction of water supply and sanitation infrastructure including borehole siting and environmental assessment.
- Undertake the baseline assessment (it's good that one was done for this project).
- Engage consulting firm/ individual consultants for supervision and quality assurance of water and sanitation infrastructure; wherever necessary.
- Engage contractors for construction of water supply systems and sanitation infrastructure in public institutions (for large works only or whenever required).
- Construct water and sanitation infrastructure with due consideration of gender, safety and accessibility

- Organise training of communities and the LA staff.
- Undertake community mobilization and sensitisation interventions to promote improved sanitation and safe hygiene practices.
- Provide tools and equipment for operation and maintenance.
- Undertaken monitoring and quality assurance visits.

The Local Authority should regularly review this plan to ensure that critical business resources are kept up-to-date and that new threats are accounted for when they arise.

12.4 Implementation Plan

The plan implementation will be continuous. The areas of monitoring and evaluation are the five sustainability areas of: technical, financial, social/cultural, institutional and environmental. Below is a summary of the broad indicators.

- Functional/technical indicators (e.g. adaptability, durability, and reliability of the system)
- Economic/Financial indicators (e.g. capital costs, operation and maintenance costs and user costs)
- Environmental indicators covering resource use (e.g. reforestation)
- Social-cultural indicators (e.g. public participation, acceptance, and stimulation of sustainable behaviour); and
- Institutional sustainability indicators - are the necessary policies, strategies and management arrangements in place to ensure sustainable WASH service provision?

The log frame at **Appendix III** gives the objectives, outputs, indicators etc.; that must be dealt with for the sustainability of the WASH services provision. The Implementation Schedule is given at **Appendix IV**.

12.5 Monitoring, Evaluation and Reporting on the Sustainability Plan

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 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. 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.

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 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:

a) comprehensive feasibility studies to guide construction of water supply and sanitation infrastructure including borehole siting and environmental assessment
b) The baseline assessments (it's good that one was done for this project).
c) Organise quarterly and bi-annual review meetings.

d) The mid-line and end-line assessments for any programmes undertaken the District, and share the results widely.

Furthermore, there is a growing emphasis on participatory approaches towards development, hence, there has also been recognition that monitoring and evaluation (M&E) should also be participatory. The LA should also implement this mode of M&E. It has been elaborated further in the WASH Master Plan.

As earlier mentioned, the costs to ensure sustainability of WASH infrastructure and service provision are all integrated in the WASH master plan; and given below is a table giving the costs associate with planning, monitoring and evaluation, reporting and learning (PMERL) in the WASH Master Plan.

Table 7: Financing of PMERL – 2021 - 2030

Item	Total Cost (ZMW'000)
Development of M&E & Reporting Framework	250
Planning	1,565
Data Collection & Reporting	11,421
Review of planning and reporting processes	2,659
Update of systems	1,130
Total	**17,025**

The sustainability plan should be reviewed every after 3 years, with a mid-term review done by 2025.

12.6 Financing of the Sustainability Plan

The activities relating to the sustainability plan are not stand alone, but are an integral part of implementing the WASH Master Plan, hence included in the cost and financing of the WASH Master Plan.

The details are given in Tables 4 and 8 in the previous sections/chapters of this documents.

Appendices

Appendix I: Logical Framework

Overall Objective: Ensure sustainability of WASH services provision.

S/N	EXPECTED OUTPUT(S)	INDICATOR	ACTIVITIES	MEANS OF VERIFICATION	FREQUENCY	RESPONSIBLE PERSON(S)	ASSUMPTIONS
1	Technical sustainability: mechanisms/appropriate technology to ensure sustainable service provision of WASH services is in place including spare part supply, technical support, etc.						
	Functionality – Water Supply	Down time	Water point maintenance Water point repairs	Down time – V-WASHE reports; APM maintenance repair reports	Continuous	Coordinator	APMs are available and under repair works A water point monitoring system in place DHIS2 functionally very well.
		The infrastructure remains useful up to its engineering design/economic life span	Create a fixed assets register. Create an operations and maintenance log book.	Operations and maintenance reports. Water point overhaul/rehabilitation reports	Continuous	RWSS Coordinator	A monitoring and evaluation system in place Financial resources available for monitoring, evaluation, reporting and learning (MERL). Decentralisation fully implemented
		Availability of information on the quality of infrastructure	Project completion reports preparation and storage. Development and storage of water quality reports Development of operations and maintenance information collection, processing and reporting.	Availability of up to date fixed assets registers Availability O&M reports Water quality reports	Annually – inspection of fixed assets registers Semi-annually for the review of O&M reports. Quarterly – water quality monitoring reports	Principal Officer/Council Secretary	Availability of financial resources for the establishment monitoring and evaluation system

S/N	EXPECTED OUTPUT(S)	INDICATOR	ACTIVITIES	MEANS OF VERIFICATION	FREQUENCY	RESPONSIBLE PERSON(S)	ASSUMPTIONS
			Creation of fixed assets registers				
		Non-revenue water (NRW) Proportion of the households paying user fees/community contributions.	Create a water point member register	Schedule of members drawing water from the water point Schedule of community contributions	Quarterly	RWSS Coordinator	Availability of funds Trained V--WASH
		Adequate supply of spare parts for minor maintenance (pipes, fittings etc.)	Restocking Stocktakes	Procurement records Stocktake records	Quarterly	Principal Officer	Availability of funds SOMAP shop constructed and seed-stock provided
		Effective maintenance system in place	Training of APMs Community sensitization on community contributions Creation of MERL system	Training register Community contributions register O&M registers/reports Spare parts sales report from the SOMAP shop	Quarterly	Principal Officer	Economy performing well Community willing to pay for O&M.
		Water quality	Water testing	Water quality reports/ conducting interviews with any V-WASHE committee members	Quarterly	RWSS Coordinator	Availability of funds Availability of quality test kits
		Water quality management and disinfection	Water testing	Testing reports Disinfection reports	Monthly/quarterly	RWSS Coordinator	Test kits available Transport and logistics available
		Number of users relative to the catchment population/households	Capacity building of V-WASHEs in report writing	V-WASHE Reports	Quarterly	RWSS Coordinator	DTT is in place Available funds for training, M&E, etc.

S/N	EXPECTED OUTPUT(S)	INDICATOR	ACTIVITIES	MEANS OF VERIFICATION	FREQUENCY	RESPONSIBLE PERSON(S)	ASSUMPTIONS
	Functionality - Sanitation	Down time	Sanitation infrastructure maintenance Training of masons Community sensitisation on O&M	Down time Maintenance reports	Monthly	RWSS Coordinator	Availability of financial resources Supportive policies in place Appropriate technology implemented
		ODF	Community sensitisation on the dangers of poor sanitation Training of sanitation action groups (SAGs)	Monitoring reports Activity reports	Monthly Every 2 years	RWSS coordinator	Availability of funds Committed leadership
		Proportion of population suffering from waterborne diseases.	Community sensitisation on the dangers of poor sanitation	Monitoring reports	Semi-annually	RWSS coordinator	Availability of funds Committed leadership
	Appropriate technology - Water Supply	Down time	Train communities on the available technologies Train communities on technology choices	APM maintenance reports	Annually	RWSS coordinator	Availability of funds Committed leadership
		Ease of use and maintenance	Training of APMs, WP caretakers Community sensitisation on community financial contributions	Survey reports	Every two years	Council Secretary	Resources available for the surveys

S/N	EXPECTED OUTPUT(S)	INDICATOR	ACTIVITIES	MEANS OF VERIFICATION	FREQUENCY	RESPONSIBLE PERSON(S)	ASSUMPTIONS
		Acceptance by users	Community sensitisation and acceptance surveys	Survey reports	Every two years	Council Secretary	Resources available for the surveys
		Low life cycle costs	Creation of fixed assets registers	Asset Registers	Every 2 years on a random basis.	RWSS Coordinator	Resources available
	Appropriate Technology - Sanitation	Underground water contamination	Construction of demonstration sanitation facilities	Water quality test reports	Monthly/Quarterly	RWSS Coordinator	Availability of funds Applied and experimental research is undertaken
		Acceptability by users					
		Ease of maintenance	Training of masons	Training reports	Quarterly	RWSS Coordinator	
		Low life cycle costs	Creation of fixed assets registers	Fixed assets registers	Annually	Council Secretary	
2	Institutional sustainability: policies, strategies and management arrangements are in place and implemented.						
	Policies and strategies in place	Policies and Strategies	Development of policies and strategies Capacity development of LA staff to develop policies and strategies	Staff returns – LA Training reports	Quarterly	Council Secretary	Availability of funds Decentralisation implemented
	Succession Plan	Succession plan	Training of institutions Development of succession plans Implementation and monitoring &	Succession plans Succession plans implementation reports Management reports/meeting minutes	Annually	Council Secretary	

S/N	EXPECTED OUTPUT(S)	INDICATOR	ACTIVITIES	MEANS OF VERIFICATION	FREQUENCY	RESPONSIBLE PERSON(S)	ASSUMPTIONS
			evaluation of succession plans				
	HR Strategies	HR strategies	Development of strategies and policies	Strategy documents	Annually	Council Secretary	
	Available staff	Available staff		Staff returns	Annually	Council Secretary	
	Sub-district structures in place	Sub-district structure in place	Creation of structures Training of structures Technical support of structures		Annually	Council Secretary	
3	Financial sustainability: to ensure WASH services are financially viable over a long time.						
	Availability of funds	Adequate available funds	Resource mobilisation	Available funds Financial statements	Quarterly	Council Secretary	Availability funds District training team in place Decentralisation fully implemented
		Attendance registers	Community sensitisation				
		Training reports	Capacity development in financial management	Training reports/attendance registers			
		Community contributions		Funds contributed by community members/accounting records	Quarterly	RWSS Coordinator	Available funds for community sensitisation Willing communities to financially contribute
4	Environmental sustainability: to ensure that WASH services do not have a negative impact on the environment.						
	ESIA reports; Environmental Social Health and Safety (ESHS) plans and reports	ESIA	Conduct ESIA whenever WASH projects are implemented	Survey reports	Whenever a new project is implemented	Council Secretary	Adequate policies in place Available funds
	Feasibility study reports	Feasibility studies			Annually		

S/N	EXPECTED OUTPUT(S)	INDICATOR	ACTIVITIES	MEANS OF VERIFICATION	FREQUENCY	RESPONSIBLE PERSON(S)	ASSUMPTIONS
	Environmental Management monitoring reports		Undertake regular environment and climate change studies				
5	Social sustainability: measures to ensure that everyone can benefit are in place and implemented.						
	Involvement of women and children	Proportion of WASH meetings attended by women and Children	Community sensitisation	V-WASHE registers	Quarterly	Council Secretary	Funds availability
	Developed/reviewed policies, i.e. SIGM	Policies in place	Development/Review of policies	Review meeting minutes	As and when necessary	Council Secretary	Skill available for review or resources available to hire a consultant

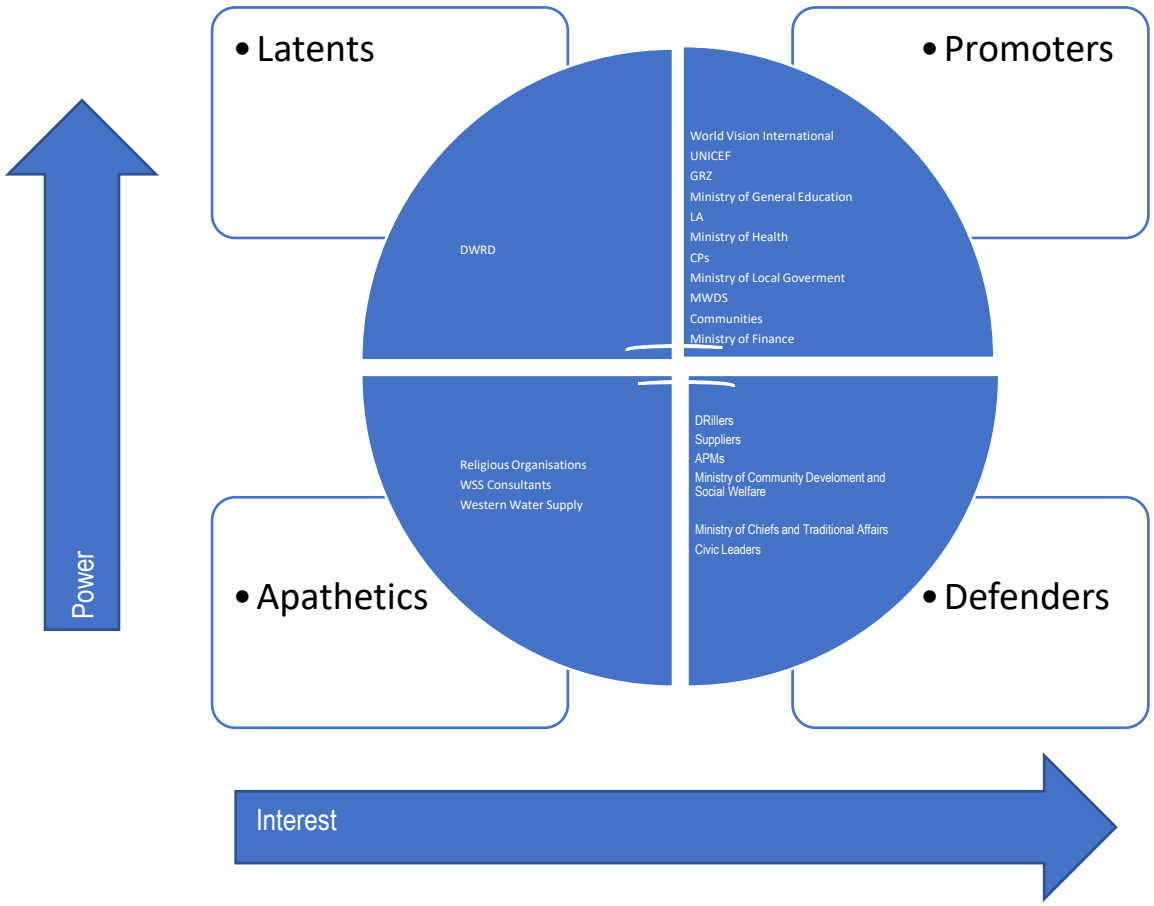
Appendix II: The Power/Interest Review Template

s/n	name of stakeholder	contact person (phone, email, address, website)	Impact/interest (how much does the project impact them? (low, high))	Influence (how much influence do they have over the project? *(low, high)*	What is important to the stakeholder?	What are the stakeholder's benefits or what can the stakeholder contribute?	How can the stakeholder block the project?	strategy for engaging/managing the stakeholder
1.	MLG	Director DHID – Eng. Nkumbu Siame	High	High	Potable water and good sanitation to the residents.	Happy with implementation of GRZ programmes. Can advocate for increased WASH budget	Not approving the RWSSP annual budget	Regular updates. Effective and efficient project implementation.
2	MWDS	Permanent Secretary	High	High	Potable water and good sanitation to the residents.	Happy with implementation of GRZ programmes. Can advocate for increased WASH budget	Not approving the RWSSP annual budget	Regular updates. Effective and efficient project implementation.
3	MGEE	Provincial Office	High	High	Environmental Sustainability	Environmental policies Financial Resources	Not approving the ESIA	Regular consultations
4	Ministry of Finance	Permanent Secretary - Budget	High	High	Provision of WASH services to the citizens	Provides financial resources	Non-release of financial resources	Satisfactory project implementation Regular financial reporting Good governance, accountability and transparency in the utilisation of financial resources

s/n	name of stakeholder	contact person (phone, email, address, website)	Impact/interest (how much does the project impact them? (low, high))	Influence (how much influence do they have over the project? *(low, high)*	What is important to the stakeholder?	What are the stakeholder's benefits or what can the stakeholder contribute?	How can the stakeholder block the project?	strategy for engaging/managing the stakeholder
5	NGOs	Controlling Officers	Low/Medium	Low	Well-being of the community	Well-being of the community	Not at all	Contact when NGO is involved in a specific project
6	Cooperating Partners	Controlling Officer/Head of Mission	High	High	Satisfactory implementation of the project	Contribute material and financial resources	Not contributing financial and material resources	Regular reporting Effective and efficient project implementation.
7	Ministry of General Education	District Education Board Secretary (DEBS)	Low/Medium	Medium	Knowledgeable communities – about WASH Health communities more especially the pupils	Regular class attendance by pupils Satisfactory WASH services in the school Community sensitisation When at the school – O&M	Denying the community access to the facilities when the WASH facilities are at the school Not cooperating with the implementing agent if the project is at the school	Consultations as and when required
8	Ministry of Health	District Medical Officer	Medium/High	Medium/high	Potable water Adequate sanitation	Reduced diarrhoeal diseases Improved WASH communication and advocacy	Can close sanitation facilities if they do not meet health standards	Regulation reporting Maintaining clean water supply and adequate sanitation facilities Regular consultations
9	Communities	V-WASHE/WDC Chairpersons	High	High	Safe clean water and adequate sanitation	Safe clean water and adequate sanitation	Refuse to allocate land for the project	Regular consultations

s/n	name of stakeholder	contact person (phone, email, address, website)	Impact/interest (how much does the project impact them? (low, high))	Influence (how much influence do they have over the project? *(low, high)*	What is important to the stakeholder?	What are the stakeholder's benefits or what can the stakeholder contribute?	How can the stakeholder block the project?	strategy for engaging/managing the stakeholder
						Financial resources Improved incomes	Don't use the WASH facilities Vandalise the facilities	
10	LA	Principal Officer	High	High	Health and productive residents	High income levels Health population	Do not budget for the project Do not implement/approve the project	Motivated staff Competent staff
11	D-WASH	Chairperson	High	High		Health population		
12	Drillers/Contractors	Chief Executive Officer (CEO)	Medium	Low	Enhanced income	Quality works	Poor works	God project and risk management skills Well-crafted and implemented contracts
13	Suppliers	CEO	Low	Low	Continued business	Supply quality materials	Supply poor quality materials	Create good business relationships
14	Area Pump Menders	APM	Low	Low	Income	Regular income	Poor service	Regular training Communication and advocacy
15	Ministry of Community Development	District Community Development Officer	Low	Low	Well GRZ implemented project Health and productive community	Community sensitisation	Not support needy communities	Regular consultations
16	Ministry of Chiefs and Traditional Affairs	District Office	Low	Low	Wellbeing of the residents	Community sensitisation	Influence the communities and its traditional leadership	Regular consultations
17	Traditional Leadership	Traditional Leaders	High	Medium			Influence the communities	

s/n	name of stakeholder	contact person (phone, email, address, website)	Impact/interest (how much does the project impact them? (low, high))	Influence (how much influence do they have over the project? *(low, high)*	What is important to the stakeholder?	What are the stakeholder's benefits or what can the stakeholder contribute?	How can the stakeholder block the project?	strategy for engaging/managing the stakeholder
18	Religious Leaders	Religious Leaders	Low	Low				
19	WASH Consultants	Team Leaders	Low	Low	income	Quality service	Provide poor quality service	Good consolations when need be.
20	Commercial Utility	CEO	High	Low	Provision of potable water and adequate sanitation Enhanced income	Quality service	Not participating in the project	Consultations as and when required
21	WARMA	CEO	High	High	Efficient and effective water abstraction	Good abstraction and utilisation of water resources	Do not issue a water permit/borehole permit/licence	Consultations as and when required
22	ZEMA	CEO	High	High	Sustainable environment	Sustainable environment Approval of ESIA	Not approving the ESIA	Consultations/applications when required
23	CCs and EHTs	Individuals/Head of Health facility	low	low	Health community members	Expertise	Not participate in the project	Training/sensitisation Provision of adequate income
24	Civic Leaders (Councillors)	Individual leader	High	medium	Community support	Community mobilisation and sensitisation	Reject/not support the project	Regular consultations
25	Ministry of Technology and Science	Local Office	Low	Low	Sustainable utilisation of technology	Provision of ICT Polices	Not approving the proposed technology	Regular consultation



S/N	Stakeholder
A	Latents (High Power & Low Interest)
A.1	UNICEF
A.2	WORLD VISION
A.3	CARITAS ZAMBIA
B	Promoters (High Power & High Interest)
B.1	MWDS
B.2	LA
B.3	MoH
B.4	MGEE
C	Defenders (Low Power & High Interest)
C.1	Host Community
C.2	MoE
D	Apathetics (Low Power & Low Interest)
D.1	MoH
D.2	MoA
D.3	MCDS
D.4	MoCTA

Appendix III: The Programme (WASH Master Plan) Implementation Costs

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**

Appendix IV: The Implementation Schedule

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Devevlopment of WASH Sustainability Plan											
Marketing of Sustainability Plan and resource mobilisation											
Development of M&E & Reporting Framework											
Planning											
Data Collection , Analysis, Reporting & Learning											
Review of planning and reporting processes											
Update of systems											
Feasibility Studies											
Environmental and Social Impact Assessment (ESIA)											

Appendix V: WASH 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	-	-	CSO/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	-	-	CSO/MWDS/DPI/DWSS/ M&E/NWASCO
		Urban	-	100%	
		National	-	-	
	Basic sanitation services	Rural	19%	100%	CSO/MWDS/DPI/DWSS/ M&E/NWASCO
		Urban	49%	100%	
		National	31%	100%	
	Open Defecation Free (ODF): Proportion (%) of Population practising OD	Rural	25%	0%	CSO/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%	CSO/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%	CSO/MGE/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%	CSO/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%	CSO
		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/MLG
		Urban			
		National			

Equity: Mean Provincial deviation in access to basic drinking water and sanitation services from the national average (at provincial level it would be district deviations from the provincial mean)	8.1 Mean Provincial deviation in access to basic drinking water	Rural			MWDS/ DPI/DWSS/ M&E
		Urban			
		Overall			
	8.2 Mean Provincial deviation in access to basic sanitation	Rural			
		Urban			
		Overall			
Per Capita Investment Cost (US$): Average cost per beneficiary new water supply and sanitation scheme	9.1 Average cost per beneficiary of new water schemes	Rural			MWDS/ DPI/DWSS/ M&E
		Urban			
	9.2 Average cost per beneficiary of new sanitation schemes	Rural			
		Urban			
Functionality (O&M):	10.1 % of functional water points/systems	Rural			NWASCO/ MWDS/ DPI/DWSS/ M&E
		Urban			
		National			
	10.2 % of functional sanitation facilities	Rural			
		Urban			
		National			
	10.3 % of districts with preventive maintenance implemented	Rural			
		Urban			
		National			
	10.4 Ratio of actual hours of water supply to required hour. (Piped water supply schemes for rural areas)	Rural			
		Urban			
	10.5 % Non-Revenue Water (NRW) (Piped water supply schemes for rural areas)	Rural			NWASCO
		Urban			
		Urban			
		National			
Water Quality: % of water samples taken at the point of water collection (use), waste discharge point that comply with national standards.	11.1 % of districts with water safety plans	Rural			NWASCO/ MWDS/ DPI/DWSS/ M&E
		Urban			
		National			
	11.2 Number of water quality assurance facilities	Rural			
		Urban			
		National			
	11.3 % of water quality assurance facilities that are functional	Rural			
		Urban			
		National			

	11.4 % of water samples taken at the point of water collection (use) that comply with ZABS/WHO.	Rural			
		Urban			
		National			
	11.5 % of water samples taken at the waste discharge point that comply with national standards.	Rural			
		Urban			
		National			

Access to Drinking Water on a Household Level

Sub-target	Indicators	
Achieve equitable access to safe and affordable drinking water on a household level	Monitoring / Equity Indicator:	Proportion of population using a safely managed drinking water source with a total collection time of 30 minutes or less for a roundtrip including queuing.
	Sustainability Indicator:	Proportion of safely managed drinking water sources with accessible plans and funds for repairs that involve its users.
	Health Indicators:	Proportion of population daily performing household water treatment. Proportion of drinking water sources that supply populations of over (X) number of people that are regularly tested for faecal coliform bacteria. Proportion of drinking water sources that are tested for naturally-occurring chemical contaminants.

Access to Sanitation and Hygiene on a Household Level

Sub-target	Indicators	
Access to improved sanitation at a household level.	Monitoring / Health / Equity Indicators:	Percentage of population using a safely managed sanitation service. Percentage of the population practicing open defecation.
	Sustainability Indicators:	Percentage of the population using a facility that is used by no more than one household. Percentage of latrines that are replaced when full.
	Equity Indicator:	Percentage of the population using a facility that provides sufficient privacy to its users.

Access to Hygiene and Sanitation outside the Home

Sub-target	Indicators	
Universal access to improved sanitation. Universal access to hygiene services.	Monitoring Indicator:	Percentage of students enrolled in primary and secondary schools that provide gendered sanitation facilities and hand washing services. Percentage of patients using health care facilities providing basic sanitation and hand washing facilities.
	Equity Indicators:	Percentage of students enrolled in public schools that provide areas for Menstrual Hygiene Management. Percentage of students enrolled in public schools that provide Menstrual Hygiene Management training.

Access to Drinking Water at Schools and Hospitals

Sub-target	Indicator
All schools and health care facilities have onsite access to safely managed drinking water sources by 2030.	Proportion of primary and secondary schools with a safely managed drinking water source on premises. Proportion of health care facilities with a safely managed drinking water source on premises.

Appendix VI Water Supply and Sanitation Facilities

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 VII Sample Memorandum of Understanding (MoU) For Water Supply

Name of Water facility: ……. Ward Name: …….

Village: ……. District: …….

We, the undersigned members of the Village (V-WASHE) Committee served by our

Water Supply System, agree to assume the following responsibilities:

a) Operating, maintaining and protecting the water supply system.

b) Supervising the caretakers and others members of the V-WASHE who should have been nominated and trained during the construction phase.

c) Ensuring that tools and spare parts left on site after construction are stored and used properly by the community.

d) Promoting and ensuring that community members contribute towards operating and maintenance (O&M) fees.

e) Organising the provision of local materials and un-skilled voluntary labour.

f) Resolving social disputes and preventing vandalism.

g) Ensuring environmental protection of the water source.

h) Educating the community in their responsibility for ensuring proper system use and maintenance.

i) Maintaining a water point file and keeping records of repair work and minutes of meetings.

j) Requesting support for major repairs from the District Council.

k) Each tapstand/water point user group's representative on the village maintenance steering committee (VMSC) shall be responsible for ensuring:
   - Maintenance of the tapstand/water point and surrounding area.
   - Collection of money, materials and voluntary labour for tapstand/water point repairs.

l) Encouraging proper use and maintenance of latrines to reduce the risk of pollution and contamination of the water source.

Signed: ……. ……..……..

V-WASHE District Council

Date: …… Date: …….. Members' signatures:

Secretary …….. Treasurer …… Trustee ……

APPENDIX VIII Water Point Repair Form Prepared By APM

Section A

Name of ward: …….
Name of water point: ……..
Type of pump in use: ……
Nature of repair work carried out: …….
Date breakdown reported: … dd … /…mm . . . . /…yy…….
Date repair works done: ...……dd…/…mm……/..yy……
Down time (number of days): ……
Date of previous repair: ……dd…/…mm……/…yy……
Status of V-WASHE(e.g. Number of WASHE meetings, amount of servicing etc.):
……

Section B
Number of protected wells working: ……
Number of defective protected wells: ……..
Number of protected wells repaired: ……
Number of people accessing safe water: ……
Number of people using pit latrines: ……..
Number of people using the water point: ……
Other remarks:
……

Prepared by: …… Designation: ……..

Date: …….