ZAMBIA

Reform of the Water Sector Programme Phase II in Zambia

Baseline Survey Report for Mwense District

Setting Water Supply, Sanitation and Hygiene Targets in the Preparation of Gender Sensitive District Water, Sanitation and Hygiene Investment Plans (D-WASH IPs)

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ABBREVIATIONS

7NDP	Seventh National Development Plan
CBD	Central Business District
CC	Community Champion
CDF	Constituency Development Fund
CHA	Community Health Assistant
CLTS	Community Led Total Sanitation
ComDev	Community Development
CP	Cooperation Partners
CU	Commercial Utility
DDCC	District Development Coordinating Committee
DEBS	District Education Board Secretary
DHO	District Health Office
DPO	District Planning Officer
DWASH IP	District Water, Sanitation and Hygiene - Investment Plan
EHT	Environmental Health Technician
FANSER	Food and Nutrition Security and Enhanced Resilience
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GIS	Geographical Information System
GIZ	Gesellschaft für Internationale Zusammenarbeit GmbH
GPS	Global Positioning System
GRID3	Geo-Referenced Infrastructure and Demographic Data for Development
GRZ	Government of the Republic of Zambia
HCF	Health Care Facility
KII	Key Informant Interviews
JMP	Joint Monitoring Programme
LA	Local Authority
LpWSC	Luapula Water Supply and Sanitation Company
M&E	Monitoring and Evaluation
MoE	Ministry of Education
MoH	Ministry of Health
MHM	Menstrual Hygiene Management
MHM FP	Menstrual Hygiene Management Focal Point
MTC	Mwense Town Council
MWDS	Ministry of Water Development and Sanitation
NIS	NWASCO Information System
NHC	Neighbourhood health committee
NSDI	National Spatial Data Infrastructure of Zambia
NRWSSP	National Rural Water Supply and Sanitation Programme
NUWSSP	National Urban Water Supply and Sanitation Programme
NWASCO	National Water Supply and Sanitation Council
NWSSP	National Water Supply and Sanitation Programmes
OD	Open Defecation
ODF	Open Defecation Free

OSS	Onsite sanitation
O&M	Operation and Maintenance
PDHID	Provincial Department of Infrastructure and Development
PEO	Provincial Education Office
PHO	Provincial Health Office
PWSO	Provincial Water and Sanitation Officer
PTA	Parent-Teacher Association
RHC	Rural health centres
RHP	Rural health posts
RWS	Reform of the Water Sector
SDG	Sustainable Development Goals
SHN	School, Health and Nutrition
SLTS	School Led Total Sanitation
SUN	Scaling Up Nutrition
UNICEF	United Nations Children's Emergency Fund
VIP	Ventilated improved pit latrine
WASH	Water, Sanitation and Hygiene
WDC	Ward Development Committee
WHO	World Health Organization
WSS	Water Supply and Sanitation
ZAMSTATS	Zambia Statistical Agency
ZMW	Zambian Kwacha

EXECUTIVE SUMMARY

Introduction

The WASH stakeholders in Mwense District through the Reform of the Water Sector Phase II (RWS II) Programme established a WASH Baseline for the district for households, schools, health care facilities, public places and non-domestic places. The programme aims to support four districts (Mansa, Mwense, Mwansabombwe and Chipili) in Luapula Province in development of the District Water, Sanitation and Hygiene Investment Plans (DWASH IP).

It provides guidance to the sector on how to develop a coordinated, common approach to WASH that facilitates the implementation and sustainability of WASH service provision through the entire district.

The planning process is highly dependent on the availability of data and capacity of partner institutions. A capacity needs and data availability assessment was conducted in all the four districts and it was revealed that there was a need to bridge the data gap for evidence-based planning.

Main Objective of the Survey

To provide baseline data for setting water supply, sanitation and hygiene targets in the preparation of gender sensitive DWASH IPs while taking into account Scaling Up Nutrition (SUN) principles.

Approach and Methodology

The baseline survey adopted both qualitative and quantitative research approaches. The qualitative phase entailed Key Informant Interviews (KIIs) with key stakeholders and opinion shapers in the civil society space and government institutions. The quantitative phase involved household and institutional interviews at ward level with representative sample of 600 households, 32 schools, 11 health care facilities, 14 public places (markets, bus stations and traditional arenas) and 40 non domestic places (offices, lodges, restaurants and industries etc.) distributed at ward level. The household samples were translated into a margin of error of 3% at a 95% confidence level.

Key WASH Findings

1. Households

- ***Water Supply***: The proportion of Mwense District using safely managed services is 5.5%, rural coverage being 4% and urban coverage being 40%. In 2021, out of an estimated population of 126,742 in Mwense District, 119,353 people lacked safely managed services.
- ***Sanitation*:** The proportion of Mwense District using safely managed services is 0.17%, rural coverage being 0.17% and urban coverage being 0%. In 2021, out of an estimated population of 126,742 in Mwense District, 126,526 people lacked safely managed services.
- ***Hygiene**:* The proportion of Mwense District using basic services is 43.3%, rural coverage being 42.8% and urban coverage being 56%. In 2021, out of an estimated population of 126,742 in Mwense District, 71,825 people lacked basic services.

2. Schools

- ***Water Supply***: The proportion of schools in Mwense District using advanced services is 21.88%, rural schools being 19.23% and urban schools being 33.33%. In 2021, out of an estimated 62 schools in Mwense District, 49 schools lacked advanced services.
- ***Sanitation:*** The proportion of schools in Mwense District using advanced services is 3.13%, urban coverage being 0% and rural coverage being 3.85%. In 2021, out of an estimated 62 schools in Mwense District, 60 schools lacked safely managed advanced services.
- ***Hygiene**:* The proportion of schools in Mwense District using advanced services was not analysed as there was a missing variable. The proportion using basic services is 65.63%, rural schools being 69.23% and urban coverage being 50%. In 2021, out of 62 schools in Mwense District, 21 schools lacked basic services.

3. Health Care Facilities (HCF)

- ***Water Supply***: The proportion of HCFs in Mwense District using advanced services is 36.36%, rural HCFs being 30% and urban HCFs being 100%. In 2021, out of 22 HCFs in Mwense District, 14 HCFs lacked advanced services.
- ***Sanitation:*** The proportion of HCFs in Mwense District using advanced services is 18.18%, rural coverage being 0% and urban coverage being 20%. In 2021, out of an estimated 22 HCFs in Mwense District, 18 HCFs lacked advanced services.

- ***Hygiene****:* The proportion of HCFs in Mwense District using advanced service is 27.27%, rural HCFs being 30% and urban coverage being 0%. In 2021, out of 22 HCFs in Mwense District, 16 HCFs lacked advanced services.
- ***Health Care Waste Management***: The proportion of HCFs in Mwense District using basic service is 54.55%, rural HCFs being 45.45% and urban coverage being 0%. In 2021, out of 22 HCFs in Mwense District, all HCFs lacked advanced services.
- ***Environmental Cleaning***: The proportion of HCFs in Mwense District using advanced service is 36.36%, rural HCFs being 40% and urban coverage being 0%. In 2021, out of 22 HCFs in Mwense District, 14 HCFs lacked advanced services.

4. Public Places

- ***Water Supply***: The proportion of public places in Mwense District using basic services is 14.29%, rural public places being 11.11% and urban public places being 20%. In 2021, Out of the 14 public places in Mwense District, 12 public places lacked basic services.
- ***Sanitation:*** The proportion of public places in Mwense District using basic services is 42.86%, rural coverage being 44.44% and urban coverage being 40%. In 2021, out of 14 public places in Mwense District, 8 public places lacked basic services.
- ***Hygiene****:* The proportion of public places in Mwense District using basic service is 35.71%, rural HCFs being 44.44% and urban coverage being 20%. In 2021, out of 14 public places in Mwense District, 9 public places lacked basic services 2 with limited service and 7 with no service.

5. Non-Domestic Places

- ***Water Supply****:* The proportion of non-domestic places in Mwense District using basic services is 40%, rural non-domestic places being 43.5% and urban public places being 35.3%. In 2021, out an estimated total of the 80 non-domestic places in Mwense District, 48 non-domestic places lacked basic services.
- ***Sanitation:*** The proportion of non-domestic places using basic services is 74.4%, rural coverage being 100% and urban coverage being 73.56%. In 2021, out of the estimated total of 154 non-domestic places in Mwense District, 39 non-domestic places lacked basic services.
- ***Hygiene****:* The proportion of non-domestic places in Mwense District using basic services is 47.50%, rural coverage being 34.78% and urban coverage being 64.71%. In 2021, out of the estimated total of 80 non-domestic places in Mwense District, 42 non-domestic places lacked basic services.

Recommendations

Based on the above conclusions from the survey, the following are the recommendations:

1. Establish target improvement of access to WASH services according to Joint Monitoring Programme (JMP) ladders across households, schools, health care facilities, public and non- domestic places
2. Develop WASH interventions for improving access to WASH based on actual development trends guided by the planning boundary of Mwense District, the standards in the National Urban Water Supply and Sanitation Programme (NUWSSP) and principles in National Rural Water Supply and Sanitation Programme (NRWSSP).
3. Evidence based planning requires upscaling of survey in other districts through dissemination and orientation of partners on developed questionnaires, tools, and data analysis strategies for meeting the data requirements of WASH indicators.

1 INTRODUCTION

No child should die or get sick as a result of drinking contaminated water, being exposed to other people's excreta, or having no place to wash hands. No child should have to stay away from school for lack of a clean toilet and privacy. No mother or new born should contract an infection from an unsanitary delivery room when they are most vulnerable. No one should suffer the indignity of having to defecate in the open.

The District WASH Investment Plan (DWASH IP) is a process as well as an output, which draws on technical (i.e. collecting and analysing data on services and costs), strategic (i.e. visioning, milestones and target setting) and collaborative (i.e. seeking consensus on investment packages) capacities and uses various tools to collect and analyse data to support decision-making.

The 2030 Agenda for sustainable development recognizes safe drinking water, effective sanitation and good hygiene (WASH) as a driver of progress on many of the Sustainable Development Goals (SDGs), including health, nutrition, education and gender equality. To meet these targets, we need a better understanding of the progress made and a strategic approach to meet the challenges that lie ahead in our shared effort to reach every community.

Zambia is no exception to the need to accelerate the provision of adequate and safe water supply, sanitation and hygiene. Consequently the Government of the Republic of Zambia (GRZ) is committed to improving the living conditions of its citizens through continuous improvement of Water Supply and Sanitation (WSS) service delivery as contained in the country's Vision 2030 for universal coverage of water supply and sanitation to be achieved in alignment with the SDG 6 targets.

GRZ has adopted the "District Wide Approach", a systems-based approach which considers the district as the entry point whilst recognizing the broader national enabling environment. At district level, the holistic approach seeks to strengthen the district as a service authority in all its core functions, including planning for universal and sustainable services via the development of a District WASH Investment Plan (DWASH IP).

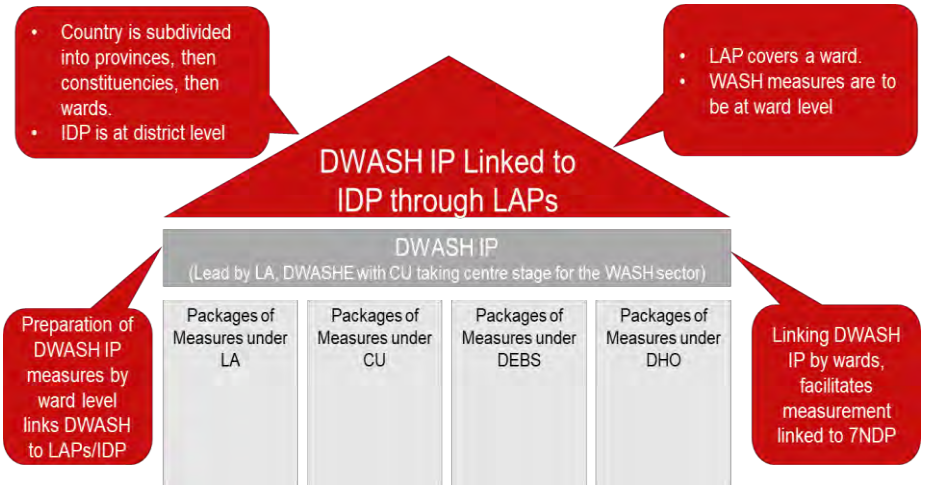


Figure 1: Packages of measures of the DWASH IP

The DWASH IP provides guidance to the sector on how to develop a coordinated, common approach to WASH that facilitates the implementation and sustainability of WASH service provision through the entire district.

Under GIZ support to the Government of Republic of Zambia, through the Ministry of Water Development and Sanitation, the Reform of the Water Sector Phase II (RWS II) aims to support four districts in Luapula Province in development of the aforementioned plans. It is anticipated that with improved planning as a basis, important prerequisites for the implementation of prioritized integrated investment packages to improve drinking water and sanitation in rural areas and growth centers would be established and thus improved access to clean water and sanitation in general. This support builds on the experiences of Reform of the Water Sector I (RWS I).

The planning process is highly dependent on the availability of data and capacity of partner institutions. To assess the situation, a capacity needs and data availability assessment was conducted in all the four districts and it was revealed that there was a need to bridge the data gap for evidence-based planning. In most cases, the data from different agencies have varying focuses that suit their interventions which resulted in data that was not entirely comprehensive for the DWASH IP.

To provide baseline data for setting water supply, sanitation and hygiene targets in the preparation of gender sensitive DWASH IPs while taking into account SUN, surveys need to be conducted in Mansa, Mwense, Mwansabombwe and Chipili districts. Although, a number of surveys have been undertaken in the recent past and these provide WASH data, as well as cover aspects of particular interests (e.g. focus data related to nutrition), they do not cover the entire districts or the key elements of the DWASH IP.

2 OBJECTIVES OF THE SURVEY

The purpose of the baseline survey is to collect and analyse necessary data in order to establish the status of WASH services in the four target districts of Luapula namely, Mansa, Mwense, Mwansabombwe and Chipili. The specific objectives include:

I. To establish the baseline situation with regard to access to WASH services in target districts, covering households, schools, health care facilities and public places.

II. To determine people's behaviours and attitudes towards hygiene practices and menstrual hygiene management, including safe handling, storage and use of water, proper use and maintenance of excreta disposal facilities, handwashing at critical times, and open defecation.

III. To determine people's behaviours and attitudes towards hygiene practices that relate to nutrition such as food handling and storage, as well as and other nutrition-related aspects.

IV. To establish the status of the water supply systems in urban, peri-urban and rural areas, including growth centres. This includes operation and maintenance.

V. To determine the functional status and capacity of the institutional structures at community and ward levels, including management practices and the capacity to coordinate, plan, manage and implement WASH interventions.

VI. To determine the extent of gender mainstreaming in WASH, especially at community and ward level structures including knowledge and possible barriers for gender mainstreaming.

VII. To establish values for the baseline indicators in line with the National Water Supply and Sanitation Programmes (NWSSP), the Seventh National Development Plan (7NDP) and Sustainable Development Goals (SDGs), while taking into consideration the state of affairs of children, women and other vulnerable groups including the disabled and elderly, as well as their specific conditions and needs.

3 WASH INDICATORS / STANDARDS IN THE DWASH IP

The structure of the survey was aligned to the National Water Supply and Sanitation Council (NWASCO) information system (NIS), SDGs, JMP Monitoring Ladder and National Water Supply and Sanitation Programmes. The Ministry of Education (MoE) and the Ministry of Health (MoH) have developed national standards to guide the provision of WASH in schools and health care facilities respectively. In order to establish values for the baseline indicators in line with the aforementioned guides, while taking into consideration the state of affairs of children, women and other vulnerable groups including the disabled and elderly, and their specific conditions and needs, it was intended to collect information according to expected results and indicators:

Table 1: Baseline survey expected results and indicators

Access to drinking water supply service ▪ Safe ▪ Basic ▪ Limited ▪ Unimproved ▪ No service	**Access to sanitation** ▪ Safe ▪ Basic ▪ Limited ▪ Unimproved ▪ No service	**Access to hygiene** ▪ Basic ▪ Limited ▪ No service
Access to Menstrual Hygiene Management services ▪ Schools ▪ Health Care Facilities ▪ Public places such as markets, etc. ▪ Non-domestic places such as industries, institutions etc.	**Gender sensitivity data and information** ▪ Current practices ▪ Gender mainstreaming at community level structures, such as ward development committee (WDC), water committees ▪ Gender in WASH activities	**Data related to scaling up nutrition** ▪ Knowledge on care taker hygiene and infant/ young child feeding practices through improved WASH ▪ Recurrent diarrhoea diseases, diarrhoea cases and deaths under 5 ▪ Wasting and stunted children under 5

3.1 WASH in Households

The following SDG Joint Monitoring Programme (JMP) service ladders for households were adopted:

- **Drinking Water Standards**

Drinking water services refer to the accessibility, availability and quality of the main source used by households for drinking, cooking, personal hygiene and other domestic uses.

Table 2: WASH indicators for household drinking water standards

Service level	Definition	Additional Comment
Safely managed	Drinking water from an improved water source which is located on the premises, available when needed, free from faecal & priority chemical contamination.	All criteria should be met to be safely managed water supply services If not, then the next level is to be considered according on its criteria.
Basic	Drinking water from an improved water source & the collection time for a roundtrip including queuing is not more than 30 minutes.	All criteria should be met to be basic water supply services (including those that didn't satisfy all criteria of safely managed). If not, then the next level is to be considered according on its criteria.
Limited	Drinking water from an improved water source & the collection time for a roundtrip including queuing exceeds 30 minutes.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
Unimproved	Drinking water from an unprotected dug well or unprotected spring	
Surface water	Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation canal	

Source: https://washdata.org/monitoring/drinking-water

- **Sanitation Standards**

Sanitation services refer to the management of excreta from the facilities used by individuals, through emptying and transport of excreta for treatment and eventual discharge or reuse.

Table 3: WASH indicators for household sanitation standards

Service level	Definition	Additional Comment
Safely managed	Use of improved facilities that are not shared with other households and where excreta are safely disposed of in situ or transported and treated offsite.	All criteria should be met to be safely managed sanitation services. If not, then the next level is to be considered according on its criteria.
Basic	Use of improved facilities that are not shared with other households	All criteria should be met to be basic sanitation services (including those that didn't satisfy all criteria of safely managed). If not, then the next level is to be considered according on its criteria.
Limited	Use of improved facilities that are shared between two or more households.	All criteria should be met to be basic sanitation services (including those that didn't satisfy all criteria of basic).
Unimproved	Use of pit latrines without a slab, hanging latrines or bucket latrines.	
Open defecation	Disposal of human faeces in fields, forests, bushes, open bodies of water and other open spaces.	

Source: https://washdata.org/monitoring/sanitation

- **Hygiene Standards**

Hygiene refers to the conditions and practices that help maintain health and prevent spread of disease including handwashing, food hygiene, and menstrual hygiene management.

Table 4: WASH indicators for household hygiene standards

Service level	Definition	Additional Comment
Basic	Availability of a handwashing facility on premises with soap and water.	All criteria should be met to be basic hygiene services. If not, then the next level is to be considered according on its criteria.
Limited	Availability of a handwashing facility on premises without soap and water.	All criteria should be met to be basic hygiene services (including those that didn't satisfy all criteria of basic).
No facility	No hand washing facility on the premises.	

Source: https://washdata.org/monitoring/hygiene

See **Annex 1** for the definition and clarifications on some of the drinking water, sanitation and hygiene terms.

National Indicators

- % of population (# households) in district # with access to safely managed drinking water supply;
- % of population (# households) in district # with access to basic water supply;
- % of population (# households) in district # using safely managed sanitation facilities, including a handwashing facility with soap and water;
- % of (# households) in district # using improved sanitation facilities, including a handwashing facility with soap and water.

3.2 WASH in Schools

JMP monitoring of WASH in schools includes tracking 'basic' drinking water, sanitation and hygiene services in pre-primary, primary and secondary schools. The following SDG Joint Monitoring Programme (JMP) service ladders for schools were adopted. This coupled with the adapted standards from the MoE were integrated to define the WASH indicators for schools. The criteria for an advanced level is clearly defined in the National Standards as guided by the JMP.

- **Drinking Water Standards**

Table 5: WASH indicators for school drinking water standards

Service level	Definition	Additional Comments
Advanced	Safely managed inclusive drinking water: Improved water facilities are located on premises, available when needed, accessible for children with disabilities and free.	All criteria should be met to be advanced water supply services. If not, then the next level is to be considered according on its criteria.
Basic	Drinking water from an improved source is available at the school.	All criteria should be met to be basic water supply services (including those that didn't satisfy all criteria of advanced). If not, then the next level is to be considered according on its criteria.
Limited	There is an improved source (piped, protected well/spring, rainwater, packaged/delivered water), but water not available at time of survey.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No Service	No water source or unimproved source (unprotected well/spring, surface water).	

Source: https://washdata.org/monitoring/schools and Water Sanitation and Hygiene in Schools (WinS) National Standards & Guidelines Mitigation & Localization (Final draft), 2019

- **Sanitation Standards**

Table 6: WASH indicators for school sanitation standards

Service level	Definition	Additional Comments
Advanced	The school has improved sanitation facilities at the school premises, which are sufficient, Menstrual Hygiene Management (MHM) friendly, single-sex, usable and safely managed. Solid waste is frequently collected and/or disposed. Toilet to Pupil Ratio: Boys= 1:25; Girls=1:20	All criteria should be met to be advanced sanitation services. If not, then the next level is to be considered according on its criteria.
Basic	Improved facilities, which are single-sex and usable at the school Toilet to Pupil Ratio= 1:50	All criteria should be met to be basic sanitation services (including those that didn't satisfy all criteria of safely managed). If not, then the next level is to be considered according on its criteria.
Limited	There are improved facilities (flush/pour-flush toilets, pit latrine with slab, composting toilet), but not single-sex or not usable at time of survey Toilet to Pupil Ratio= 1:100	All criteria should be met to be basic sanitation services (including those that didn't satisfy all criteria of basic).
No Service	No toilets or latrines, or unimproved facilities (pit latrines without a slab or platform, hanging latrines, bucket latrines).	

Source: https://washdata.org/monitoring/schools and Water Sanitation and Hygiene in Schools (WinS) National Standards & Guidelines Mitigation & Localization (Final draft), 2019

- **Hygiene Standards**

Table 7: WASH indicators for school hygiene standards

Service level	Definition	Additional Comments
Advanced	The school has handwashing facilities with water and soap continually available at critical times. Group handwashing and hygiene promotion is integral part of curriculum and/or school routine solid waste is frequently collected and/or disposed Handwashing Facility to Pupil Ratio Boys= 1:25 Girls=1:20	All criteria should be met to be advanced hygiene services. If not, then the next level is to be considered according on its criteria.
Basic	Handwashing facilities, which have water and soap available. Handwashing Facility to Pupil Ratio= 1:50	All criteria should be met to be basic hygiene services (including those that didn't satisfy all criteria of advanced). If not, then the next level is to be considered according on its criteria.
Limited	Handwashing facilities with water, but no soap.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No Service	No handwashing facilities at the school or handwashing facilities with no water.	

Source: https://washdata.org/monitoring/schools and Water Sanitation and Hygiene in Schools (WinS) National Standards & Guidelines Mitigation & Localization (Final draft), 2019

- **Menstrual Hygiene Management (MHM) Standards**

To manage menstruation hygienically and with dignity, it is essential that girls have access to clean water, decent toilets and good hygiene in schools. Thus, the following criteria shall apply:

- The school is aware of and follows the National MHM Guidelines and MHM Toolkit within its capacity.
- There is a designated MHM Focal Point Person (MHM FP) at the school which that regularly orients male and female pupils in MHM to take a lead role in implementing MHM activities.
- They should stock emergency menstrual hygiene materials such as disposable pads, washable pads, cotton wool etc.
- The school involves health workers to educate and assist the girls on the management of menstrual pain and holds talks with the girls on proper personal hygiene during menses.
- The school supports the communities through the Parent-Teacher Association (PTA) committees and traditional leadership to understand facts on MHM aiming aimed at supporting the girls and boys at home, their families and the community to avail correct information.

See **Annex 1** for the definition and clarifications on some of the drinking water, sanitation and hygiene terms.

3.3 WASH in Health Care Facilities

Achieving and maintaining WASH services in health care facilities is a critical element for a number of health aims including those linked to quality universal health coverage, infection prevention and control, patient safety, and child and maternal health, in particular the time around child delivery. JMP monitoring of WASH in health care facilities (HCF) includes tracking basic water, sanitation, hand hygiene, health care waste management, and environmental cleaning services.

- **Drinking Water Standards**

Table 8: WASH indicators for health care facilities drinking water standards

Service level	Definition	Additional Comments
Advanced	Safely managed inclusive drinking water: Improved water facilities are located on premises, available when needed, accessible to persons with limited mobility and good water quality.	All criteria should be met to be advanced water supply services If not, then the next level is to be considered according on its criteria.
Basic	Water is available from an improved source on the premises.	All criteria should be met to be basic water supply services (including those that didn't satisfy all criteria of advanced). If not, then the next level is to be considered according on its criteria.
Limited	An improved water source is within 500 metres of the premises, but not all requirements for basic service are met.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No Service	Water is taken from unprotected dug wells or springs, or surface water sources; or an improved source that is more than 500 metres from the facility; or the facility has no water source.	

Source: https://washdata.org/monitoring/health-care-facilities

- **Sanitation Standards**

Table 9: WASH indicators of health care facilities sanitation standards

Service level	Definition	Additional Comments
Advanced	The HCF has improved sanitation facilities at the facility premises, which are sufficient, MHM friendly, single sex for both staff and patients, usable and safely managed. Accessible to people with limited mobility.	All criteria should be met to be advanced sanitation services If not, then the next level is to be considered according on its criteria.
Basic	Improved sanitation facilities are usable with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, and at least one toilet accessible for people with limited mobility.	All criteria should be met to be basic sanitation services (including those that didn't satisfy all criteria of safely managed). If not, then the next level is to be considered according on its criteria.
Limited	At least one improved sanitation facility, but not all requirements for basic service are met.	All criteria should be met to be basic sanitation services (including those that didn't satisfy all criteria of basic).
No Service	Toilet facilities are unimproved (pit latrines without a slab or platform, hanging latrines and bucket latrines), or there are no toilets or latrines at the facility.	

Source: https://washdata.org/monitoring/health-care-facilities

- **Hygiene Standards**

Table 10: WASH indicators for health care facilities hygiene standards

Service level	Definition	Additional Comments
Advanced	Functional hand hygiene facilities (with water and soap and/or alcohol-based hand rub) are available at points of care, and within 5 metres of toilets. Availability of a shower.	All criteria should be met to be advanced hygiene services. If not, then the next level is to be considered according on its criteria.

Service level	Definition	Additional Comments
Basic	Functional hand hygiene facilities (with water and soap and/or alcohol-based hand rub) are available at points of care, and within 5 metres of toilets.	All criteria should be met to be basic hygiene services (including those that didn't satisfy all criteria of advanced). If not, then the next level is to be considered according on its criteria.
Limited	Functional hand hygiene facilities are available at either points of care or toilets, but not both.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No Service	No functional hand hygiene facilities are available at either points of care or toilets.	

Source: https://washdata.org/monitoring/health-care-facilities

- **Health Care Waste Management Standards**

Table 11: WASH indicators for health care facilities health care waste management standards

Service level	Definition	Additional Comments
Advanced	Waste is safely segregated into at least three bins, and sharps and infectious waste are treated and disposed of safely. Organic waste separation.	All criteria should be met to be advanced health care waste management services If not, then the next level is to be considered according on its criteria.
Basic	Waste is safely segregated into at least three bins, and sharps and infectious waste are treated and disposed of safely.	All criteria should be met to be basic health care waste management services (including those that didn't satisfy all criteria of advanced). If not, then the next level is to be considered according on its criteria.
Limited	There is limited separation and/or treatment and disposal of sharps and infectious waste, but not all requirements for basic service are met.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No Service	There are no separate bins for sharps or infectious waste, and sharps and/or infectious waste are not treated/disposed of safely.	

Source: https://washdata.org/monitoring/health-care-facilities

- **Environmental Cleaning Standards**

Table 12: WASH indicators for health care facilities environmental cleaning standards

Service level	Definition	Additional Comments
Advanced	Basic protocols for cleaning are available, and staff with cleaning responsibilities have all received training. Availability of cleaning materials.	All criteria should be met to be advanced environmental cleaning services If not, then the next level is to be considered according on its criteria.
Basic	Basic protocols for cleaning are available, and staff with cleaning responsibilities have all received training.	All criteria should be met to be basic environmental cleaning services (including those that didn't satisfy all criteria of advanced). If not, then the next level is to be considered according on its criteria.
Limited	There are cleaning protocols and/or at least some staff have received training on cleaning.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No Service	No cleaning protocols are available and no staff have received training on cleaning.	

Source: https://washdata.org/monitoring/health-care-facilities

3.4 WASH in Public Places and Non-Domestic Places

WASH services are fundamental to economic development. The availability of safe WASH can facilitate business development, especially the informal sector, which contributes significantly to economic growth and development in many developing countries including Zambia. Public places include local markets, bus stations/taxi ranks and traditional ceremony arenas while non-domestic places include bars, restaurants, lodges, offices/institutions, factories/warehouses, and car washes. The following WASH indicators for public places were adopted from the World Health Organization (WHO) Guidelines on Sanitation and Hygiene.

- **Drinking Water Standards**

Table 13: WASH indicators for public places and/or non-domestic drinking water standards

Service level	Definition	Additional Comment
Basic	Drinking water from an improved water source, available when needed.	All criteria should be met to be basic drinking water services (including those that didn't satisfy all criteria of advanced). If not, then the next level is to be considered according on its criteria.
Limited	Drinking water from an improved water source, not always available when needed.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No service	Drinking water from an unimproved water source or surface water.	

- **Sanitation Standards**

Table 14: WASH indicators for public places and/or non-domestic sanitation standards

Service level	Definition	Additional Comment
Basic	Availability of an improved sanitation facilities dedicated to the public place or non-domestic places, Sex separated and accessible to persons with limited mobility.	All criteria should be met to be basic sanitation services (including those that didn't satisfy all criteria of advanced) If not, then the next level is to be considered according on its criteria.
Limited	Availability of a sanitation facility.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No Access	The use of open places for urination or defecation.	

- **Hygiene Standards**

Table 15: WASH indicators for public places and/or non-domestic hygiene standards

Service level	Definition	Additional Comment
Basic	Availability of a handwashing facility on premises with soap and water.	All criteria should be met to be basic sanitation services (including those that didn't satisfy all criteria of advanced). If not, then the next level is to be considered according on its criteria.
Limited	Availability of a handwashing facility on premises without soap and water.	All criteria should be met to be limited services (including those that didn't satisfy all criteria of basic).
No Access	No hand washing facility on the premises.	

3.5 Gender Sensitivity Data

Roles in collecting, using and making decisions on water as well as maintaining water infrastructure change markedly depending on gender and age. Hygiene needs and practices also vary according to gender and time of life; risk of violence is another important factor in determining water access. Analysing and responding to different needs, roles and dynamics improves WASH interventions so that they are more likely to be equally enjoyed by people in need. Some identified indicators of gender sensitivity in WASH are as follows:

Table 16: WASH indicators for gender sensitivity

Indicator	Definition
Roles and responsibilities	Men, women, boys' and girls' roles in WASH management and services
Impact of roles and responsibilities	Roles and responsibilities have an impact on reduced opportunities in school attendance, income generation, rest and child care
Leadership barriers	Men and women community leadership participation barriers

3.6 Menstrual Health

Menstrual health refers to 'a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity, in relation to the menstrual cycle'. A detailed definition of menstrual health, including access to information, facilities, and supportive environments, was agreed upon by the Global Menstrual Collective through a multi-stage process and published in 2021. Until 2021, the JMP did not have indicators to monitor Menstrual Health. These indicators can be grouped into the four areas.

Table 17: WASH indicators for menstrual health

Indicator	Definition
Awareness	Awareness of menstruation before menarche (first menstruation)
Use of menstrual materials	Use of menstrual materials to capture and contain menstrual blood, such as sanitary pads, cloth, tampons, or cups. These can also be grouped into single-use and reusable materials
Privacy	Access to a private place to wash and change while at home
Participation	Participation in activities during menstruation, such as school, work and social activities.

3.7 Scaling-Up Nutrition

WASH play a fundamental role in improving nutritional outcomes. Undernutrition is directly caused by inadequate dietary intake and/or disease and indirectly related to many factors, including contaminated drinking-water and poor sanitation and hygiene. Lack of access to WASH can affect a child's nutritional status in many ways. Existing evidence supports at least three direct pathways: via diarrhoeal diseases, intestinal parasite infections and environmental enteropathy. WASH may also impact nutritional status indirectly by necessitating walking long distances in search of water and sanitation facilities and diverting a mother's time away from child care. Some identified indicators of nutritional related WASH are as follows:

Table 18: WASH indicators for scaling up nutrition

Indicator	Definition
Hand Hygiene	Wash hands with soap before feeding child, after defecation, after cleaning child
Food handling	Keep food safe (e.g. reheating food before serving infants, storing food safely in containers)
Water treatment	Treat and safely store water
Diarrhoeal diseases	Frequency of diarrhoeal diseases in children under 5

4 SURVEY METHODOLOGY

4.1 Survey Preparation and Management

4.1.1 Partner and Stakeholder Engagement

Stakeholder and partner involvement is critical to ensure a common understanding and buy-in of the WASH baseline survey exercise and highlight the use of the results and findings from the survey for WASH investment planning. It was important to engage the stakeholders and partners early in the process because they provided data sources that were required to successfully design and implement the baseline survey, the desirable maps, insights, capacities, and resources to develop the baseline survey implementation plan. Partner and stakeholder engagement was an on-going process throughout baseline survey exercise.

Table 19: WASH baseline survey partner engagement activities

Sn	Partner Engagement Activity	Dates	Objective	Partners	Comment
1	Capacity Needs and Data Availability Assessment		Review the available capacity of implementers and data availability for the development of a DWASH IP	Ministry of Water Development and Sanitation (MWDS)/DWSS Provincial Water and Sanitation Officer (PWSO) LpWSC Provincial Department of Infra-structure and Development (PDHID)/ MTC Provincial Education Office (PEO)/ DEBS District Health Office (DHO) Provincial Planning Provincial Chiefs Office Provincial Community Development (ComDev)	
2	Baseline survey Preparation Consultations		Gather the necessary data instruments required to design Baseline survey exercise	MWDS/DWSS (PWSO) MTC LpWSC DHO DEBS Dept of Chiefs Zamstats	This particular activity was on-going from preparation to implementation stage
3	Stakeholder Baseline Survey Kick Off Meeting	19th October 2021	Present the Baseline survey objectives, Survey Tools, Approach and obtain feedback from stakeholders	MWDS/DWSS (PWSO) MTC LpWSC DHO DEBS Dept of Chiefs	
4	Courtesy call to the chiefs	13th October to 15th October 2021	Present the Baseline survey to the Chiefs and seek permission for the survey to be conducted in Chiefdoms	Dept of Chiefs Chief Lubunda (13.10) Chief Lukwesa (13.10) Chief Kashiba (14.10) Chief Mulundu (14.10) Chief Katuta (15.10)	
5	Survey findings and interpretation of results	19th and 20th May 2022	Present the findings of the survey, obtain feedback, and validate	MTC LpWSC DHO DEBS Dept of Chiefs DoA Care International Caritas-FANSER	

Table 20: Stakeholder contributions and/ or support to the baseline survey exercise

Sn	Stakeholder	Stakeholder contribution and/ or support to the baseline survey
1	LA	Provided Maps DPO and WASH Coordinator heavily involved District and Ward Level Information Registered Businesses Information Facilitated access to the Public Places and Non-Domestic
2	LpWSC	Provided Maps Customer information GIS Officer heavily involved Recognition of Enumerators in the field
3	DHO	Health Care Facility Information/ Introductory letter Provincial Health Office (PHO) heavily involved Facilitated contact with Environmental Health Technicians (EHT) and community groups (quantitative and qualitative) Catchment/zonal information
4	DEBS	School Information/ Introductory letter Zonal Information
5	Dept of Chiefs and Traditional Affairs	Chiefdom Information Facilitated courtesy to the Chiefs (5) Facilitated contact with Village Headmen and Rural Communities
6	ZamStats	Provided Demographic information Facilitated maps and some Coordinates

4.1.2 Organisation and Management of Survey

The design of the survey was meant to be cost-effective considering the limited resources and data availability for validating. The design of the survey took into consideration the view that the most cost-effective approach would be for the Luapula GFA Team to manage the survey with support from partners and the recruited field supervisor and data collectors. This was influenced by the GFA Team having recruited a Geographical Information System (GIS) expert with experience in GIS and data collection as well as design. Additionally, GFA had to recruit on short-term basis a Monitoring and Evaluation (M&E) Expert and Data Analyst to complete the Survey Management Team.

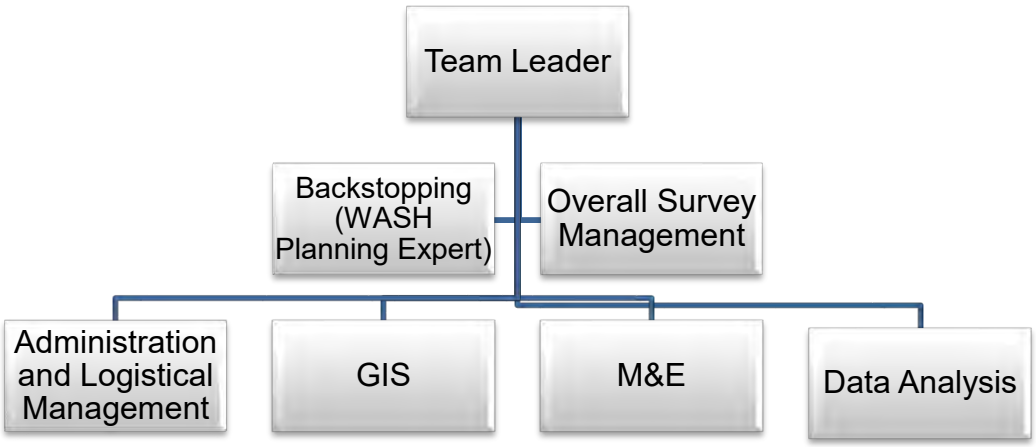


Figure 2: WASH baseline survey core management team

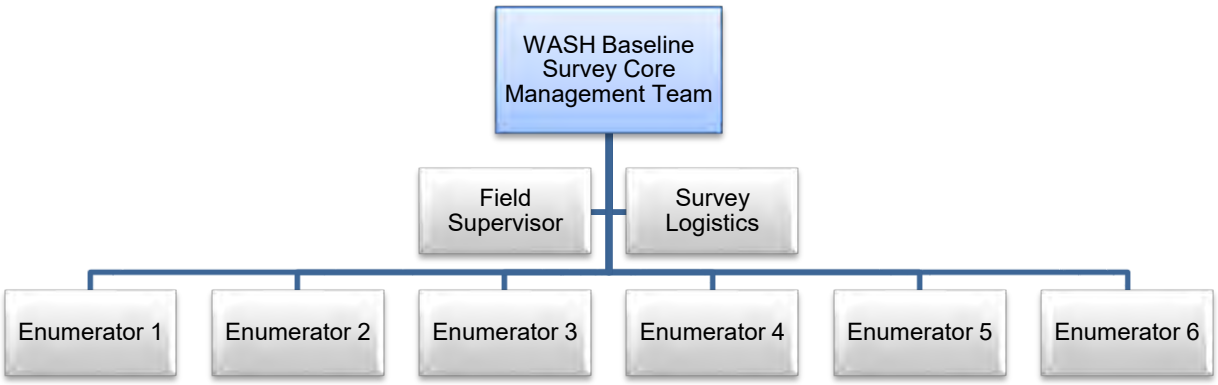


Figure 3: WASH baseline survey data collection team

Roles and responsibilities of baseline survey team

Within the baseline survey exercise the team members had the following roles and responsibilities:

Table 21: Roles and responsibilities of the WASH baseline survey team

Function	Name	Role and Responsibility
Team Leader	Yulia Titova	• Overall responsibility of the project
Backstopping	Ison Simbeye	• Ensure the survey is aligned to the desired indicators of the DWASH IP
Overall Survey Management	Mwaba Kapema	• Overall management and reporting of the survey • Responsible for the partner engagement and management • Responsible for the quality of the of the survey and ensuring the needs of the admin & logistics, GIS, M&E, Data Analysis and partners are met
Partners	MTC, LpWSC, DEBS, DHO, Chiefs and traditional affairs dept.	• Provide all necessary information for planning and implementation of survey • Facilitate access to survey sample points
Administration and logistical management	Lillian Kafunda	• Contractual agreements with enumerators and logistics services • Responsible for enumerator and team logistics • Responsible for procurement of equipment and services for the survey • Made sure all required gadgets and stationary were purchased and availed to the enumerators • Made sure that payments were made on time
GIS	Gabriel Chibuye	• Proposing the survey tools • Designing the questionnaires in KoboTool box • Data collection and verification prior to the survey • Generating survey samples and closely working with the Field Supervisor to monitor the progress of the survey each day • Cleaning of the survey data in preparation for data analysis • Production of maps before, during and after the survey
M&E	Mirja Kattelus	• Checking all the survey tools and questionnaires • Testing the questionnaires to ensure the tools were working as expected • Formulating the sampling methodology • Helping with the data cleaning prior to data analysis • Enumerator evaluation during the enumerator training • Worked closely with the Data Analyst in formulating the data analysis framework • Ensured quality data before data analysis could be done

Function	Name	Role and Responsibility
Data Analysis	Patrick Chilumba	• Review of the Baseline survey questionnaires and tools • Designing and conducting KIIs and FGDs • Developing baseline data analysis framework in line with the survey concept • Data cleaning and quality control • Analysing data using the developed data analysis framework and production of supporting visuals for publication of results
Field Supervisor	Purity Chanda	• Overall responsibility of the enumerators in the field • Development of a daily field plan for each enumerator against days and samples provided • Daily and weekly reports to the Baseline Survey Core Management Team • Also had responsibilities of an enumerator
Enumerators	Gift Musonda Morgan Chansa Bright Besa Hazel Muteta Most Mwape Monica Mulenga	• Survey Interviews • Collection of quality data from respondents/samples • Upload and read the maps given • Upload all data collected from the field • Take photos of water sources and toilets • Field feedback

The GFA survey core team oversaw the supervision of the exercise, conduction of Focus Group Discussions (FGDs), collaboration with counterparts' programmes, as well as development of survey tools, questionnaires, data analysis and reporting.

4.1.3 Enumerators

To carry out the baseline survey, the programme had engaged seven (7) enumerators to carry out the main data collection exercise in both Mansa and Mwense. The enumerators were supported by a core survey management team from GFA which ensured that high quality data was obtained during the entire survey process. The Field Supervisor supervised the data collectors, coordinated the field surveys, clarified and resolved any field problems that were encountered by data collectors.

For more details on the recruitment and training of the enumerators, refer to the Baseline Survey Enumerator training report which includes a written evaluation form and a grading matrix based on observations of the GFA core team.

4.1.4 Logistics

The logistics in general comprised of the detailed organisation and implementation of the baseline survey, which involved the management of the baseline survey resources, administrative and transportation costs to meet the needs of the survey and that of the enumerators. The major equipment that would ensure the data needed was collected efficiently was already procured during the Mansa Data Collection Process but only required the procurement of the operational equipment. The logistics that were put in place for the survey have been divided into 3 categories as follows:

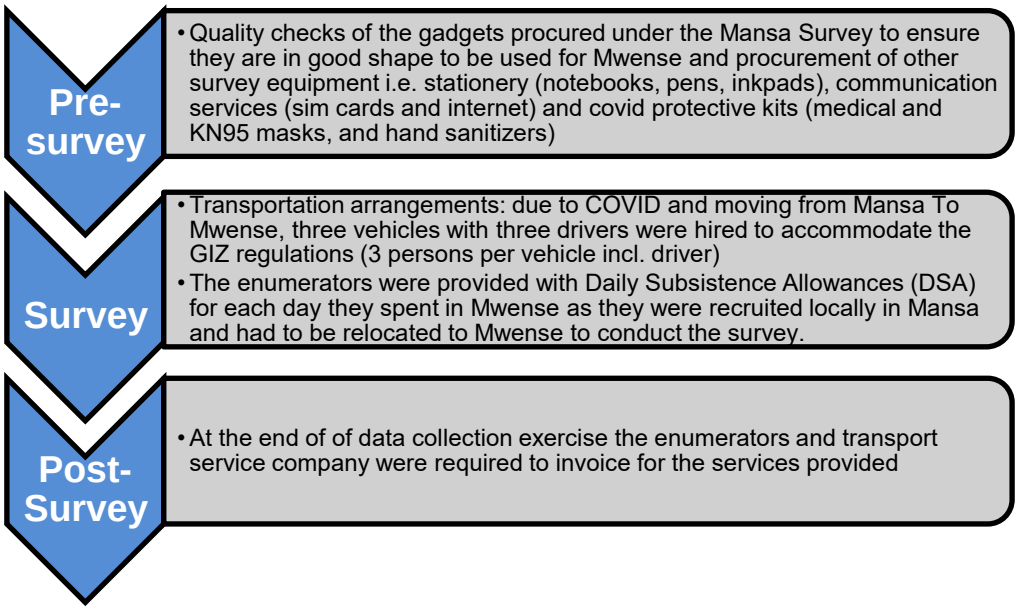


Figure 4: Mwense baseline survey logistics

4.2 Survey Tools and Questionnaires

4.2.1 Questionnaires

It was essential to make sure that the questionnaires capture the key WASH indicators in line with national standards and address the following key focus areas and main topics under them:

Table 22: Key WASH indicators and their key focus areas and main questionnaire topics

Focus Areas:	Main topics
Access to drinking water services	• Current service level • Operation and maintenance • Willingness and ability to pay • Climate change and mitigation • Desired water supply services
Access to sanitation services	• Current service level • Operation and maintenance • Willingness and ability to pay • Emptying/frequency of emptying, cost implication • Desired sanitation services
Access to hygiene services	• Current service level • Hygiene practices • Health status
Access to MHM services	• Current practices • Culture and religion norms towards infrastructure & products • Design and construction of WASH facilities • Availability of menstrual products • School / work absence as a quantifiable effect of poor menstruation facilities • MHM focal points

Focus Areas:	Main topics
Access to solid waste services incl. environmental cleaning	• Status and nature of solid waste management approaches • Desired solid waste management services • Health Care Waste Management
Gender sensitivity data and information	• Gender disaggregated demographic data • Design and construction of WASH facilities • Current practices and roles in managing WASH facilities and services • School and income generation opportunities • Barriers to participating in community leadership
Social inclusion, vulnerable groups, elderly, girl child, disabled	• Design and construction of WASH facilities • Current practices • Social inclusion mainstreaming at community level structures e.g. people with disabilities i.e. increased participation & voice in decision making & management • Difficulties people with disabilities have in accessing the services • Awareness of rights • Schools with children with disabilities
Data related to scaling up nutrition	• Mothers / caretakers in households with knowledge on their hygiene and infant/ young child feeding practices • Recurrent diarrhoea diseases • School absence as a quantifiable effect of water borne diseases • Diarrhoea cases and deaths under 5 • Wasting children under 5 (low weight for height) • Children under 5 who are stunted (low height for age) • Availability and prices of protein rich foods • Food handling practices

There are five main questionnaire categories, which capture the above topics where applicable and with varying question formulation, including:

Table 23: The five main questionnaires categories and their expected respondents

Category	Questionnaire	Respondent
Household	Rural Household	Head of House or Spouse, additionally a girl child
	Urban Household (Landlord)	Head of House or Spouse, additionally a girl child
	Urban Household (Tenant)	Head of House or Spouse, additionally a girl child
School	Government, Community or Private (Primary, Secondary or combined)	Head of School, Deputy Head or Senior Representative
Health Care Facility	Government or Private (Hospitals, Clinics, Rural Health Posts/Clinics)	EHT or HCF Representative
Public Place	Market, Bus station or Traditional Arena	Chairpersons or representative
Non-Domestic	Lodges / Guesthouses, Bars, Restaurants, Offices, Institutions, Factories, Warehouses and Car Washes	Representative

4.2.2 Kobo Toolbox

Kobo Toolbox was selected as the software to host the questionnaires and the collected data. It is a suite of open source software applications that can be used for data collection, allowing for easy design and formatting of questionnaires. KoboCollect allow users to collect data online and offline on phones, tablets or any browser.

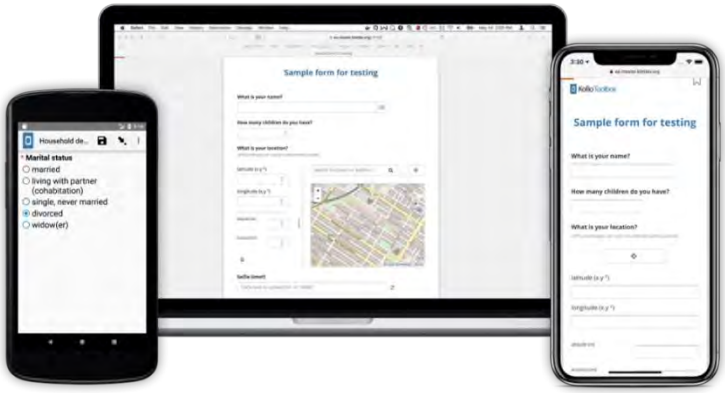


Figure 5: KoboCollect interface on phones, tablets or any browser.

The hardware/ software tools and other materials used during the survey include:

- Samsung Tab A
  - KoboCollect - this is an Android application which was downloaded on each tablet for the actual data collection
  - Questionnaires - these would be loaded onto the Kobocollect tool from the server
  - Camera - the camera of the tablet would be used for capturing the coordinates from the handheld device
  - Maps of Wards and locations of selected sample units
  - Google Earth – for navigation
- Garmin Etrex10
  - For obtaining Location
  - Mapping Routes of each enumerator

Figure 6: Survey equipment procured for the baseline survey exercise

The KoboCollect application was customized and installed on the tablets for the purpose of data collection. The enumerators were familiarised on the setup, main structure and use of the KoboCollect Application prior to the field data collection:

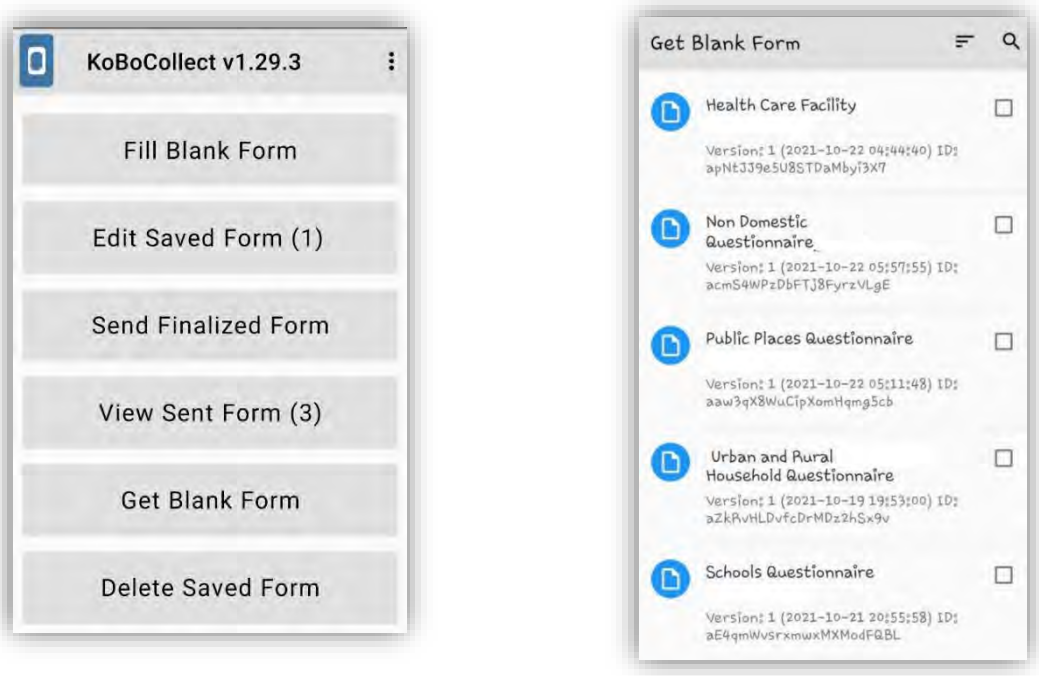


Figure 7: Main interface of the KoboCollect mobile application and list of blank forms developed for the pilot survey

The data collectors were also instructed how to take a picture of the point of interest, i.e. WASH facilities and how to capture the global positioning system (GPS) coordinates both on the KoboCollect tool as well as on the GPS gadget:

Figure 8: Capturing GPS coordinates on the Garmin Etrex10

4.2.3 Testing of Tools and Questionnaires

Testing of the tools and questionnaires was extensively done by the implementation of the Mansa Data Collection Process which revealed some lessons and areas for improvement to ensure the smooth implementation of the Mwense Data Collection Process. The essence of the learning from the Mansa Survey was to refine the questionnaire for several aspects, including:

i. The clarification of the questions and thus refine the questionnaires and implement appropriate interventions that would enable interviewees cooperate with the enumerators
ii. Knowing the exact time required to complete one questionnaire
iii. The enumerators gained confidence in their significant interpersonal skills and became familiar with the questions and use of the app
iv. The general reception and perception of the different respondents was established

For Mwense however, the enumerators had to go through a one day workshop to give their experiences on what happened in Mansa and to strategize on the best way of going about the Mwense Survey. The enumerators also briefly reviewed some of the questions in the questionnaires to clarify certain issues based on their experience form the Mansa Survey.

4.2.4 Key Informant Interviews

Key informant interviews are designed to gather opinions on specific topics related to WASH. The information learned was to supplement the data collection process and guide future WASH interventions and actions.

Key Informant Interviews (KII)

A key informant interview is an in-depth interview that collects information from individual experts. The key informant interviews were designed to target the key players that contribute to WASH service provision in the different categories namely households, schools, HCFs, public places and non-domestic places. The duration for the KII was set for 2 hours and the target individuals for the interviews are shown in Figure 9.

Mwense Town Council (MTC)	• Public Health Officer • District Planning Officer • WASH Coordinator • Markets and Bus Stations Manager • Community Development Officer
Luapula Water and Sanitation Company (LpWSC)	• District Manager • Commercial Service Assitant • Customer Service Assistant • Commercial Officer (HQ) • Foremen (Plumbers)
District Health Office (DHO)	• Public Health Officer • 4 Environmental Health Technicians (EHTs)
District Education Board Secretary (DEBS)	• DEBS • Planner
Market and Transport Association	• Chairperson

Figure 9: Target persons for Key Informant Interviews

The KIIs were designed to be implemented in 3 days. **Annex 2** provides a detailed plan for the KIIs as well as its objective.

4.3 Data Instruments

4.3.1 Data Sources

There were various sources of data that were identified prior to the sampling and data collection exercise. Some of the sources that data was obtained from are listed below:

Table 24: List of primary data sources

Sn	Institution	Data Source
1	Mwense Town Council (MTC)	MTC through the District Planning Officer and WASH Coordinator provided data for the district boundaries as well as some information on the population. The Mwense planning boundary data and ward maps were provided in shapefile format and the population was provided in excel. Other data that was provided were the list of public places as well as some of the non-domestic places through the business license list.
2	Luapula Water and Sanitation Company	The GIS unit of the provided data of the maps and shapefiles of their areas of operation as well as the utility lines for Mwense District both for water supply and sewerage.
3	GRID3 Project	Geo-Referenced Infrastructure and Demographic Data for Development (GRID3) works with countries to generate, validate and use geospatial data on population, settlements, infrastructure, and boundaries. GRID3 combines the expertise of partners in government, United Nations, academia, and the private sector to design adaptable and relevant geospatial solutions based on capacity and development needs of each country. The GRID3 Zambian data hub has a collection of spatial information from the various sources: the Ministry of Lands (from the National Spatial Data Infrastructure (NSDI)), Ministry of Health, the Zambia Statistics Agency, the Ministry of Education, and various organizations in different sectors which have contributed their data to the hub. From the GRID3 hub the following information was obtained: • Data on population of Zambia which was further narrowed down to ward population • Data on the location of schools • Data on location of health care facilities • Data on the settlements • Data on the location of built up areas • Data on the location of hamlets • Data on the point of interest names
4	The Zambia Statistics Agency	Zamstats provided demographic information and facilitated maps and some coordinates.
5	Ministry of Health – District Health Office (DHO)	The DHO provided the list of health care facilities, by type and their location. The list was compared to the data from the GRID3 data, which provided the coordinates for the health care facilities.
6	Ministry of Education – District Education Board Secretary (DEBS)	The DEBS provided the list of schools; secondary schools, primary schools as well as community schools. The list was compared to the data from the GRID3 data, which provided the coordinates for the schools.
7	Luapula Provincial Planning Authority (Physical planning)	The Authority Provided some more shapefiles on the boundaries of the districts and the province which was used to make comparisons with data from the council as well as the NSDI (GRID3) data.
8	Department of Chiefs and Traditional Affairs	Provided information on the main chiefs in the districts, the traditional ceremonies as well as customs to be followed as the survey team went to visit the Chiefs to pay a status call.

4.3.2 Data Availability

From the different data instruments, we could establish the key statistical data that was required to apply the sampling methodology and / or approach to data collection in the field for representativeness and reduced biasness. The key statistics for Mwense District were as follows;

Table 25: Key Mwense statistics for baseline survey sample size calculations

District	Estimated Population (GRID3)	Number of Schools (DEBS)	Number of Health Care Facilities (DHO)	Public Places (LA)	Non Domestic
Mwense	126,742	62	22	No Data	80

4.4 Survey Population and Sample Size

4.4.1 Household Sample Size

The district wide sample size was determined using the following proportion method for sample size calculation (finite population) and conservative assumptions;

$$n = \frac{N}{1 + \frac{(N-1)\,(\frac{L}{100})^2}{1.96^2\,P(1-P)}}$$

Where:

- **n** Sample population
- **N** The population of a district (126,742)
- **Z** Normal curve Z-score set at 1.96 as at 5% level of significance (95% confidence level)
- **P** population proportion usually assumed to be 0.5 or 50% of the population with access to sanitation to maximize on the sample size required for this baseline survey
- **L** The Margin of Error set between 2% and 5% for districts with high and low populations. A high population is assumed to have a low margin of error and a low population with a high margin of error

  For the baseline, the most recommended Margin of error (L) of between 2% and 5% were assumed. Conservative margin of errors of 3%, 4%, 5.0%, and 5.0% were assumed and used for Mansa, Mwense, Mwansabombwe and Chipili districts respectively.

The results of the Mwense sample size calculations are presented in Table 26.

Table 26: Mwense District household sample size

Total Population in Mwense District	**126,742**	
Population sample size	**Initial sample size** *Calculated Population Sample Size*	**598**
	Revised sample size *Calculated Population Sample Size * 3 factor*	**2990**
Household sample size ***(assume 5 people per household according to 2015 LCMS)***	**Initial sample size**	**120**
	Revised sample size	**598**

The sample distribution across wards was weighted as follows;

$$Ward\ sample = District\ sample\ size \times \frac{ward\ population}{district\ population}$$

The results of the Mwense ward sample size is presented in Table 27:

Table 27: Mwense household ward level sample size

Name of ward	Projected population	Final sample size (Calculated Population Sample Size * 5 factor)
Chachacha	6958	33
Chansha	3517	17
Chibembe	4259	20
Chiwasha	5627	27
Kalanga	5863	28
Kaombe	6725	32
Kapamba	6696	32
Kapela	9139	43

Name of ward	Projected population	Final sample size (Calculated Population Sample Size * 5 factor)
Kasengu	5149	24
Katiti	5541	26
Luche	10215	48
Lundashi	3756	18
Mambilima	7525	36
Michelo	2300	11
Mpasa	4914	23
Munwa	3791	18
Musonda	5916	28
Mwense	6973	33
Nkanga	6535	31
Nsofi	8971	42
	126,742	**600**

4.4.2 Schools, Health Care Facilities and Non-Domestic Sample Size

The aim was to sample 50% of all schools, HCFs and non-domestic places. Their samples size were determined using the following proportion method for sample size calculation:

$$School\ sample\ size = \frac{Total\ No.of\ schools\ in\ District\ (according\ to\ DEBS\ database)}{2}$$

$$HCF\ Sample\ size = \frac{Total\ No.of\ HCFs\ in\ District\ (according\ to\ DHO\ database)}{2}$$

$$Non\ Domestic\ sample\ size\ = \frac{Total\ No.of\ Non\ Domestic\ (according\ to\ Business\ License\ List)}{2}$$

The results of the schools sample size is presented in Table 28.

Table 28: Mwense schools, HCF and non-domestic sample size

Mwense school sample size	Total number of schools	**62**
	Sample size	**31**
	Actual samples collected	**32**
Mwense HCF sample size	Total number of HCF	**22**
	Sample size	**11**
	Actual samples collected	**11**
Mwense non-domestic places	Total number of non -domestic places	**80**
	Sample size	**40**
	Actual samples collected	**40**

From the Table 28, it is observed that the schools were oversampled by 1 school. This was a result of Musonda Girls STEM school being included as a bonus sample. A single sexed school was not sampled with the random sample generation exercise, for representation it was included as it is the only single sexed school in the district

4.4.3 Public Places Sample Size

The aim was to bridge the public places data gap as there was no database that existed on markets, bus stations/taxi ranks and traditional ceremony arenas. Therefore, this was set for a 100% samples for all public places.

$$Public\ places\ sample\ size = all\ public\ places\ in\ Mwense\ District$$

For planning purposes, the sample size was set as shown in the table below

Table 29: Mwense public places sample size

Mansa public places sample size	**Sample size** *(estimated for the sake of planning)*	**20**
	Actual samples collected	**14**

4.5 Sampling Methodology

In general, all sampling techniques at the various data collection points ensured representativeness and strict avoidance of bias. Thus different but appropriate types of random sampling techniques were applied wherever possible.

4.5.1 Households Sampling Methodology

The GRID3 projected provided data for households that was used for planning and coming up with sample sizes for each district. The raster gridded file used was downloaded from the GRID3 website. This geotiff raster contains estimates of total population size for each approximately 100m grid cell across Zambia. The values are the mean of the posterior probability distribution for the predicted population size in each grid cell. NA values represent areas that were mapped as unsettled according to building footprints data.

The raster file was converted to a feature point file in arcGIS. The point file was clipped to the specific districts and later wards. Each point data had a value that represented the average population per 100m grid. For any ward, the sum of total number of values of points in that ward was equal to the population of the ward. Figure 10, map 2 shows how the population of Mwense district was extracted. Map 3 is an example of the ward population for the ward Musonda. The population data was overlaid with settlements, built up and hamlets. This gave a picture of the ward's populated areas which was in line with built-up areas, the settlements and the hamlets. This combined polygon dataset was used to generate random points based on the calculated sample size of the ward using the *random tool* in arcGIS. Map 4 shows the generated random samples with the settlement dataset which was a union of the settlements, hamlets and the built-up areas clipped from the GRID3 data.

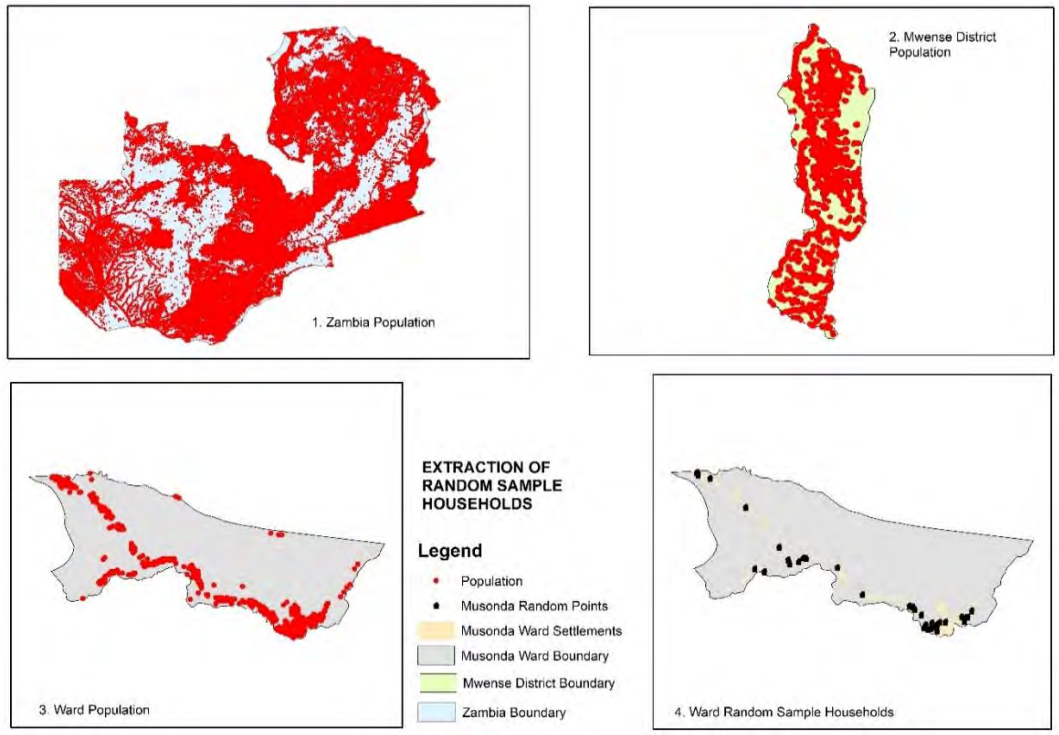


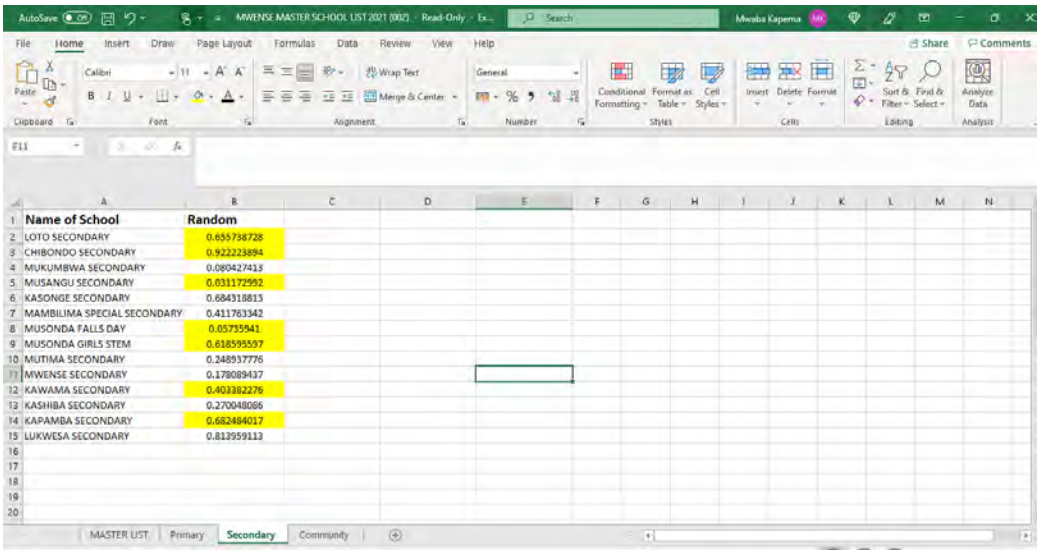
Figure 10: Mwense household sampling methodology

The random points were numbered from number 1 to the last number. The feature random point file and the ward boundary were converted to Keyhole Markup Language (kml/ kmz) files. These files were uploaded onto the mobile Google Earth application on each enumerator's tablet. This helped the enumerators with navigating to their specific samples/ respondents.

4.5.2 Other Premises

Schools

Excel was used to create random samples from the school database, in order to come up with 50% of schools to be surveyed. The schools were clustered into Urban, peri-urban and rural schools which were further clustered according to Government, community and private schools. The government schools were further classified according to primary and secondary schools. After the clustering of the schools was complete, they were put in different sheets of excel to have a 50% representation for each cluster. Generally, the RAND function in excel was used to assign a random number between 0 and 1 to each cell.



	Name of School	Random
2	LOTO SECONDARY	0.655738728
3	CHIBONDO SECONDARY	0.922223894
4	MUKUMBWA SECONDARY	0.089427413
5	MUSANGU SECONDARY	0.031172992
6	KASONGE SECONDARY	0.684318813
7	MAMBILIMA SPECIAL SECONDARY	0.411763342
8	MUSONDA FALLS DAY	0.05735941
9	MUSONDA GIRLS STEM	0.618595597
10	MUTIMA SECONDARY	0.248937776
11	MWENSE SECONDARY	0.179089437
12	KAWAMA SECONDARY	0.403382276
13	KASHIBA SECONDARY	0.270048086
14	KAPAMBA SECONDARY	0.682484017
15	LUKWESA SECONDARY	0.813959113

Figure 11: Mwense schools sampling methodology

Health Care Facilities

Excel was used to create random samples from the HCF database, in order come up with 50% of HCFs to be surveyed. The HCFs were clustered according to wards, unlike the schools which was done by area and further by type. This was as a result of the HCF database was given by Zonal and not by Urban, Peri-urban and Rural.

After the clustering of the HCF was complete, they were put in different sheets of excel to have a 50% representation for each cluster. Generally, the RAND function in excel was used to assign a random number between 0 and 1 to each cell.

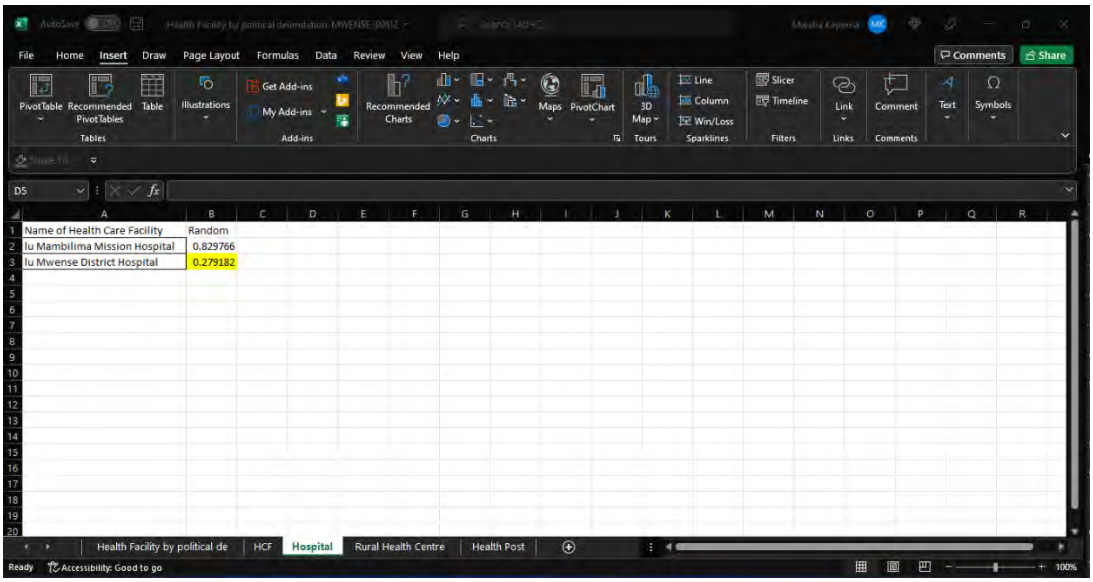


Figure 12: Mwense health care facilities sampling methodology

Non-Domestic Premises

Excel was used to create random samples from the business license list, in order come up with 50% of non-domestic places to be surveyed. The non-domestic premises were clustered into bars / restaurants / lodges, offices, institutions and factories/warehouses by the Mansa Municipal Council.

After the clustering of the non-domestic premises was complete, they were put in different sheets of excel to have a 50% representation for each cluster. Generally, the RAND function in excel was used to assign a random number between 0 and 1 to each cell.

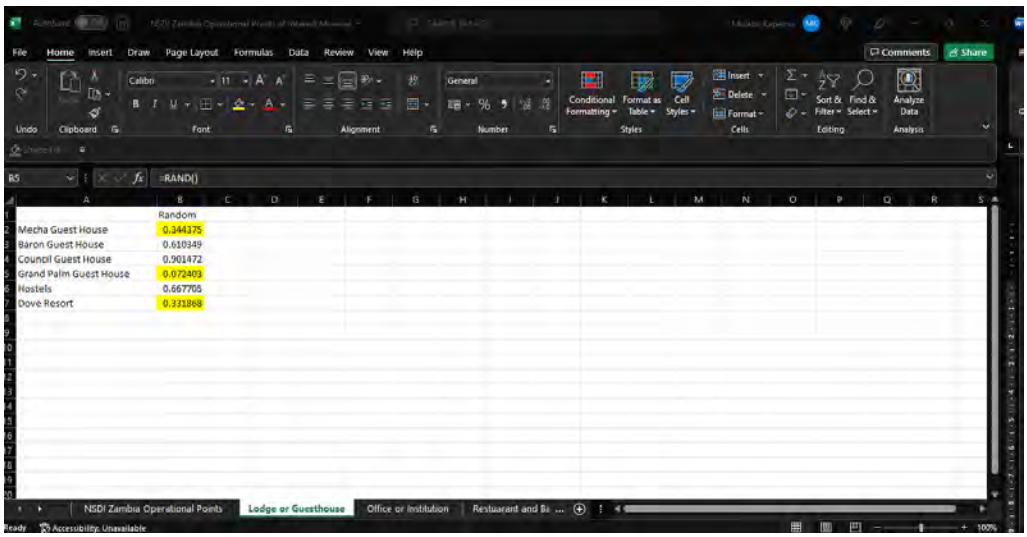


Figure 13:Mwense non-domestic sampling methodology

Public Places

There was no sampling methodology that was used to sample public places as all properties were to be visited. The enumerators were instructed to visit all public places, i.e. markets, bus stations/taxi ranks and traditional ceremony arenas in the District. In order for this to happen the enumerators were to ask the communities about the locations of the existing public places during the data collection exercise in the wards.

4.6 Implementation of Data Collection

4.6.1 Quantitative Data

Quantitative research is a structured way of collecting and analysing data obtained from different sources. This is the methodology which researchers use to test theories about people's attitudes and behaviours based on numerical and statistical evidence.

Planning for data collection

The data collection was planned according to a deployment plan prepared jointly by the core management team and the field supervisor. This plan gave a timetable of the fieldwork indicating the distribution of enumerators, samples assigned to each enumerator and expected dates of work to collect the samples. This helped to know the expected duration in the field, to avoid omissions/duplications of work in a ward, identify the samples assigned to the enumerators, in which ward each enumerator works every day and to define an efficient route to move from sample to sample. The planning was a prerequisite for a good data collection which required adequate resource allocation.

Assigning of data collection samples

The randomly sampled data collection points were distributed to the enumerators by the field supervisor in pairs for assigned wards.

Equipment preparations

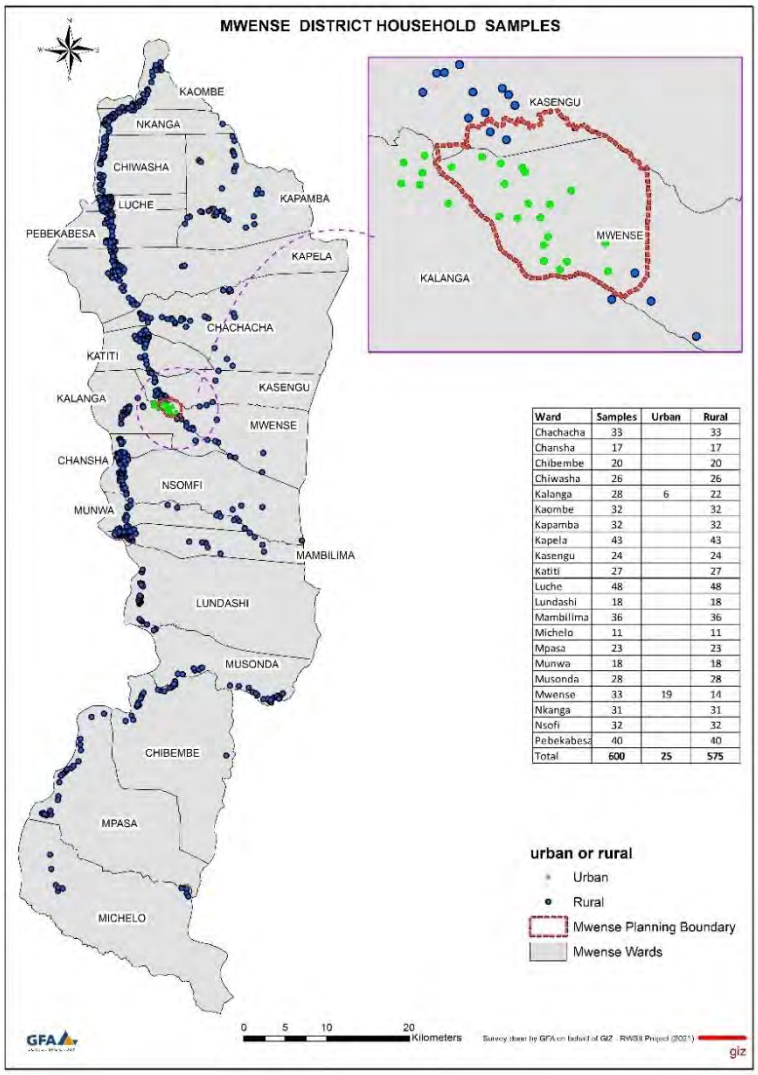
Prior to going to the field, the supervisor and enumerators ensured they had all functioning equipment and sufficient supplies to perform their work. The equipment was stored at the GFA project office and were only collected for the field day.

Transportation arrangements

The enumerators were picked from their lodging place and driven to the various wards they were stationed each day where they occasionally used bicycles to traverse the villages that were impassable by car. Typically, it was the responsibility of the GFA administration and logistics expert to make all logistical arrangements in consultation with the rest of the core management and field supervisor.

Selected samples contact

The enumerators used Google earth loaded with the random samples to locate the selected samples. After location of samples, the enumerator was to make all efforts to meet the selected respondent, introduce themselves (ID and introductory letter useful), explain the purpose of the study and obtain their informed consent. In the incident where no respondent was found at the sampled household, the enumerators were asked to visit the closest household in the vicinity of the sampled random point.



Ward	Samples	Urban	Rural
Chachacha	33		33
Chansha	17		17
Chibembe	20		20
Chiwasha	26		26
Kalanga	28	6	22
Kaombe	32		32
Kapamba	32		32
Kapela	43		43
Kasengu	24		24
Katiti	27		27
Luche	48		48
Lundashi	18		18
Mambilima	36		36
Michelo	11		11
Mpasa	23		23
Munwa	18		18
Musonda	28		28
Mwense	33	19	14
Nkanga	31		31
Nsofi	32		32
Pebekabesa	40		40
Total	600	25	575

Figure 14: Map of Mwense District household samples

Ethical considerations

Ethical considerations and practices were carefully explained and discussed with the data collection team during the pre-data collection training. It involved a clear introduction of the enumerator, explanation of the purpose of the baseline survey, how the information would be used, and the respondent's voluntary participation in the survey as well as their freedom to exit/refuse participation at any stage without consequences. All this was done with the aim of obtaining an informed consent from each participant before proceeding with data collection. As the survey collected data from households, schools, health care facilities, non-domestic and public places, the survey team ensured that each participant interviewed selected a place where they felt comfortable and safe. Finally, at the end of the interview, the data collectors thanked the respondents for their time, willingness, and effort to provide data for the baseline survey.

In-field data collection implementation roadmap

Table 30: Mwense District survey data collection roadmap

Date	Survey Activity
17th October 2021	Enumerators travelling to Mwense and settling in
19th October 2021	Introduction of enumerators to stakeholders
20th October 2021	Commencement of Data collection in Mwense
30th November 2021	Survey Ends

4.6.2 Qualitative Data

Qualitative data was obtained from observations, and semi structured interviews, through focus group discussions (for households) and Key Informant Interviews (for schools, health facilities and other important service providers). Qualitative data is generally non-numerical and further provides information to triangulate quantitative data obtained from questionnaires.

A descriptive qualitative study was conducted with five key informant interviews. All interviews were audio taped and transcribed verbatim.

4.6.2.1 Key Informant Interviews

In-depth interviews were conducted with purposively selected people (key informants) for their first-hand knowledge about WASH in Mwense District with representatives from Mwense Town Council (MTC), Luapula Water Supply and Sanitation Company (LpWSC), DHO, DEBS, and market & transport association.

The interviews were loosely structured, relying on a list of issues to be discussed. The facilitator had a guide and 7 main topics which were used to probe information. The core team made appointments with key informants to avoid scheduling conflicts. Consent to conduct these interviews had to be obtained as the interviews had to be recorded for accuracy apart from the note taking.

Initial contact is a critical part of the interview during which interviewers must establish rapport with key informants and create an atmosphere in which key informants are able to willingly communicate their views and opinions. The facilitator briefly explained the background, the objective of the interview, and the possible uses of the information and ideas provided by the key informant. The key informant was also assured of the confidentiality of information.

4.7 Adherence to COVID-19 Regulations

The commencement of the survey was at a time when COVID was already a reality and because of this, it was prudent to take precaution at right at the beginning of the survey. Despite the enumerators having been vaccinated, once they were in the vehicles, each driver had sanitisers stationed in their vehicles to wipe down the interior of the vehicle and sanitise the enumerators as they settled into the vehicles. The enumerators and drivers were also given KN95 and surgical masks, hand sanitizers and social distancing was enforced. Each vehicle was to accommodate 3 persons including the driver except for one where 4 shared the vehicle space. This was in accordance with the GIZ COVID regulation protocol.

4.8 Data Analysis Framework

The data analysis framework in this report summarises the process of data collection and analysis used to arrive at descriptive statistics used to define and understand WASH outcome variables in Mwense in 2021. It allows us to navigate through data analysis process in an organized way and helps to describe the steps that were followed to examine the data to arrive to usable information for recommendations and decision making. In other words, the framework allows us to focus on the core objectives of the survey (baseline WASH outcomes) and possibly the actions and decisions that need to be taken to improve these outcomes.

Given the huge amount of data collected through the survey, the framework helps us to focus attention on the WASH outcomes that generate value or deal with critical WASH related outcomes first before examining all the other data that are available but of secondary importance.

The main analytical approach was descriptive analytics which helps us to understand the current situation in Mwense regarding WASH outcomes at the various units of analysis (households, schools, etc) described in the sampling section above. Information has been summarized using techniques such as modes, means, medians and proportions or percentages. The data has also been presented in frequencies, cross-tabulations, bar charts (including stacked charts for sanitation ladders) for ease of understanding.

The data analysis conceptual framework is visually summarized in Figure 15.

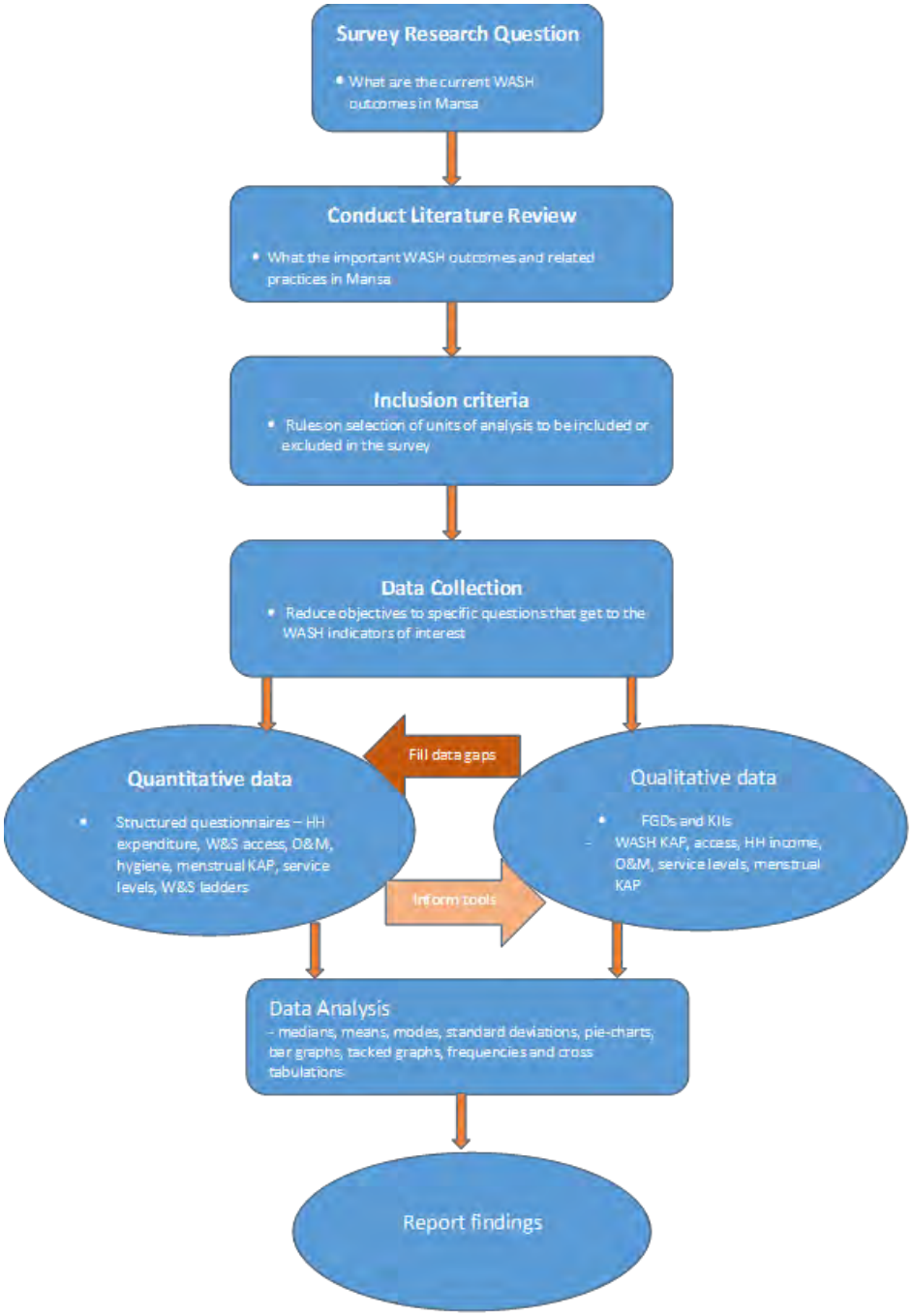


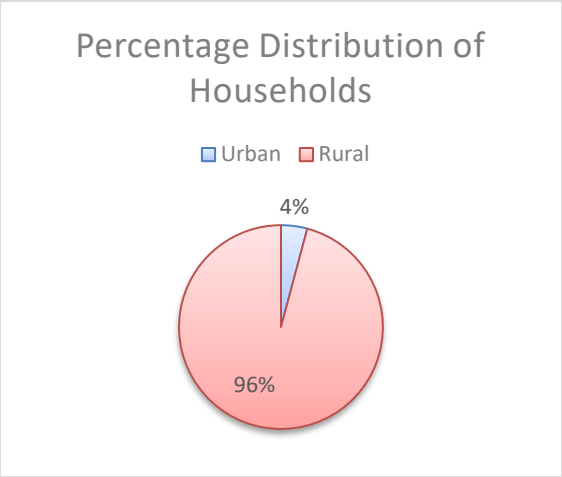
Figure 15: Data analysis conceptual framework

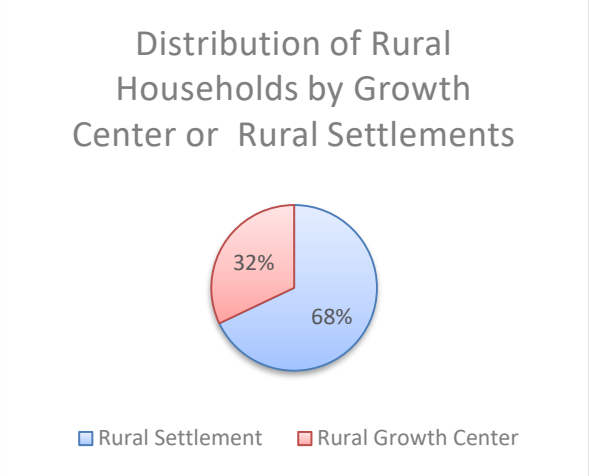
5 FINDINGS

5.1 Households

5.1.1 Socio-Economic Status & Electricity Connectivity

Average household size for urban and rural areas in Mwense





Findings 1: Mwense District distribution of households (N = 600)

Majority of households interviewed were from rural areas (96%, 575) as compared to those from urban areas (4%, 25). This generally represents the spread of population in Mwense which also geographically has larger rural areas compared to the urban areas.

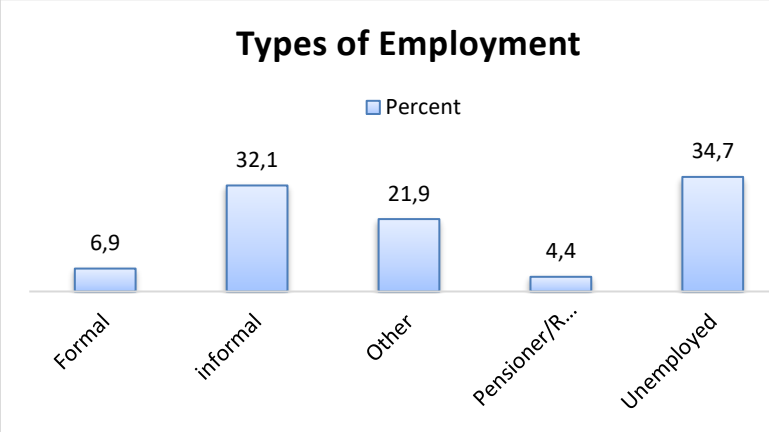
Average Size of Household in Mansa			*Average number of males per HH*			*Average number of females per HH*	
Mean	6.305		Mean	3.027		Mean	3.275
Standard Error	0.1188329566		Standard Error	0.0725858602		Standard Error	0.0994367134
Median	6		Median	3		Median	3
Mode	6		Mode	2		Mode	2
Standard Deviation	2.9108010819		Standard Deviation	1.7779832008		Standard Deviation	2.4356920973
Sample Variance	8.4727629382		Sample Variance	3.1612242626		Sample Variance	5.9325959933
Kurtosis	0.7139234135		Kurtosis	1.9967393772		Kurtosis	-0.390918041
Skewness	0.6812311228		Skewness	0.9055239029		Skewness	0.5221914894
Range	16		Range	13		Range	12
Minimum	1		Minimum	0		Minimum	0
Maximum	17		Maximum	13		Maximum	12
Sum	3783		Sum	1816		Sum	1965
Count	600		Count	600		Count	600

Findings 2: Mwense District average household size

The average household size in Mwense was 6 inhabitants and it was equally split between males and female (3 males and 3 females per household).

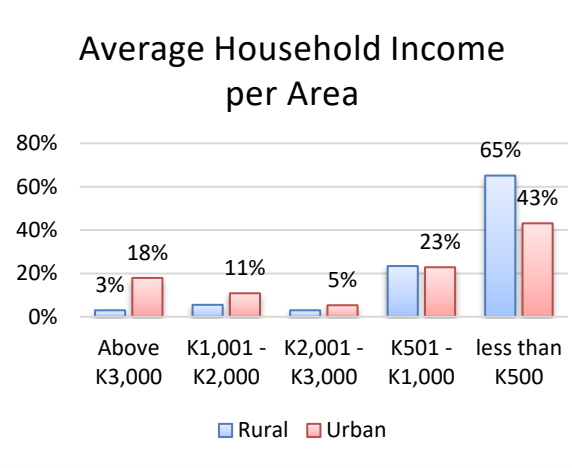
Employment

Very few people (6.9%) were in formal employment while 58.4% were in either unemployed or informally employed. 34.7% had some other form of employment. These jobs included farming, gardening, and businesses such as charcoal selling as well as minor jobs, amongst others.



Findings 3: Mwense District - types of employment (N = 599)

Average household income



Most of the households with the least income bracket of less than K500 came from rural areas (65% of 436 rural households). In contrast more people (18% of the 508 urban households) in the higher income bracket above K3, 000 came from the urban areas. There was a minimal difference in the K501 to K1, 000 bracket. In general, the urban areas had a larger share of households with higher incomes while the rural areas hard a larger share of lower incomes

Findings 4: Mwense District average household income (N=183)

Access to electricity

It is observed that most of Mwense District does not have access to electricity (84% of 600 households) and for those that have, access to electricity is through ZESCO (hydroelectricity) 13% and solar 3%. Willingness to connect to electricity out of those that had no access stood at 94%. (see Figure 16).

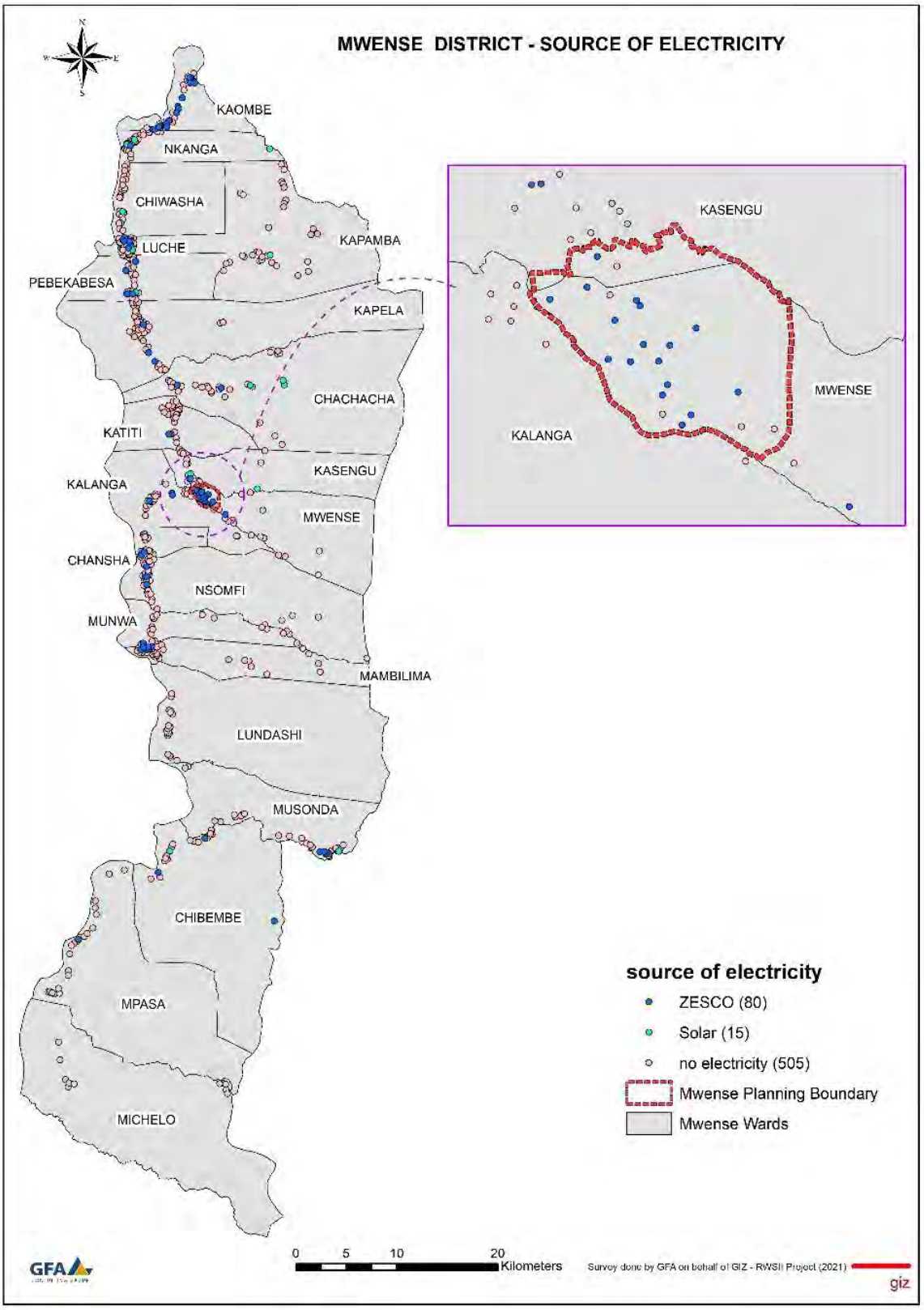
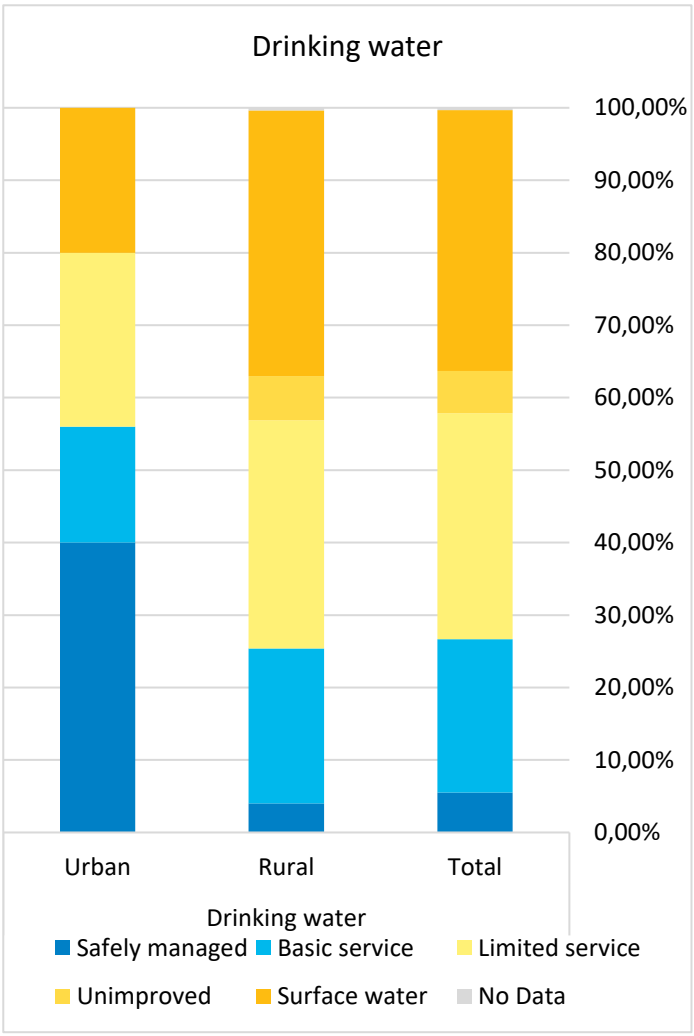


Figure 16:Mwense District household source of electricity (N=600)

5.1.2 Water Supply Services

Mwense JMP ladder for drinking water services



Mwense	Drinking water		
	Total	Rural	Urban
Safely managed	5.50%	4.00%	40.00%
Basic service	21.17%	21.39%	16.00%
Limited service	31.17%	31.48%	24.00%
Unimproved	5.83%	6.09%	0.00%
Surface water	36.00%	36.70%	20.00%
No Data	0.33%	0.35%	0.00%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of Mwense District using safely managed services is 5.5%, rural coverage being 4% and urban coverage being 40%.

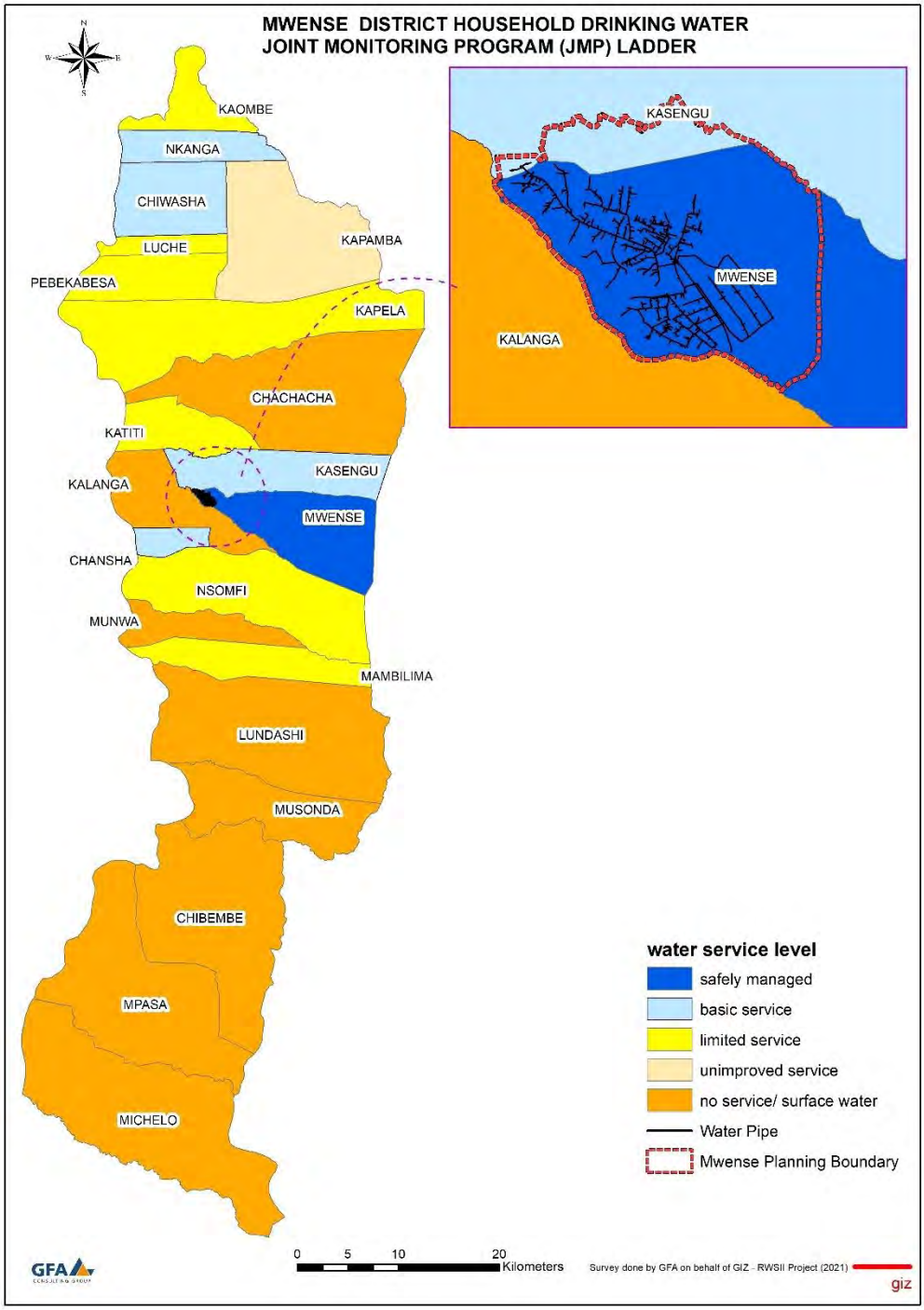
In 2021, out of an estimated population of 126,742 in Mwense District, 119,353 people lacked safely managed services including 26,831 people with basic services, 39,505 people with limited services, 7389 people using unimproved sources and 45,627 drinking surfaces water.

People living in the rural areas were ten times as likely to lack safely managed services as those living in the urban areas. Please refer to Table 2 for the definition and clarifications on the service level indicators for drinking water.

Findings 5: Mwense District JMP ladder for drinking water

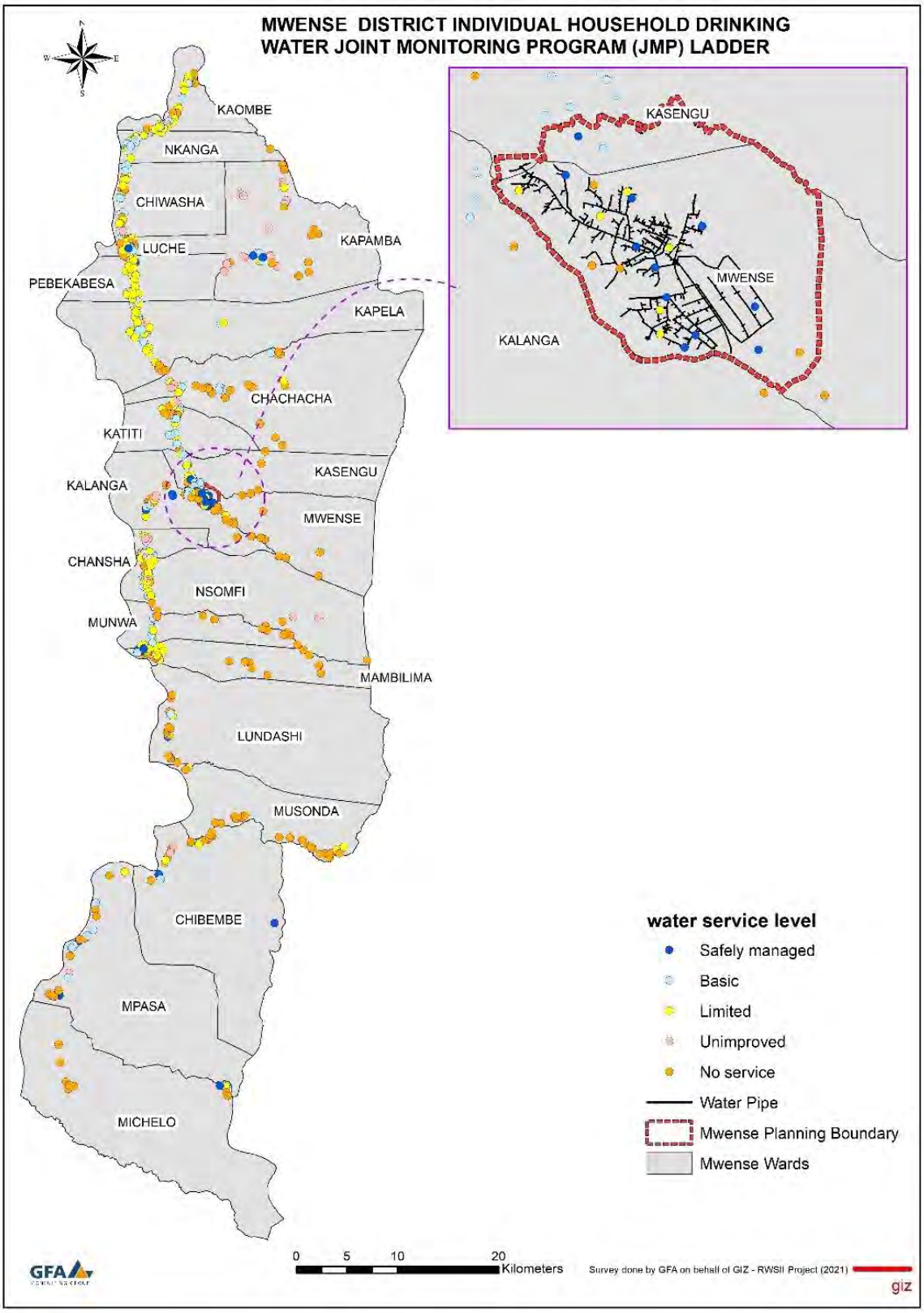
Note

One of the four criteria for safely managed drinking water is that it needs to be free from contamination. In this JMP ladder calculation this was estimated by the respondent's perception of the quality of the drinking water, i.e. the drinking water was considered to be free from contamination if it was perceived to be either 'Very good (does not require any further treatment)' or 'Good/fair (may require treatment by user)'

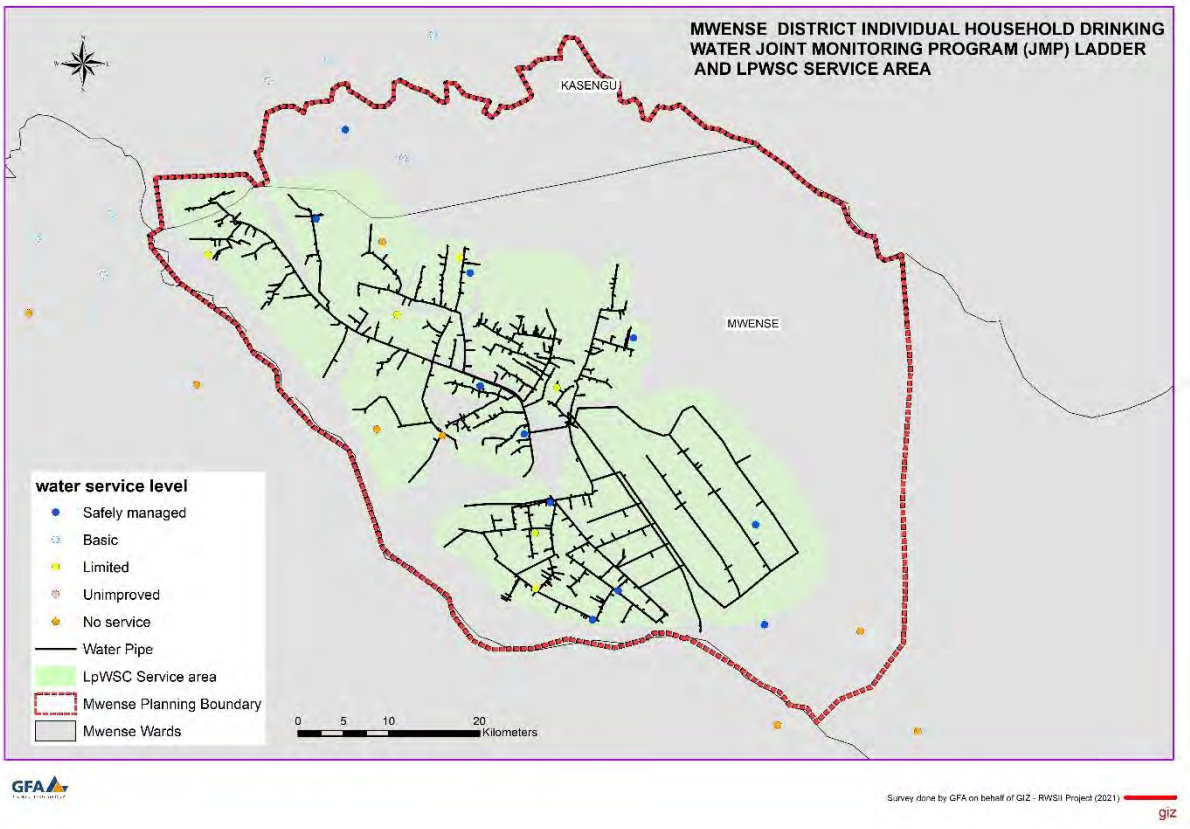


Findings 6: Mwense District ward level JMP for household drinking water services

Findings 6 shows JMP indicators at ward level. Out of the 21 wards in Mansa District, only one ward, namely Mwense which at the central business district (CBD) has majority of its households having access to safely managed drinking water. Majority of the wards in Mwense District have majority accessing surface for as a drinking water source which relates to what is being reported in Findings 6. To see how this distribution is at individual household level refer to Findings 7.



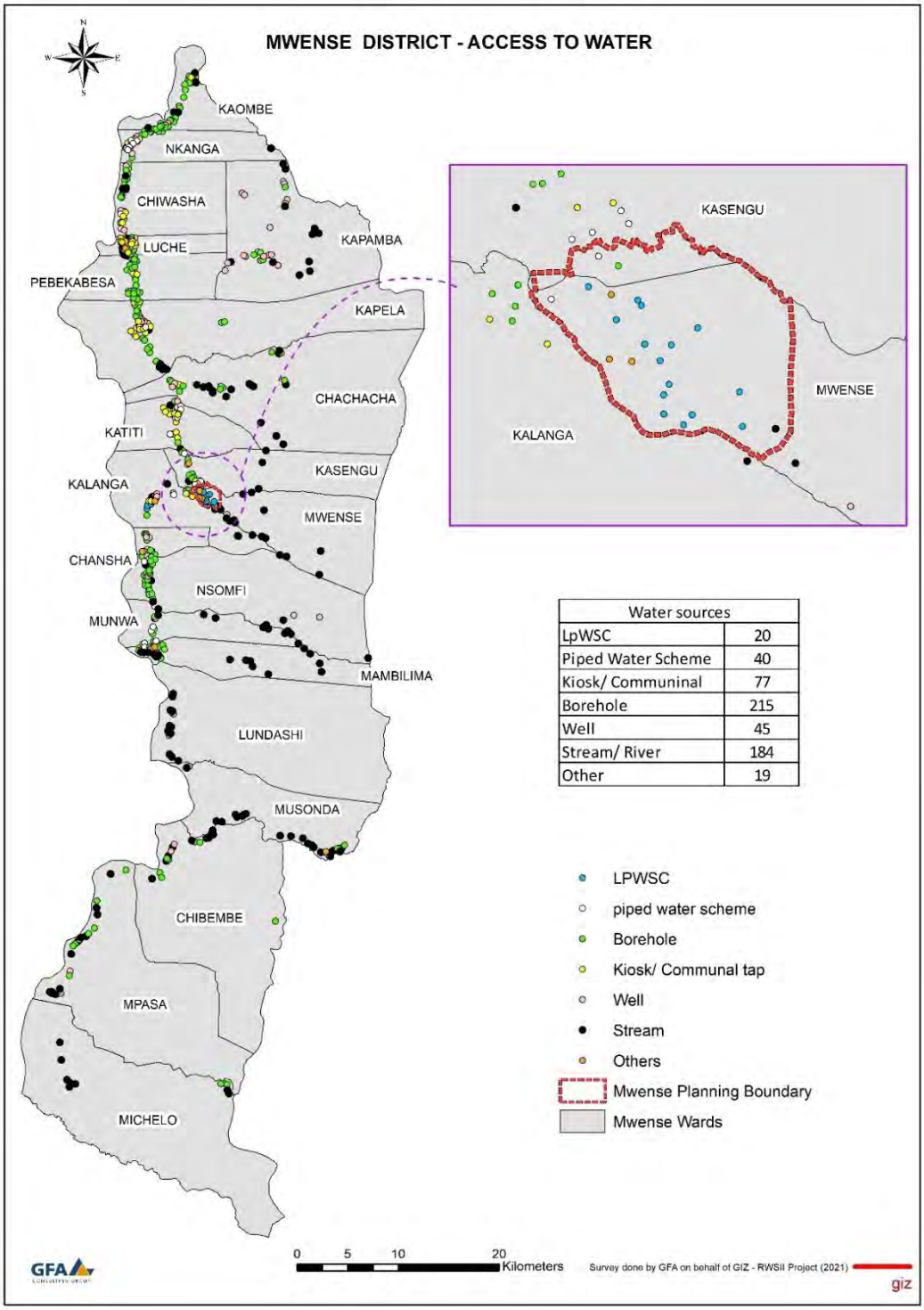
Findings 7: Map of Mwense District showing the JMP ladder for drinking water



Findings 8: Map of Mwense District drinking water service level around the Mwense planning boundary and current LpWSC service coverage area

An operating service license from NWASCO has been issued to LpWSC to cover the entire district. But as one can see from Findings 7 and Findings 8, LpWSC is currently only servicing almost half of the planning boundary of Mwense but has also already extended its services to 5 growth centres through piped water schemes, the extent of this service has not yet been digitized. From Findings 8, it is expected that all households along the service line of LpWSC would have access to safely managed or basic services, but this is not the case because the water is not available when needed, and they have to resort to alternative water sources which affected the collection time mostly.

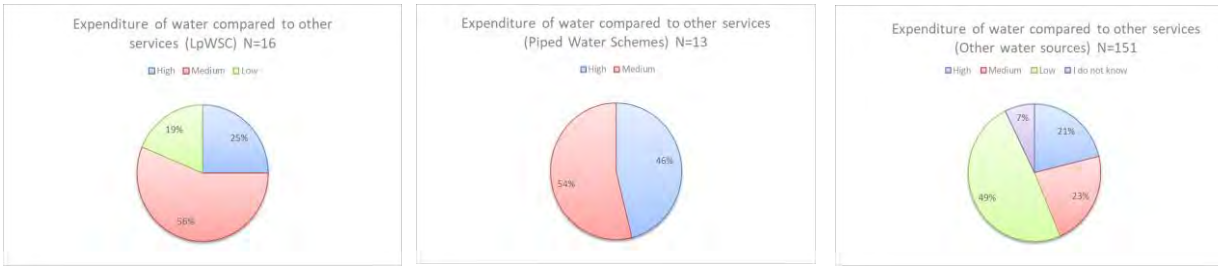
Type of water source



Findings 9: Mwense District households-type of water sources / access

From Findings 9, majority of household access water from the stream/river and only 3% of the enumerated plots were connected to LpWSC while 97% were not.

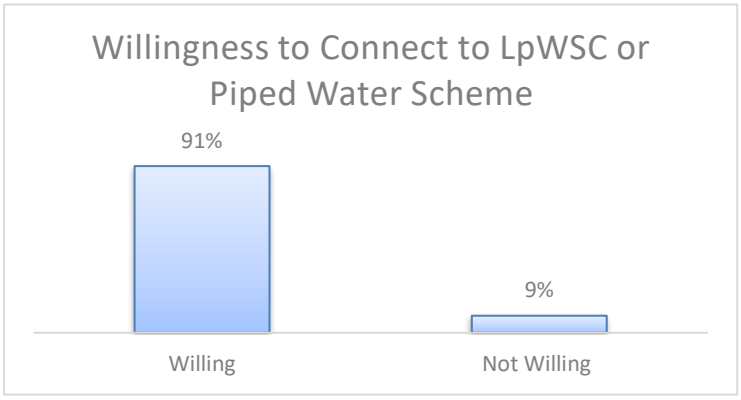
Affordability of the water service



Findings 10: Mwense District expenditure of water compared to other services

For the households on LpWSC, majority (54%) of the households thought the LpWSC water services were moderately affordable and about 25% categorise water as an expensive service. While as for those that are accessing from piped water schemes, majority 54% thought it was moderately affordable and about 46% categorise water as an expensive service. Lastly for the households using other sources, 49% thought the water service was cheap while about 23% and 21% categorise it as moderately affordable and expensive respectively.

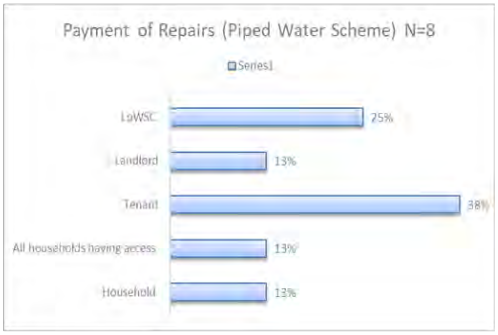
Willingness to connect to LpWSC

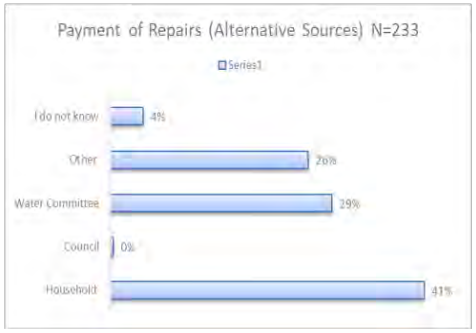


Majority of the people (91%) were willing to connect to the LpWSC network. An appreciable number of 9% were unwilling to connect.

Findings 11: Mwense District willingness to connect to LpWSC (N = 539)

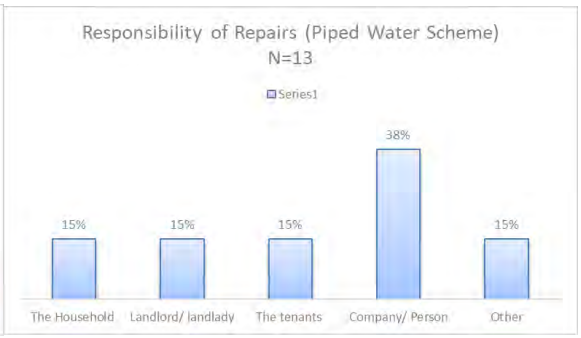
Maintenance of water services

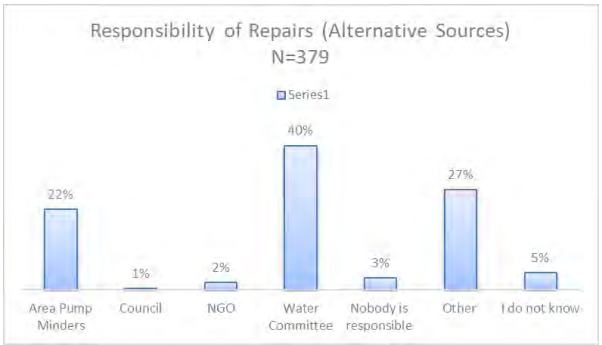




Findings 12: Mwense District responsibility for payment of maintenance repair works of the water source

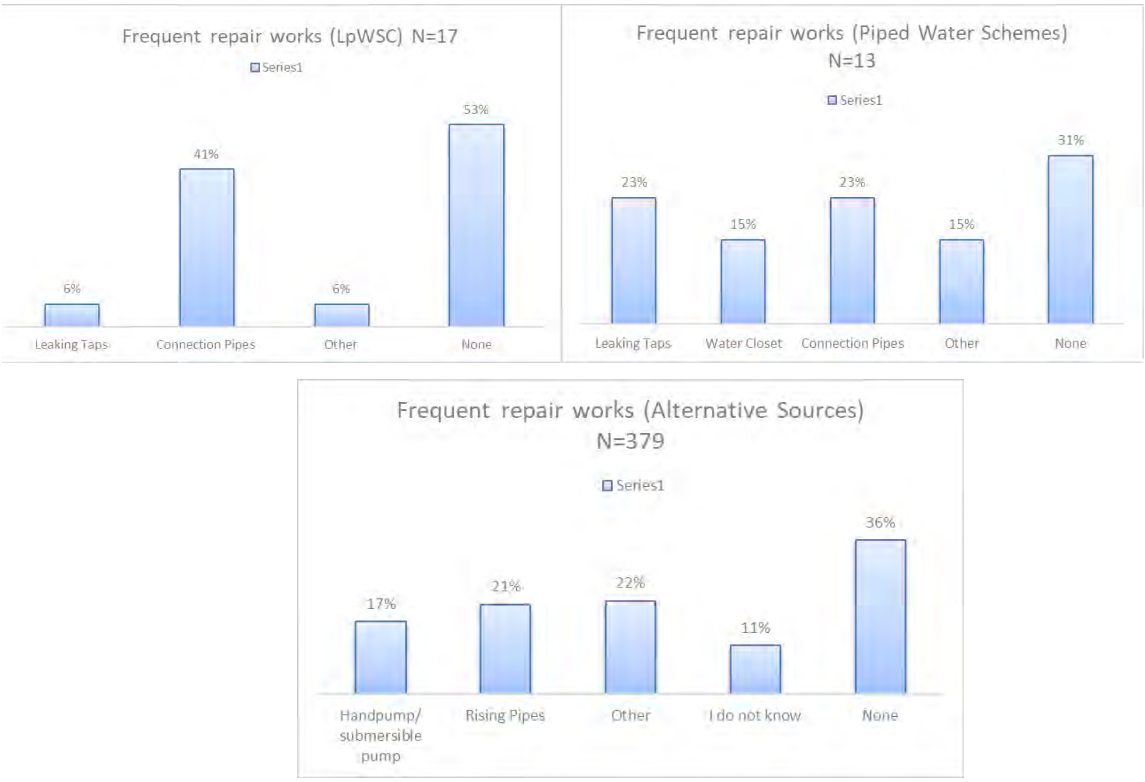
Regarding the LpWSC connections, the responsibility to pay for maintenance/ repair works lies with the LpWSC. While for those connected to piped water schemes the tenants are pay for repairs and lastly the alternative sources repairs are paid by the household themselves.





Findings 13: Mwense District responsibility to conduct repairs

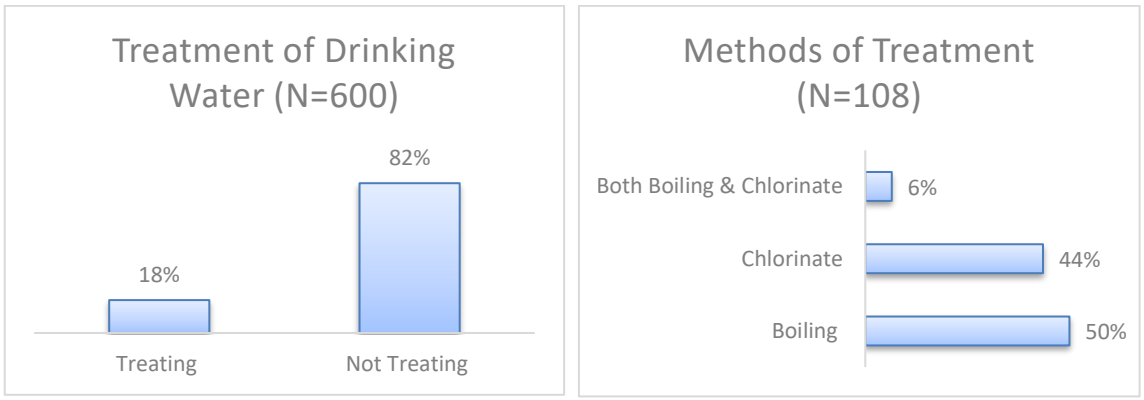
Regarding the LpWSC connections, the responsibility of conducting these repairs lies with the LpWSC. While for those connected to piped water schemes, a company or person is responsible for conducting repairs and lastly for the alternative sources conducting repairs is the responsibility of the water committee



Findings 14: Mwense District water service frequent repairs

Majority of the repairs done on LpWSC connections were connection pipes meanwhile 53% reported that no repair works had occurred. While for those connected to piped water schemes, it was leaking taps and connection pipes with about 31% not having any repairs done. Lastly for the ones with alternative sources, majority of the repairs were others which were mostly replacement of rubbers and also rising with about 36% not having any repairs done.

Treatment of drinking water

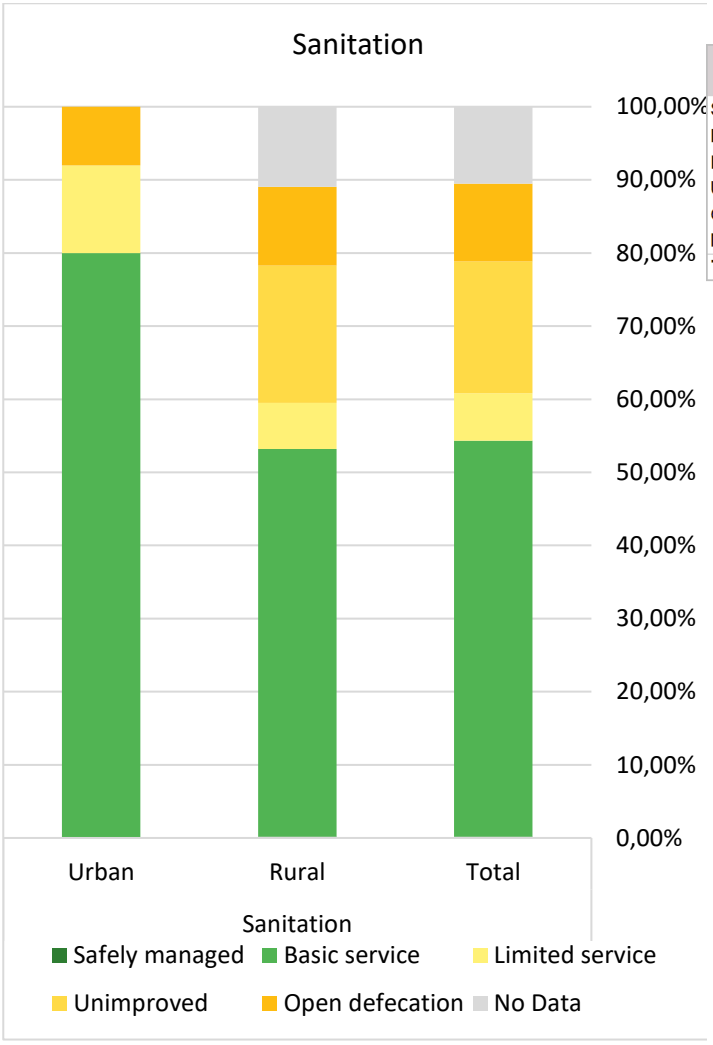


Findings 15: Mwense District treatment of drinking water

There was a higher number of households who do not treat drinking water (82%) than those who do treat (18%). On the other hand of those who treat water most of them boil (50%) or chlorinate (44%) or do both (6%).

5.1.3 Sanitation Services

Mwense JMP ladder for sanitation services



Mwense	Sanitation		
	Total	Rural	Urban
Safely managed	0.17%	0.17%	0.00%
Basic service	54.17%	53.04%	80.00%
Limited service	6.50%	6.26%	12.00%
Unimproved	18.00%	18.78%	0.00%
Open defecation	10.67%	10.78%	8.00%
No Data	10.50%	10.96%	0.00%
Total	**100.00%**	**100.00%**	**100.00%**

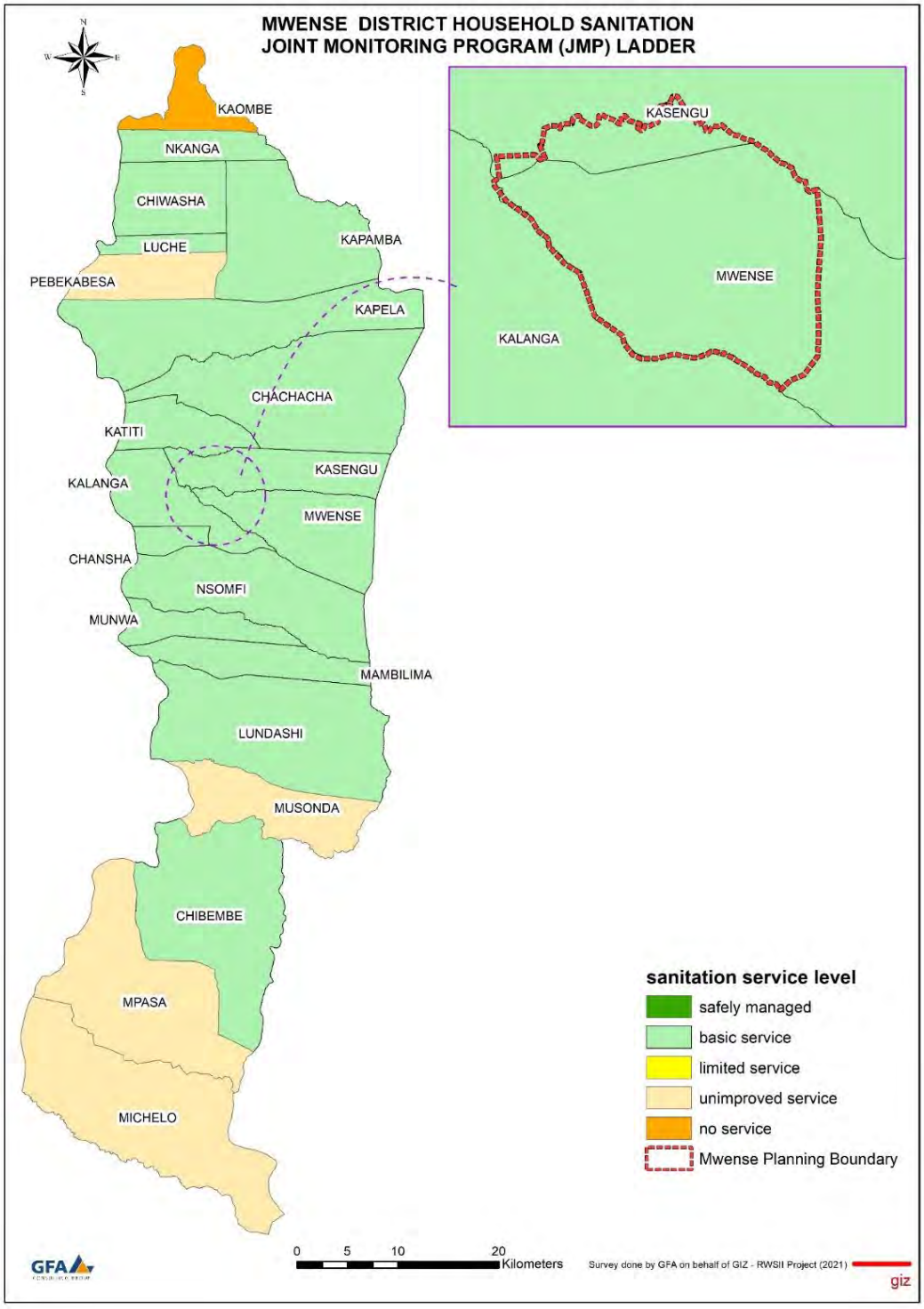
The proportion of Mwense District using safely managed services is 0.17%, rural coverage being 0.17% and urban coverage being 0%.

In 2021, out of an estimated population of 126,742 in Mwense District, 126,526 people lacked safely managed services including 68,646 people with basic services, 8,238 people with limited services, 22,814 people using unimproved facilities and 13,523 practicing open defecation.

Two thirds of people who still lacked even basic services lived in rural areas. 97% of the population practising open defecation lived in rural areas.

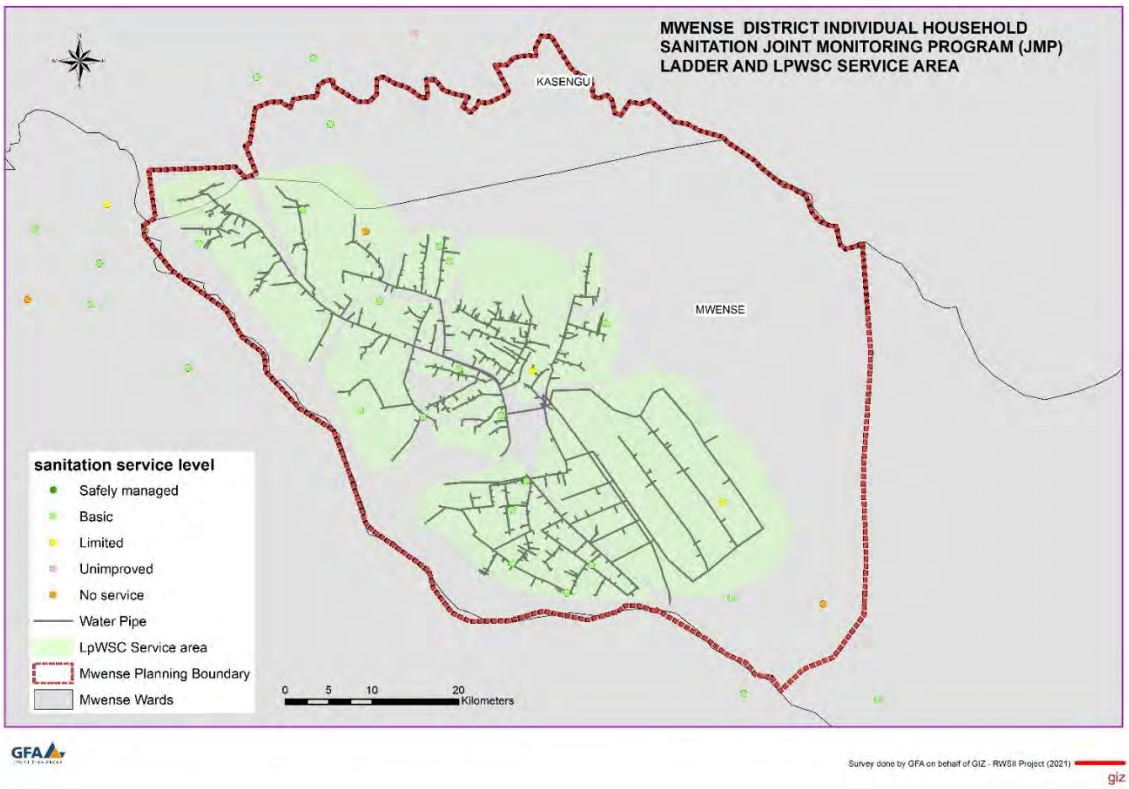
Please refer to Table 3 for the definition and clarifications on service level indicators on Sanitation.

Findings 16: Mwense District JMP ladder for sanitation services



Findings 17: Mwense District ward level JMP for household sanitation services

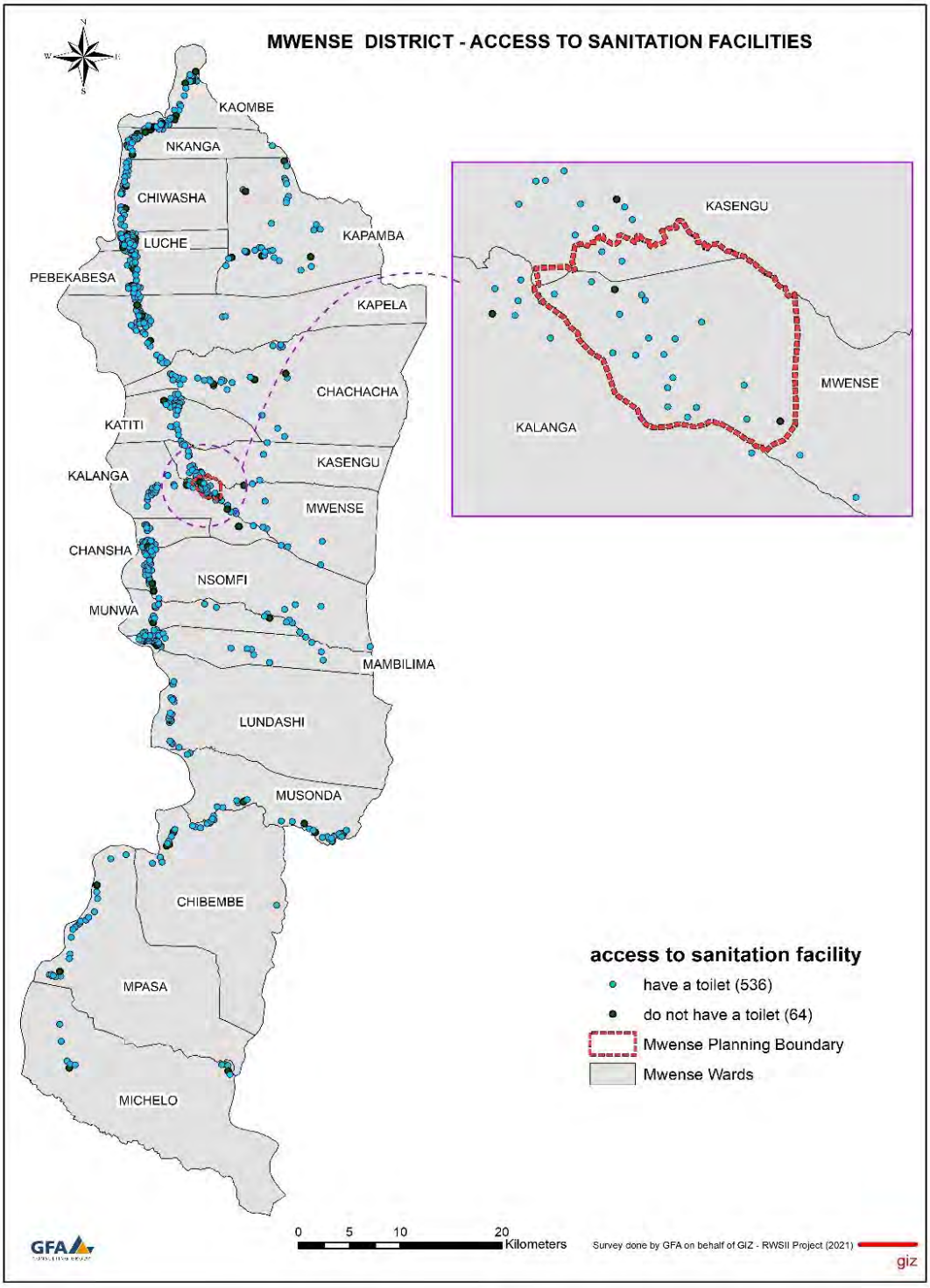
Findings 17 shows JMP indicators at ward level, 16 out of the 21 wards in Mwense District, have majority of its households having access to basic sanitation services which relates to what is being reported in Findings 16. Four wards having majority of the households having access to unimproved service while one ward has majority practicing open defecation. To see how this distribution is at individual household level refer to



Findings 18: Map of Mwense District sanitation service level around the Mwense planning boundary and current LpWSC service coverage area

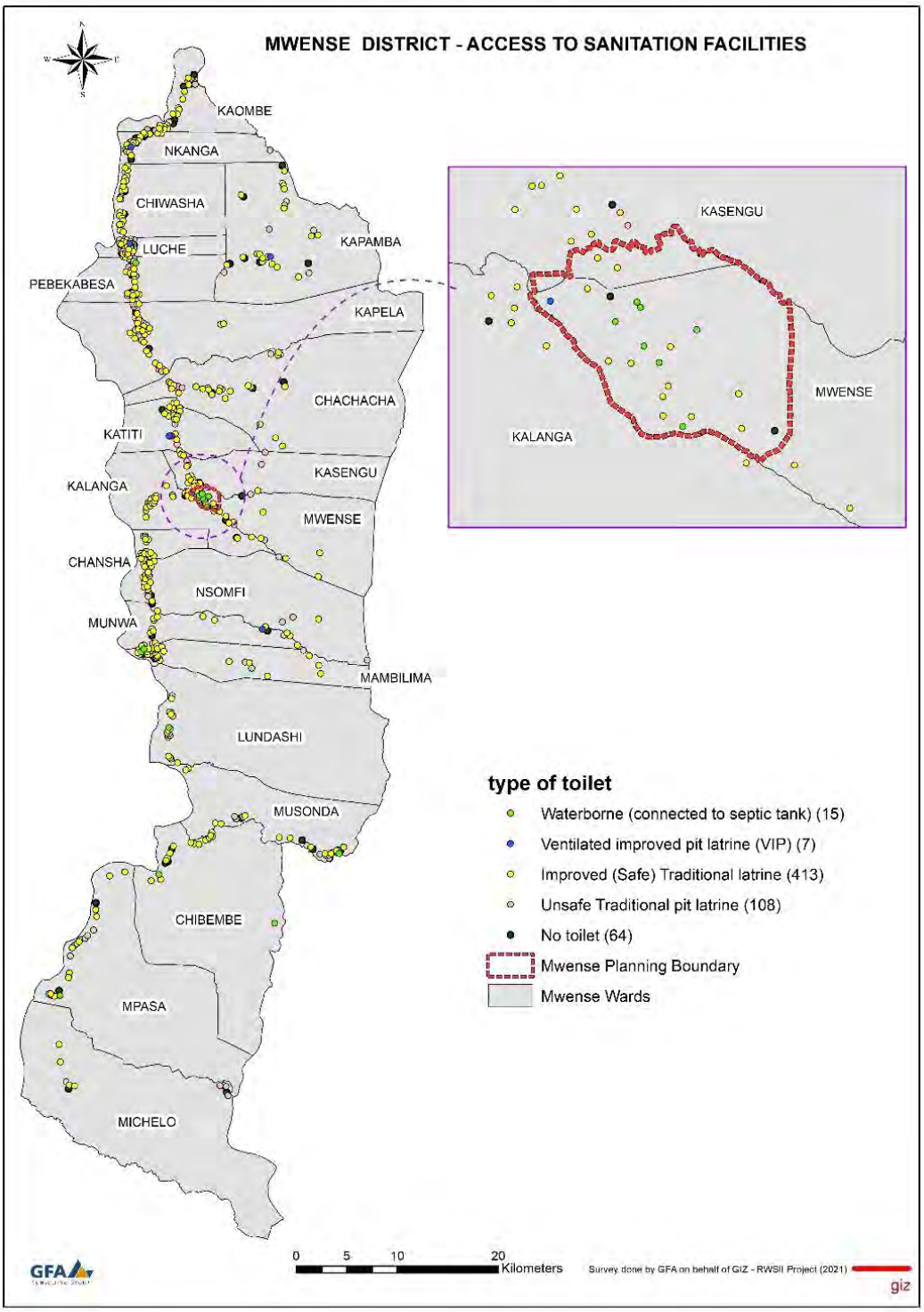
From the statistics provided by LpWSC, the current urban population on offsite sanitation stands at 0%. This is because LpWSC has no sewer connection in the district. At the time of the survey LpWSC had not been dealing with onsite sanitation (OSS) as expected with the extended mandate through the OSS and Faecal Sludge Management (FSM) Regulatory Framework.

Access to sanitation facilities



Findings 19: Mwense district households - access to sanitation facilities

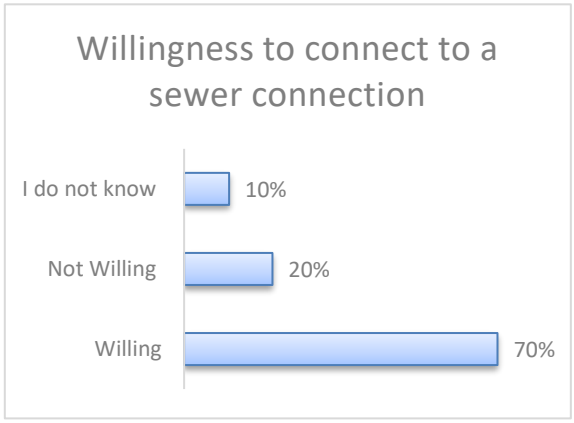
From Findings 19 it is observed that not having access to a toilet is not only in the rural areas or outskirts as most would expect but the CBD of Mwense District also has households that do not have access to sanitation facilities.



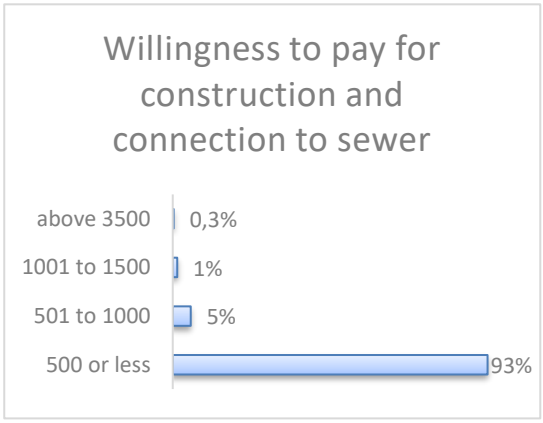
Findings 20: Map of Mwense District households - type of sanitation facilities

From Findings 20, it is observed that open defecation is not only practiced in the rural areas, but also in the urban areas open defecation is practiced. Majority of households that have access to toilets in Mwense District use improved (safe) traditional latrines (77%). Out of the 89% that have access to sanitation facilities, only 10% share their sanitation facilities with other households.

Willingness to connect to a sewer line



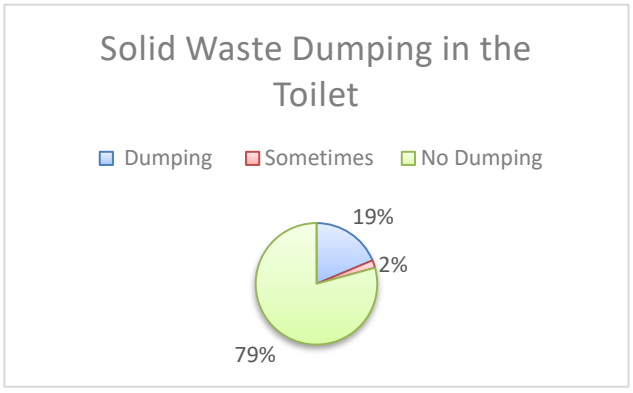
Findings 21: Mwense District willingness to connect to a sewer line (N = 536)



Findings 22: Mwense District willingness to pay for a sewer line connection (N = 376)

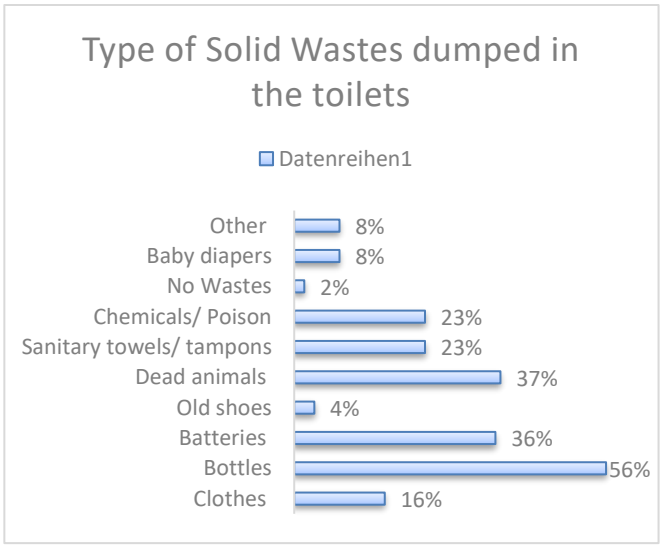
Majority (70%) of the households are willing to connect to a sewer if there was an option for that service. However, most of the households are willing to pay 500 ZMW or less for constructing and connecting.

Solid waste dumping in toilets



Findings 23: Mwense District solid waste dumping practices in the toilets (N =535)

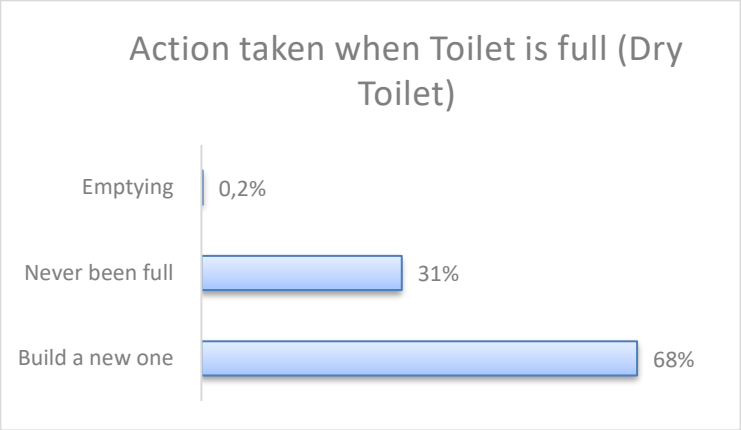
Majority (79%) of the households do report not dumping solid waste in the dry toilets. 19% do report dumping solid waste in dry toilets while 2% sometimes do it.



Findings 24: Mwense District types of wastes dumped in the dry toilet (N = 111)

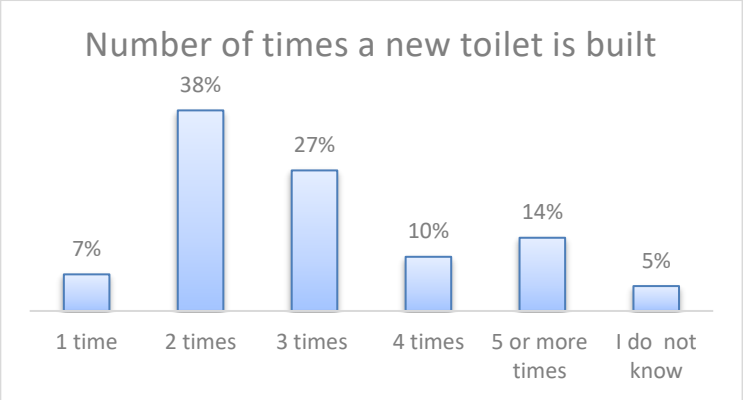
Majority (56%) of the waste dumped in the dry toilets are batteries, then followed by dead animals (37%) and chemicals/poison (23%). This could have an impact on the empty technologies to be used when providing onsite sanitation services. This is an important factor to note when planning for FSM.

Emptying practices



Findings 25: Mwense District emptying practices (N = 528)

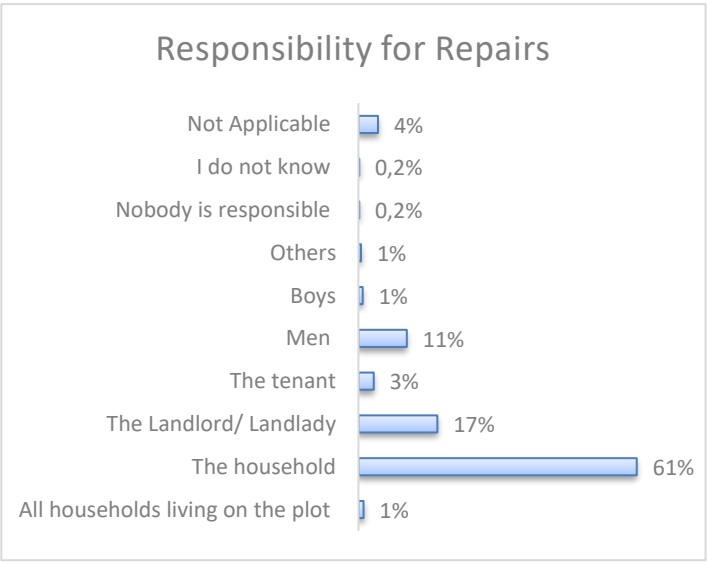
Of those with dry toilets, 68% build a new toilet when the one gets full, while 31% have never had full toilets. 0.2 represents manual emptying (bucket emptying) by individuals and this is from Katiti ward.



Findings 26: Mwense District number of times a new toilet is built (N = 362)

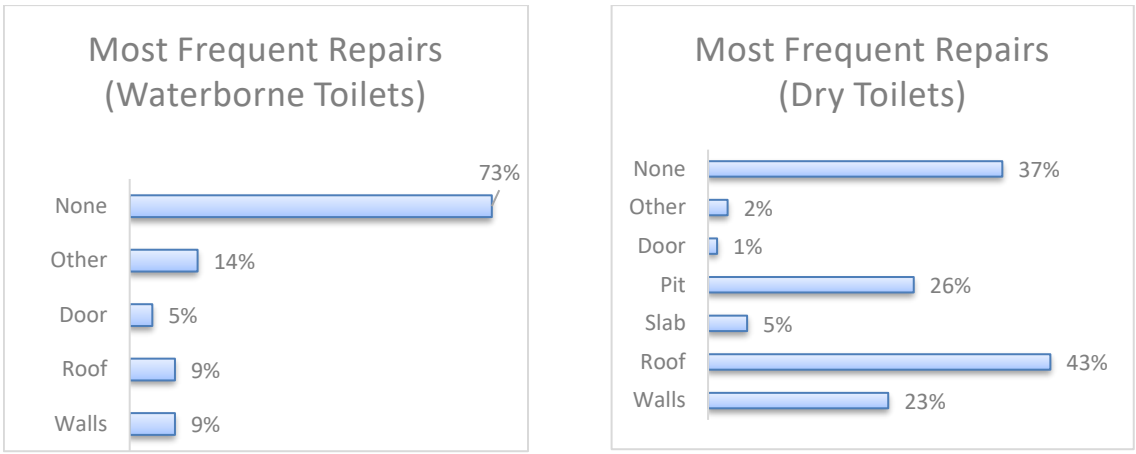
Although this question was not applicable to 32% of respondents, whose toilets have never been full and of those who empty their toilets. Majority 38% have built a new toilet twice, 27% three times and 14% 5 or more times.

Maintenance of sanitation facilities



Findings 27: Mwense District responsibility for repair of toilet (N = 535)

In general, the household mostly takes responsibility of repairing the toilets (61% and 17% it's the landlord/landlady.



Findings 28: Mwense District most frequent toilet repairs (N = 474)

Majority responded that there have been other repairs (14%) on waterborne toilets than those listed i.e. unblocking the septic while for the dry toilet it was the slab (43%), the door (26%), and the walls (23%). In addition, 73% of respondents with waterborne toilets and 37% with dry toilets reported that no repairs had been done.

5.1.4 Hygiene Services

Mwense JMP ladder for hygiene services

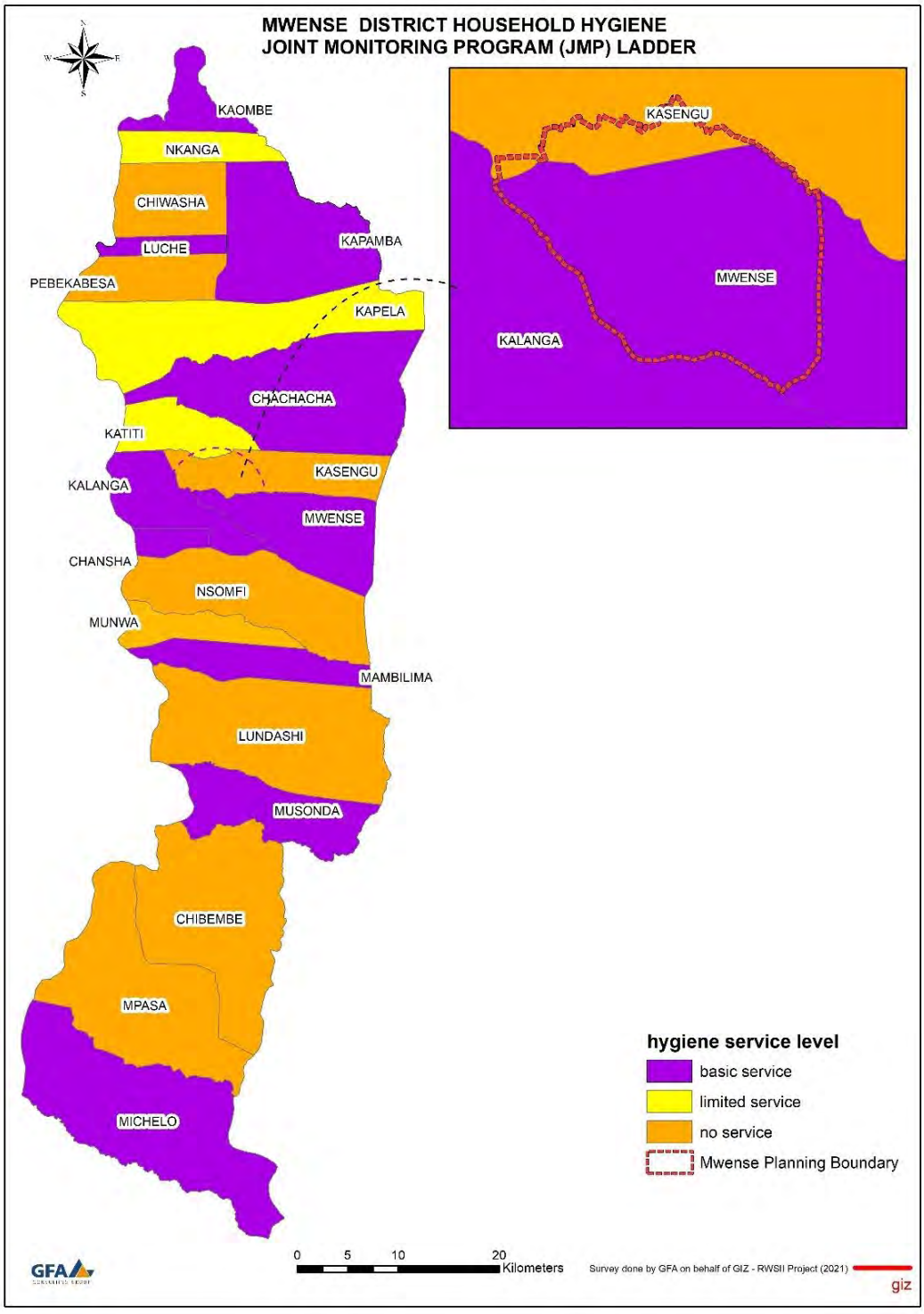
Findings 29: Mwense District JMP ladder for hygiene services

Mwense	Hygiene		
	Total	Rural	Urban
Safely managed	-	-	-
Basic service	43.33%	42.78%	56.00%
Limited service	18.50%	18.96%	8.00%
Unimproved	-	-	-
No Service	38.17%	38.26%	36.00%
No Data	0.00%	0.00%	0.00%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of Mwense District using basic services is 43.3%, rural coverage being 42.8% and urban coverage being 56%.

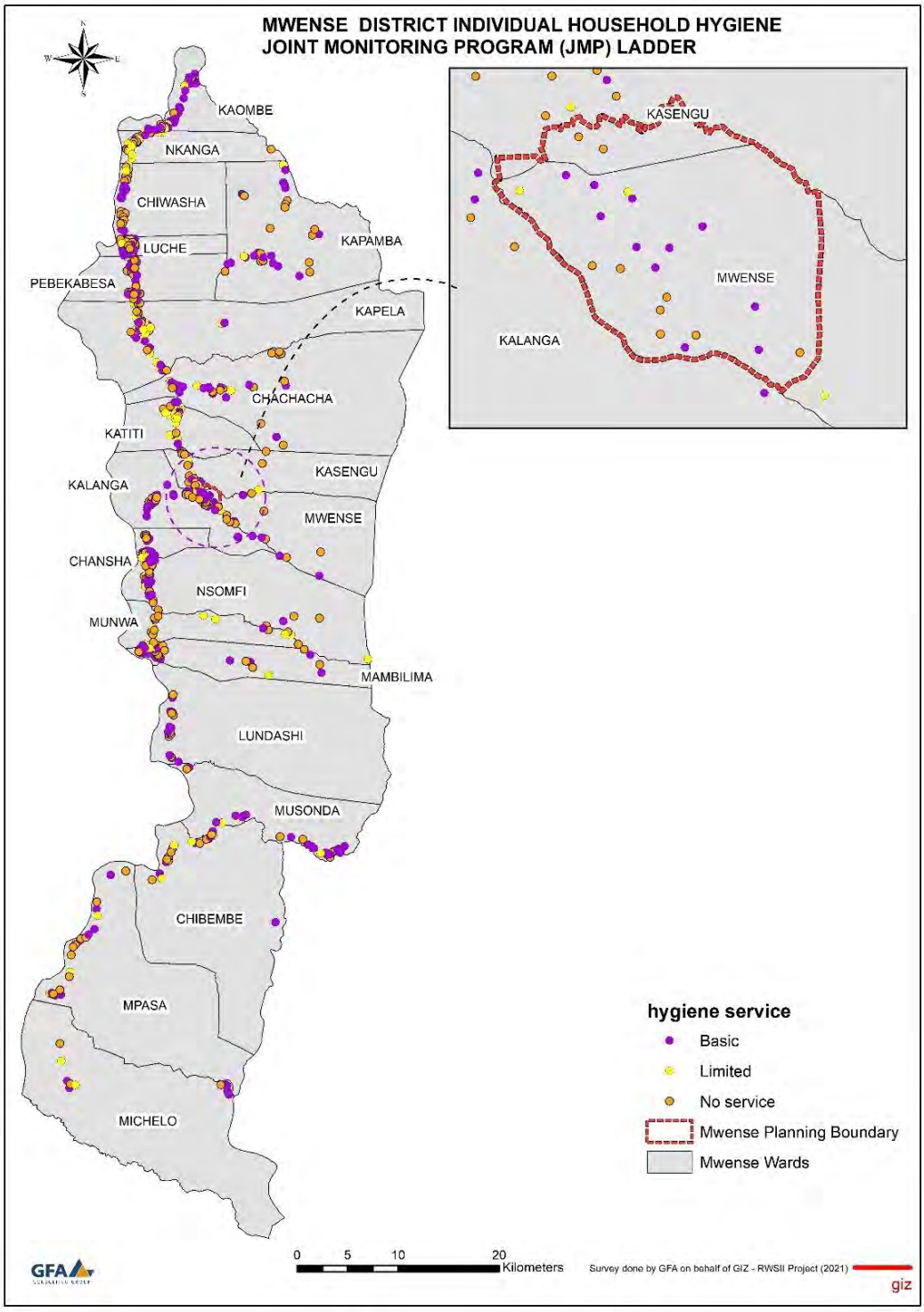
In 2021, out of an estimated population of 126,742 in Mwense District, 71825 people lacked basic services including 48,377 with no handwashing facilities at all.

Please refer to Table 4 for the definition and clarifications on some of the hygiene terms.



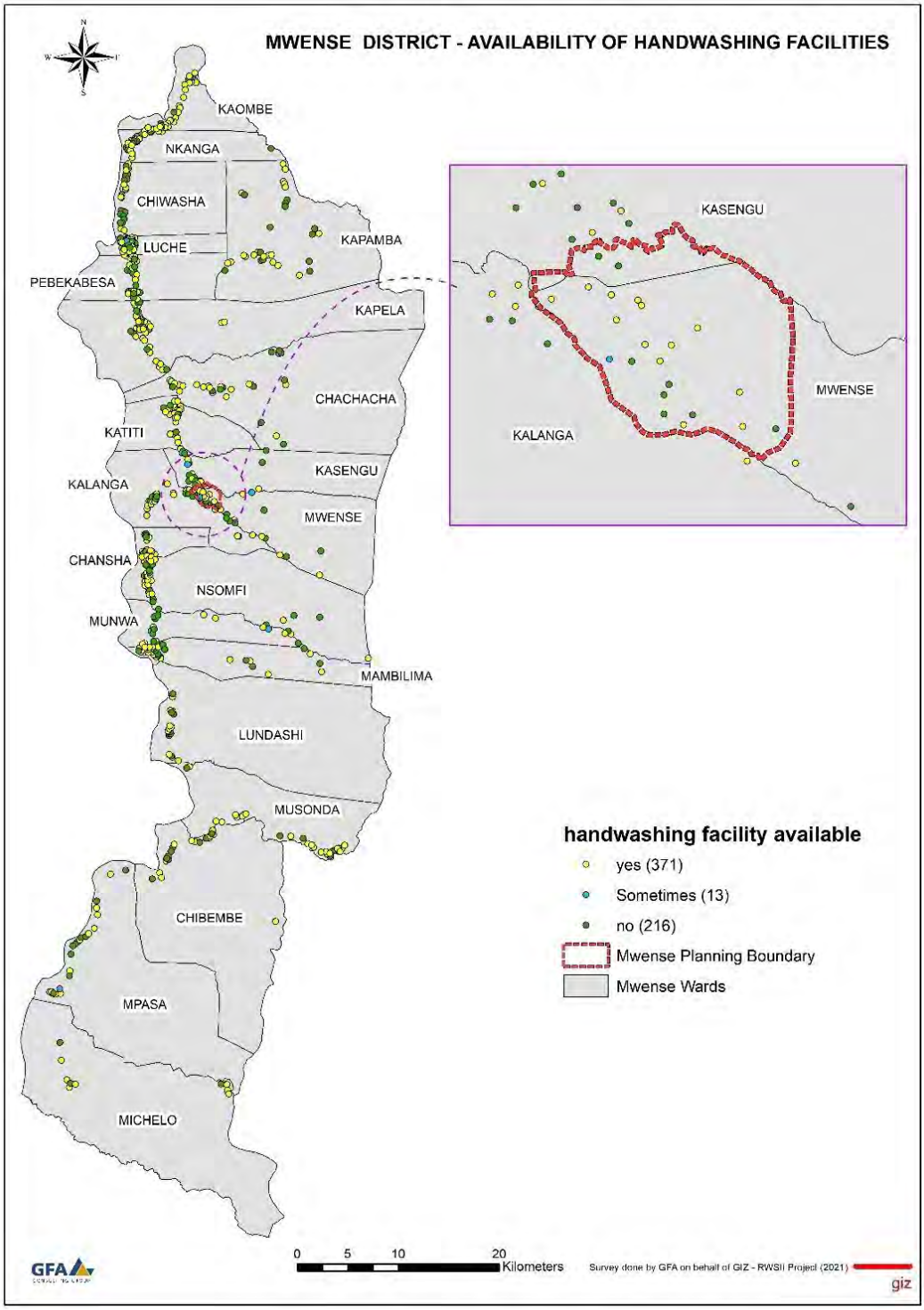
Findings 30: Mwense District ward level JMP for household hygiene services

Findings 30 shows JMP indicators at ward level. Out of the 21 wards in Mwense District, only ten wards have majority of its households having access to basic hygiene services. There are 8 wards in Mwense District that have majority of the households with no access to hygiene services. To see how this distribution is at individual household level refer to Findings 31.



Findings 31: Mwense District map showing JMP ladder for hygiene services

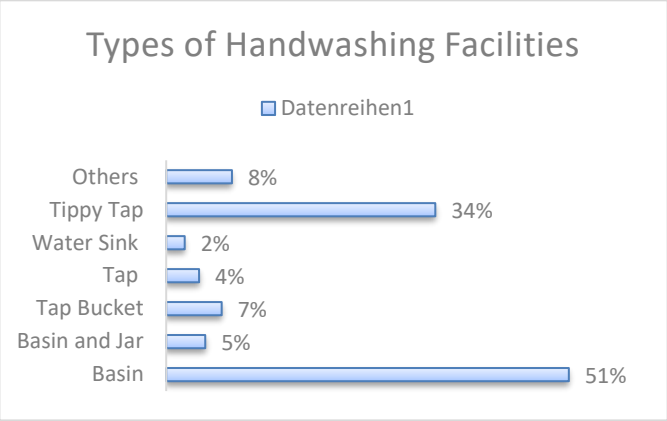
Access to hygiene facilities



Findings 32: Mwense District households- access to hygiene facilities

From Findings 32, it is observed that not having access to a handwashing facility is not only in the rural areas or outskirts but also in the urban areas. Overall, out of the visited households, 62% (371 in total) had access to handwashing facilities, while 38% had no access or had sometimes access to handwashing facilities.

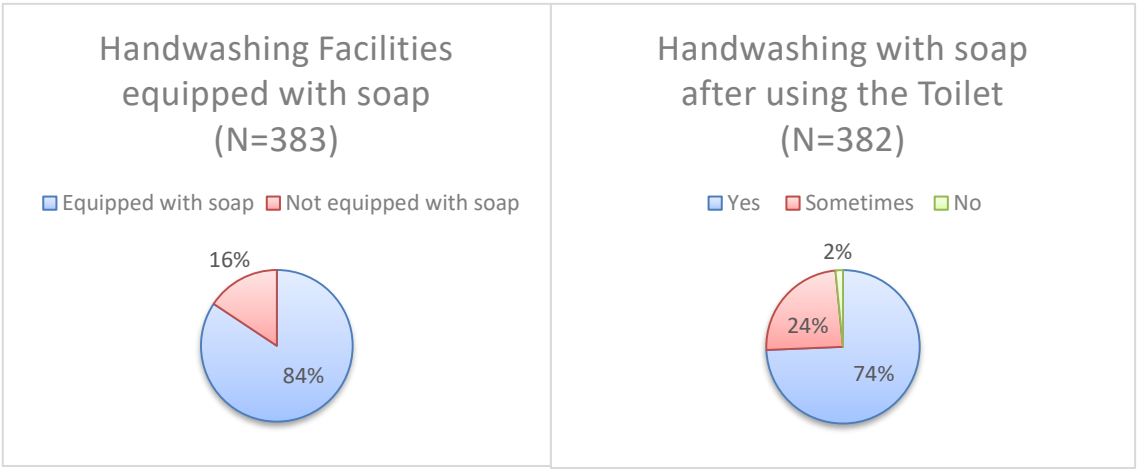
Type of handwashing facilities



Majority (51%) of the households that had handwashing facilities use a basin and other alternatives (34%) which mainly included a bottle or container.

***Findings 33*: Mwense District types of handwashing facilities (N = 383)**

Handwashing with soap

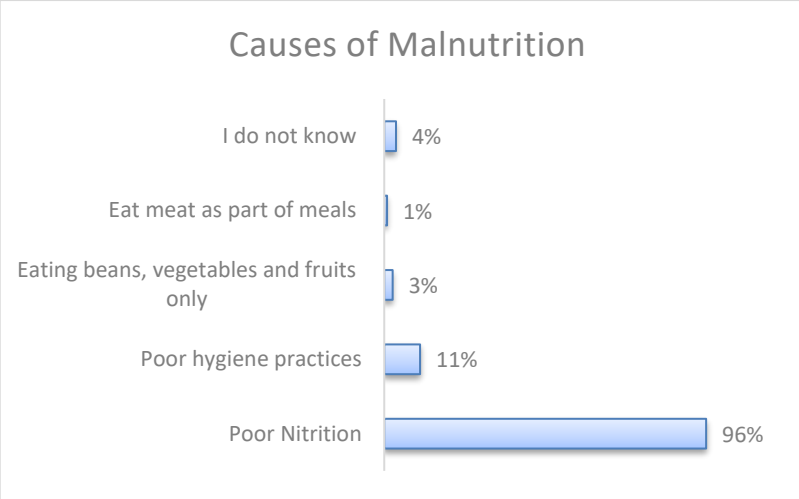


Findings 34: Mwense District handwashing with soap practices

From households that had handwashing facilities, 84% of them were equipped with Soap and from these about 74% washed their hands with soap after using a toilet. Those households that did not equip their handwashing facility with soap gave reasons such as cannot afford soap, or the soap is not available in the area.

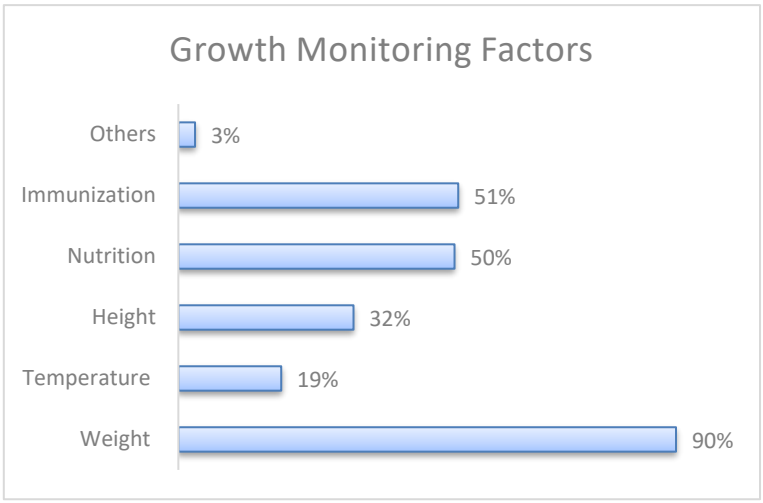
5.1.5 Scaling Up Nutrition

Child nutrition



Findings 35: Mwense District causes of malnutrition (N = 599)

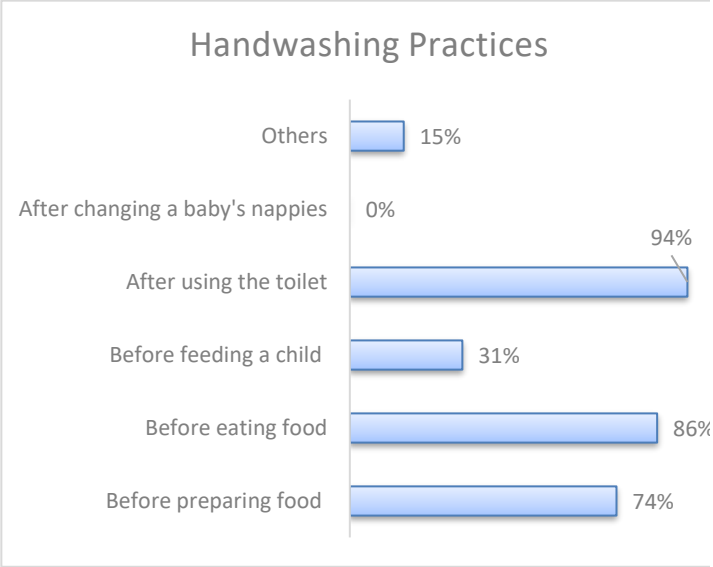
In general, majority of Mwense District relate malnutrition more to poor nutrition than poor hygiene.



Findings 36: Mwense District growth monitoring factors for children (N = 596)

Weight (90%) was the most common growth factor while only 32% monitored height as well. But to determine stunted or wasted growth, the weight and height of the child needs to be compared with age.

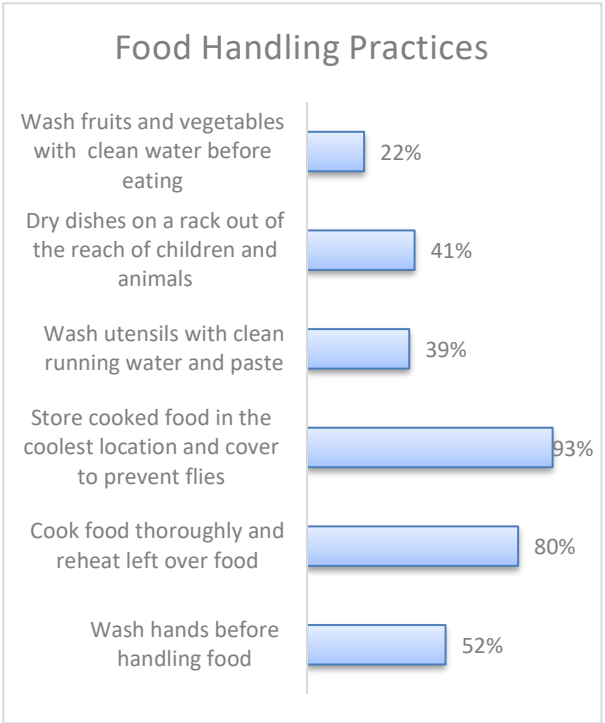
Hand hygiene practices



Findings 37: Mwense District handwashing practices (N = 488)

Majority of Mwense District wash their hands after using a toilet (94%), as well as before eating (86%) and before preparing the food (74%). It is observed that none from the visited households practice handwashing after changing the baby's nappies. Interpreting this result at District level would not necessarily mean there isn't a household in the entire district do not practice this but simply means there is a negligible amount of households that do and it is not an embedded behaviour or habit for most. This may be due to a baby's faeces are not considered to be as contagious as an adult's. If none wash their hands after changing baby and only 31% are washing their hands before feeding the baby, chances of infecting the child are quite high

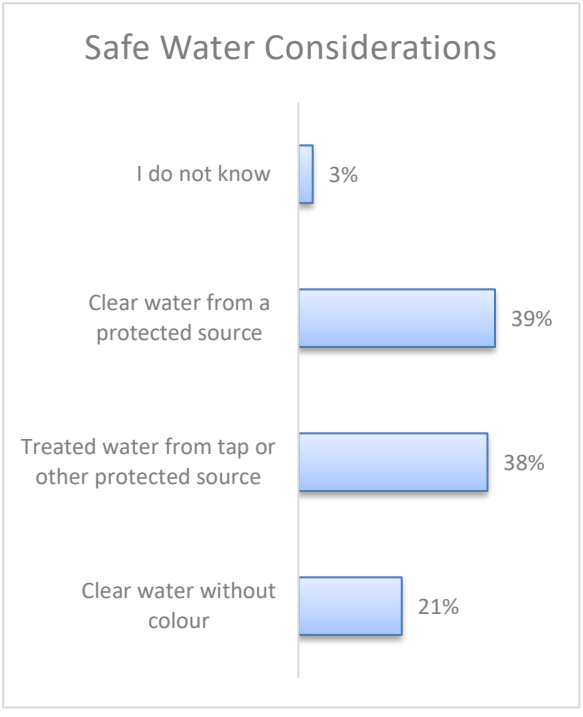
Food handling practices



Findings 38: Mwense District food handling practices (N = 599)

Majority of Mwense District (93%) store their cooked food in the coolest location and cover to protect from flies.

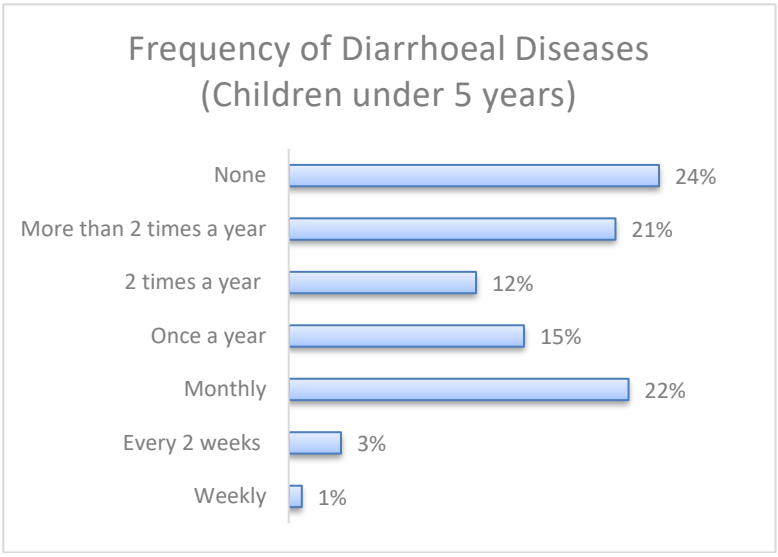
Safe water



Findings 39: Mwense District considerations for safe water (N = 599)

Majority (39%) categorise safe water as clear water from an improved water source and 38% as treated water coming from tap or other protected source.

Diarrhoeal diseases



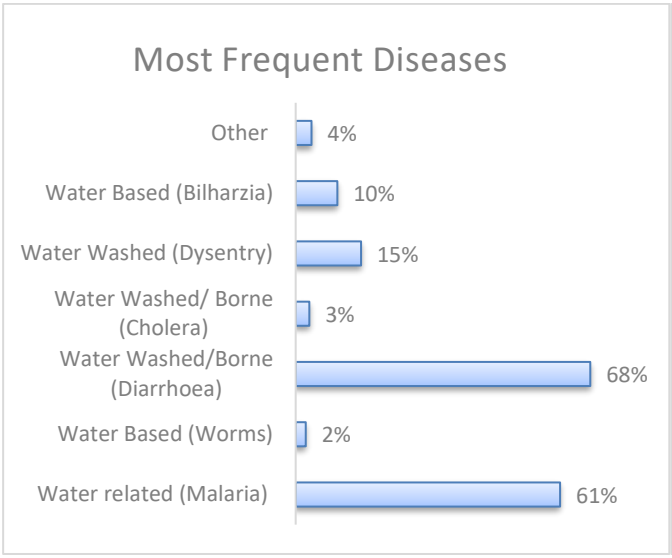
The highest frequency for diarrhoeal diseases for children below the age of five years in Mwense is monthly (22%) and more than twice a year (21%). In addition, 24% of households do not have a frequent occurrence of diarrhoeal diseases for their children under five.

Findings 40: Mwense District frequency of diarrhoeal diseases (N = 382)

Findings 41: Mwense District diarrhoeal diseases in the last 6 months and 1 year (N = 265)

The proportion of children under the age of 5 that had diarrhoeal diseases in the last 6 months and 1 year were 69% and 89% respectively.

5.1.6 Water Borne Diseases

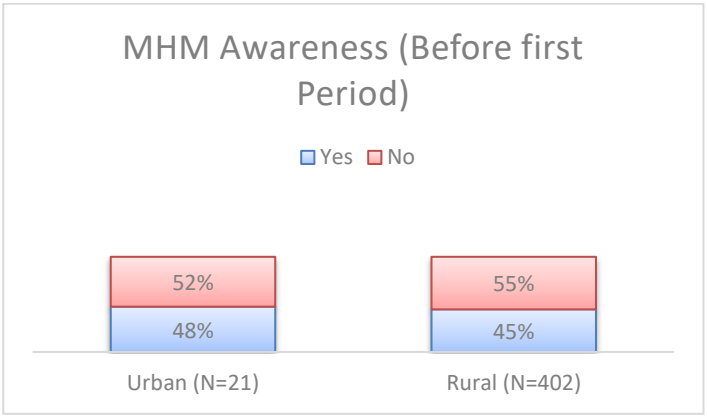


Findings 42: Mwense District waterborne diseases (N=599)

The most frequent disease in Mwense District is diarrhoea (68%) and malaria (61%). These results are rather surprising that diarrhoea is more frequent than malaria because Mwense District is a mosquito infested and malaria prone district. There has been much prevalence of cholera in the last 2 years.

5.1.7 Menstrual Health Management

Awareness of menstruation before menarche

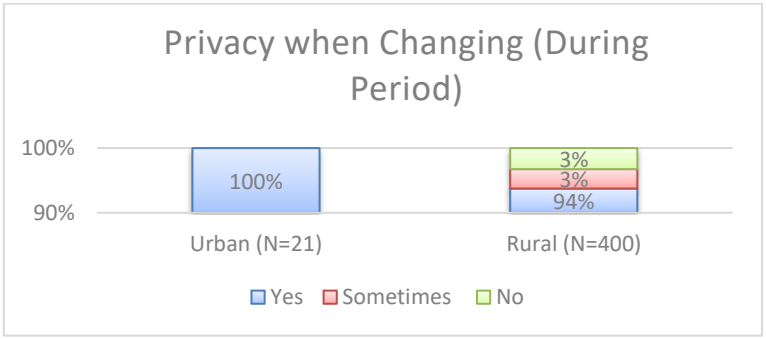


Majority in the rural areas (55%) and urban (52%) were not aware of MHM before their first period.

Findings 43: Mwense District MHM - Awareness before first menstruation (N = 423)

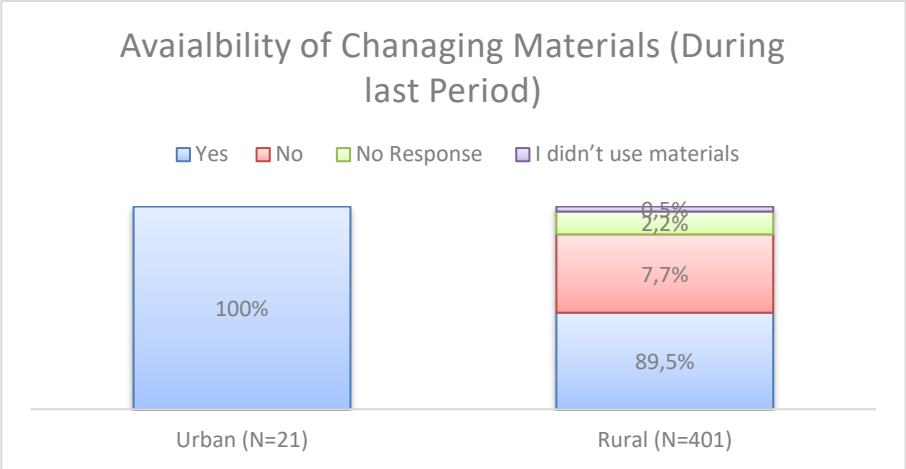
Privacy when changing

Majority had access to a private place to wash and change their sanitary towels at home in both the urban and rural areas. .



Findings 44: Mwense District MHM - Privacy when changing (N=421)

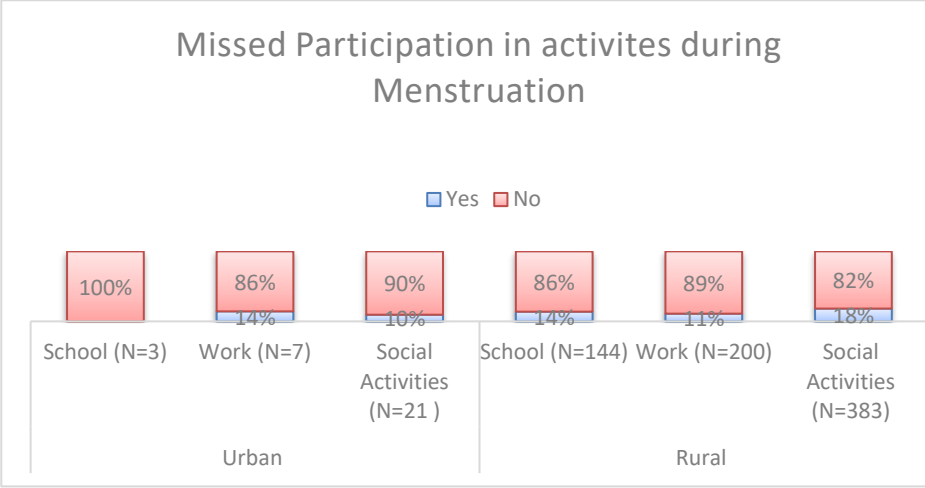
Use of menstrual materials



Majority had access to menstrual materials to capture and contain menstrual blood during their last period, while 2.2% of the respondents in the rural areas refused to respond to this question.

Findings 45: Mwense District MHM - Use of menstrual materials (N = 422)

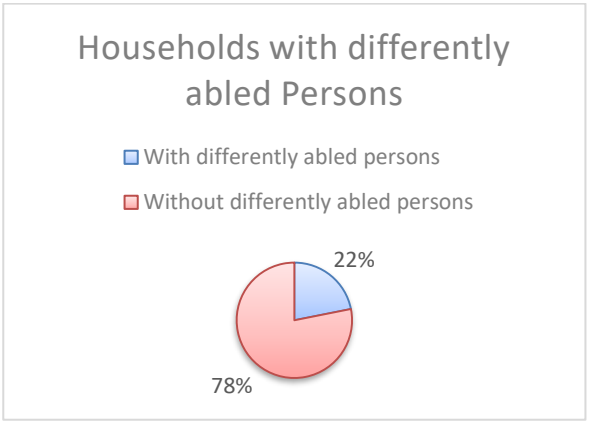
Participation in activities during menstruation



Participation in various activities during menstruation was observed to not be a challenge. From the population that had challenges, majority were from the rural areas.

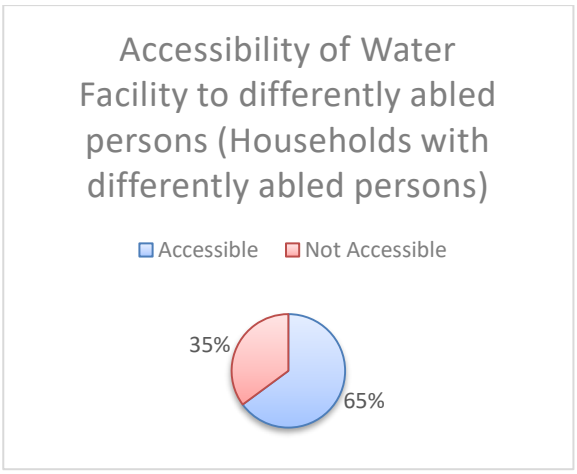
Findings 46: Mwense District MHM - Participation in activities during menstruation (N = 147 for schools, N = 207 for work and N = 404 for social activities)

5.1.8 Social Inclusion



22% of households in Mwense District have persons with limited mobility living with them.

Findings 47: Mwense District Households living with differently abled persons (N = 599)

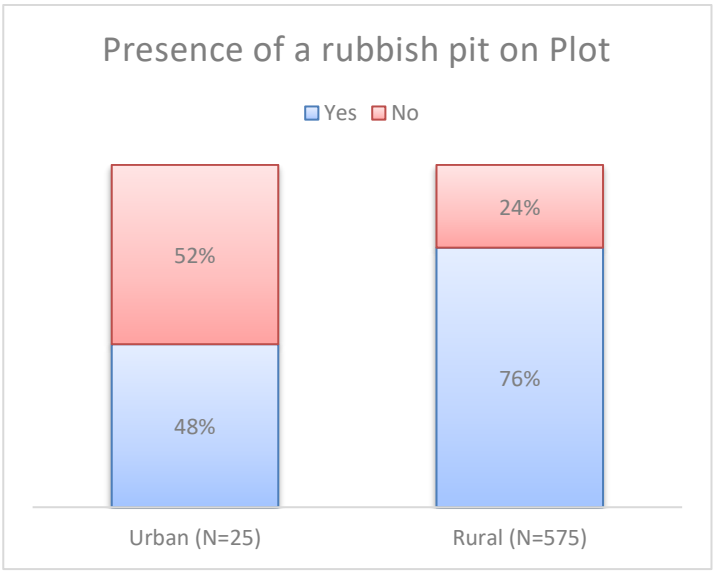


Findings 48: Mwense District households with water facilities accessible to differently abled persons (N = 131)

Findings 49: Mwense District households with sanitation facilities accessible to differently abled persons (N = 131)

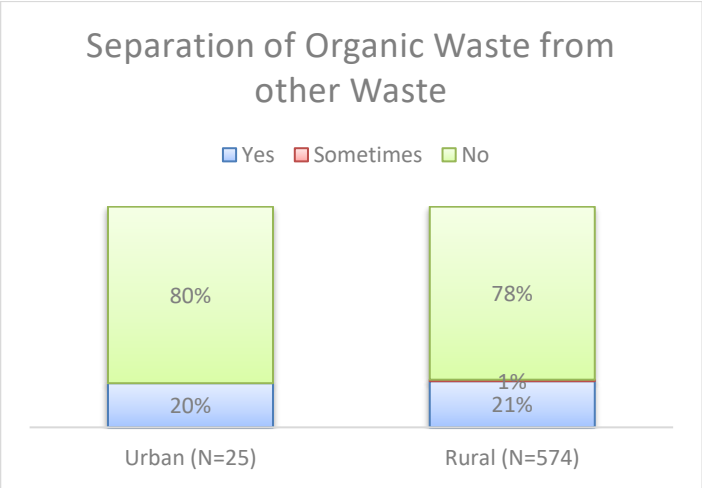
Majority of the households with differently abled persons have water and sanitation facilities which are accessible to these persons. The main form of accessibility for the water facility and sanitation (92% and 88% respectively) facility is a clear path without stairs/steps and free from obstruction

5.1.9 Solid Waste Management



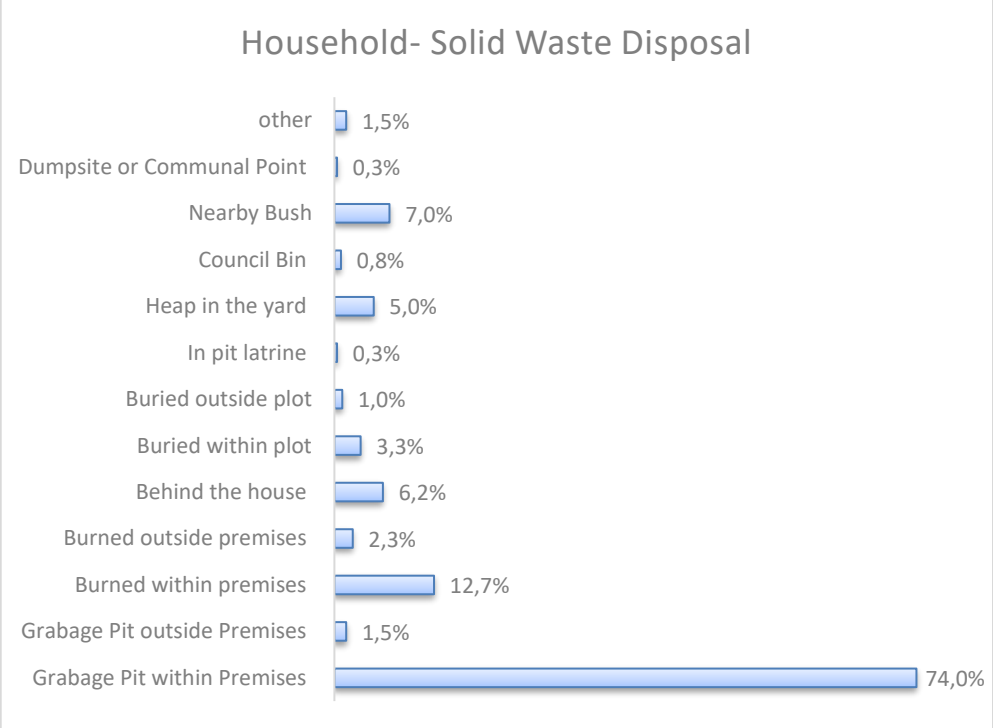
Findings 50: Mwense District solid waste management - pit system (N = 600)

Majority of households in the urban areas (52%) did not have a rubbish pit on their plot, while 76% of rural households did have one.



While most households gathered their waste in the rubbish pits, most households, 80% of urban and 78% of rural, did not separate organic waste from other waste.

Findings 51: Mwense District solid waste management separation of waste (N = 599)

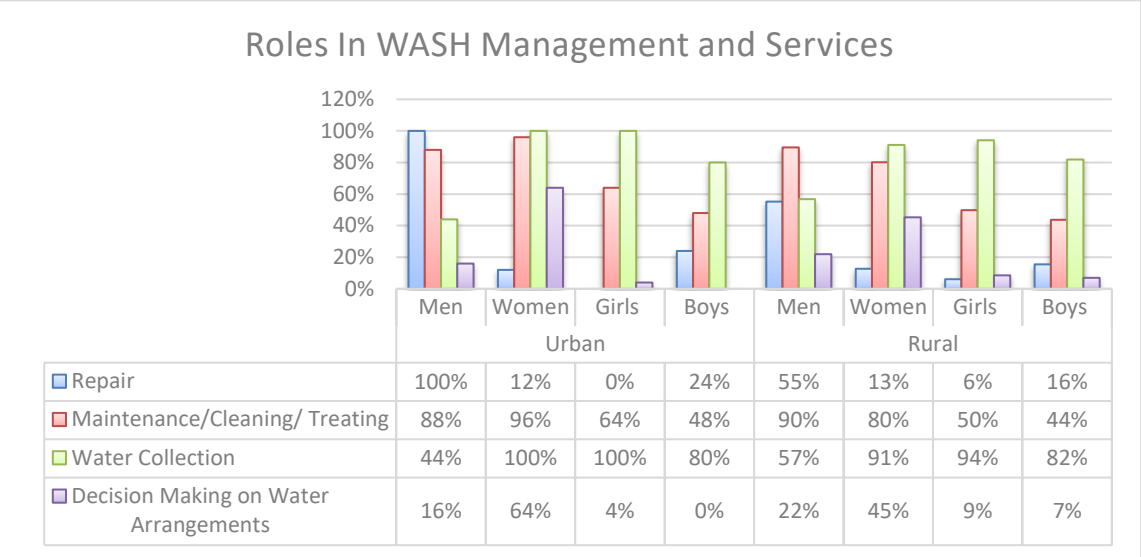


Findings 52: Mwense District solid waste disposal practices in households (N = 600)

Majority (74%) of households in Mwense District use garbage pits within their premises to dispose solid waste.

5.1.10 Gender Sensitivity Data and Information

Gender roles in WASH management and services

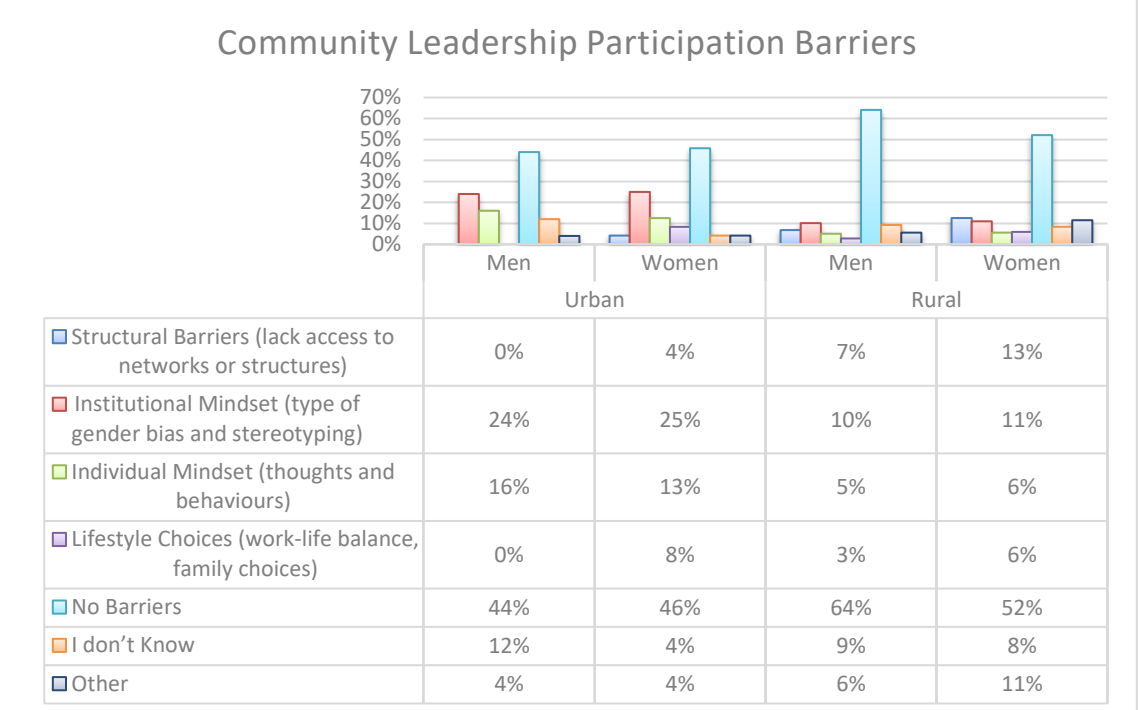


	Urban				Rural			
	Men	Women	Girls	Boys	Men	Women	Girls	Boys
Repair	100%	12%	0%	24%	55%	13%	6%	16%
Maintenance/Cleaning/ Treating	88%	96%	64%	48%	90%	80%	50%	44%
Water Collection	44%	100%	100%	80%	57%	91%	94%	82%
Decision Making on Water Arrangements	16%	64%	4%	0%	22%	45%	9%	7%

Findings 53: Mwense District Gender Roles in WASH Management and Services (N = 1052)

In both urban and rural areas, the men's main role in WASH was observed as to make repairs and maintenance while for the women it was mainly water collection and maintenance. While as for boys and girls, their main role in WASH was water collection.

Barriers in community leadership participation



	Urban		Rural	
	Men	Women	Men	Women
Structural Barriers (lack access to networks or structures)	0%	4%	7%	13%
Institutional Mindset (type of gender bias and stereotyping)	24%	25%	10%	11%
Individual Mindset (thoughts and behaviours)	16%	13%	5%	6%
Lifestyle Choices (work-life balance, family choices)	0%	8%	3%	6%
No Barriers	44%	46%	64%	52%
I don't Know	12%	4%	9%	8%
Other	4%	4%	6%	11%

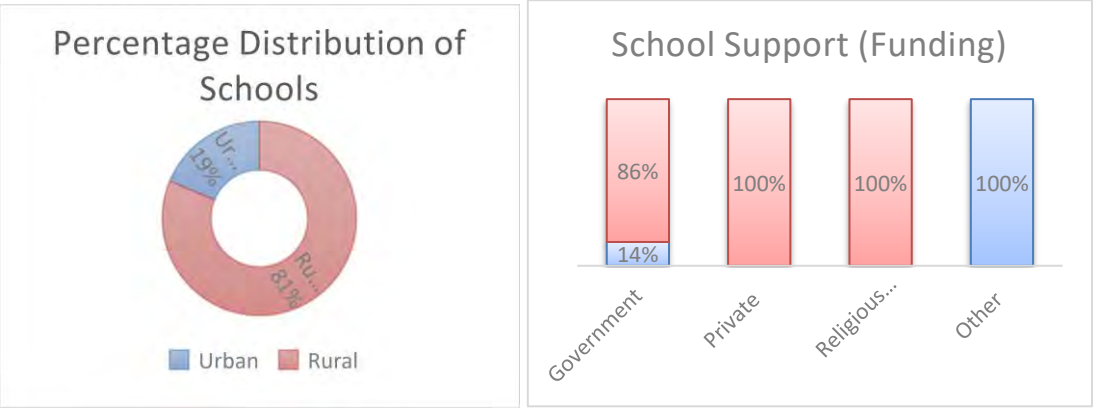
Findings 54: Mwense District Barriers in Community Leadership Participation (N = 915)

Men are most likely to not experience any barriers to community leadership participation both in urban (44%) and rural (64%) areas, which appears to be the same case for women both in urban (46%) and rural (52%) areas. Out of the proportion that experienced barriers to community leadership participation, majority of the men indicated to have experienced barriers regarding institutional mindset i.e., type of gender bias and stereotyping both in the urban (24%) and rural (10%) while for the women, it was mainly institutional mind-set i.e. gender biasness and stereotyping in the urban (25%) and structural barriers i.e. lack of access to networks or structures in the rural (11%) areas.

5.2 Schools

5.2.1 School Demographics & Electricity Connectivity

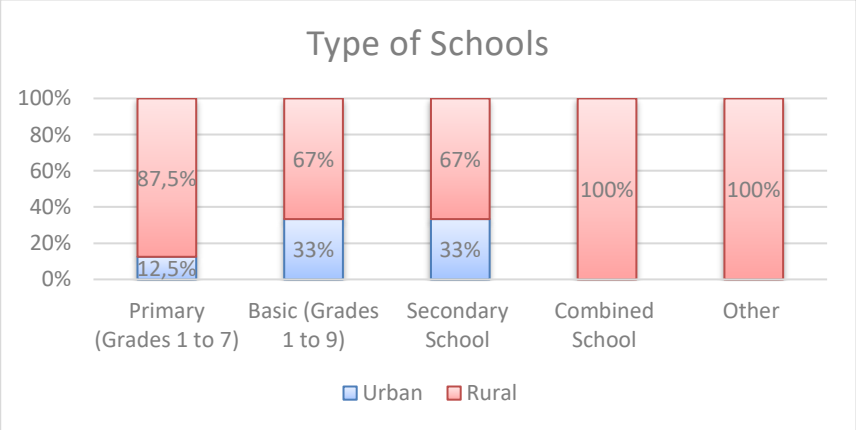
Average distribution of schools in Mwense



Findings 55: Mwense District distribution of schools (N=32)

There were more schools interviewed in the rural areas (81%) than in the urban areas. This generally represents the distribution of schools in Mwense District. From the interviewed schools, majority were Government (88%), followed by Other (6%, mission and mixture of Government and Private). Most of the Government schools were in the rural areas while 100% of the schools under other were in the urban.

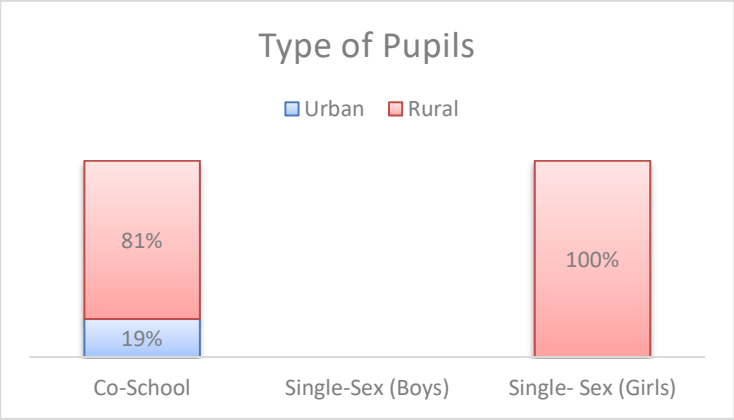
Types of schools



Findings 56: Mwense District type of schools (N=32)

From the interviewed schools, majority were primary (50%) followed by basic and secondary (19% each). Majority of the schools for each type were in the rural areas. Those that fall in the other category included primary (1-4).

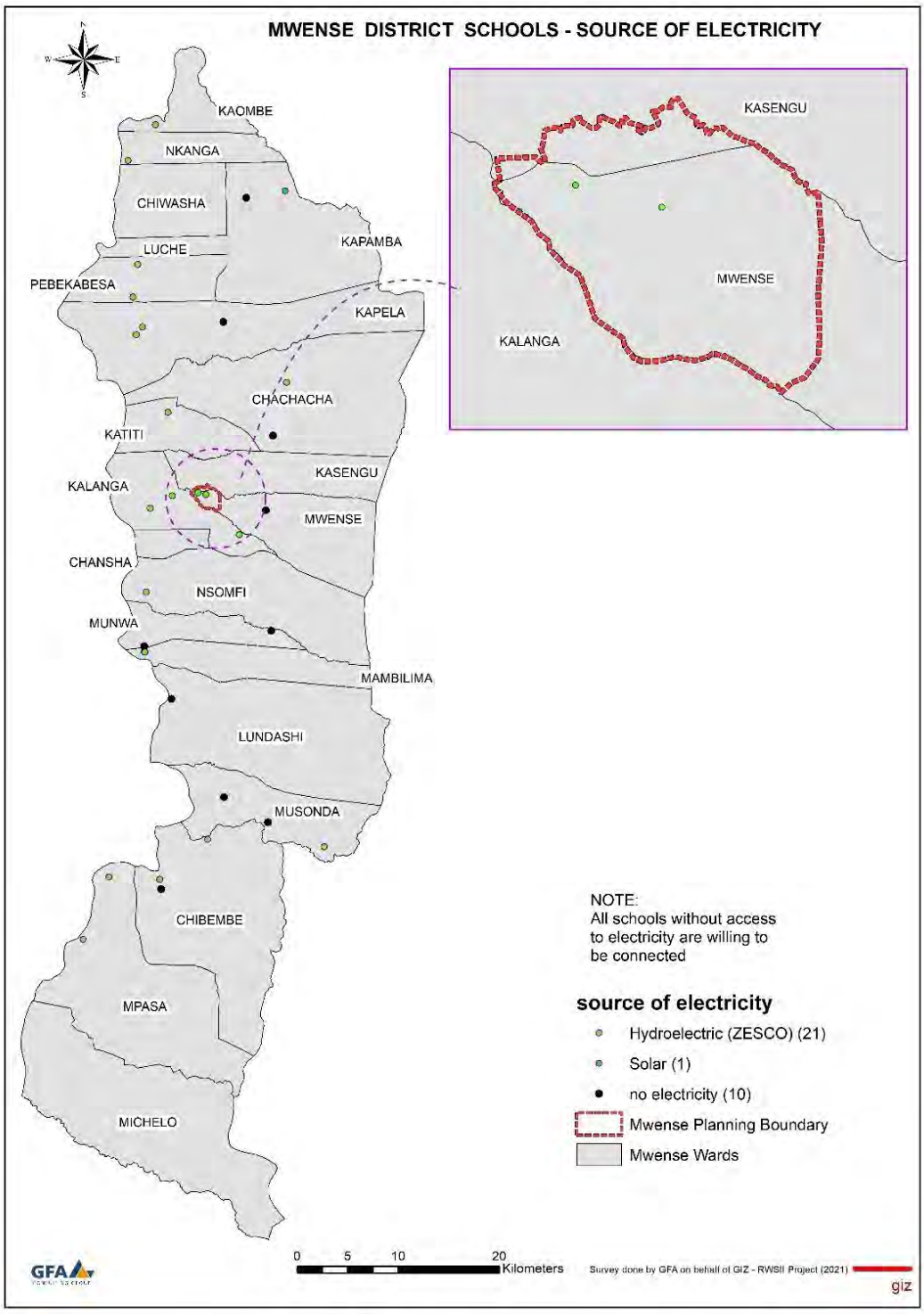
Type of pupils



Findings 57: Mwense District schools type of pupils (32)

From the interviewed schools, majority were co-school (97%). Majority of these schools were in the rural areas, co-school (81%) and single sex girl schools (100%). Co-school means, had a mixture of both and girls.

Connection to electricity

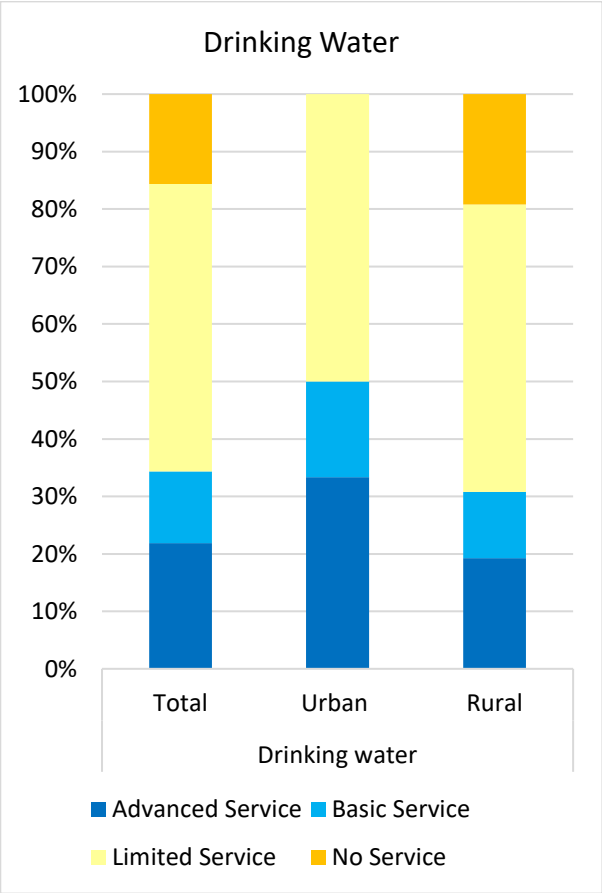


Findings 58: Mwense District - connection to electricity in schools

Majority of the schools are connected to electricity, with ZESCO (66%) and Solar (3%). When asked if the schools without electricity were willing to connect, all schools indicated that they were willing to connect to electricity.

5.2.2 Water Supply Services

Mwense JMP ladder for drinking water services



Findings 59: Mwense District schools JMP for drinking water services

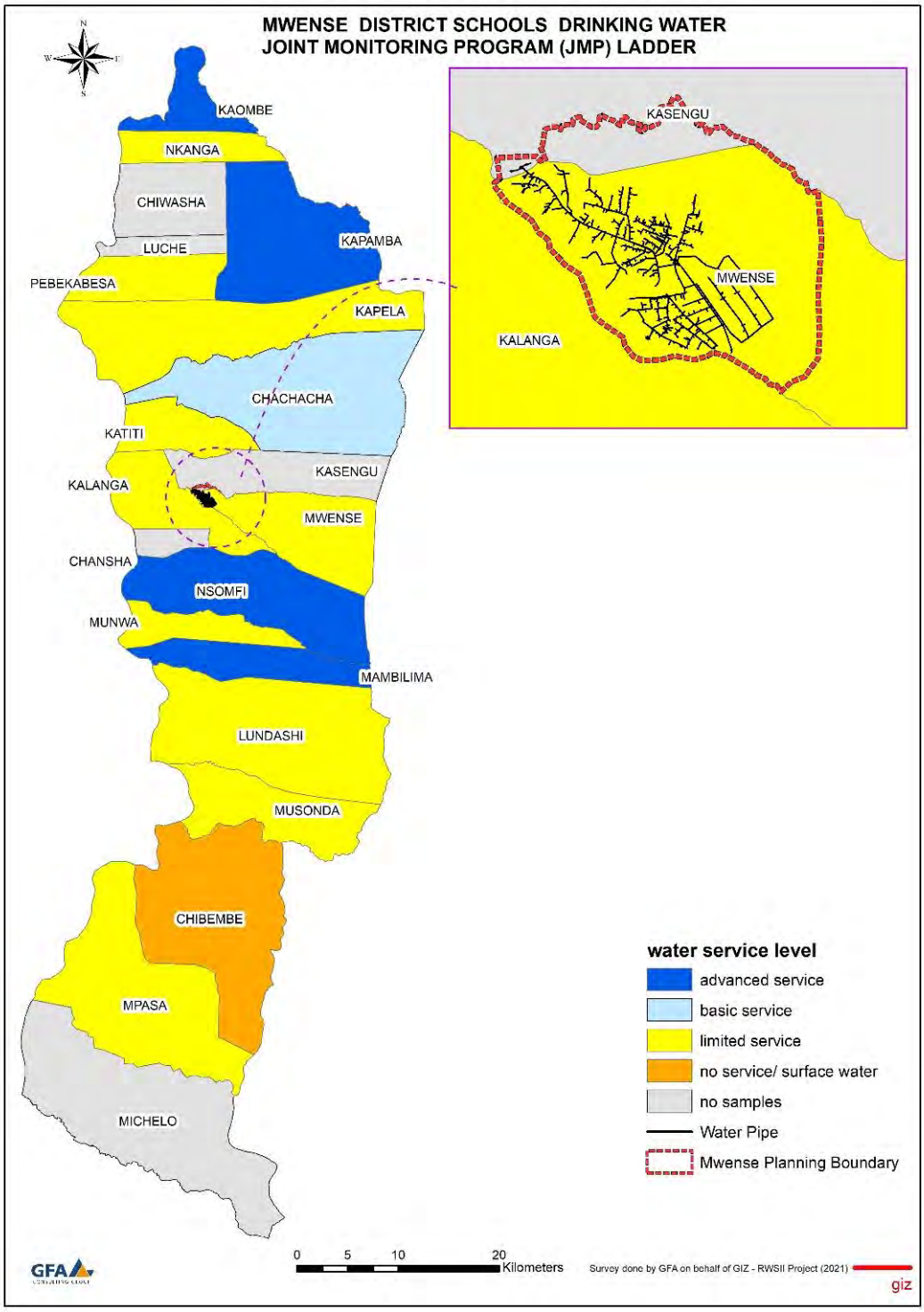
Mwense	Drinking water		
	Total	Urban	Rural
Advanced Service	21.88%	33.33%	19.23%
Basic Service	12.50%	16.67%	11.54%
Limited Service	50.00%	50.00%	50.00%
No Service	15.63%	0.00%	19.23%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of schools in Mwense District using advanced services is 21.88%, rural schools being 19.23% and urban schools being 33.33%.

In 2021, out of 62 schools in Mwense District, 49 schools lacked advanced services, including 8 schools with basic services, 31 schools with limited services, 10 schools having no water source or having access to an unimproved water source.

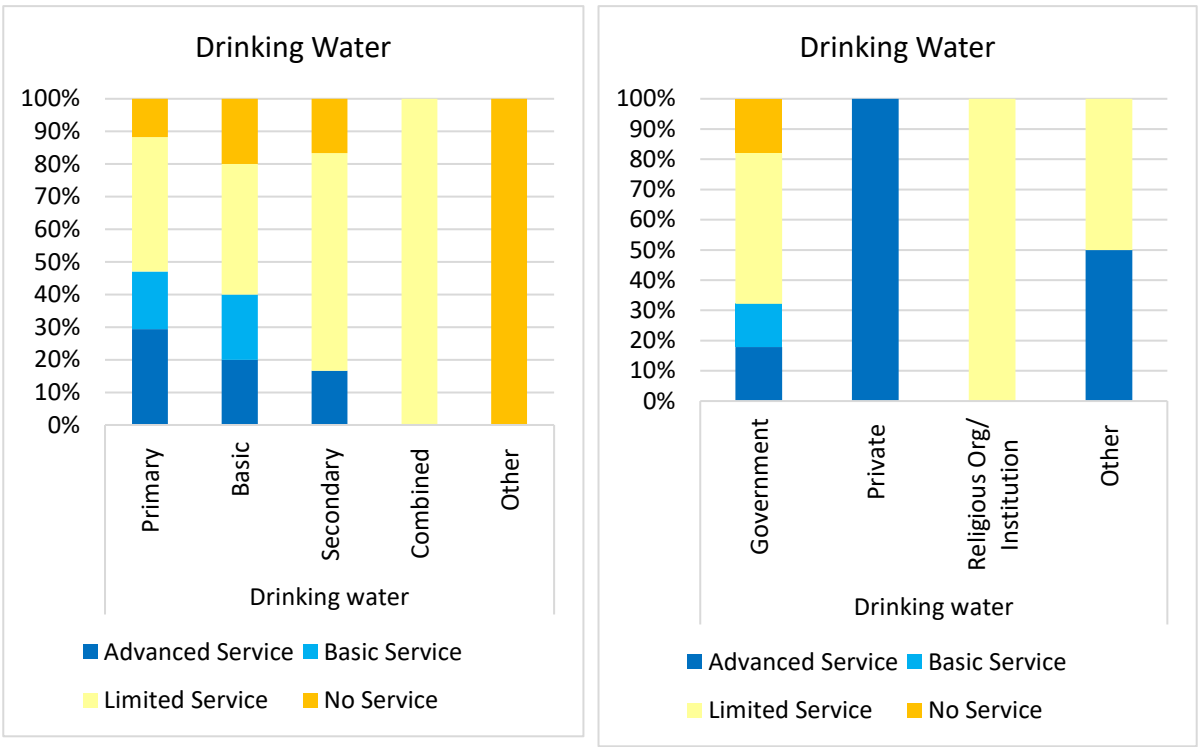
Schools in the rural areas were twice as likely to lack safely managed services as those in the urban areas.

Please refer to Table 5 for the definition and clarifications on some of the drinking water terms.



Findings 60: Mwense District ward level JMP for drinking water services in schools

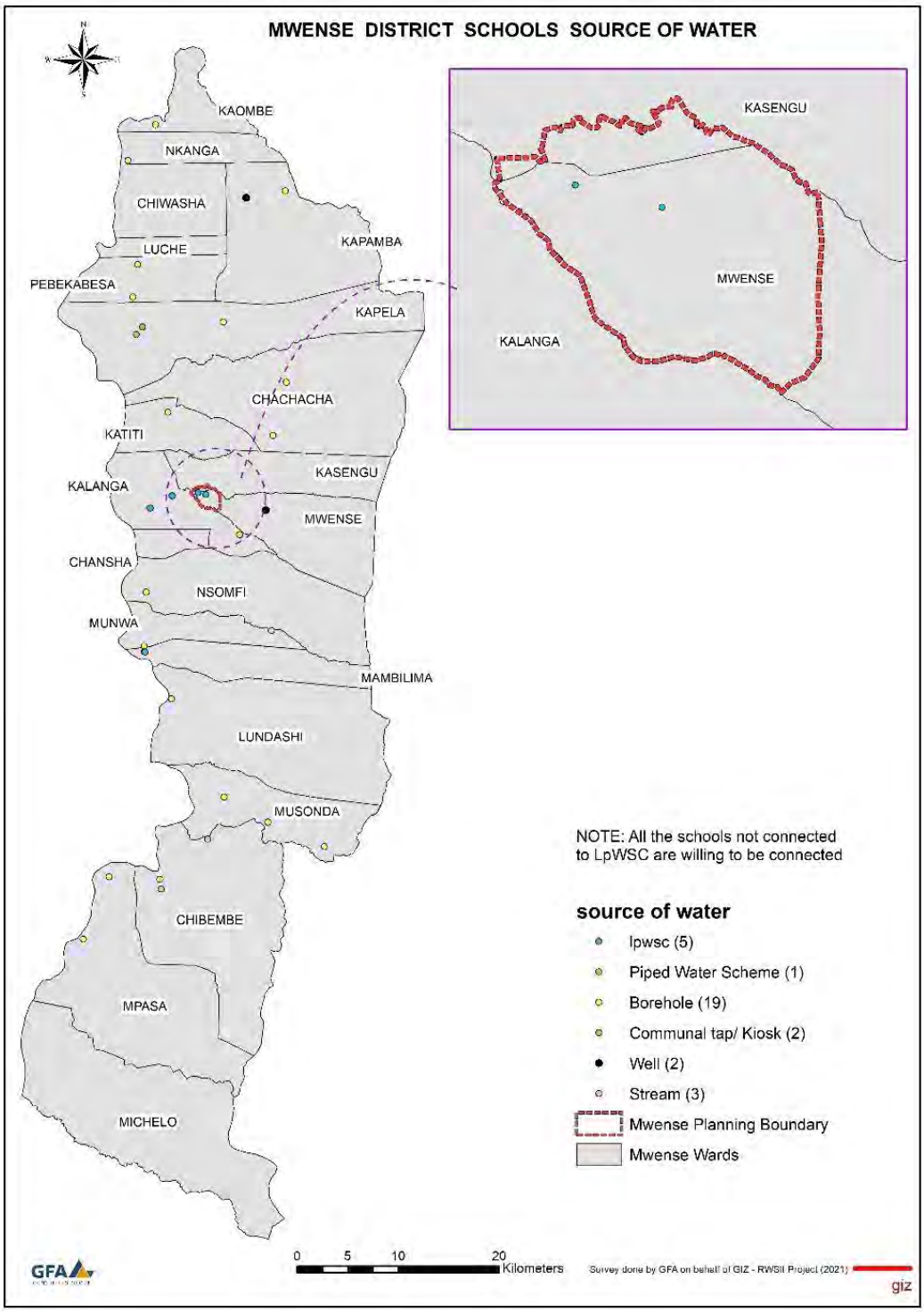
Findings 60 shows JMP indicators at the ward level, out of the 16 wards in Mwense District that were represented, only 4 wards, namely Kaombe, Kapamba, Nsomfi and Mambilima have majority of its schools having access to advanced service. With one ward (Chachacha) having majority with basic and one ward (Chibembe) have majority with no service. That leaves a total of 9 wards with majority having limited services which relates what is being reported in Findings 59.



Findings 61: Mwense District JMP for school - drinking water services by school type and funder

Some primary, basic and secondary schools have access to advanced service while combined have limited service and other (primary 1-4) have no service at all. While all schools funded privately have the most advanced service in drinking water unlike those funded by religious organisations or institutions.

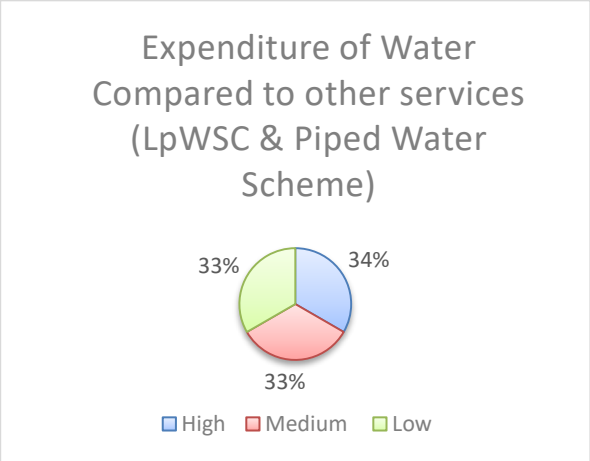
Type of water source



Findings 62: Mwense District Schools -Type of Water Sources/ Access

From Findings 62, in general, the main source of water for schools was Boreholes (59%) and LpWSC (16%) with primary and basic schools taking up the largest share of 54% and 21% respectively. Very few schools are connected to piped water schemes (3%).

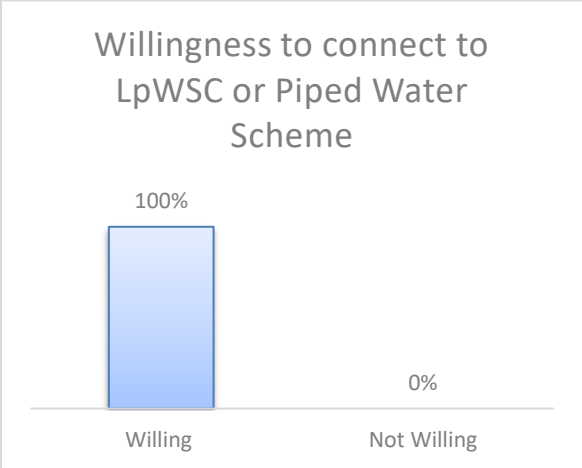
Affordability of the water service



Findings 63: Mwense District schools - expenditure of water compared to other services (N=6)

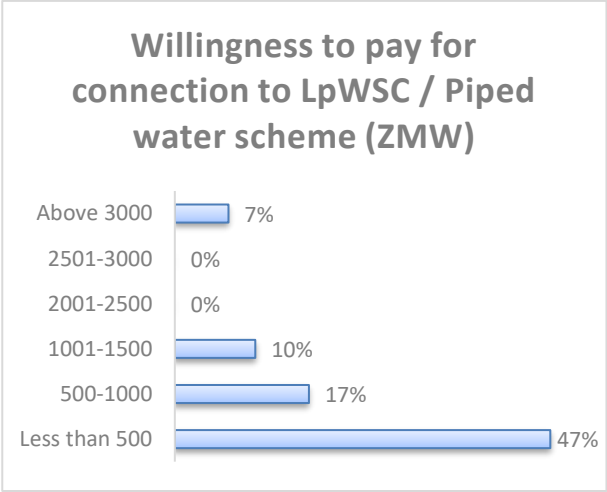
Majority of the schools thought water services were expensive (34) and fairly expensive (33%) while 33 % categorise water as a cheap service.

Willingness to connect to LpWSC



Findings 64: Mwense District schools - willingness to connect to LpWSC and piped water scheme (N=26)

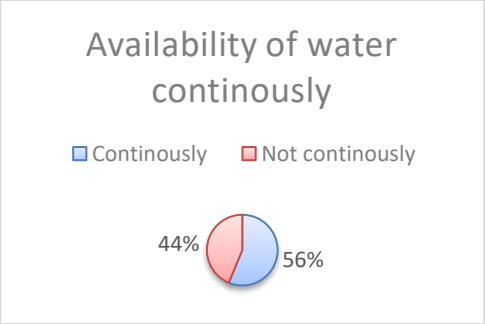
All the schools not connected to LpWSC or piped water scheme were willing to connect to the LpWSC network or piped water scheme.



Findings 65: Mwense District schools - willingness to pay for connection to LpWSC and piped water scheme (N=30)

However, most of the schools are willing to pay less than 500 ZMW or less in connection fees for LpWSC or piped water scheme.

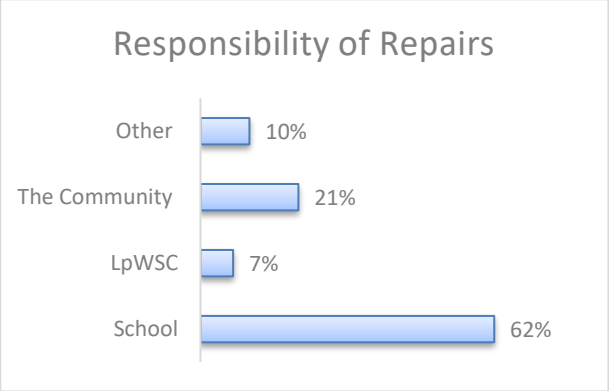
Water availability



Findings 66: Mwense District schools availability of water (N=32)

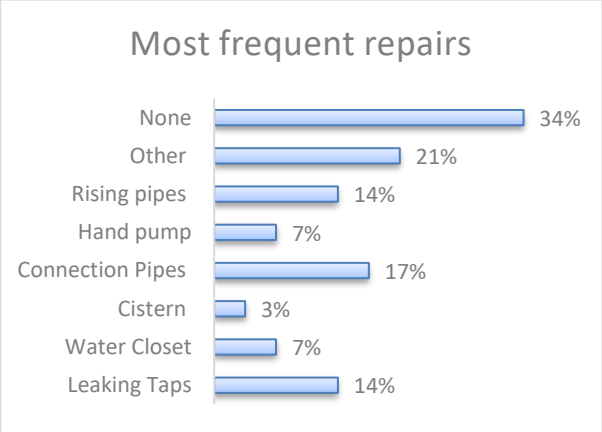
Majority of the schools (56%) indicated water to be continuously available.

Maintenance of water services



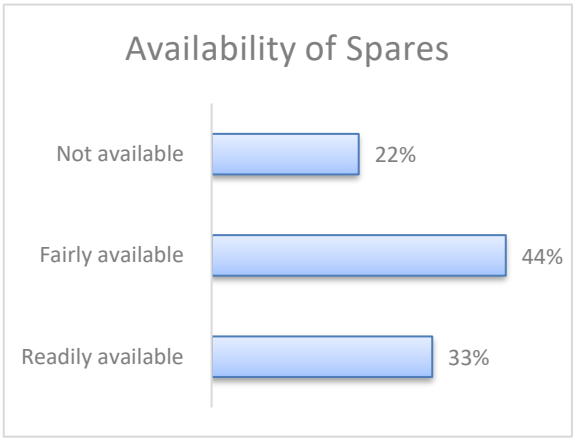
Findings 67: Mwense District responsibility for maintenance/ repair works of the water source for schools (N=29)

The responsibility to pay for maintenance / repair works lies with the school that is having access to the water source.



Findings 68: Mwense District school water service frequent repairs (N=29)

The most frequent repairs done are other repairs (21%,i.e. rubbers, seals and blockages and connection pipes (17%). Though most schools had no frequent repairs (34%).

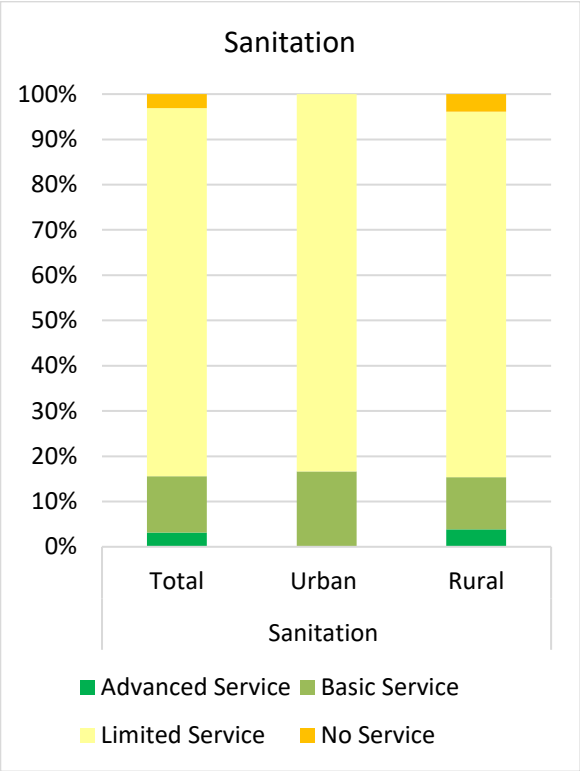


Findings 69: Mwense District school availability of spares (N=18)

44% of the schools noted that spares were fairly available, 33%, readily available and 22% indicated that spares were not available.

5.2.3 Sanitation Services

Mwense JMP ladder for sanitation services



Findings 70: Mwense schools JMP ladder for sanitation

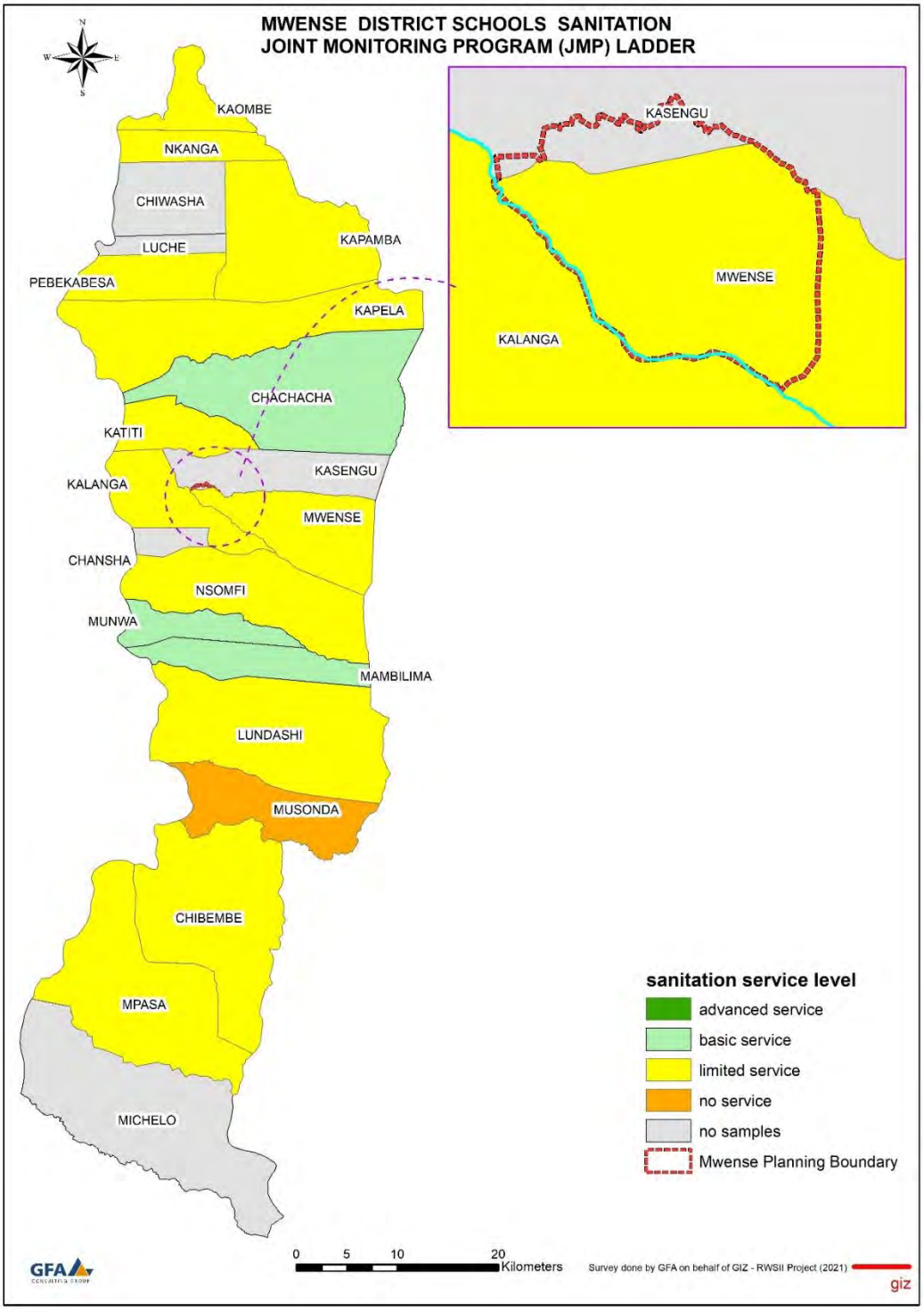
Mwense	Sanitation		
	Total	Urban	Rural
Advanced Service	3.13%	0.00%	3.85%
Basic Service	12.50%	16.67%	11.54%
Limited Service	81.25%	83.33%	80.77%
No Service	3.13%	0.00%	3.85%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of schools in Mwense District using advanced services is 3.13%, urban coverage being 0% and rural coverage being 3.85%.

In 2021, out of an estimated 62 schools in Mwense District, 60 schools lacked safely managed advanced services including 8 schools with basic services, 50 schools with limited services and 2 schools having no toilet or having access to an unimproved facilities.

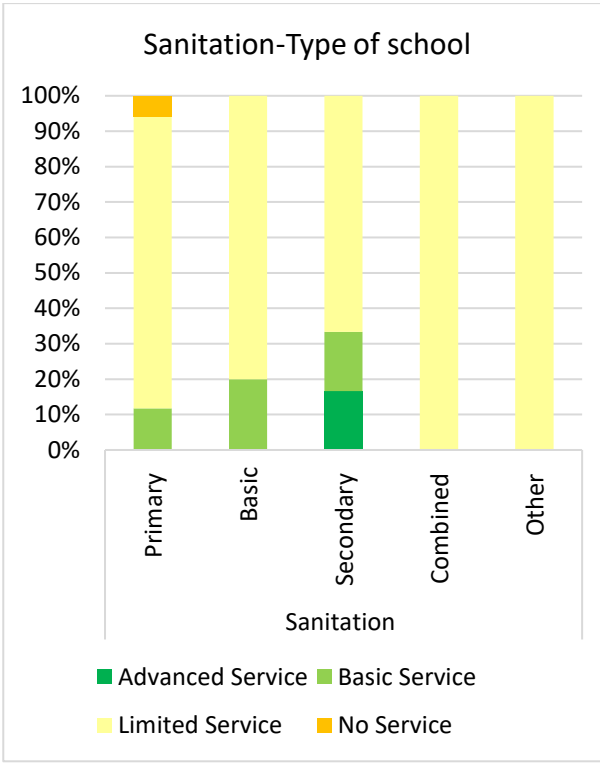
There was no school in the urban areas with advanced sanitation service. Most schools Mwense District fall in the category of limited service because of the toilet to pupil ratio which was averaging at 162 for boys and 155 for girls.

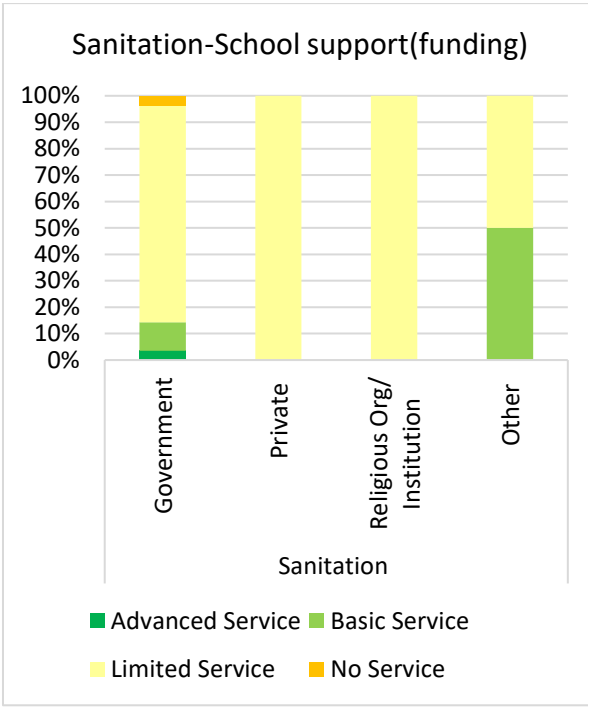
Please refer to Table 6 for the definition and clarifications on some of the sanitation terms.



Findings 71: Mwense District Ward level JMP for School Sanitation Services

Findings 71 shows JMP indicators at the ward level, out of the 16 wards in Mwense District that were represented, none have majority of its schools having access to advanced service. About 12 wards have majority having limited service and 3 with basic service.

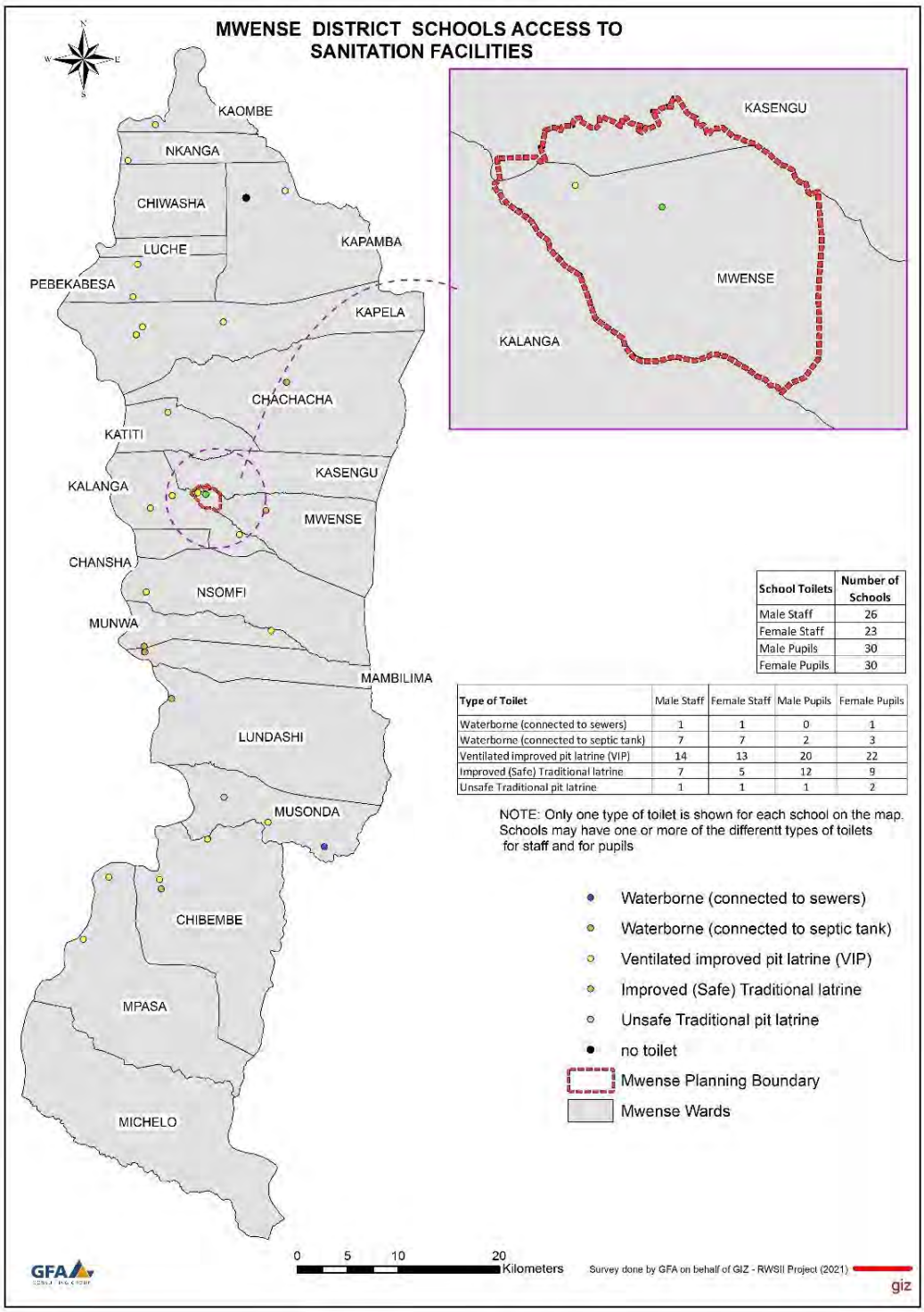




Findings 72: Mwense District JMP for school sanitation services by school type and funder

The secondary schools are the only type that have representation of access to advanced sanitation while basic service is only in primary, basic and secondary. When it comes to school support, advanced service is only in the government funded schools.

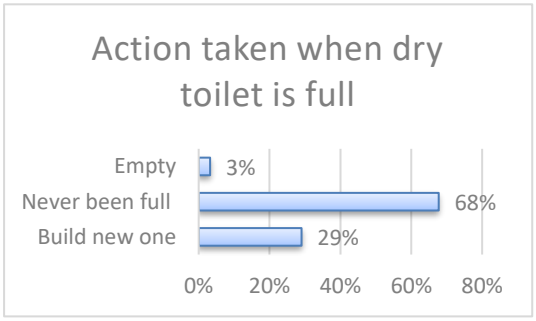
Access to sanitation facilities



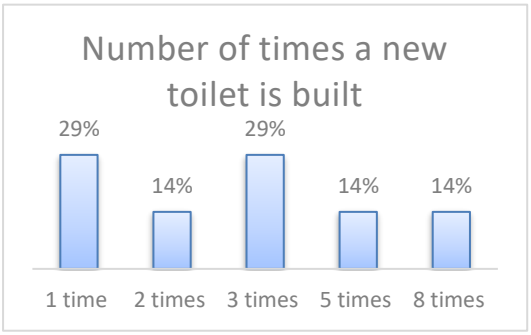
Findings 73: Map of Mwense District schools - access to sanitation facilities

From Findings 73, in general, the main type of sanitation for schools was ventilated improved pit latrine (VIP), seconded by improved safe traditional and then waterborne to septic tanks.

Emptying practices



Findings 74: Mwense District school toilet emptying practices (N =31)

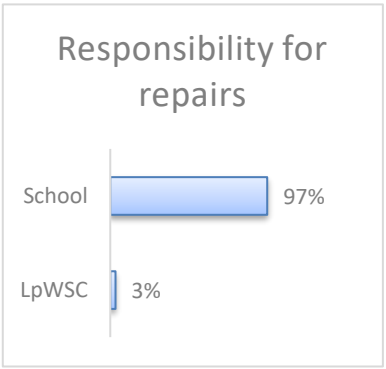


Findings 75: Mwense District school - number of times a new toilet is built (N=7)

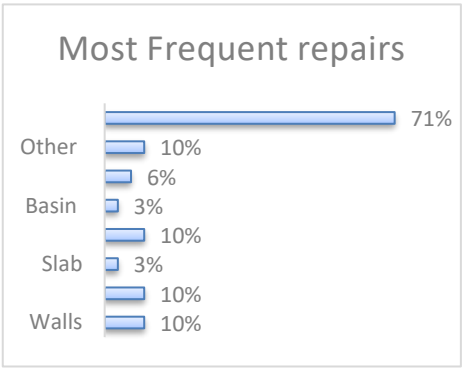
Like the households, school toilet emptying practices are building a new one once it is full (29%) while for the majority their toilets haven't been full. For the 3% that recording emptying were using the draining system. This information is cardinal in FSM planning.

Most of the schools which had built a new toilet before, did that once (29%) and three times (29%).

Maintenance of sanitation facilities



Findings 76: Mwense District schools – responsibility for repair of toilet (N=31)

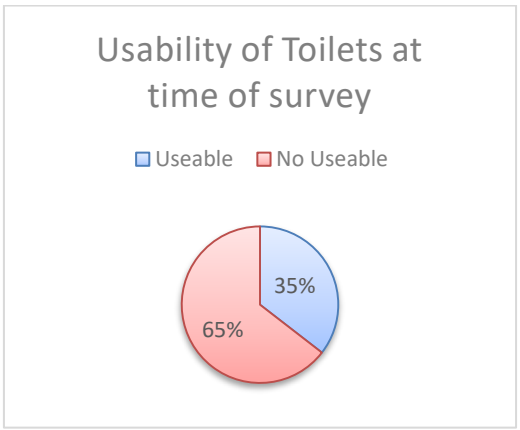


Findings 77: Mwense District schools - most frequent toilet repairs (N=31)

In general, the school mostly takes responsibility of repairing the toilets (97%).

The most frequent repairs on the toilets are the pit, walls and roof though majority have no repairs done.

Sufficiency and usability of toilets

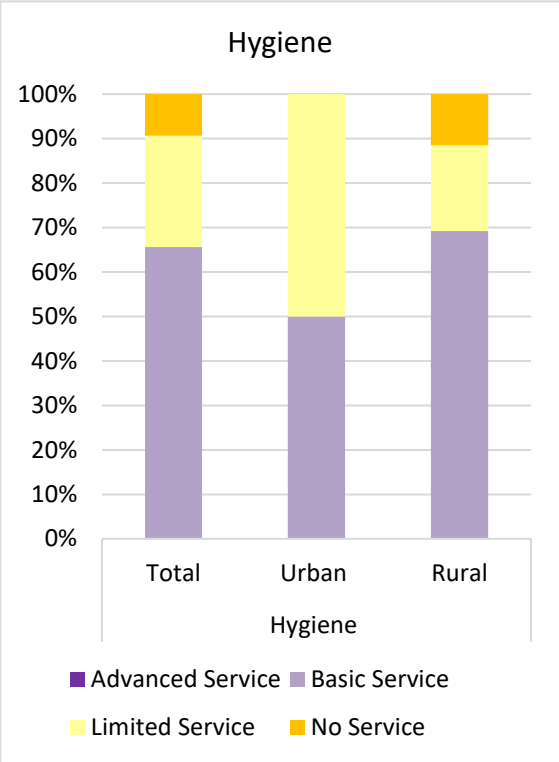


Findings 78: Mwense District schools - sufficiency (N=7) and usability (N=31) of sanitation facilities

94% of the schools in Mwense have insufficient toilets while 35% of the toilets were useable at the time of the survey.

5.2.4 Hygiene Services

Mwense JMP ladder for hygiene services



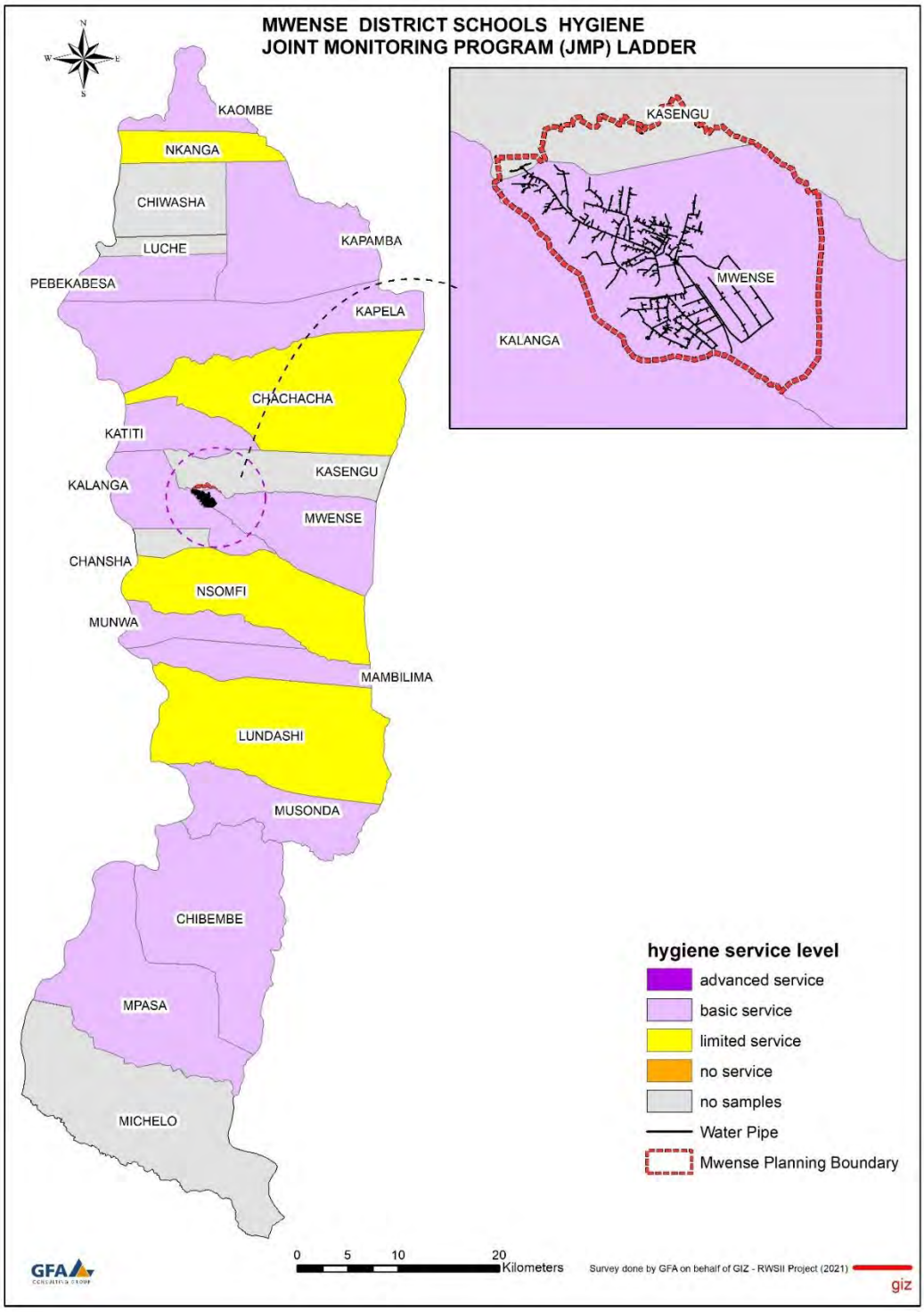
Findings 79: Mwense District schools JMP ladder for hygiene services

Mwense	Hygiene		
	Total	Urban	Rural
Advanced Service	0.00%	0.00%	0.00%
Basic Service	65.63%	50.00%	69.23%
Limited Service	25.00%	50.00%	19.23%
No Service	9.38%	0.00%	11.54%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of schools in Mwense District using advanced service was not analysed as there was a missing variable on knowing how handwashing facilities the school had to calculate pupil to handwashing facility ratio. Therefore, the analysis only began with basic service which is at 65.63%, rural schools being 69.23% and urban coverage being 50%.

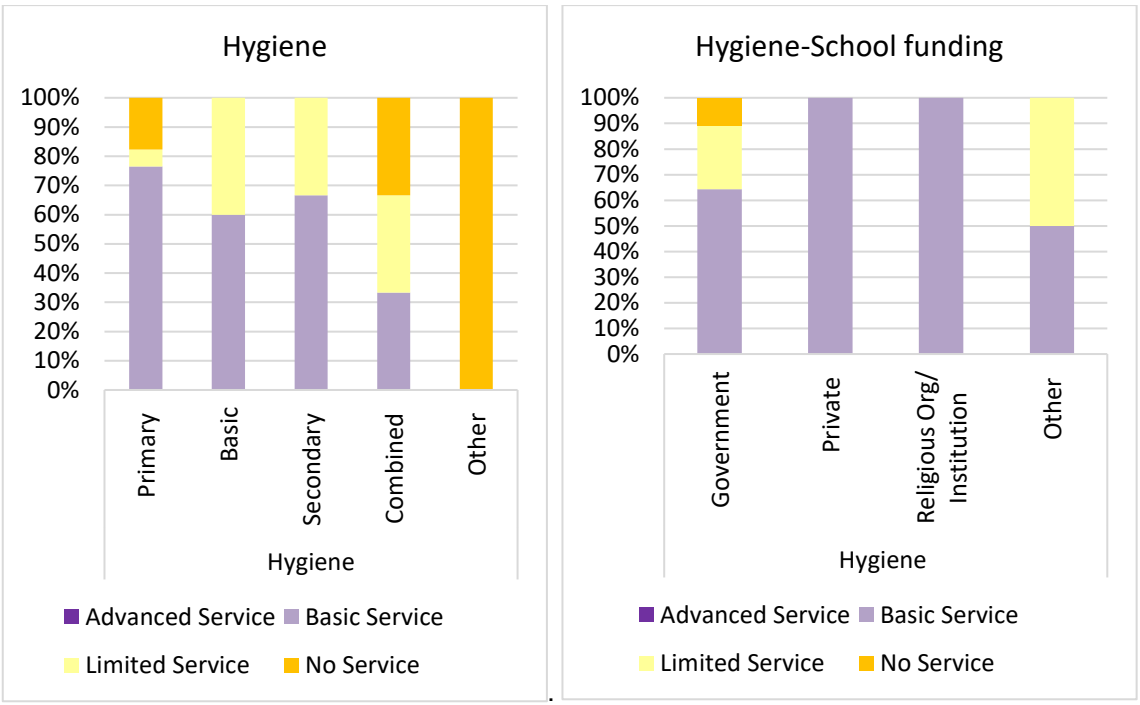
In 2021, out of 62 schools in Mwense District, 21 schools lacked basic services including 15 with limited service and 6 with no handwashing facilities at all.

Please refer to Table 7 for the definition and clarifications on some of the hygiene terms.



Findings 80: Mwense District ward level JMP for school hygiene services

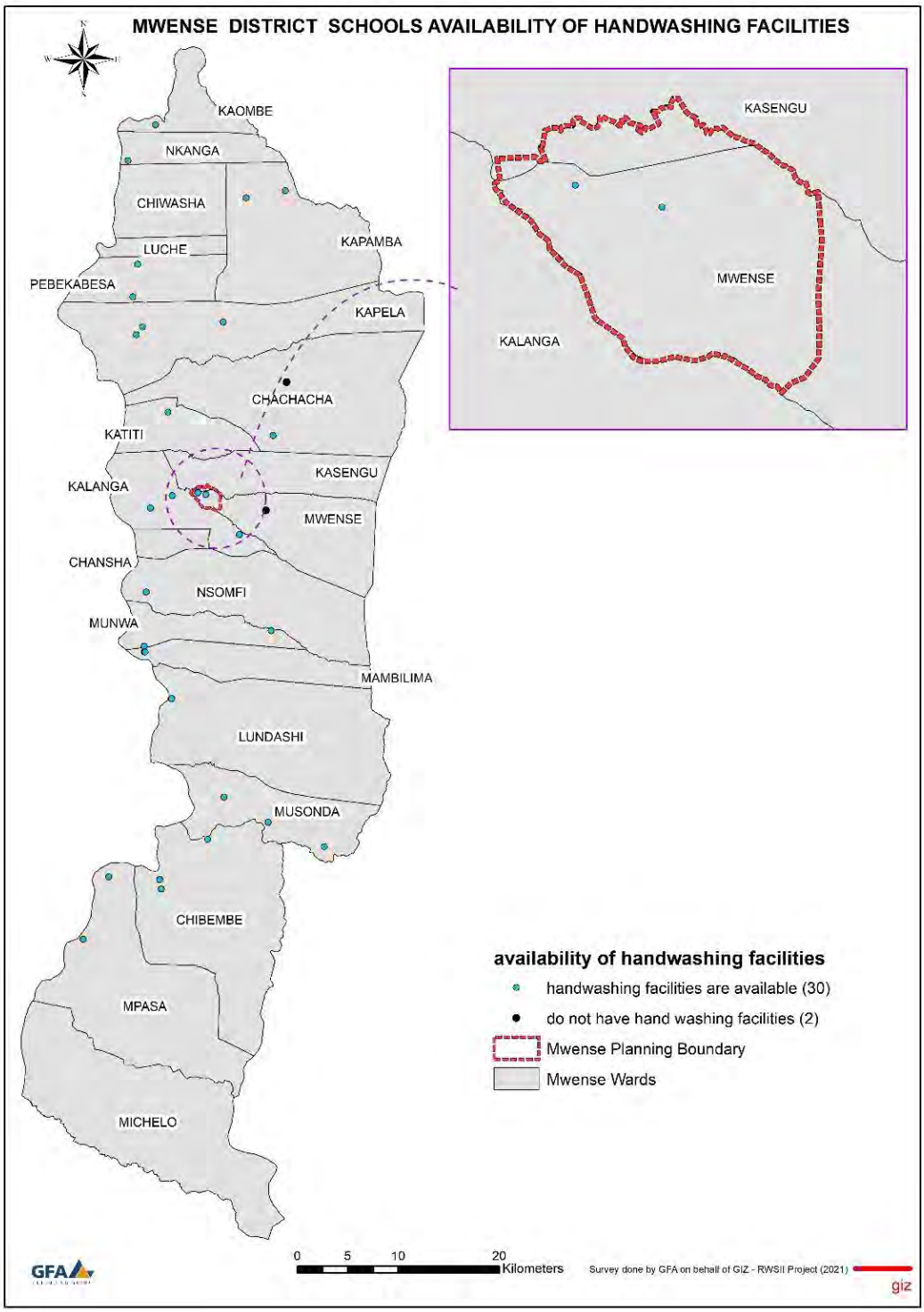
Findings 80 shows JMP indicators at the ward level. Out of the 16 wards that were represented, only 4 wards, namely Nkanga, Chachacha, Nsomfi and Lundashi have majority of its schools that did not have access to basic hygiene services. Majority of the wards in Mansa District have school with access to basic hygiene services.



Findings 81: Mwense District JMP for school hygiene services by school type and funder

Majority of the schools have access to basic hygiene, while a good proportion still have limited and no hygiene service. With other (primary 1-4) not having access to hygiene. By funding type, all have a good proportion with basic hygiene while there are still some government schools without hygiene services.

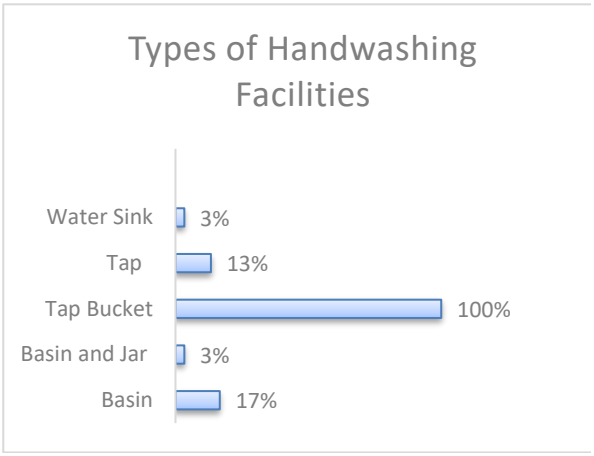
Access to hygiene facilities



Findings 82: Map of Mwense district schools - access to hygiene facilities

From Findings 82**,** it is observed that majority have access to handwashing facilities and only 6% do not.

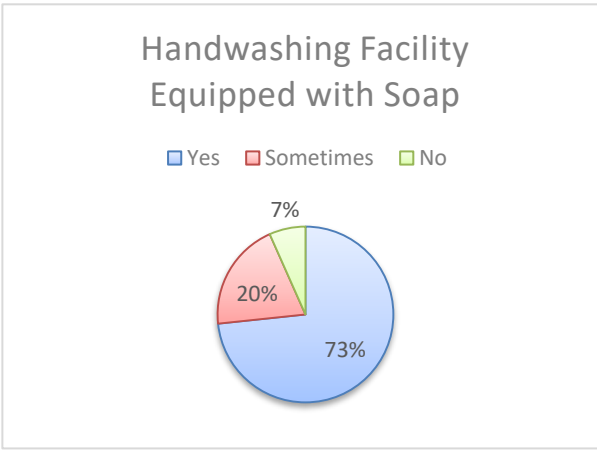
Type of handwashing facilities



Findings 83: Mwense District schools - types of handwashing sacilities (N=30)

Majority (100%) of the schools that had handwashing facilities use tap bucket.

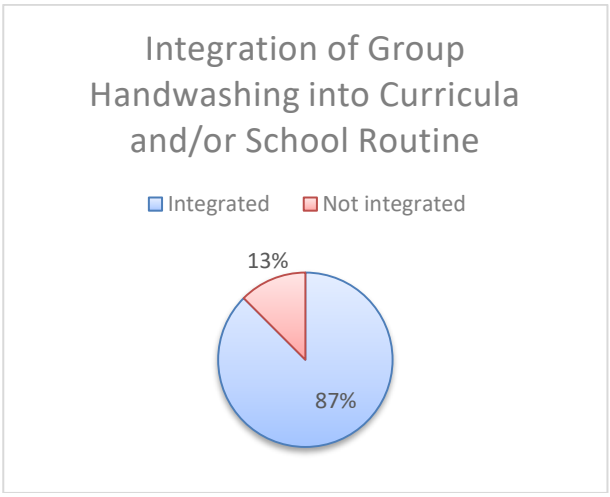
Handwashing with soap

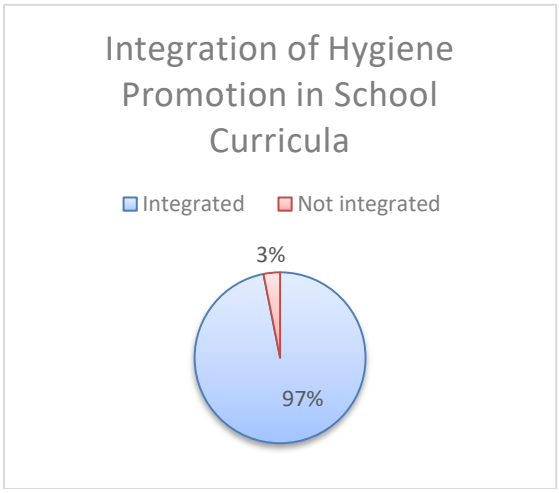


Findings 84: Mwense District - handwashing with soap practices (N=30)

73% of the handwashing facilities were equipped with soap,

Hygiene promotion



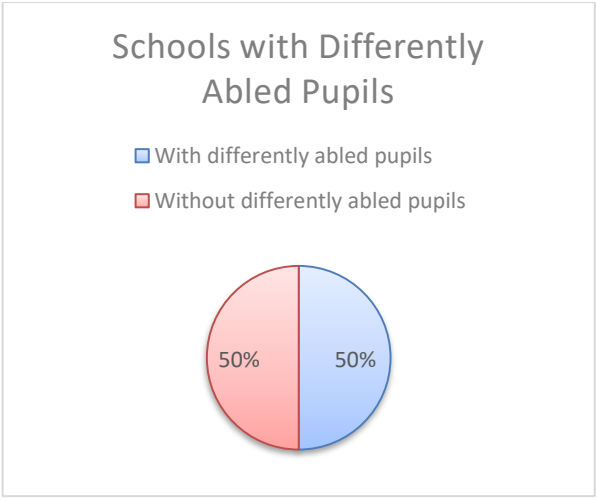


Findings 85: Mwense District schools handwashing and hygiene promotion curricula integration (N=32)

Majority of the schools in Mwense District have integrated hygiene promotion measures into the school curricula.

5.2.5 Social Inclusion

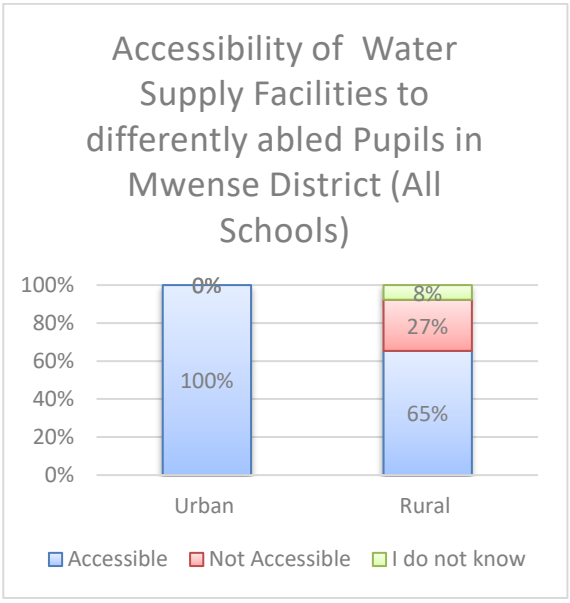
Differently abled pupils

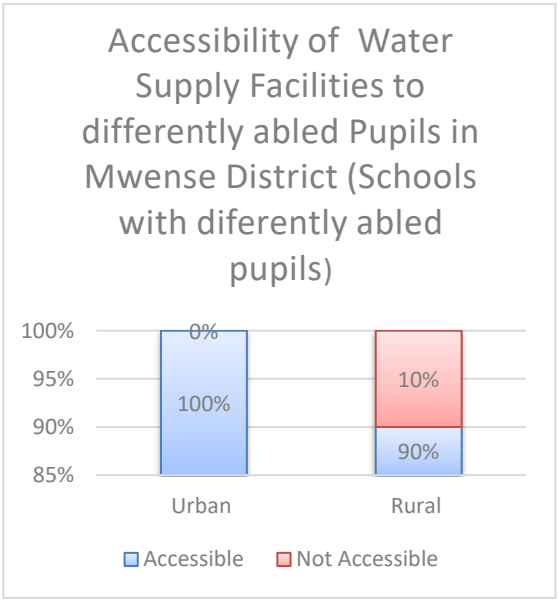


50% of the schools in Mwense have pupils who are differently abled. Out of the schools that have differently abled pupils, 63% are rural schools and 37% are urban.

Findings 86: Mwense District schools with differently abled pupils (N=32)

Accessibility to water supply facilities

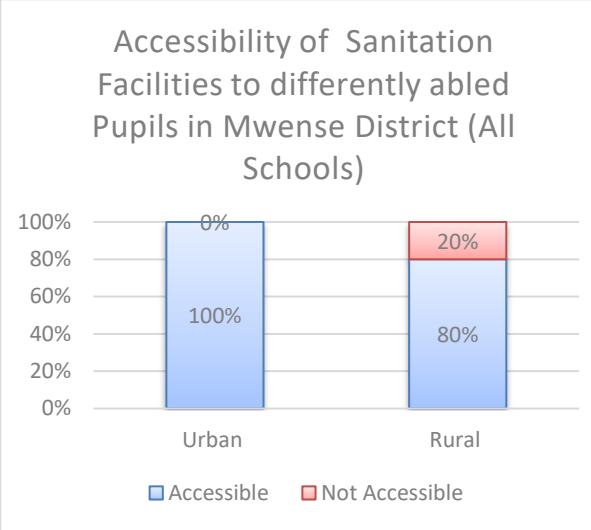


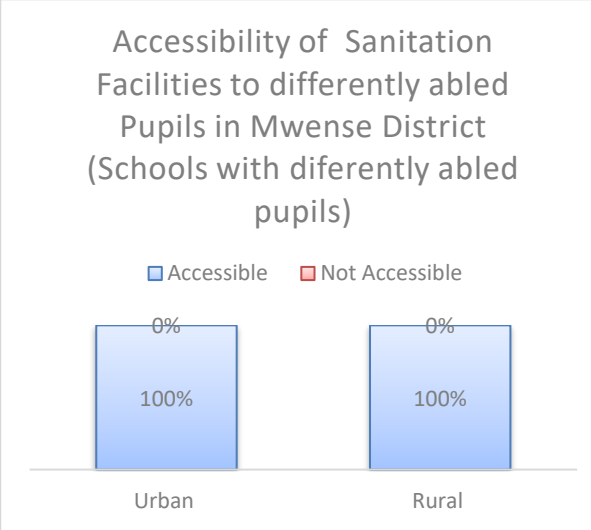


Findings 87: Mwense District schools - water facility accessibility to differently abled pupils: all schools (N=32) and schools with differently abled pupils (N=16)

72% of the schools in Mwense District have water facilities which are accessible to differently abled persons of which in the urban areas represents all and 65% of those in the rural areas. From the schools that had pupils that were differently abled, 94% of them have water facilities that are accessible of which 100% and 90% of those in the urban and rural respectively.

Accessibility to sanitation facilities



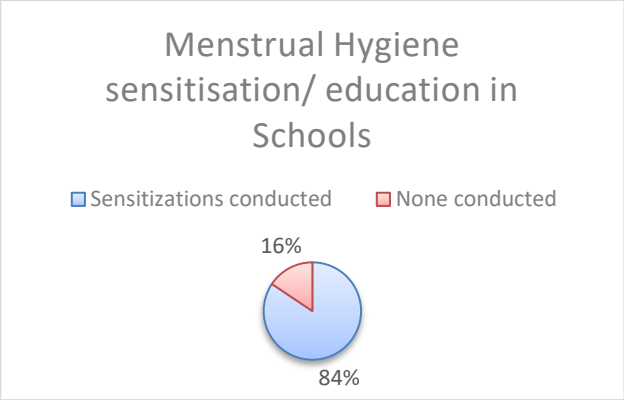


Findings 88: Mwense District schools sanitation facility accessibility to differently abled pupils, all schools (N=31) and schools with differently abled pupils (N=15)

84% of the schools in Mwense District have sanitation facilities which are accessible to differently abled persons of which in the urban areas represents all and 80% of those in the rural areas. From the schools that had pupils that were differently abled, 100% of them have sanitation facilities that are accessible.

5.2.6 Menstrual Health Management

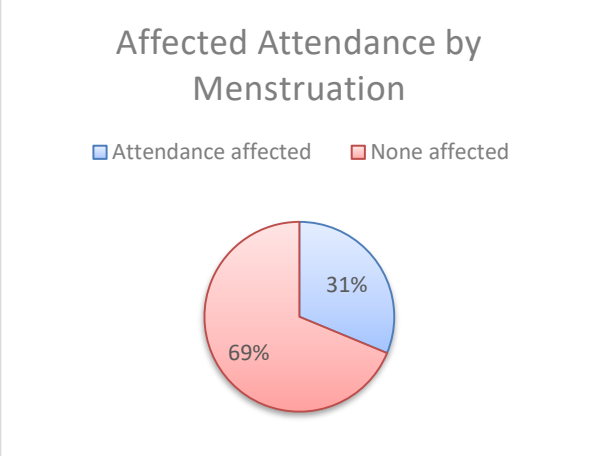
Menstrual hygiene sensitisation and education

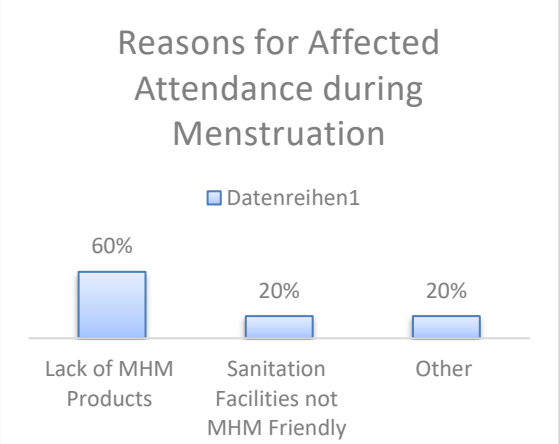


84% of the schools in Mwense District conduct menstrual hygiene sensitisation.

Findings 89: Mwense District schools menstrual hygiene sensitisation (N=32)

Participation in school during menstruation

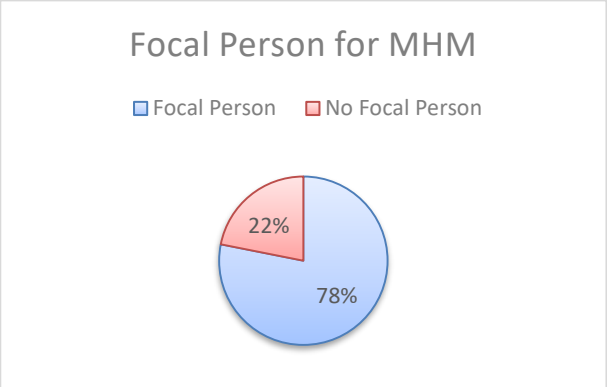




Findings 90: Mwense District schools - participation during menstruation (N=32) and reasons (N=10)

69% of the schools in Mwense have the girl child's school attendance not being affected by menstruation and for the 31% whose school attendance is affected, the reason that stands out the most is due to lack to MHM products (60%) and sanitation facilities not MHM friendly/other (20%).

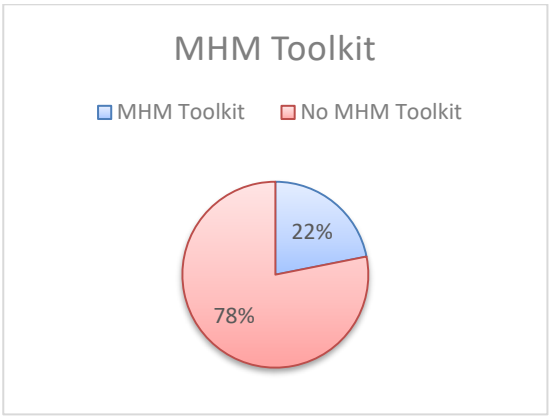
MHM focal point

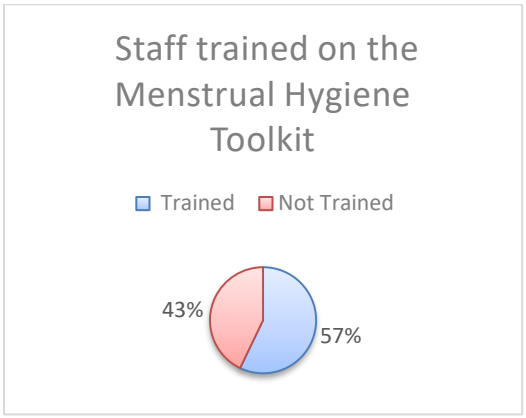


78% of the schools in Mwense District have a MHM focal point person

Findings 91: Mwense District schools - MHM focal points (N=32)

MHM toolkit

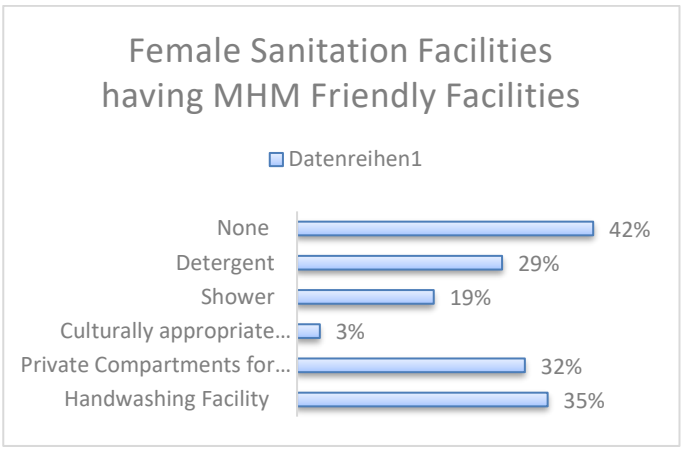




Findings 92: Mwense District schools MHM toolkit (N=32) and training (N=7)

22% of the schools in Mwense have an MHM toolkit, from these 57% have staff that have been trained on the MHM toolkit

MHM friendly facilities

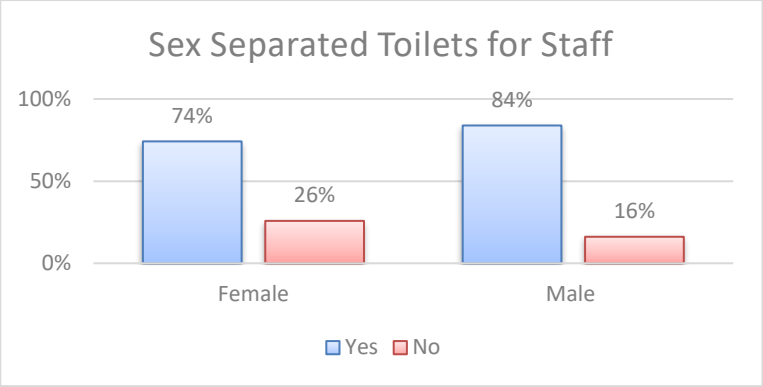


Findings 93: Mwense District schools - MHM friendly services in female sanitation facilities (N=31)

Majority of the schools do not fulfil any of the indicators for MHM friendly sanitation facilities.

5.2.7 Gender Sensitivity Data and Information

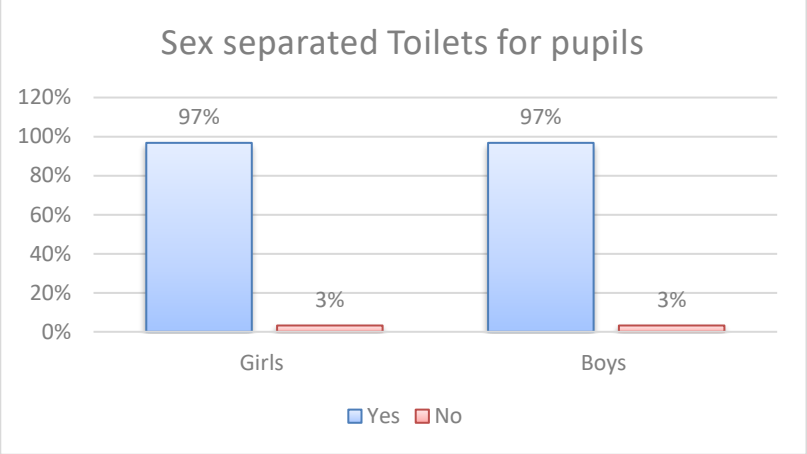
Sanitation facilities for staff



Out of all the schools in Mwense with female and male staff, 74% had toilets dedicated to female staff and 84% to male staff.

Findings 94: Mwense District schools sex separated toilets for schools with female (N=31) and male (N=31) staff

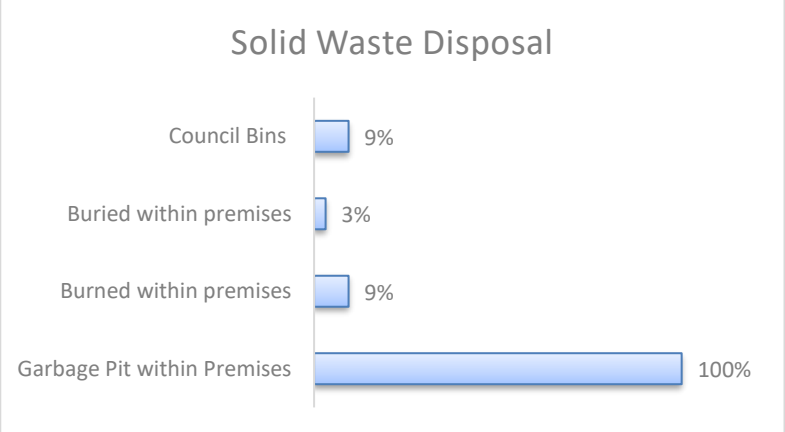
Sanitation facilities for pupils



In Mwense District 97% of the schools that boys and girls had toilets dedicated to them with girls.

Findings 95: Mwense District schools sex separated toilets for schools with girls (N=31) and boys (N=31) pupils

5.2.8 Solid Waste Management



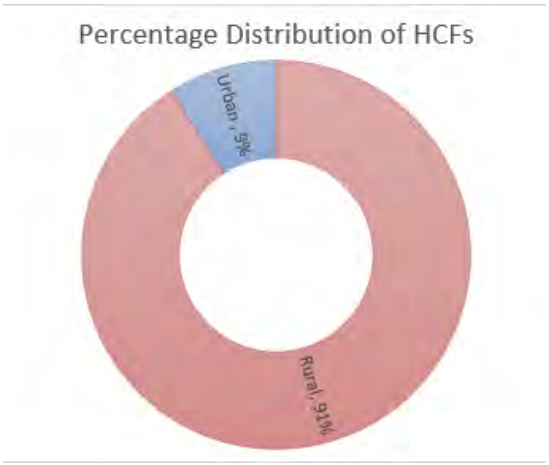
Majority of the schools use garbage pits within the premises to dispose of Solid waste

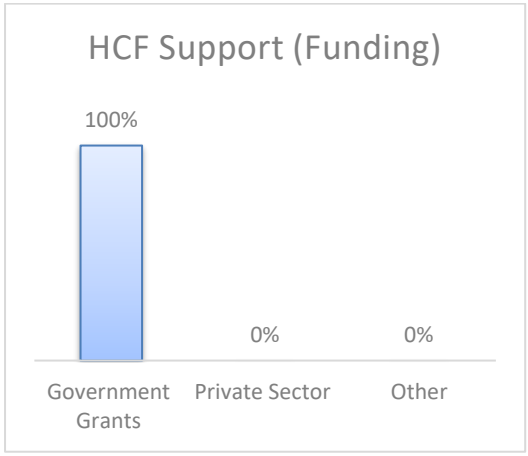
Findings 96: Mwense District schools solid waste disposal (N=32)

5.3 Healthcare Facilities

5.3.1 Health Care Facility Information & Electricity Connectivity

Average Distribution of Health Care Facilities in Mwense

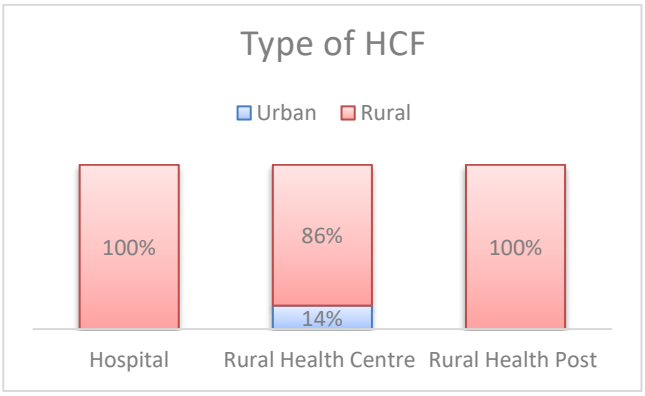




Findings 97: Mwense District distribution of health care facilities and sources of funding (N = 11)

There were more HCFs interviewed in the rural areas (91%) than in the urban areas. This generally represents the distribution of HCFs in Mwense. From the interviewed HCFs, They were all supported by Government Grants.

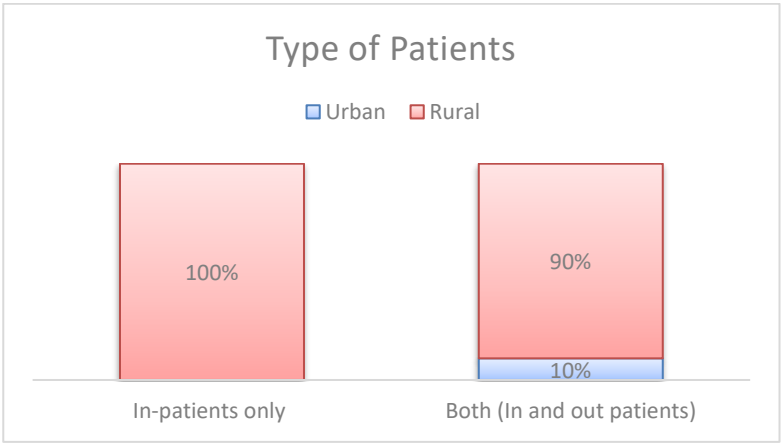
Types of HCFs



Majority of HCF interviewed in Mwense District were 64% rural health centres (RHCs) and 27% rural health posts (RHPs). Most of these were in the Rural Areas with RHC being the only type interviewed in the Urban.

Findings 98: Mwense District type of health care facility (N = 11)

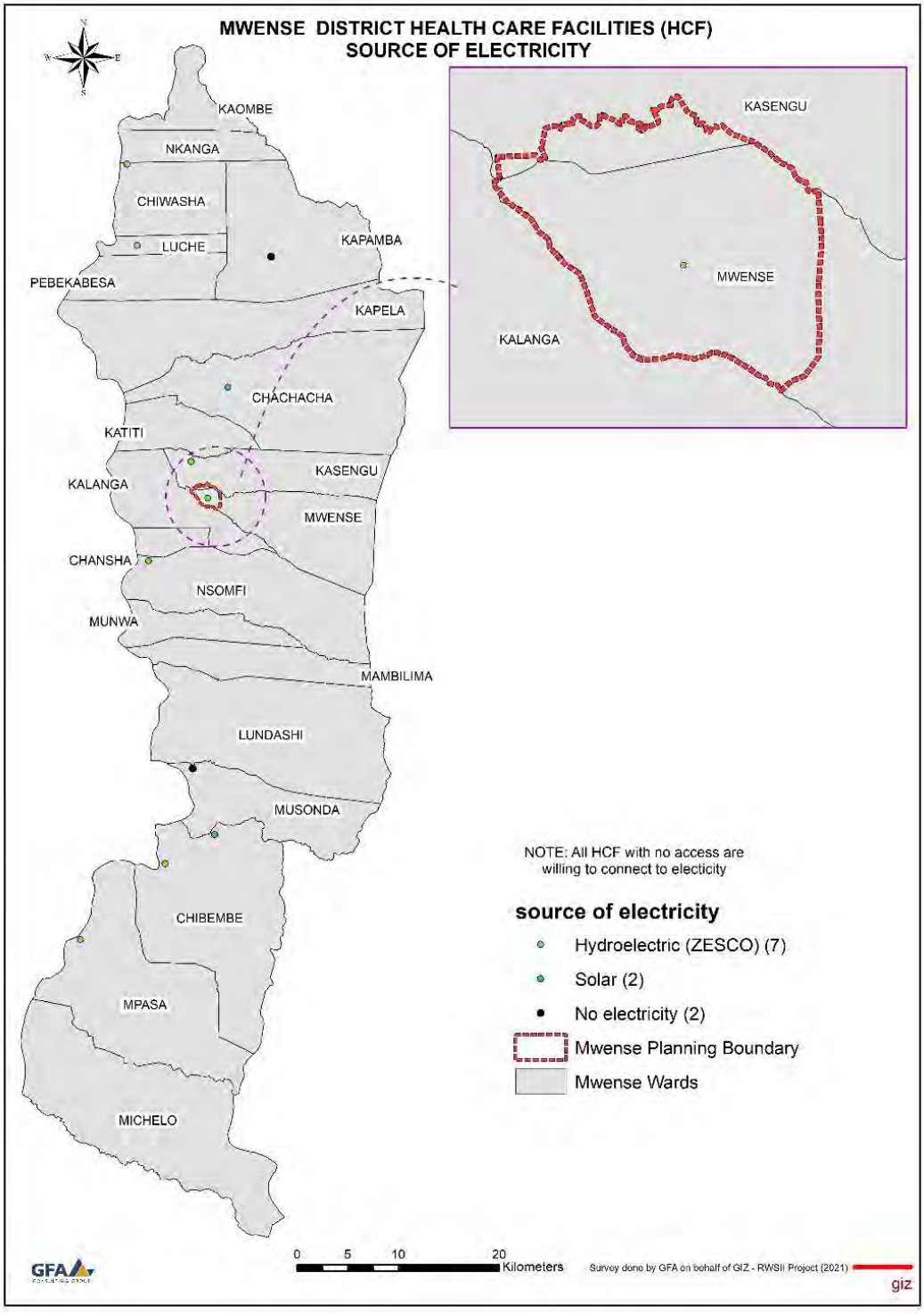
Type of patients



100% of the in-patient only was in the rural areas while for those had both were represented by 90% and 10% in the rural and urban respectively.

Findings 99: Mwense District health care facility catering for in- and out-patients (N = 11)

Connection to Electricity

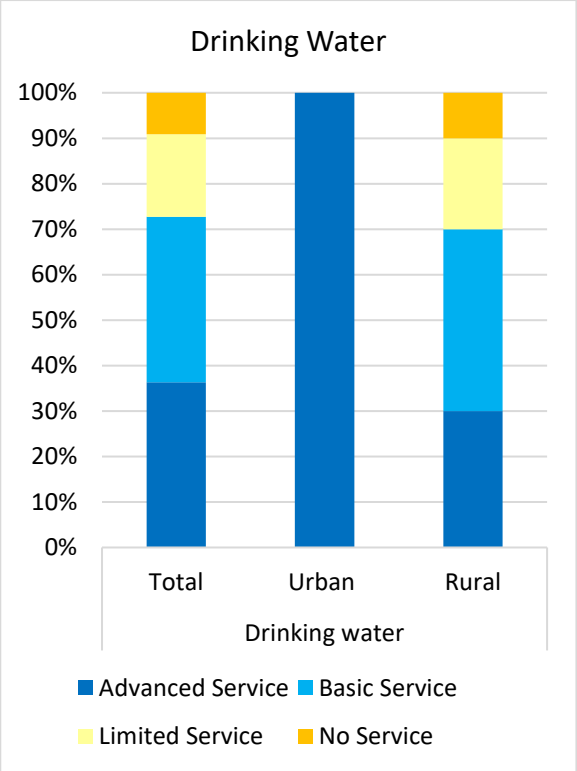


Findings 100: Mwense District health care facilities - connection to electricity

82% of the health care facilities have access to electricity i.e. ZESCO and solar. For the HCFs that are not connected to electricity, they are all willing to connect given the opportunity.

5.3.2 Water Supply Services

Mwense JMP ladder for drinking water services



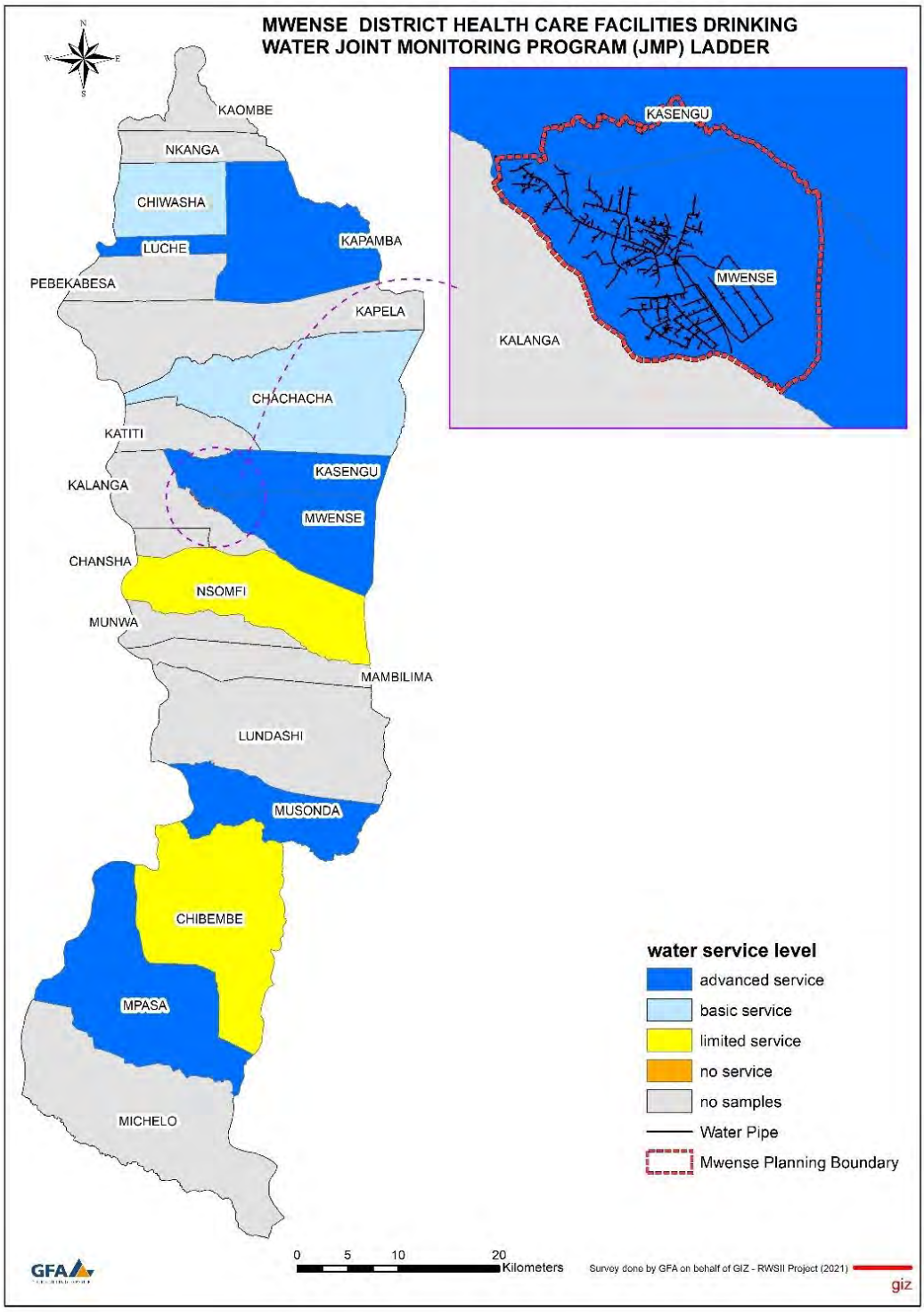
Findings 101: Mwense district health care facilities - JMP for drinking water services

Mwense	Drinking water		
	Total	Urban	Rural
Advanced Service	36.36%	100.00%	30.00%
Basic Service	36.36%	0.00%	40.00%
Limited Service	18.18%	0.00%	20.00%
No Service	9.09%	0.00%	10.00%

The proportion of HCFs in Mwense District using advanced services is 36.36%, rural HCFs being 30% and urban HCFs being 100%.

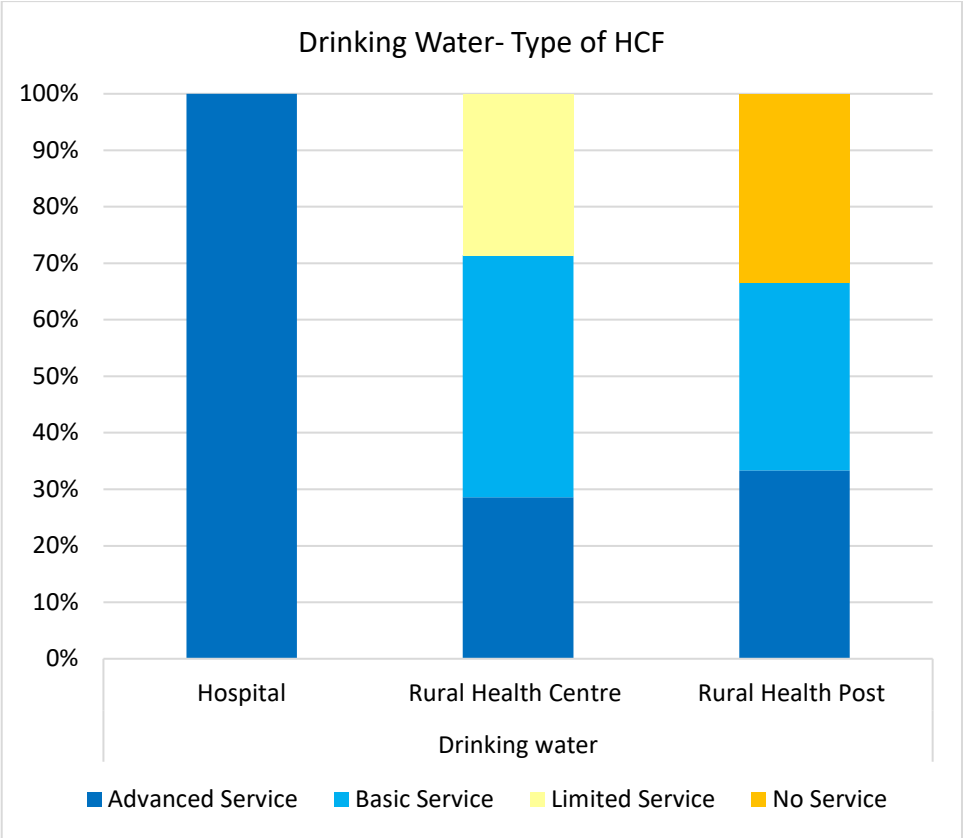
In 2021, out of 22 HCFs in Mwense District, 14 HCFs lacked advanced services including 8 schools with basic services, 4 schools with limited services, 2 schools having no water source or having access to an unimproved water source.

HCFs in the rural areas were three times as likely to lack advanced services as those in the urban areas. Please refer to Table 8 for the definition and clarifications on some of the drinking water terms.



Findings 102: Mwense District ward level - JMP for HCF drinking water services

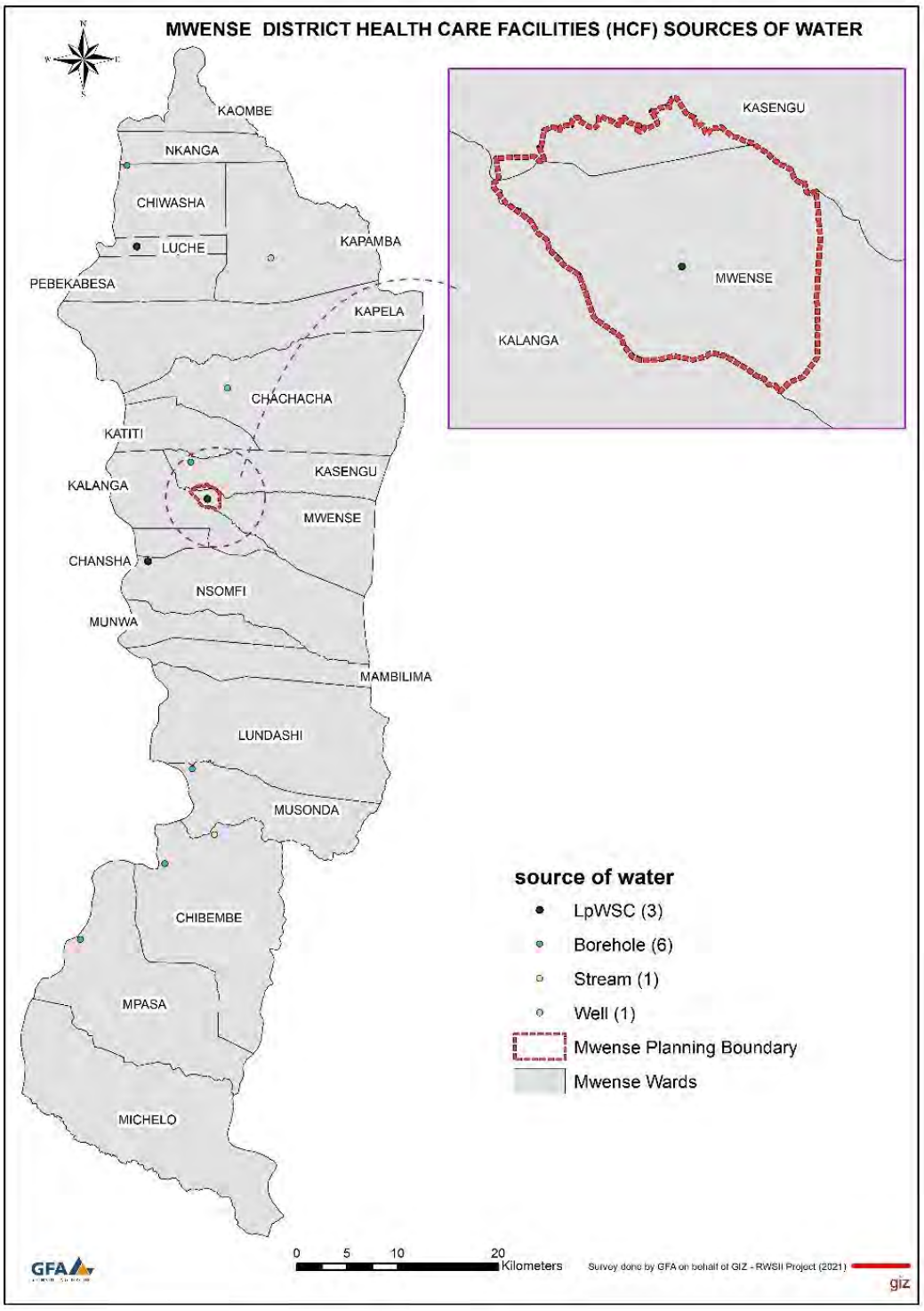
Findings 102 shows JMP indicators at the ward level. Out of the10 wards that were represented in Mwense District, 6 wards, namely Luche, Kapamba, Kasengu, Mwense, Musonda, and Mpasa, have majority of their HCFs having access to advanced service. Only 2 wards namely; Nsomfi and Chibembe have majority of their HCFs with limited service and there is no ward that no service.



Findings 103: Mwense District - JMP for HCF drinking water services by HCF type

100% hospitals have access to advanced services while rural health centres have a mixture of advanced, basic, and limited service. Rural health posts have parts that have access to advanced, basic and no service.

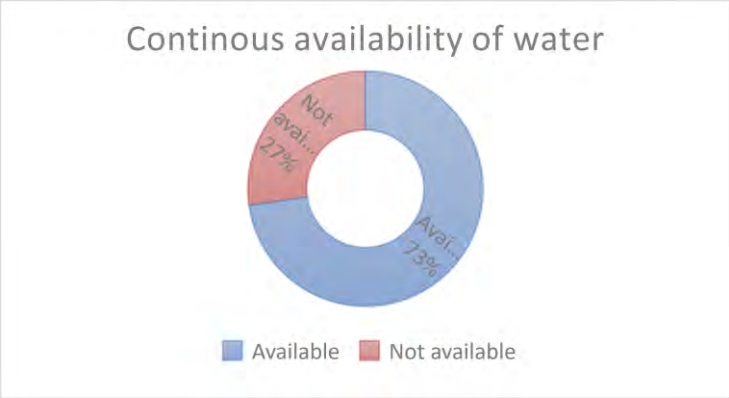
Type of water source



Findings 104: Mwense District HCFs - type of water sources / access

From Findings 104 it can be seen, that in general the main source of water for HCFs was boreholes (55%) and LpWSC (27%).

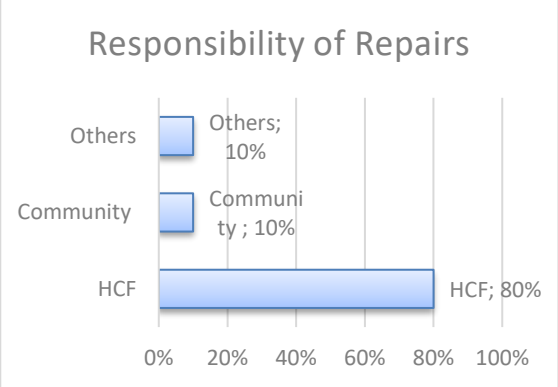
Water availability



73% of the HCFs had Water which was continuously available

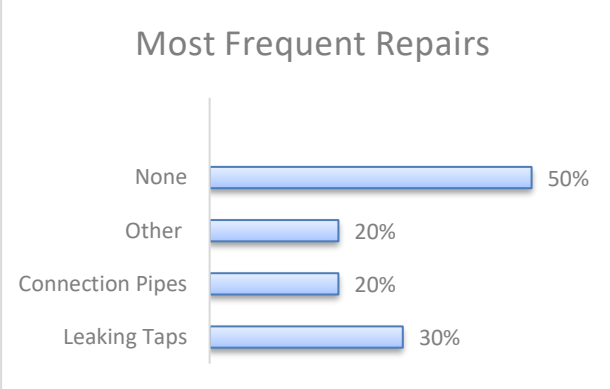
Findings 105: Mwense District - availability of water for HCFs (N = 11)

Maintenance of water services



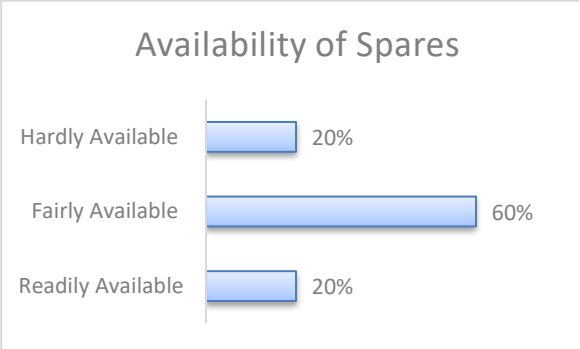
Findings 106: Mwense District - responsibility for maintenance / repair works of the water source for HCFs (N = 10)

The responsibility for maintenance/ repair works lies with the HCF that is having access to the water source.



Findings 107: Mwense District HCF water service frequent repairs (N = 10)

Majority response was that there were none on the repairs (50%), seconded by leaking taps (30%). The rest were 20% on connection pipes and 20% on other.

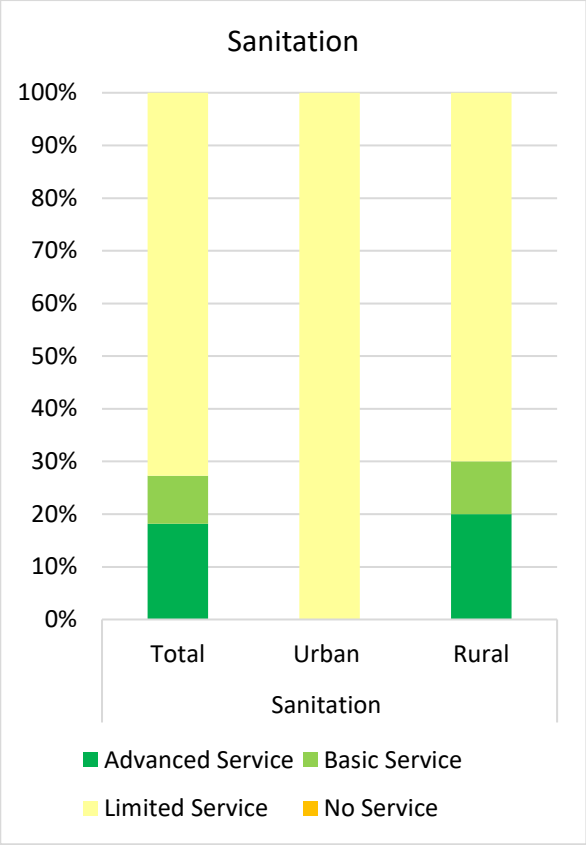


Findings 108: Mwense District HCF availability of spare parts (N = 5)

60% of the HCFs noted that spare parts were fairly available and 20% indicated that they were readily available and 20% also indicated that they were hardly available.

5.3.3 Sanitation Services

Mwense JMP ladder for sanitation services



Findings 109: Mwense HCF JMP ladder for sanitation

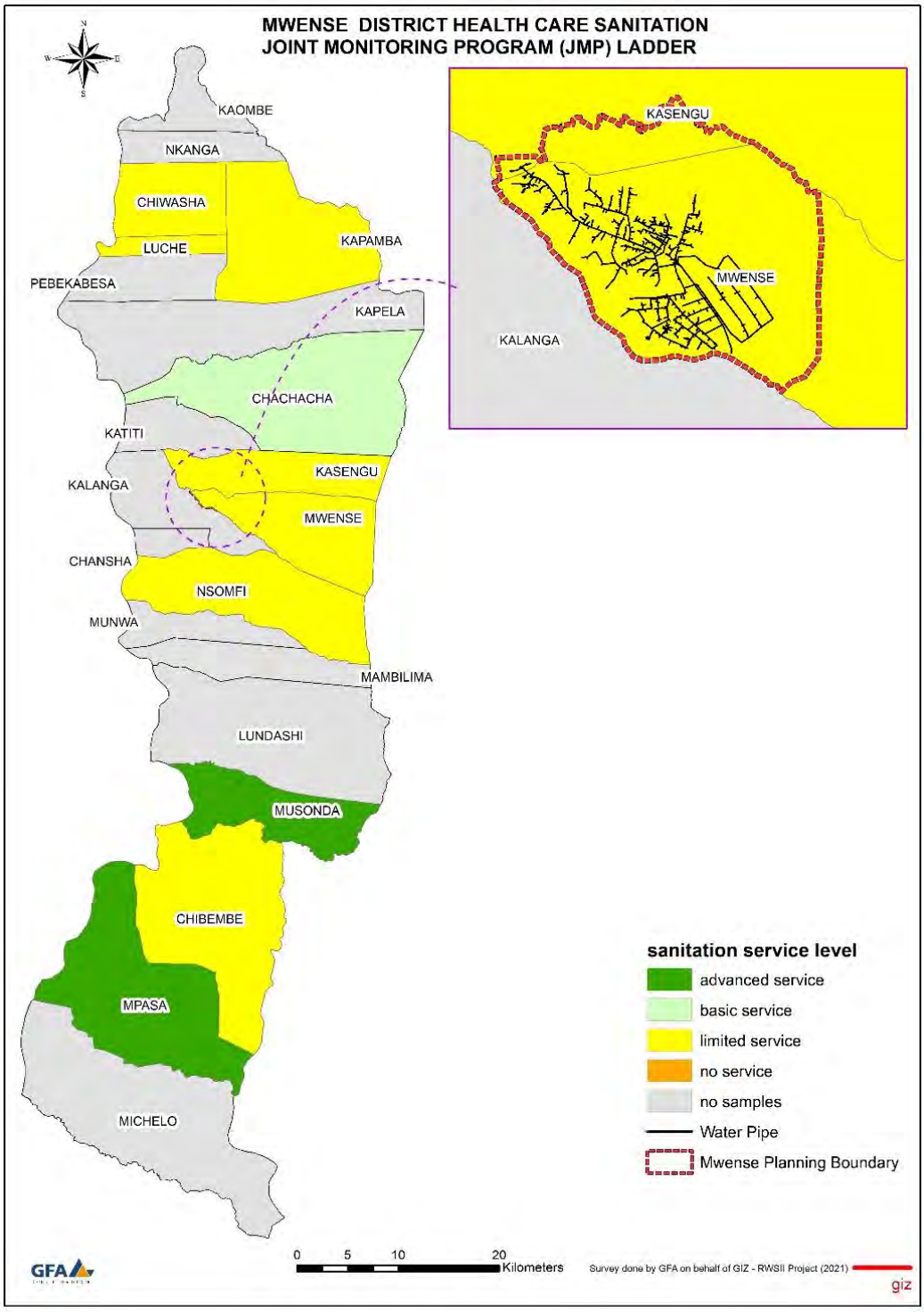
Mwense	Sanitation		
	Total	Urban	Rural
Advanced Service	18.18%	0.00%	20.00%
Basic Service	9.09%	0.00%	10.00%
Limited Service	72.73%	100.00%	70.00%
No Service	0.00%	0.00%	0.00%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of HCFs in Mwense District using advanced services is 18.18%, rural coverage being 0% and urban coverage being 20%.

In 2021, out of an estimated 22 HCFs in Mwense District, 18 HCFs lacked advanced services including 2 HCFs with basic services, 16 HCFs with limited services and there were no HCFs that lacked sanitation services.

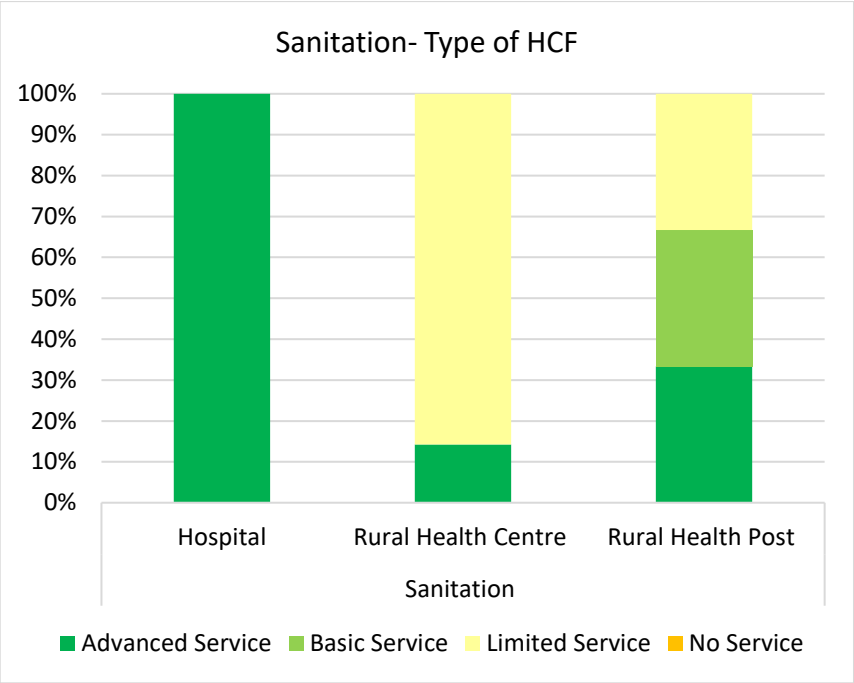
There was no HCF in the urban areas having access to basic service or no service. Majority of the HCFs in Mansa District have access to limited service because they did not have at least one facility dedicated to staff.

Please refer to Table 9 for the definition and clarifications on some of the sanitation terms.



Findings 110: Mwense District ward level JMP for HCF sanitation services

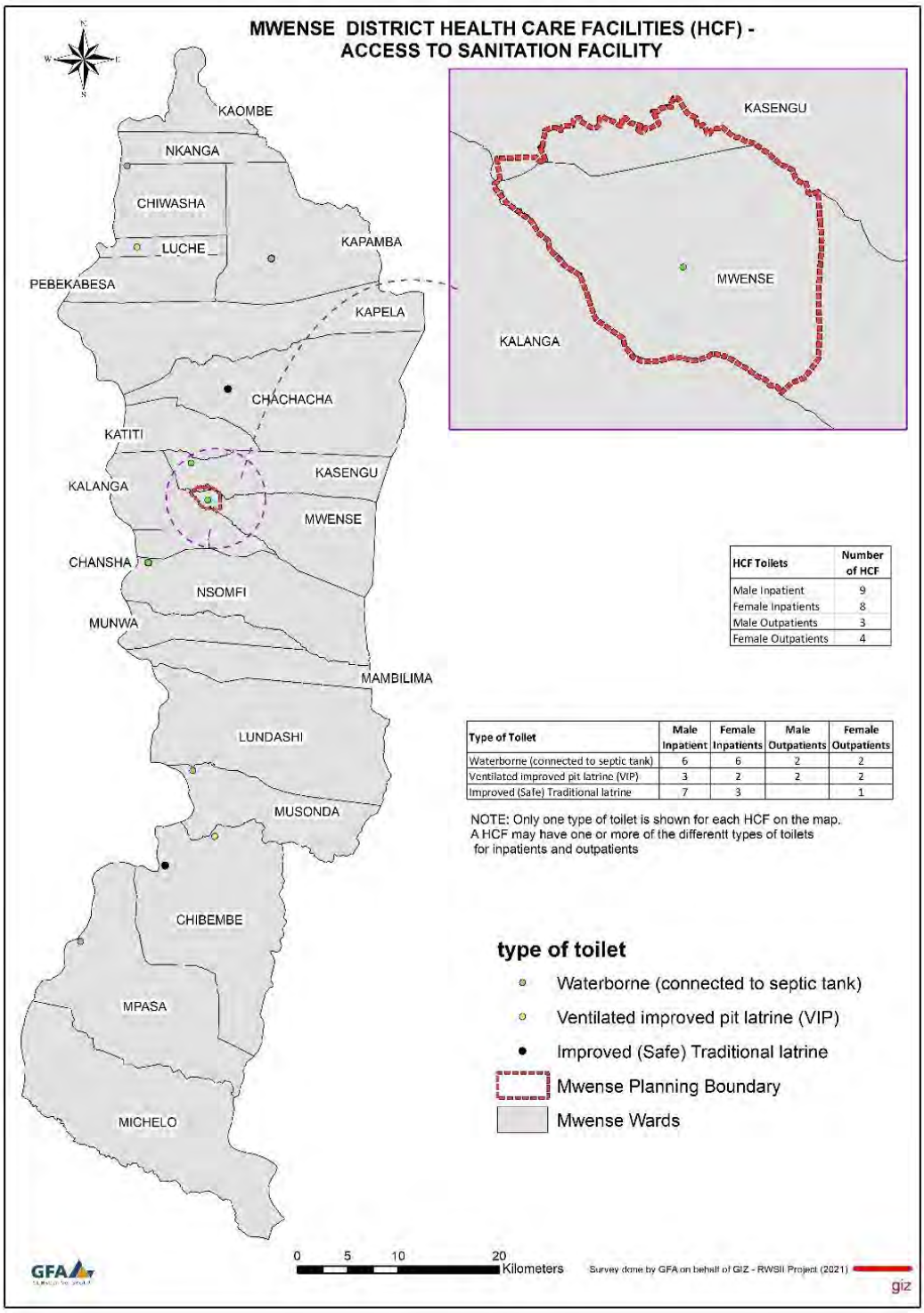
Findings 110 shows JMP indicators at ward level. Out of the 10 wards that were represented in Mwense District, only 2 wards, Musonda and Mpasa, have HCFs with access to advanced service. Most of the wards (7) in Mwense District have HCFs with access to limited sanitation services.



Findings 111: Mwense District JMP for HCF sanitation services by HCF type

100% of the hospitals have access to advanced sanitation while the rural health centres and rural health posts also have basic and limited service.

Access to sanitation facilities



Findings 112: Map of Mwense District HCFs - access to sanitation facilities

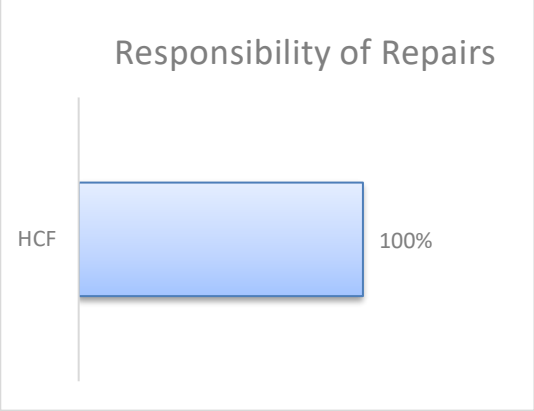
From Findings 112 in general, the main type of sanitation for HCFs were waterborne to septic tank, seconded by improved safe traditional latrines.

Emptying practices

Findings 113: Mwense District HCF Toilet Emptying Practices (N = 11)

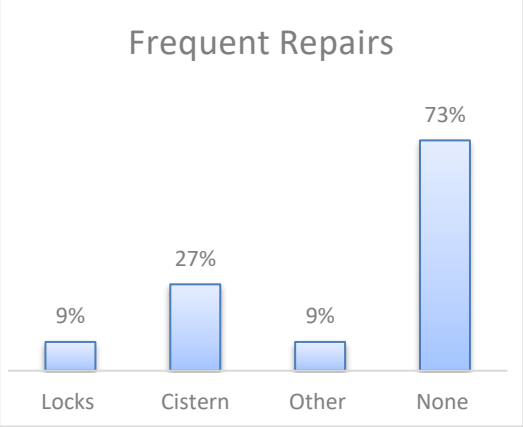
For HCF the majority toilets have never been full and for the little that have been, a new one was built 18%.

Maintenance of sanitation facilities



Findings 114: Mwense District HCFs - responsibility for repair of toilet (N = 11)

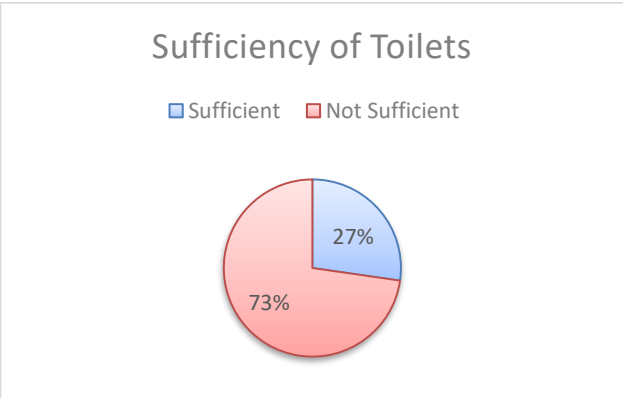
In general, the HCF take responsibility of repairing the toilets (100%).



Findings 115: Mwense District HCFs - frequent repairs on the toilets (N = 11)

The most frequent repairs done are on the cistern (27%) while majority (73%) had not done any frequent repairs

Sufficiency of toilets

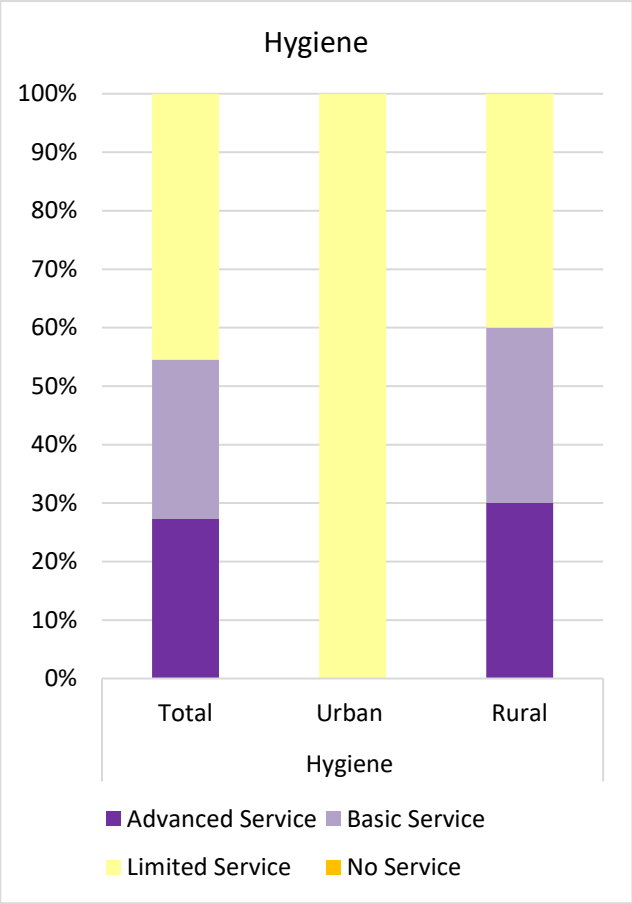


Findings 116: Mwense District schools-sufficiency and usability of sanitation facilities (N = 11)

73% of the HCFs in Mwense have insufficient toilets this is because the number of toilets does not match the population and no toilets dedicated for staff.

5.3.4 Hygiene Services

Mwense JMP ladder for hygiene services



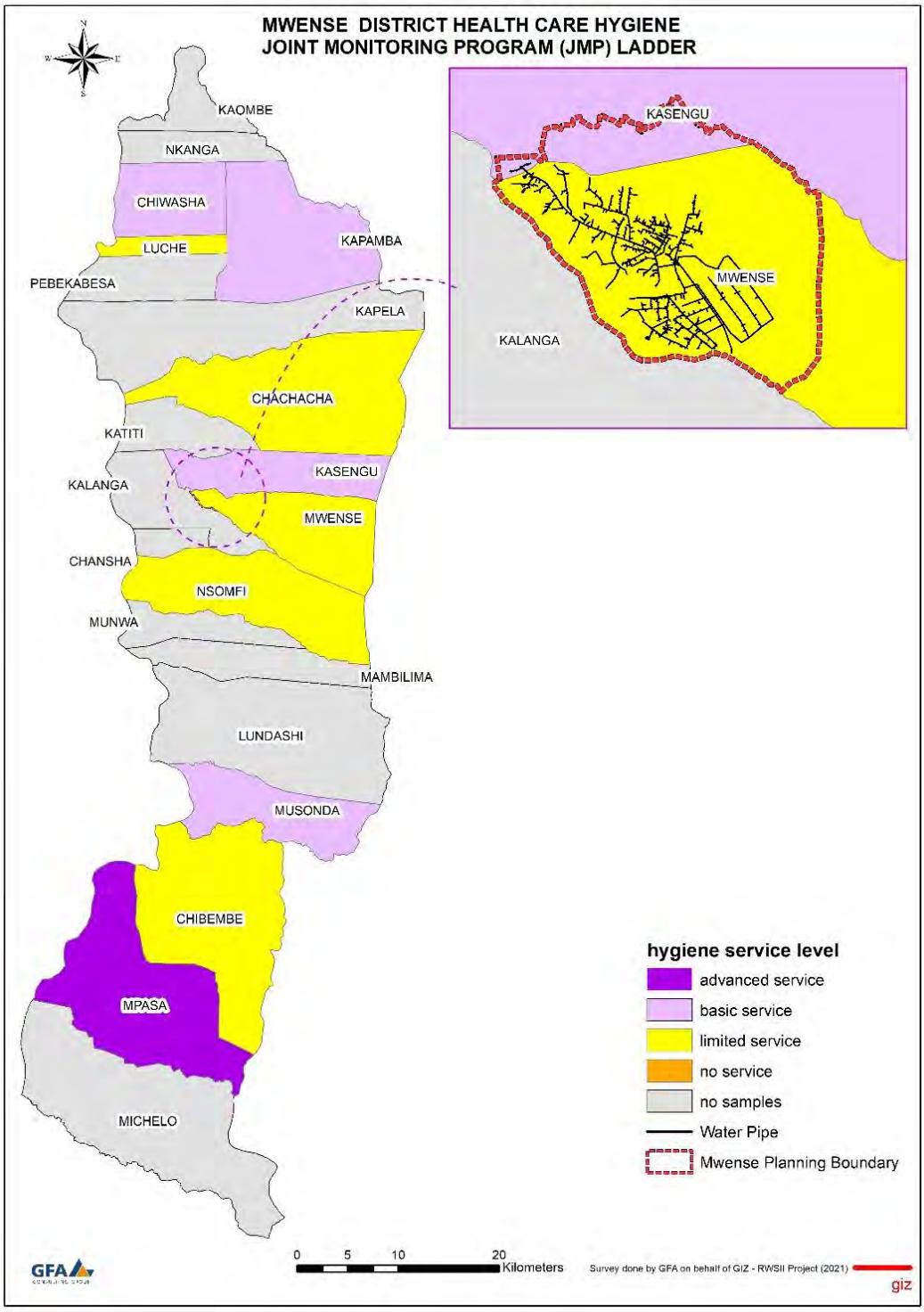
Findings 117: Mwense District health care facilities JMP ladder for hygiene services

Mwense	Hygiene		
	Total	Urban	Rural
Advanced Service	27.27%	0.00%	30.00%
Basic Service	27.27%	0.00%	30.00%
Limited Service	45.45%	100.00%	40.00%

The proportion of HCFs in Mwense District using advanced service is 27.27%, rural HCFs being 30% and urban coverage being 0%.

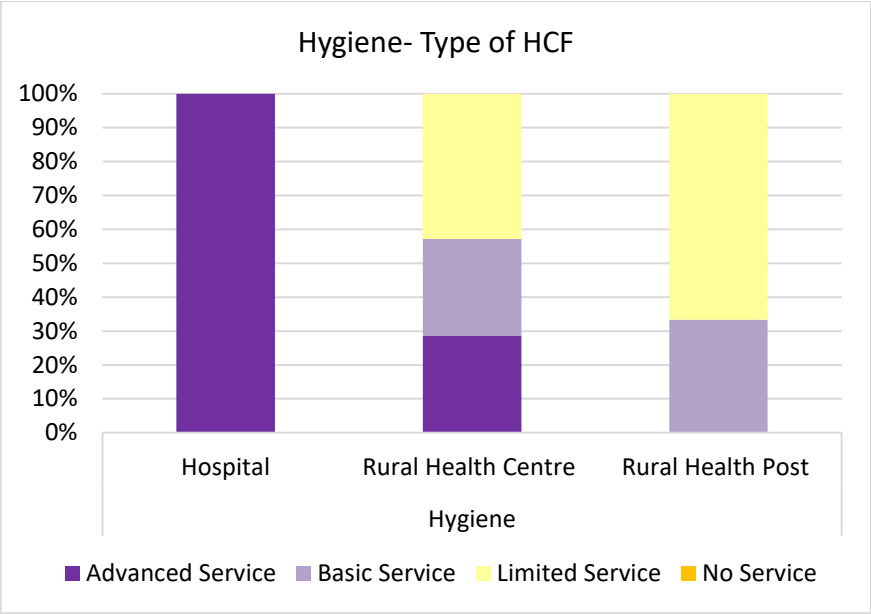
In 2021, out of 22 HCFs in Mwense District, 16 HCFs lacked advanced services including 6 with basic services and 10 with limited service. There were no HCFs with no service.

Please refer to Table 9 for the definition and clarifications on some of the hygiene terms.



Findings 118: Mwense District ward level JMP for HCFs hygiene services

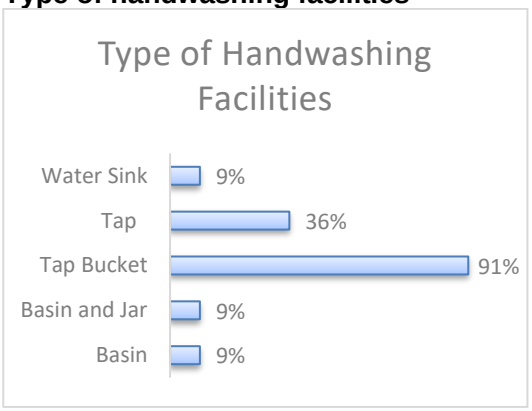
Findings 118 shows JMP indicators at the ward level. Out of the 10 wards that were represented in Mwense District, only 1 ward, Mpasa has HCFs with access to advanced hygiene services. Majority of the wards in Mwense District have HCFs with access to either basic or limited hygiene services.



Findings 119 Mwense District JMP for HCF hygiene services by HCF type

100% of the hospitals have access to basic service. While the RHC and RHP have a mixture of service levels that include advanced, basic and limited service.

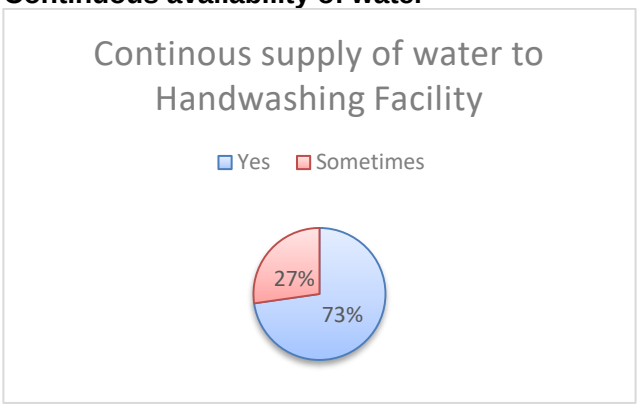
Type of handwashing facilities



Findings 120: Mwense District HCFs-types of handwashing facilities (N = 11)

Majority (91%) of the HCFs use tap bucket.

Continuous availability of water

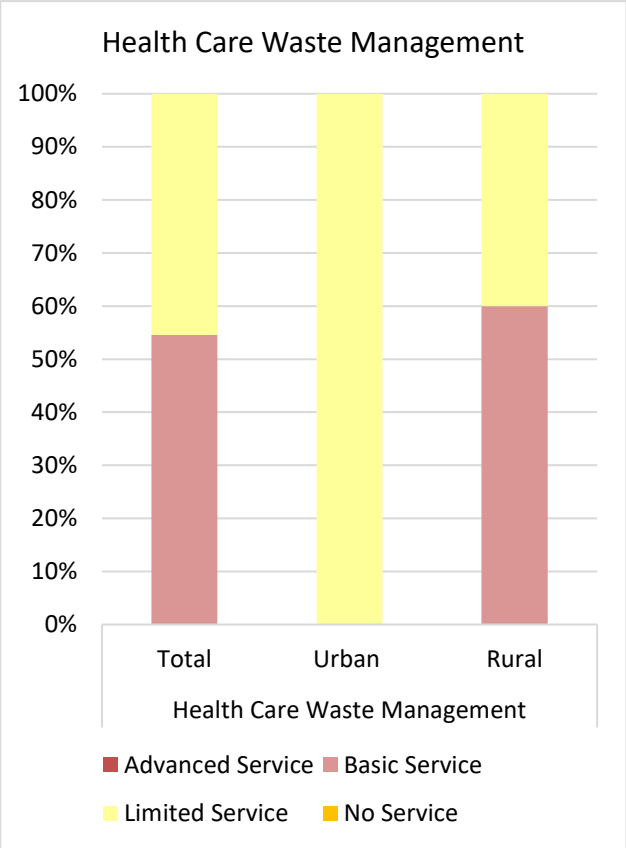


Findings 121: Mwense District HCF handwashing facility supplied with water continually (N = 11)

Majority (73%) of the HCFs have continuous supply of water to their handwashing facilities.

5.3.5 Health Care Waste Management

Mwense JMP ladder for health care waste management services



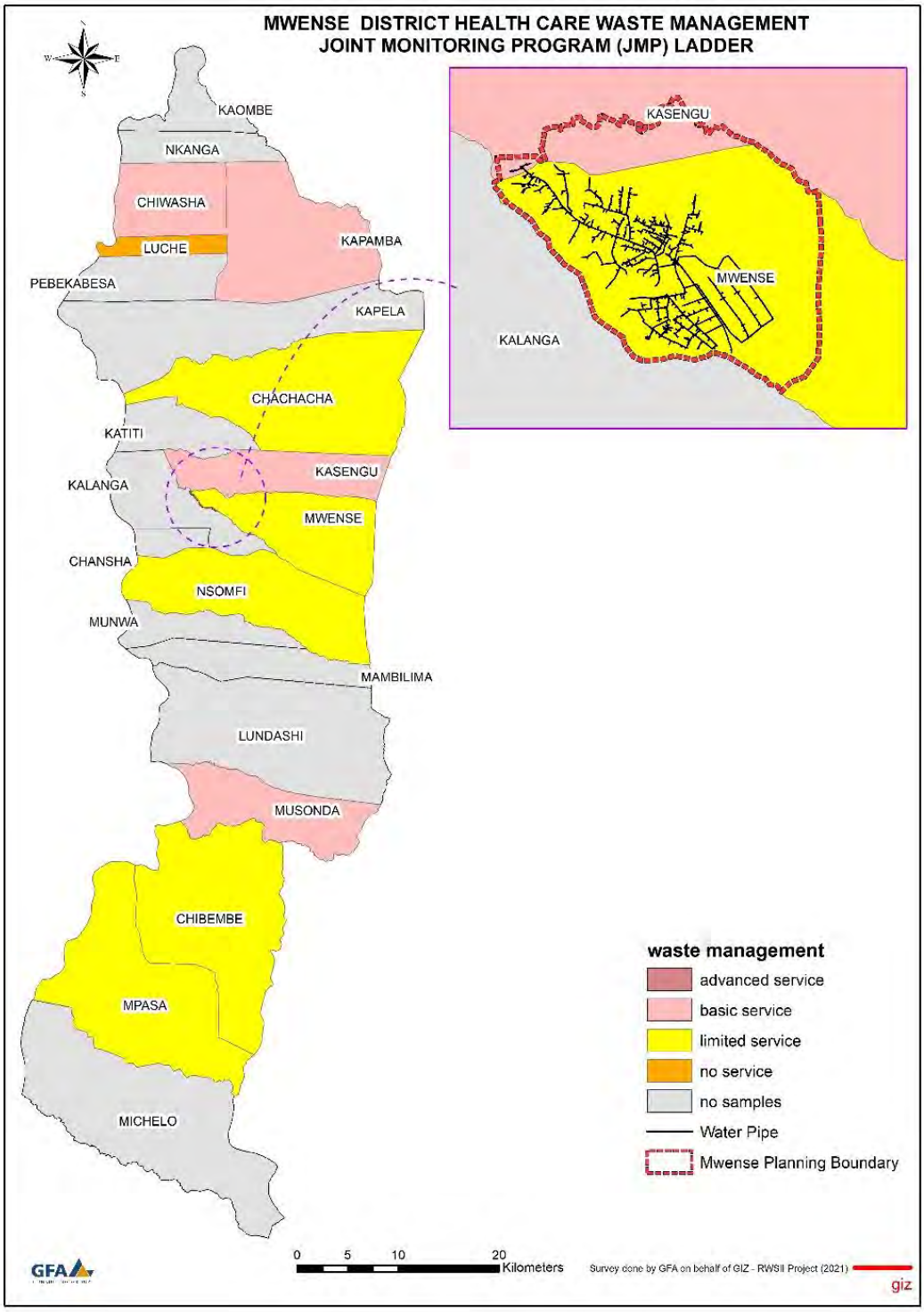
Findings 122: Mwense District JMP ladder for health care waste management services

Mwense	Health Care Waste Management		
	Total	Urban	Rural
Advanced Service	0.00%	0.00%	0.00%
Basic Service	54.55%	0.00%	60.00%
Limited Service	45.45%	100.00%	40.00%
No Service	0.00%	0.00%	0.00%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of HCFs in Mwense District using basic service is 54.55%, rural HCFs being 45.45% and urban coverage being 0%. This is because there was need for the separation of organic waste.

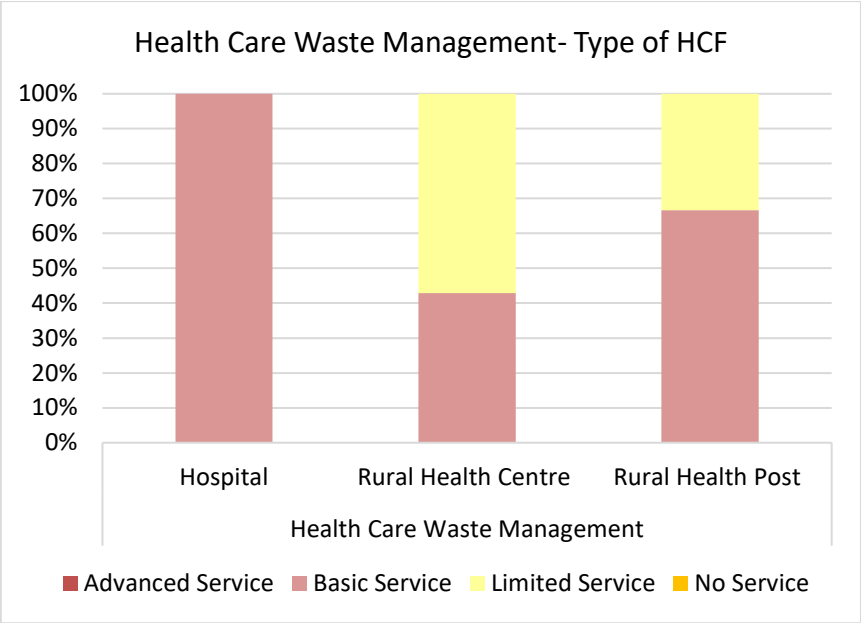
In 2021, out of 22 HCFs in Mwense District, all HCFs lacked advanced services including 12 with basic services, 10 with limited service and there are no HCFs without separation bins for sharps or infectious waste and/or the sharp and infectious waste is not treated.

Please refer to Table 11 for the definition and clarifications on some of the health care waste management terms.



Findings 123: Mwense District ward level JMP for HCFs waste management services

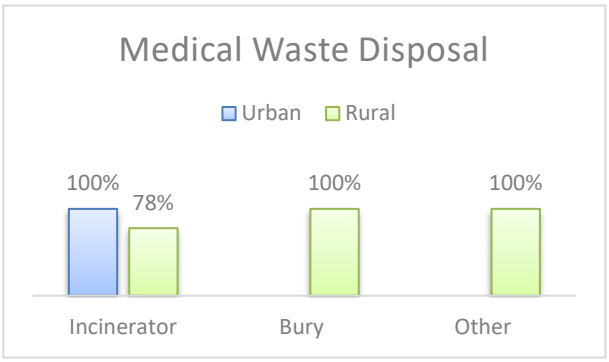
Findings 123 shows JMP indicators at the ward level. Out of the 10 wards that were represented in Mwense District, there are no wards that have HCFs with waste management at advanced level. The majority wards have majority HCF with either basic or limited level of health care waste management but there is still one ward with majority having no service.



Findings 124: Mwense District JMP for HCF health care waste management services by HCF type

100% of the hospitals have access to basic service while there is a mixture of services between basic and limited for the RHCs and RHP.

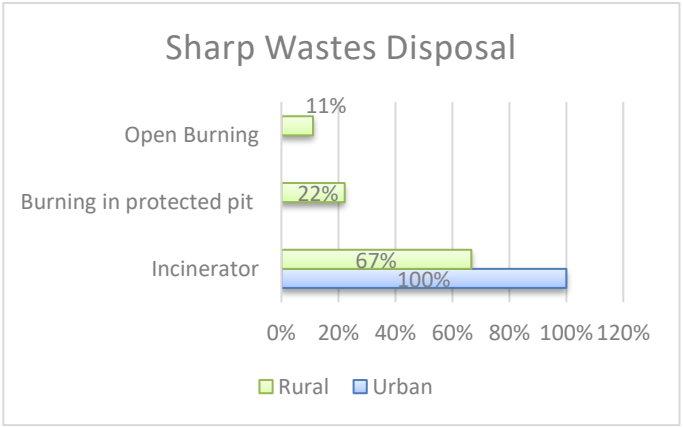
Medical waste disposal



Findings 125: Mwense District HCFs-medical wastes disposal (N = 11)

Majority of the HCFs (82%) in Mwense District use the incinerator to dispose of medical waste. The distribution according to urban and rural is 100% and 78% respectively. While other forms of disposal are also used by rural areas i.e. burying and other means (burning).

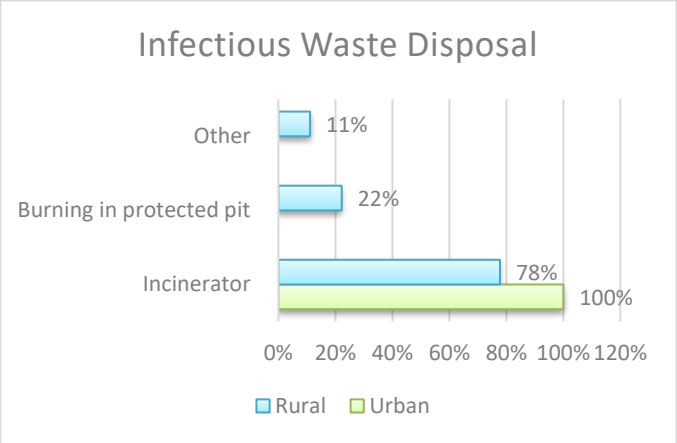
Sharp wastes disposal



Findings 126: Mwense District HCFs-sharp wastes disposal (N = 11)

Majority of the HCFs (73%) in Mwense District use the incinerator to dispose of sharp waste. The distribution according to urban and rural is 100% and 67% respectively While other forms of disposal are also used by rural areas i.e. burning in protected pit and open burning.

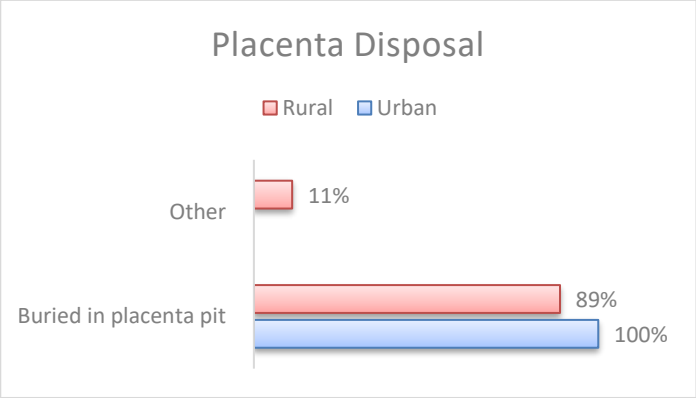
Infectious Waste Disposal



Findings 127: Mwense District HCFs-infectious wastes disposal (N = 11)

Majority of the HCFs (82%) in Mwense District use the incinerator to dispose of infectious waste. The distribution according to urban and rural is 100% and 78% respectively while other forms of disposal are also used by rural areas i.e. burning in protected pit and other means.

Placenta Disposal

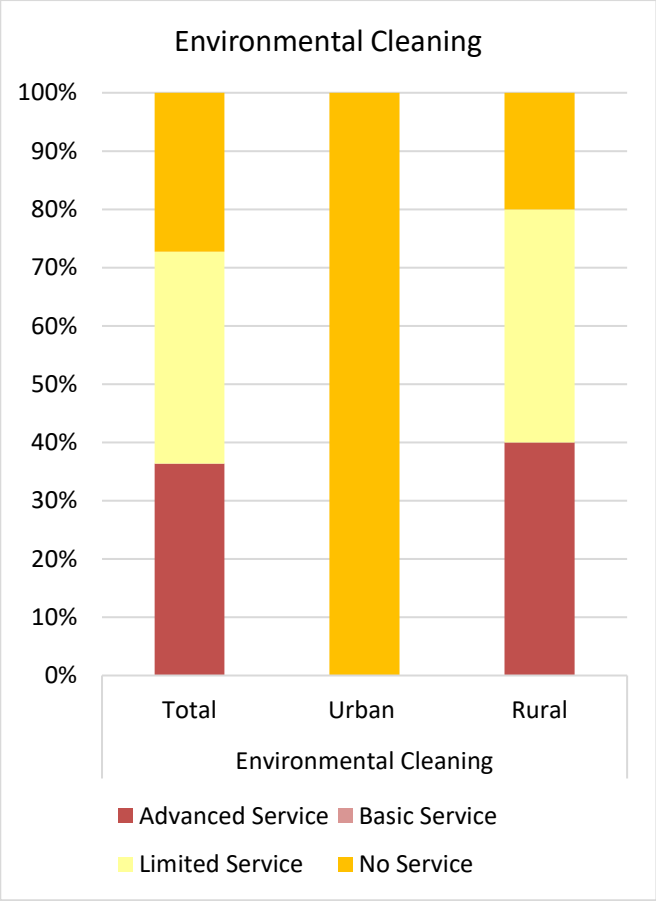


Findings 128: Mwense District HCFs- placenta disposal (N = 11)

Majority of the HCFs (91%) in Mwense District bury in placenta pit as a disposal method for placentas. The distribution according to urban and rural is 100% and 89% respectively while other forms of disposal are also used by rural areas.

5.3.6 Environmental Cleaning

Mwense JMP ladder for environmental cleaning services



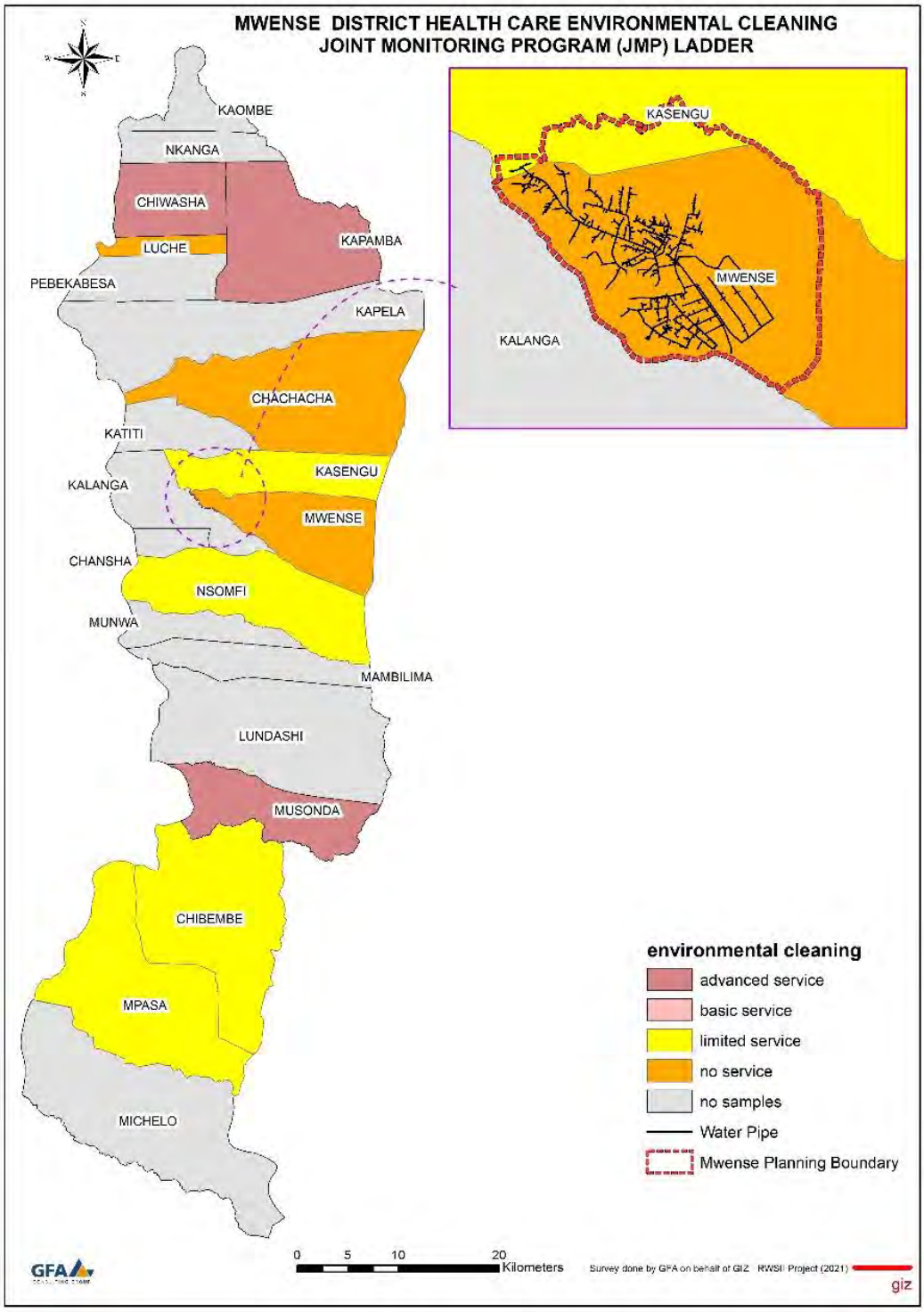
Findings 129: Mwense District JMP ladder for environmental cleaning services

Mwense	Environmental Cleaning		
	Total	Urban	Rural
Advanced Service	36.36%	0.00%	40.00%
Basic Service	0.00%	0.00%	0.00%
Limited Service	36.36%	0.00%	40.00%
No Service	27.27%	100.00%	20.00%
Total	**100.00%**	**100.00%**	**100.00**

The proportion of HCFs in Mwense District using advanced service is 36.36%, rural HCFs being 40% and urban coverage being 0%.

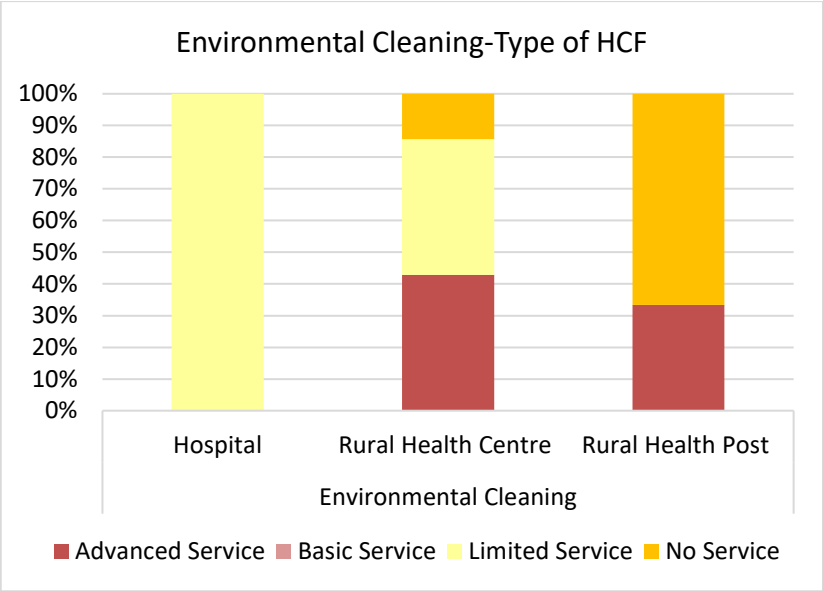
In 2021, out of 22 HCFs in Mwense District, 14 HCFs lacked advanced services including 8 with limited service and 6 with no cleaning protocols available and no staff having received training on cleaning. There were no HCFs with basic services.

Please refer to Table 12 for the definition and clarifications on some of the environmental cleaning terms.



Findings 130: Mwense District ward level JMP for HCFs environmental cleaning services

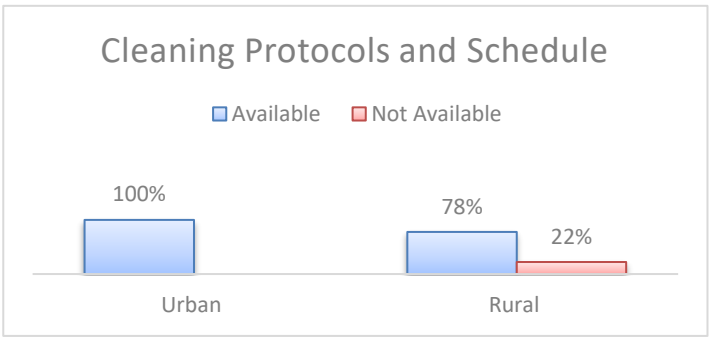
Findings 130 shows JMP indicators at the ward level. Out of the 10 wards that were represented in Mwense District, there are 3 wards that have HCFs with waste management at advanced level. The majority of the wards have HCF limited level of environmental cleaning but there is still a large proportion that have with majority having no service



Findings 131: Mwense District JMP for HCF environmental cleaning services by HCF type

100% of hospitals have access to limited service while there are mixtures of services levels among advanced, basic and no service for RHCs and RHPs.

Cleaning Protocol

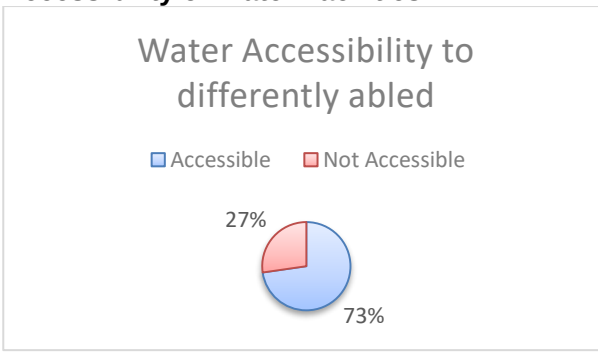


100% of the HCFs have cleaning protocols and cleaning schedule in urban while 15% of HCFs in rural areas do not.

Findings 132: Mwense District HCFs-cleaning protocols (N = 11)

5.3.7 Social Inclusion

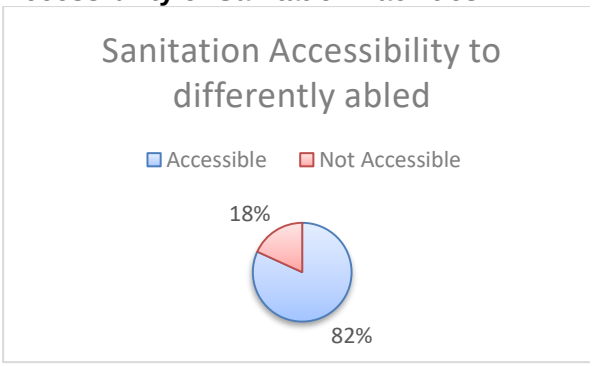
Accessibility of Water Facilities



Findings 133: Mwense District HCFs - water accessible for people with disabilities (N = 11)

73% of the water supply facilities are accessible to differently abled persons.

Accessibility of Sanitation Facilities

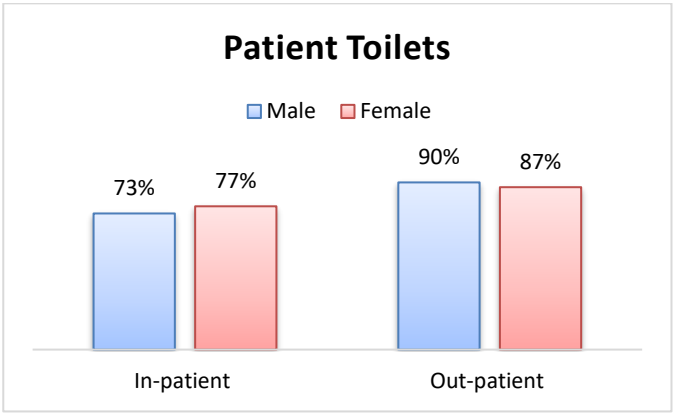


Findings 134: Mwense District HCFs – sanitation facilities accessible for people with disabilities (N = 11)

82% of the sanitation facilities are accessible to differently abled persons.

5.3.8 Gender Sensitivity Data and Information

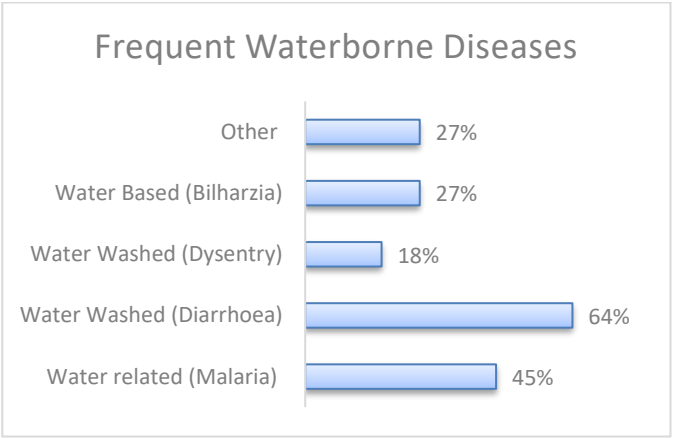
Patient Toilets



Findings 135: Mwense District HCFs – toilet availability for male / female inpatients / outpatients (N = 11)

There are more sex separated toilets for out-patient toilets than for in-patient toilets.

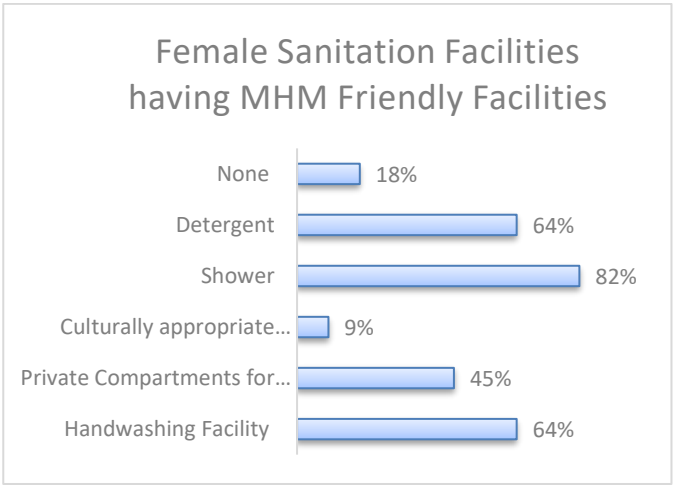
5.3.9 Waterborne Diseases



Findings 136: Mwense District HCF - most frequent water borne disease in the health care facility (N = 11)

The most frequent cases attended to at the HCFs are diarrhoea (64%) and malaria 45%. Like the households, these results are rather surprising that diarrhoea is more frequent than malaria because Mwense District is a mosquito infested and malaria prone district.

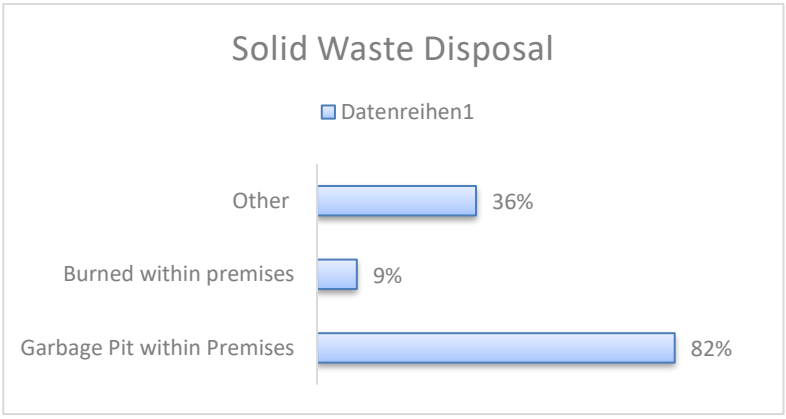
5.3.10 Menstrual Hygiene Management



Findings 137: Mwense District HCF - Female sanitation facilities MHM friendly (N = 11)

Majority of the HCFs with sanitation facilities showers 84% while those having detergent and handwashing facilities were at 64% each but lack most of the other indicators for MHM friendly sanitation facilities.

5.3.11 Solid Waste Management



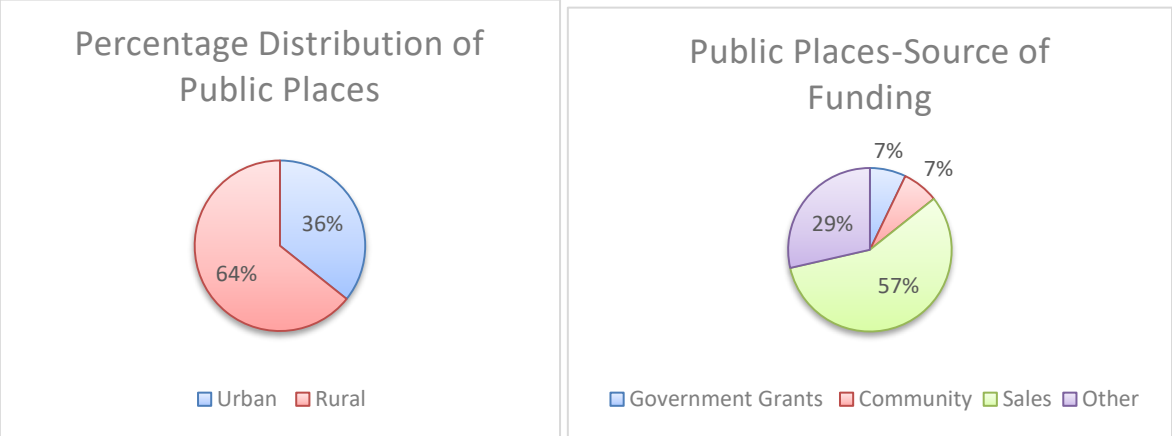
Findings 138: Mwense District HCFs Solid Waste Disposal (N = 11)

Majority of the HCFs use garbage pits within the premises to dispose of Solid waste.

5.4 Public Places

5.4.1 Overview of Public Places & Electricity Connectivity

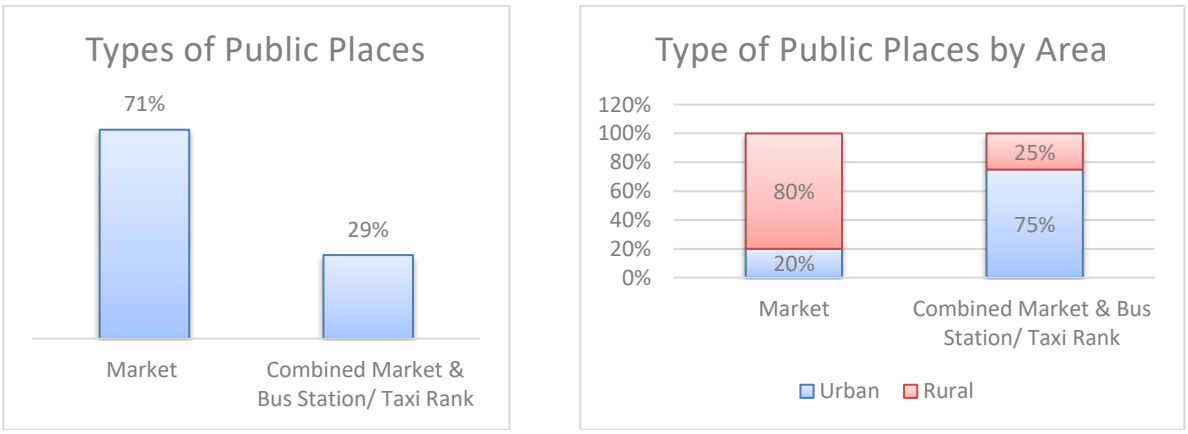
Average distribution of public places in Mwense



Findings 139: Mwense District distribution of public places (N = 14)

There were more public places interviewed in the rural areas (64%) than in the urban areas. This represents the distribution of public places in Mwense as all properties were visited. Funding for public places is generally spread out across all areas with the category of sales being much higher by 57% and other mainly being no funding.

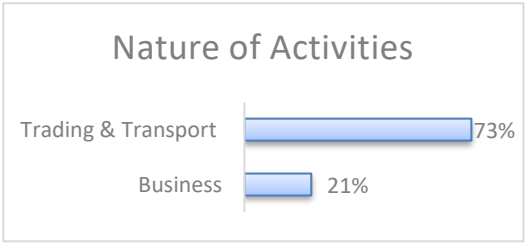
Types of public places



Findings 140: Mwense District - types of public places (N = 14)

Majority of the public places in Mwense District are markets (71%) and combined market & bus station/ taxi ranks only (29%). From these 80% of the markets are in the rural areas while combined markets, bus stations/taxi ranks are in the urban.

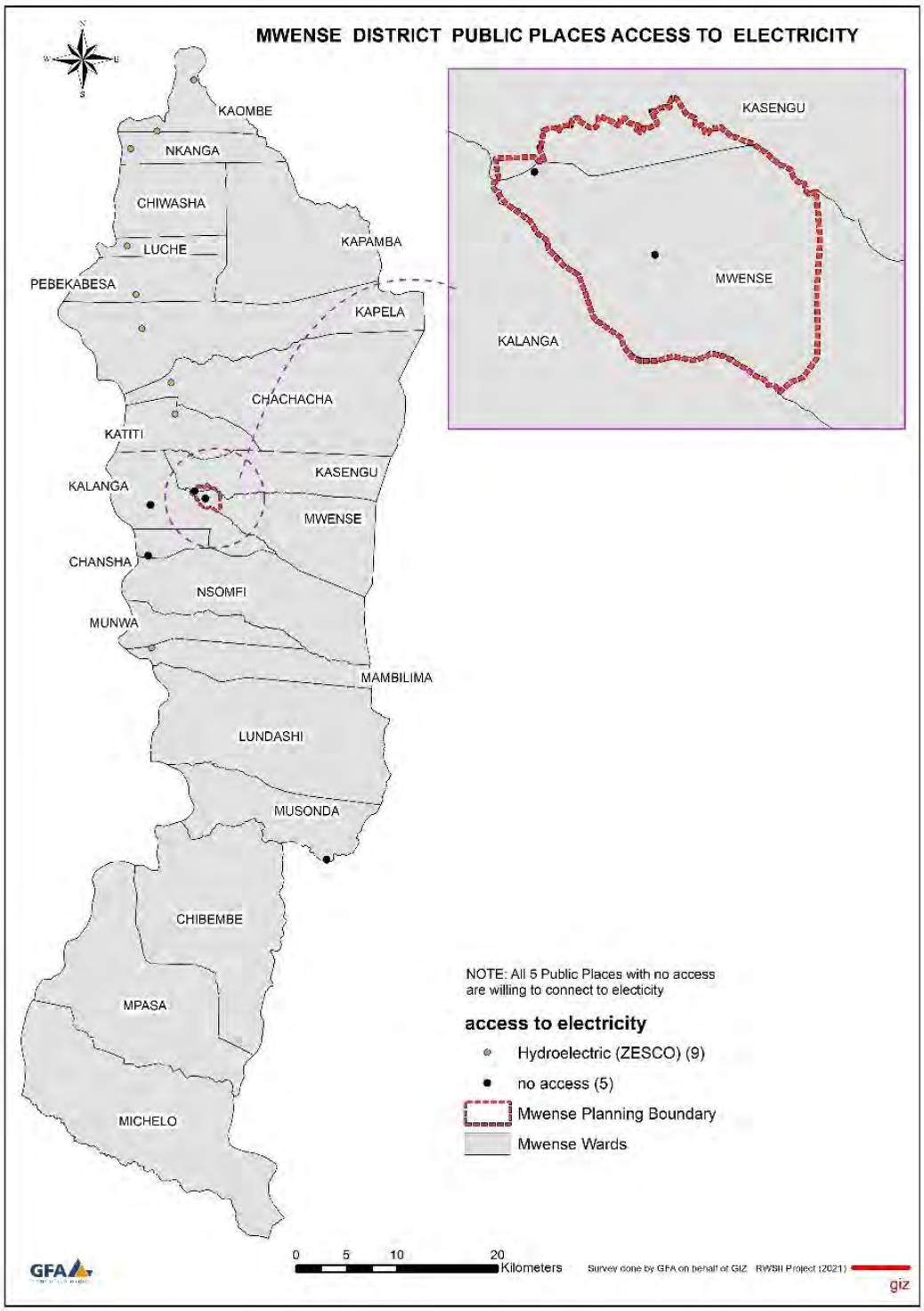
Nature of activities



Findings 141: Mwense District - public places nature of activities (N = 14)

The nature of activities of majority of the public places in Mwense is trading and transportation.

Connection to electricity

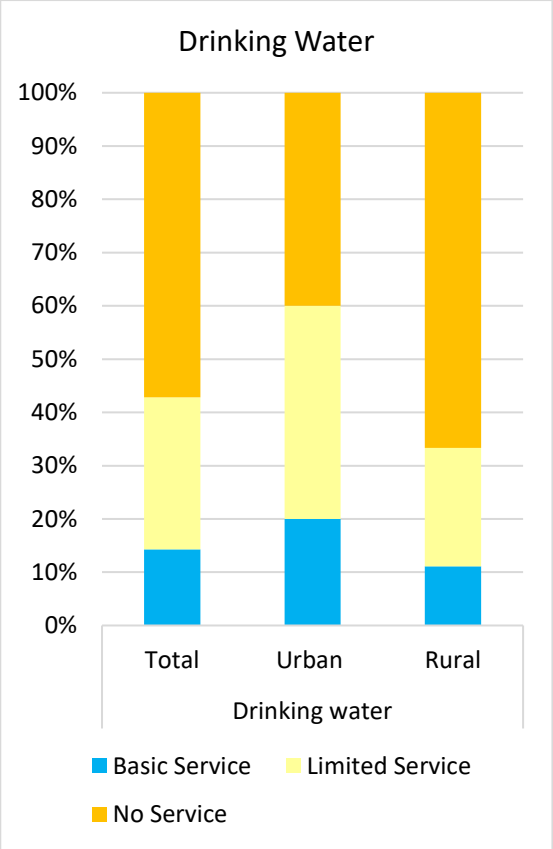


Findings 142: Mwense District - electricity connection of public places (N = 14)

Majority (64%) of the public places have access to electricity. All of those that are not connected are willing to connect to electricity.

5.4.2 Water Supply Services

Mwense JMP ladder for drinking water services



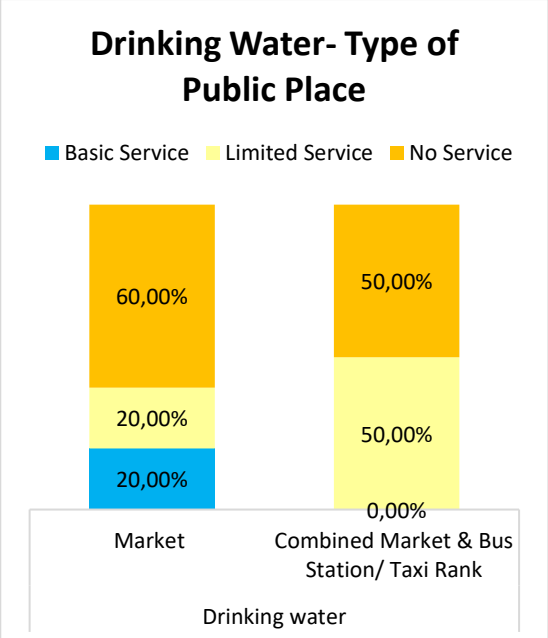
Findings 143: Mwense District ward level JMP for public places drinking water services

Mwense	Drinking water		
	Total	Urban	Rural
Basic Service	14.29%	20.00%	11.11%
Limited Service	28.57%	40.00%	22.22%
No Service	57.14%	40.00%	66.67%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of public places in Mwense District using basic services is 14.29%, rural public places being 11.11% and urban public places being 20%.

In 2021, out of the 14 public places in Mwense District, 12 public places lacked basic services including 4 public places with limited services, and 8 public places having no water source or having access to an unimproved water source.

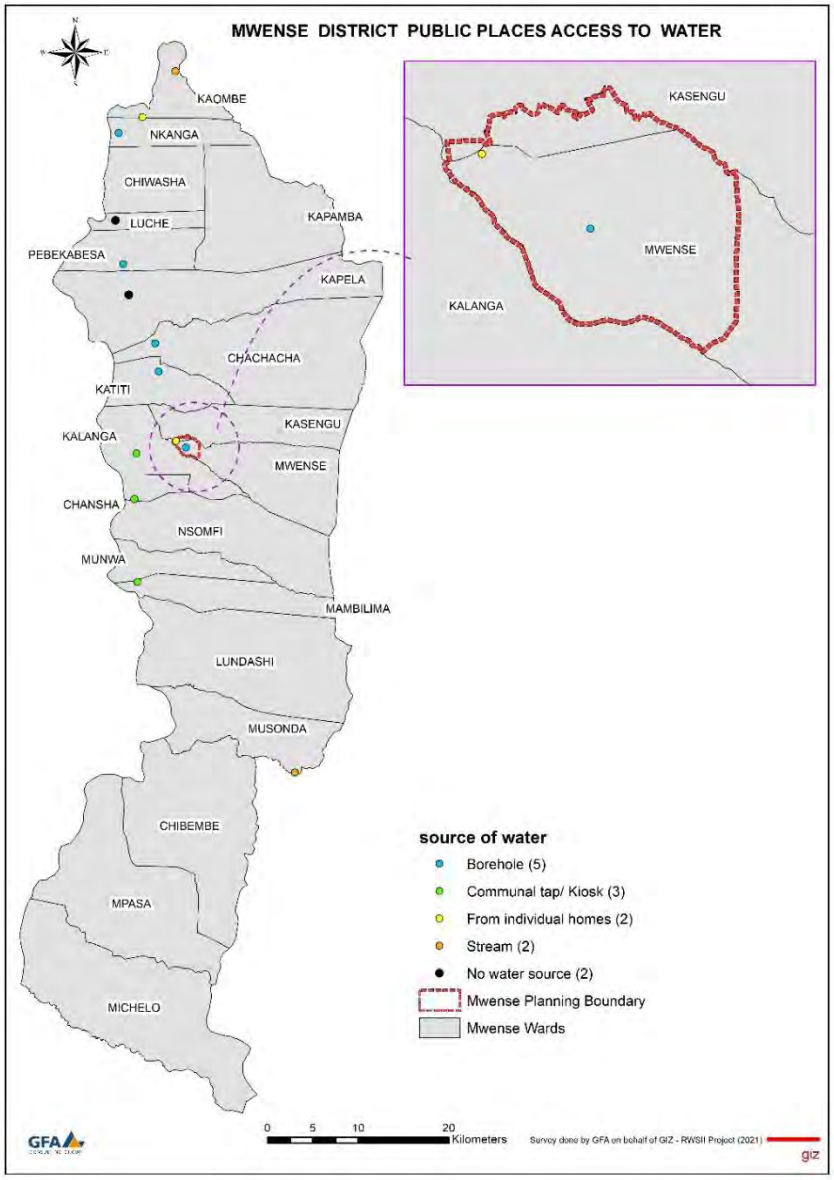
Public places in the rural areas were twice as likely to lack basic services as those in the urban areas. Please refer to Table 13 for the definition and clarifications on some of the drinking water terms.



Findings 144: Mwense District JMP for public places drinking water services by public places type

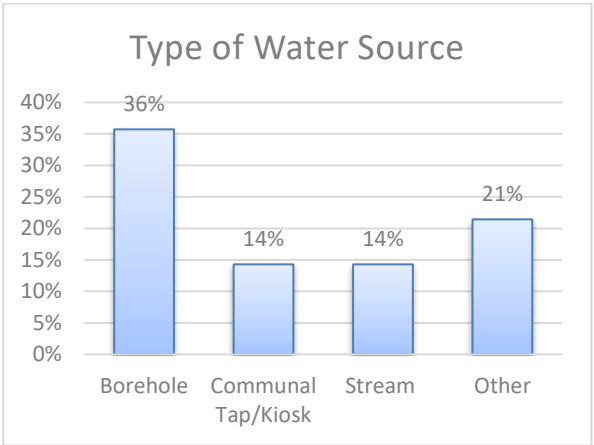
60% markets had no service and only 20% of the markets had basic services and the other 20% had no service. For combined markets & bus stations/markets, 50% had no service and 50% had limited service.

Access to water



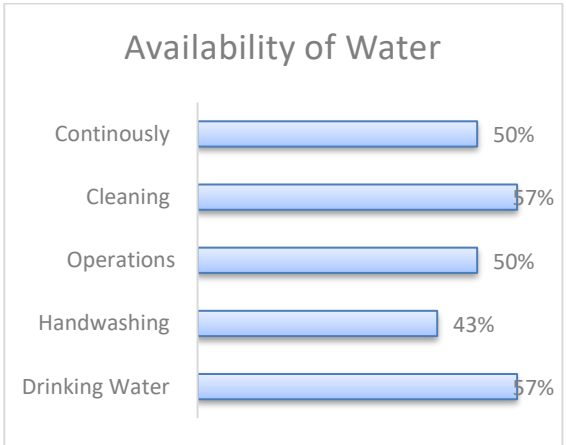
Findings 145: Mwense District - type of water access for public places (N = 14)

Type of water source



Findings 146: Mwense District type of water source for public places (N = 14)

Availability of water

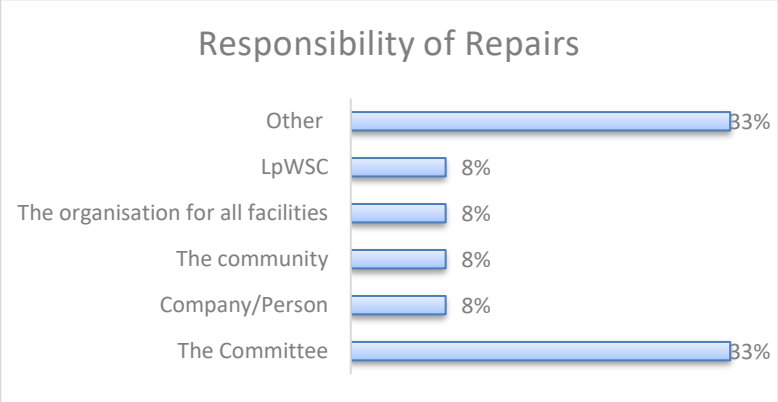


Findings 147: Mwense District Water availability for public places (N = 14)

Most of the public places are using boreholes (36%) as a main source of water as well as other (21%). The category of other includes the purchasing of water and accessing it from neighbouring facilities.

50% of the public places have water which is continuously available. Water was mostly available for drinking and cleaning (57%) and operations (50%).

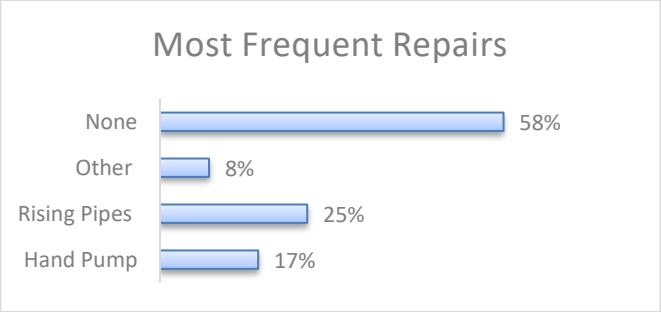
Maintenance



Findings 148: Mwense District water facility - responsibility of repairs for public places (N = 12)

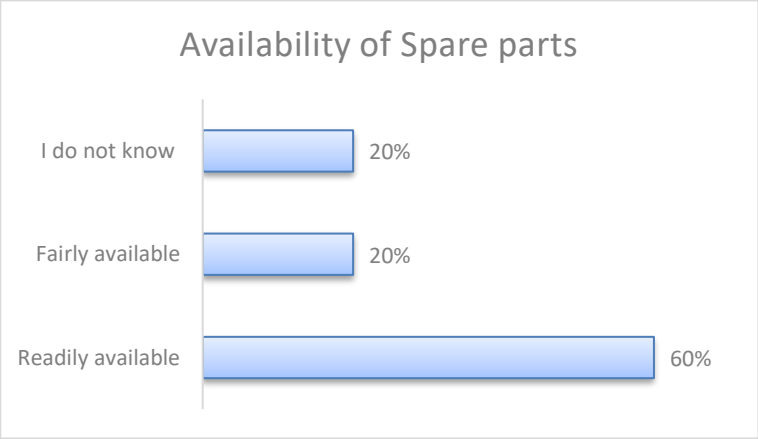
The committee 33% and other at 33%. The other option mainly included the owners of the facilities who were not included on the list of responses.

Most frequent repairs



Findings 149: Mwense District water facility - frequent repairs for public places (N = 14)

There were none most frequent repairs 58% and rising pipes 25% was the second highest in repairs.

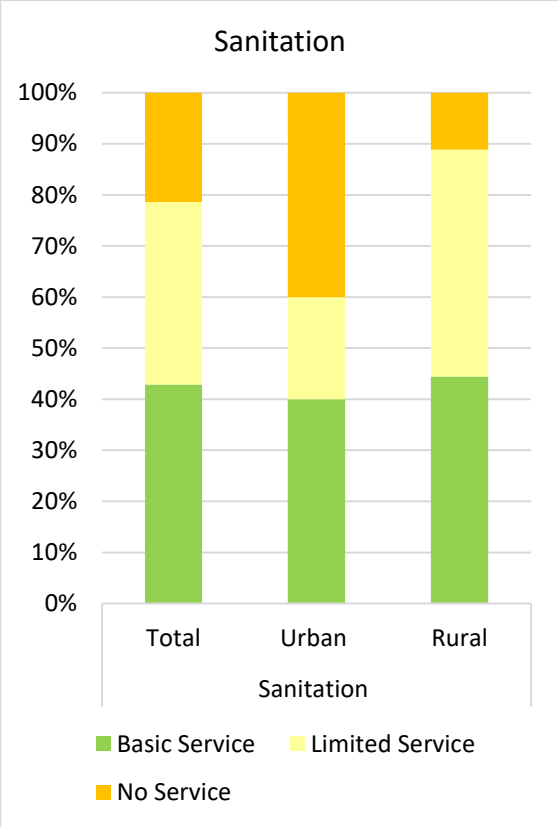


Findings 150: Mwense District - availability of spare parts for public places (N = 5)

Majority of the public places indicated that spare parts were readily available

5.4.3 Sanitation Services

Mwense JMP ladder for sanitation services



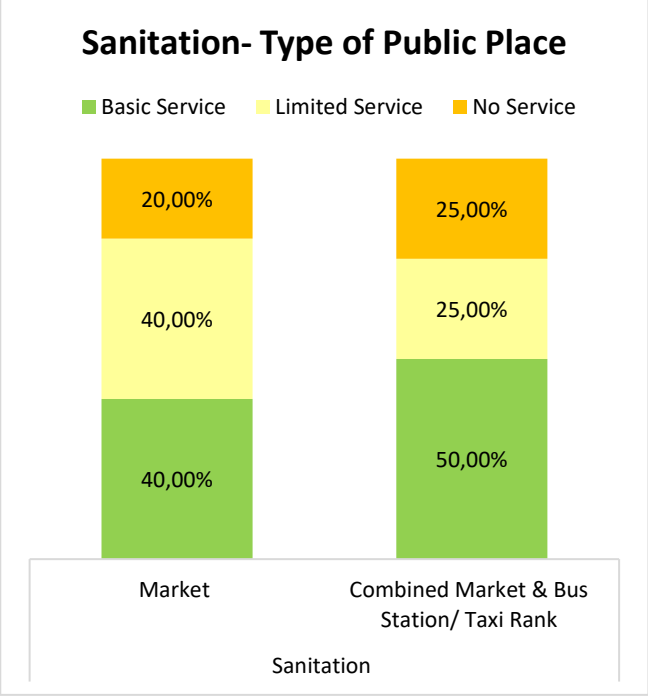
Findings 151: Mwense public places JMP ladder for sanitation

Mwense	Sanitation		
	Total	Urban	Rural
Basic Service	42.86%	40.00%	44.44%
Limited Service	35.71%	20.00%	44.44%
No Service	21.43%	40.00%	11.11%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of public places in Mwense District using basic services is 42.86%, rural coverage being 44.44% and urban coverage being 40%.

In 2021, out of the of 14 public places in Mwense District, 8 public places lacked basic services including 5 public places with limited services and 3 public places having no toilet or having access to unimproved facilities .

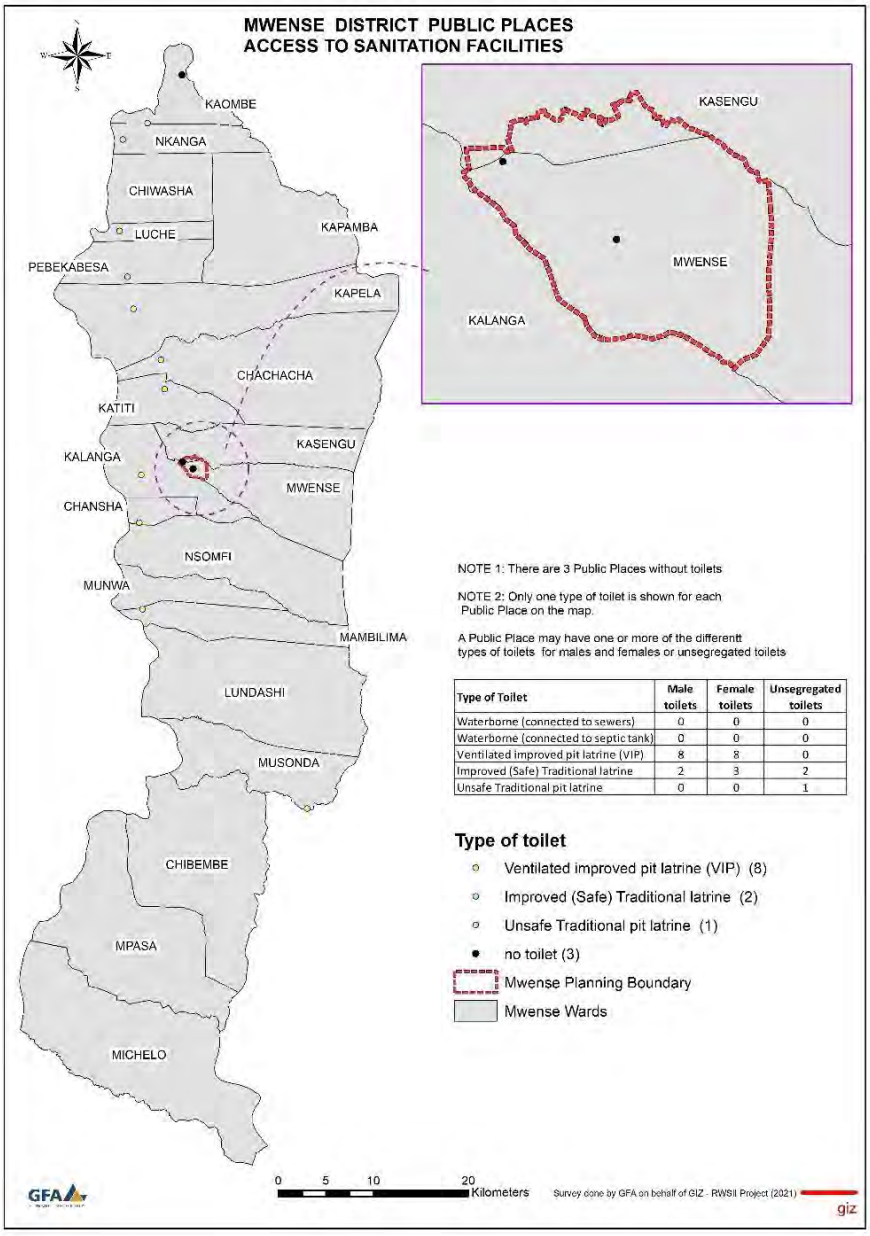
Please refer to Table 14 for the definition and clarifications on some of the sanitation terms.



Findings 152: Mwense District JMP for public places sanitation services by public place type

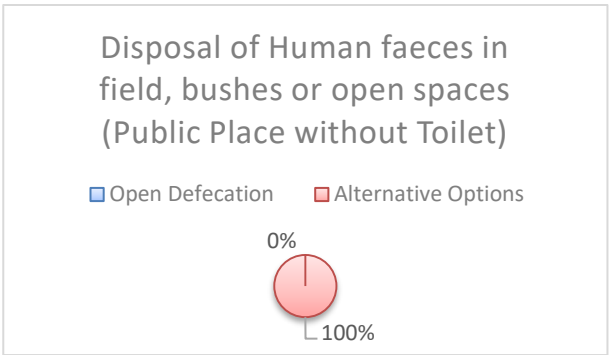
50% combined markets and bus stations/ taxi rank had basic service and the remainder 50% is split in half with limited service and no service. Markets had 40% basic service while 40% of the other markets limited service and 20% had no service.

Access to sanitation facilities



Findings 153: Map of Mwense District Public Places - Access to Sanitation facilities

From Findings 153, in general, the main type of sanitation for public places in the urban is the VIP seconded by the improved traditional pit latrines.



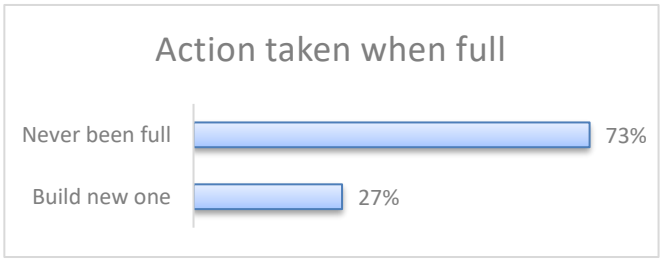
Findings 154: Mwense District open defecation in public places (N = 14)

Findings 155: Mwense District alternative sanitation solutions in public Places (N =3)

100% of the public places without toilets are using alternative options.

Majority of the public places that use alternative options for toilets are using nearby household toilets.

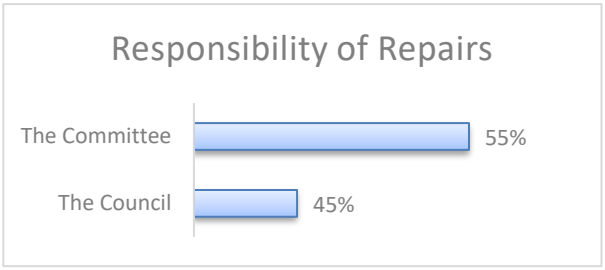
Emptying practices



Findings 156: Mwense District - emptying practices in public places (N =11)

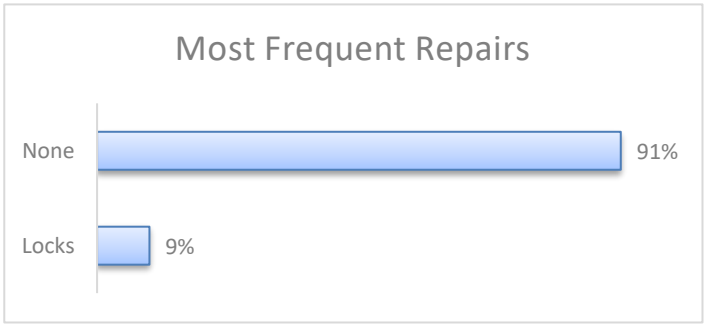
For public places, majority toilets have never been (73%) while 27% of them build new ones.

Maintenance of sanitation facilities



Findings 157: Mwense District public places-responsibility for repair of toilet (N = 11)

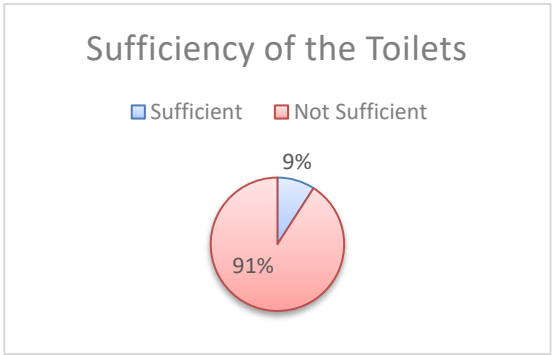
In general, the committee mostly takes responsibility of repairing the toilets (55%) as well as the council (45%).



Findings 158: Mwense District public places -most frequent repairs for toilets (N=11)

Of repairs, it was found that there were none (91%) and other repairs were locks (9%)

Sufficiency of toilets

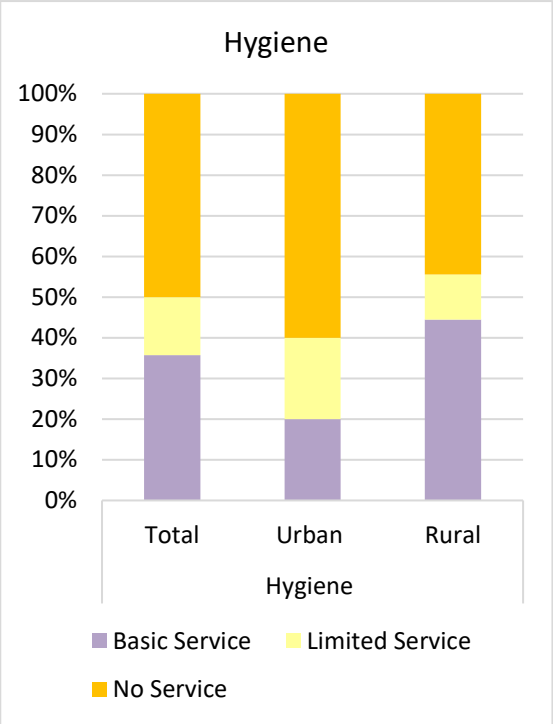


Findings 159: Sufficiency of sanitation facilities (N=11)

91% of the public places in Mwense have insufficient toilets this is because the number of toilets does not match the population.

5.4.4 Hygiene Services

Mwense JMP ladder for hygiene services



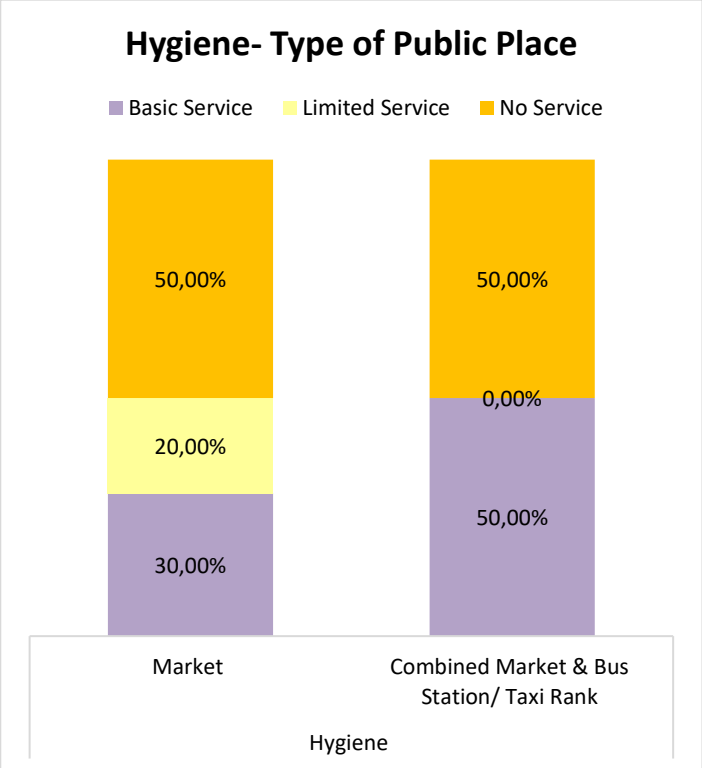
Findings 160: Mwense District JMP ladder for hygiene services

Mwense	Hygiene		
	Total	Urban	Rural
Basic Service	35.71%	20.00%	44.44%
Limited Service	14.29%	20.00%	11.11%
No Service	50.00%	60.00%	44.44%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of public places in Mwense District using basic service is 35.71%, rural HCFs being 44.44% and urban coverage being 20%.

In 2021, out of 14 public places in Mwense District, 9 public places lacked basic services 2 with limited service and 7 with no service.

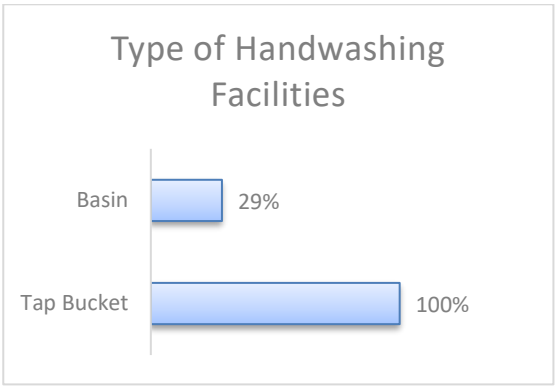
Please refer to Table 15 for the definition and clarifications on some of the hygiene terms.



Findings 161: Mwense District JMP for public places hygiene services by public place type

Combined markets and bus station / taxi rank each had 50% basic service and 50% no service while markets had 50% no service, 30% basic service and 20% limited service.

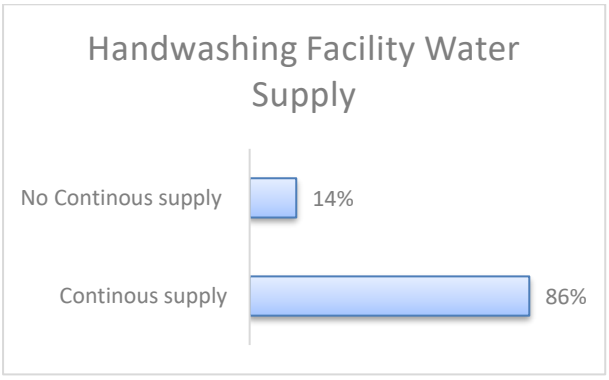
Type of handwashing facilities



Findings 162: Mwense District public places-types of handwashing facilities (N=7)

Majority (100%) of the public places use the tap bucket.

Continuous availability of water supply

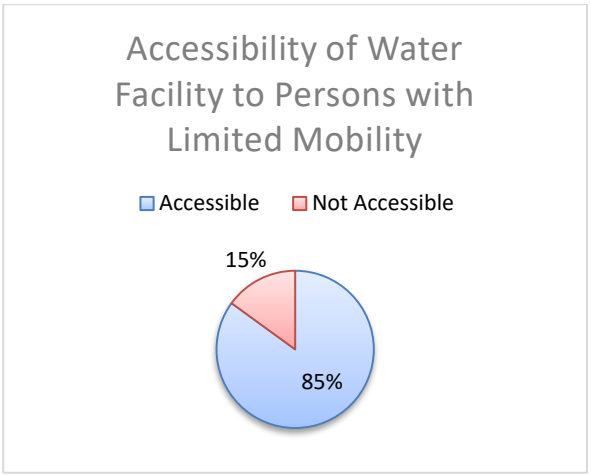


Findings 163: Mwense District Public Places- Water Supply to Handwashing Facility (N=7)

Majority (86%) of the public places with hand washing facilities have continuous supply of water to them.

5.4.5 Social Inclusion

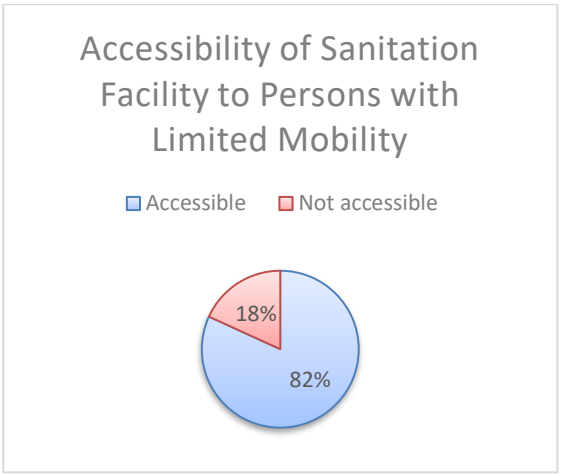
Accessibility of water facilities



Findings 164: Mwense District public places- water facility accessibility to persons with limited mobility (N =14)

85% of the water supply facilities are accessible to differently abled persons

Accessibility of Sanitation Facilities

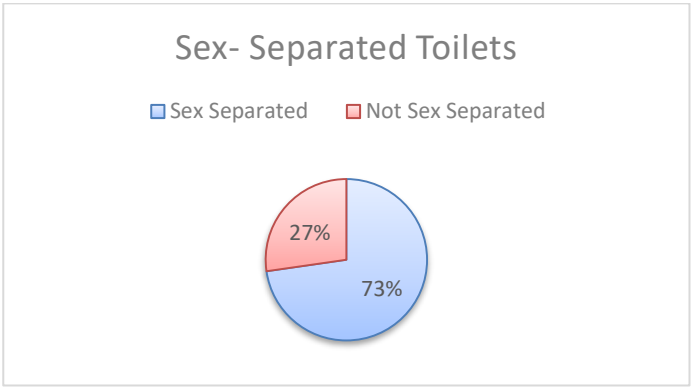


Findings 165: Mwense District public places- Sanitation facility accessibility to persons with limited mobility (N =11)

82% of the sanitation facilities are accessible to differently abled persons.

5.4.6 Gender sensitivity data and information

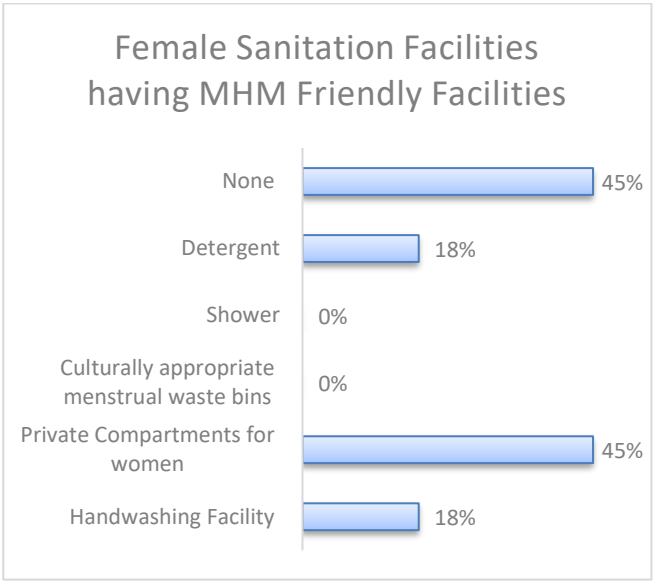
Public places toilets



73% of the public places with toilets have sex separated toilets

Findings 166: Mwense District - sex-separated toilets for public places (N =11)

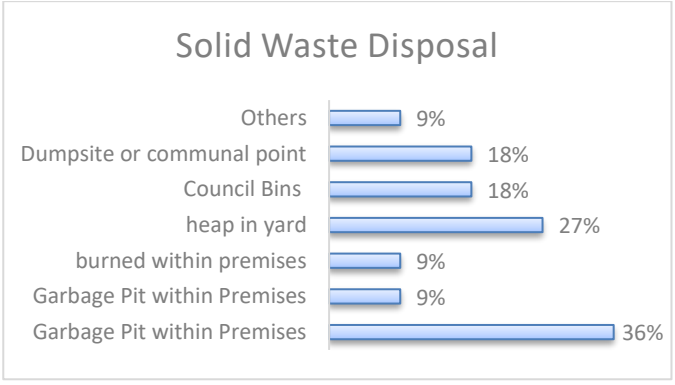
5.4.7 Menstrual Hygiene Management



Majority of the public places do not have MHM friendly services especially showers and waste bins

Findings 167: Mwense District - MHM friendly female sanitation facilities in public places (N=11)

5.4.8 Solid Waste Management



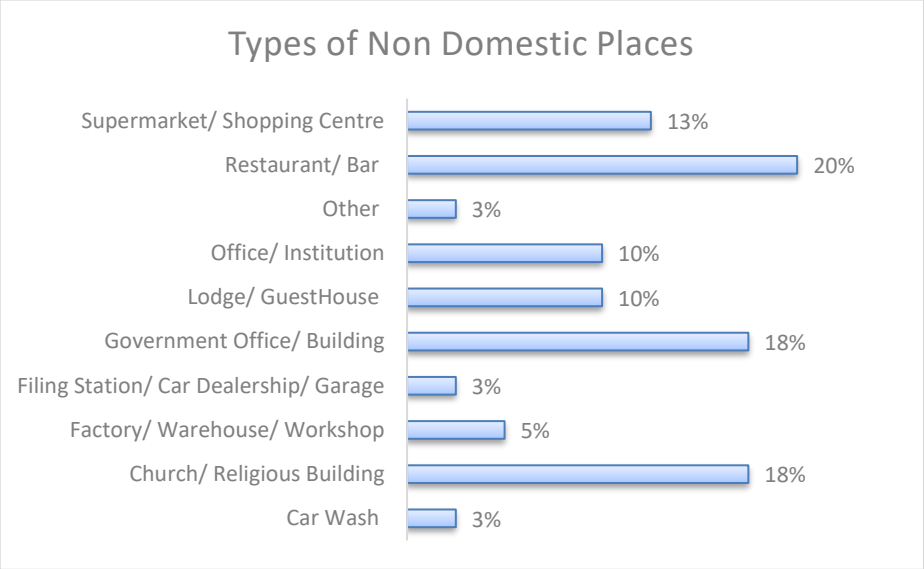
Majority of the public places use the garbage pit within premises to dispose of Solid waste

Findings 168: Mwense District Solid Waste Disposal in Public Places (N =11)

5.5 Non-Domestic Premises

5.5.1 Overview of Non-Domestic Premises & Electricity Connectivity

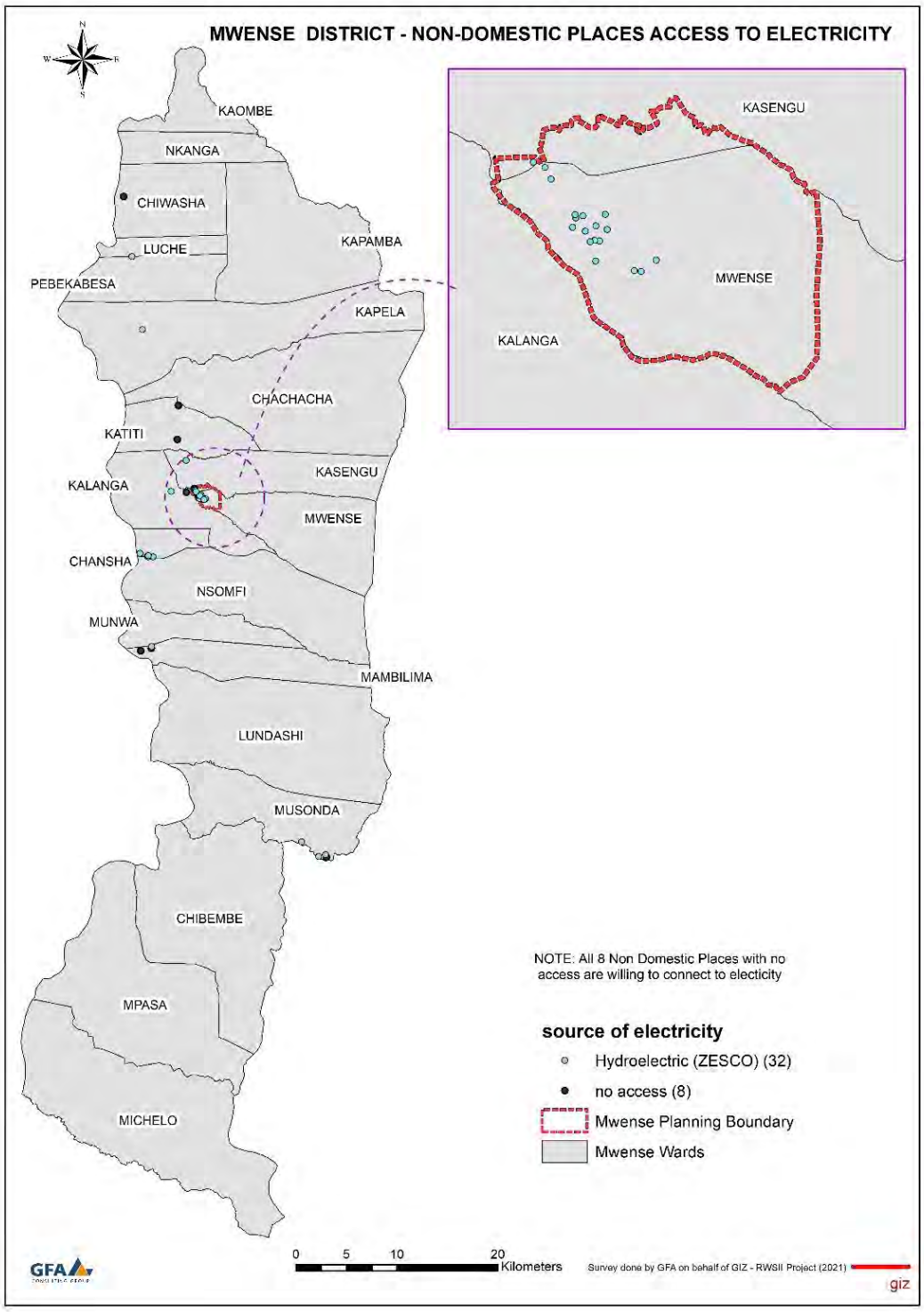
Types of non-domestic places



Findings 169: Mwense District types of non-domestic places

Majority of the non-domestic places in Mwense District are restaurants & bars (20%) and Government office/building and church/religious building each at (18%).

Connection to electricity

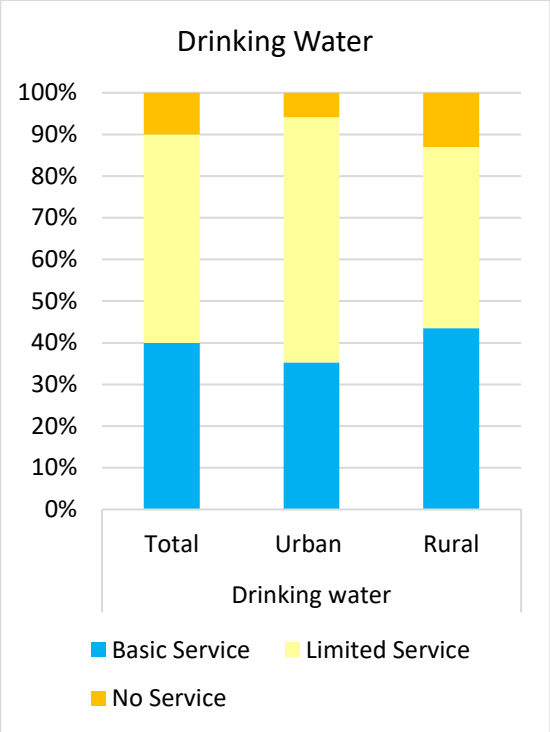


Findings 170: Mwense District non-domestic - connection to electricity

80% of the Non-Domestic Places around in Mwense District have access to electricity specifically ZESCO.

5.5.2 Water Supply Services

Mwense JMP ladder for drinking water services



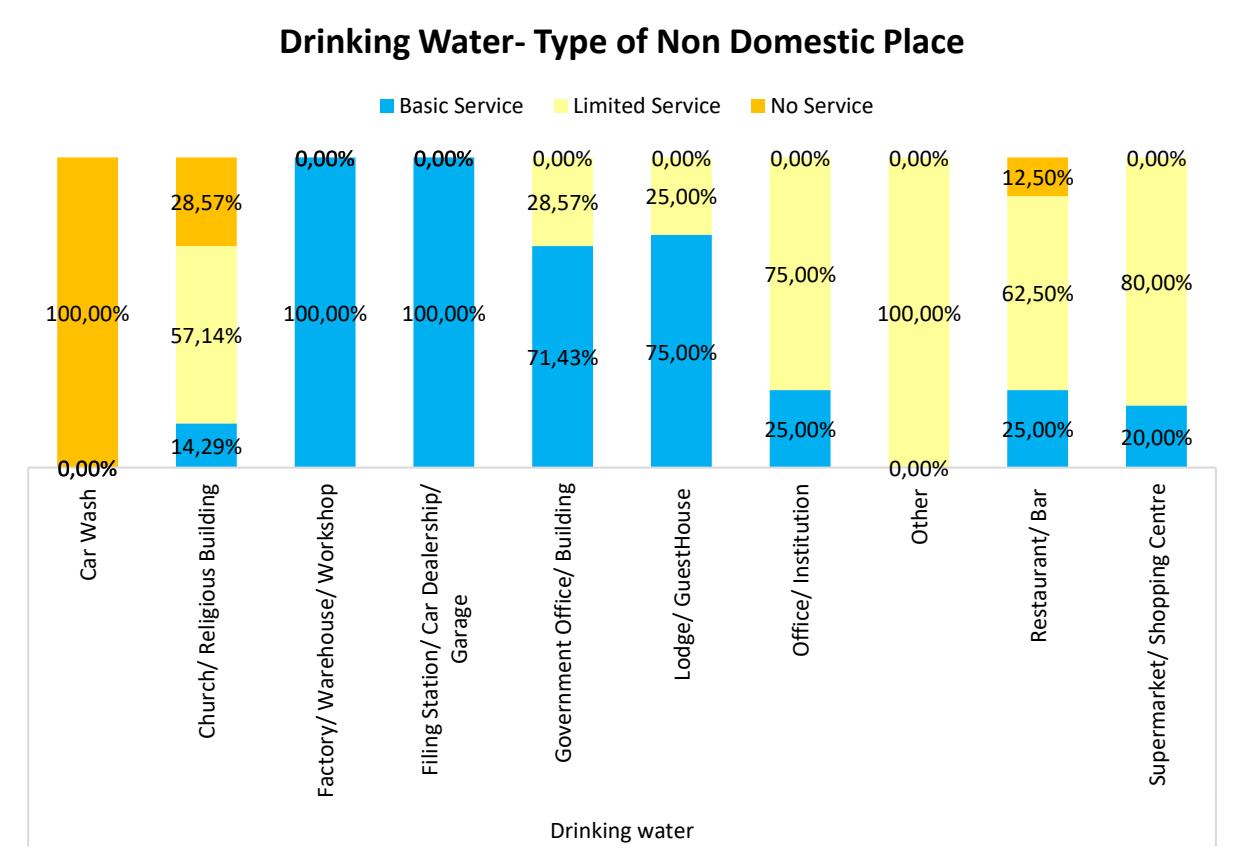
Findings 171: Mwense non-domestic JMP ladder for drinking water

Mwense	Drinking water		
	Total	Urban	Rural
Basic Service	40.00%	35.29%	43.48%
Limited Service	50.00%	58.82%	43.48%
No Service	10.00%	5.88%	13.04%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of non-domestic places in Mwense District using basic services is 40%, rural non-domestic places being 43.5% and urban public places being 35.3%.

In 2021, out an estimated total of the 80 non-domestic places in Mwense District, 48 non-domestic places lacked basic services including 40 non-domestic places with limited services, and 8 non-domestic places having no water source or having access to an unimproved water source.

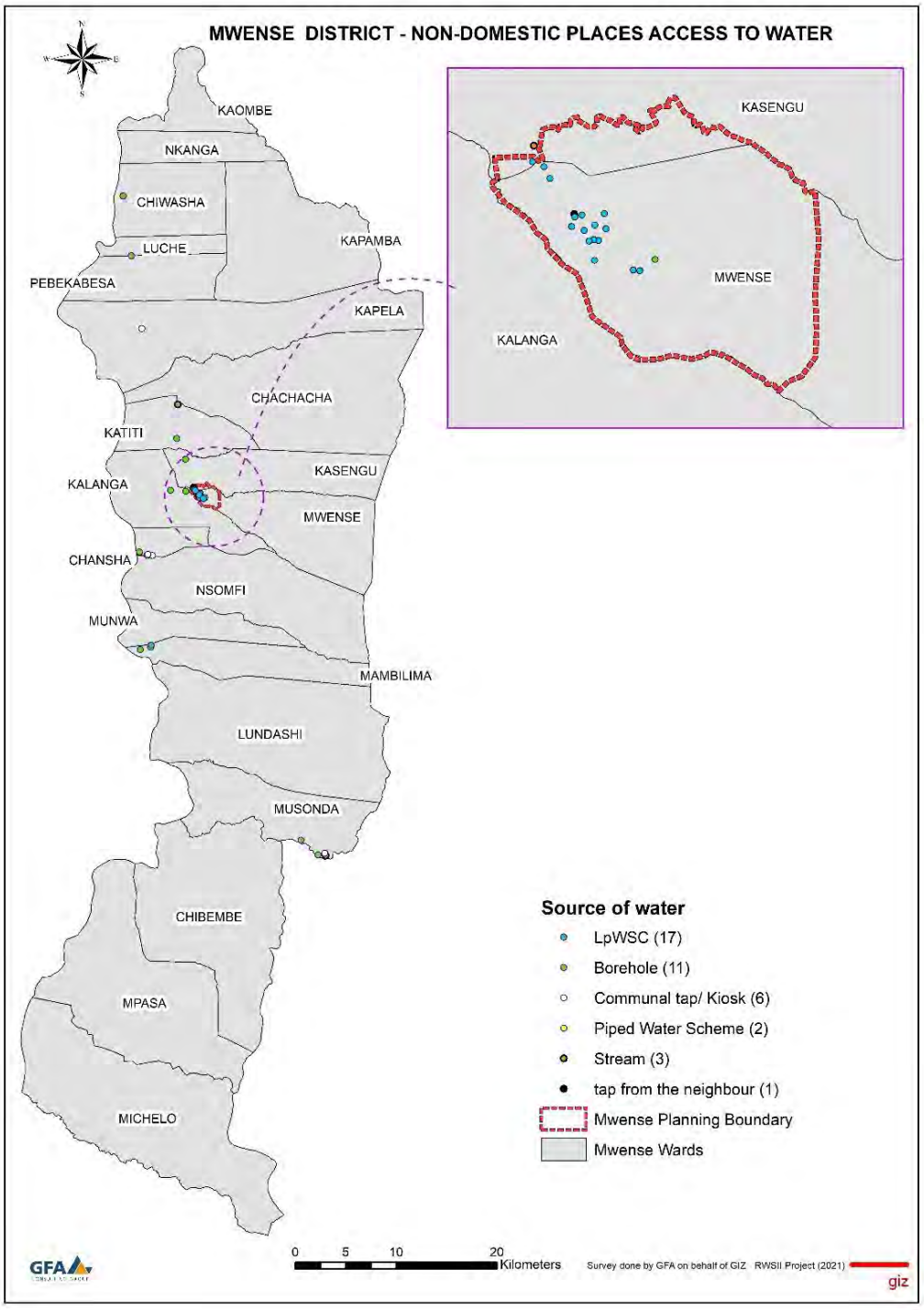
Please refer to Table 13 for the definition and clarifications on some of the drinking water terms



Findings 172: Mwense District JMP for non-domestic places - drinking water services by type

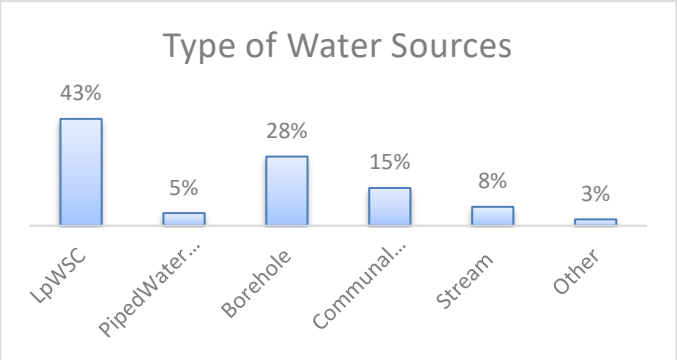
All factories/warehouses/workshops and filing stations/car dealerships/ garages have access to advanced services. Majority of Government Office/buildings and lodges/ guesthouses have access to basic services. Majority of the non-domestic places have access to limited water services with all other (bank), some restaurants/bar, supermarket/ shopping centre, private office/institution and churches/religious buildings. All car washes have no service with some churches/religious buildings and restaurants/bars.

Access to water and type of water source



Findings 173: Mwense District non-domestic water access (N=40)

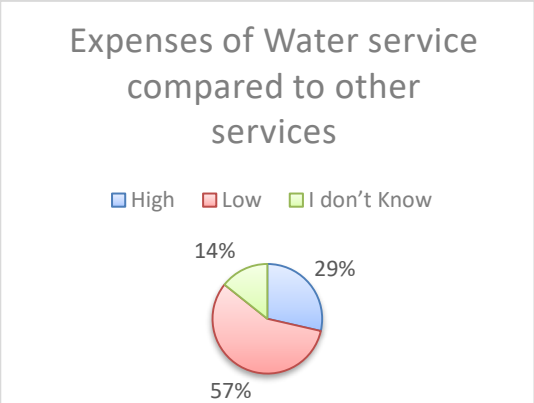
43% of the non-domestic places in Mwense are connected to LpWSC, 28% have access to water using the borehole.



Findings 174: Mwense District non-domestic places - type of water source (N =40)

Majority of the non-domestic places in Mwense District have access to LpWSC (43%) and boreholes (28%).

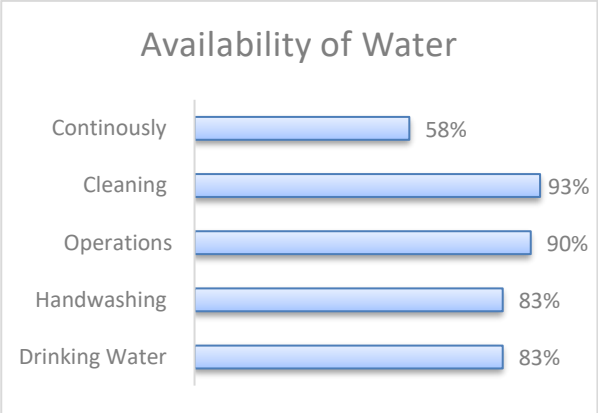
Affordability of Water Service



Findings 175: Mwense District non-domestic water expenses compared to other services (N=7)

57% of non-domestic places categorise water expenses to be low while 29% categorise it to be an expensive service.

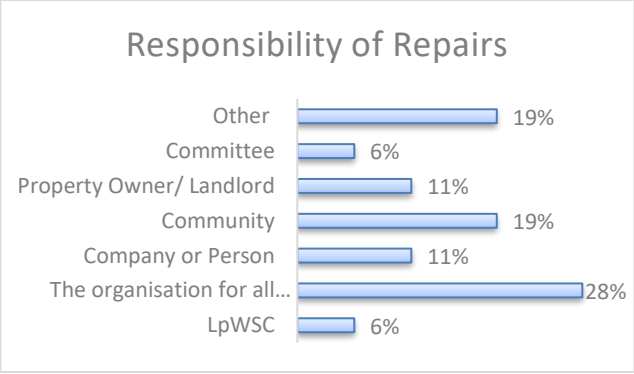
Availability of Water



Findings 176: Mwense District non-domestic availability of water (n=40)

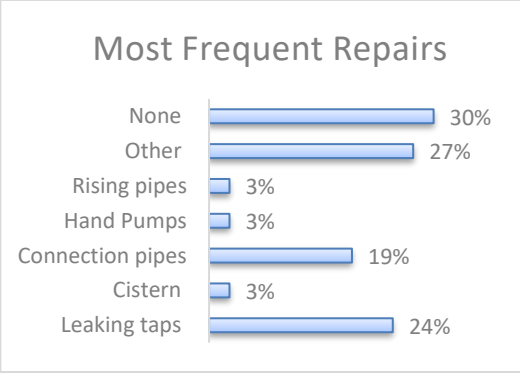
58% of the non-domestic places have water which is continuously available. Water was mostly available for cleaning (93%).

Maintenance



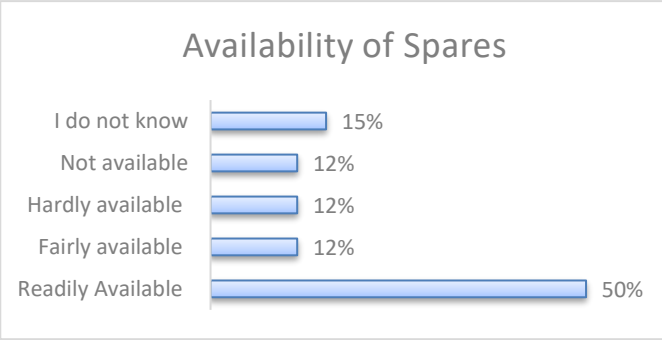
Findings 177: Mwense District non-domestic places - responsibility of repairs (N=36)

The responsibility of repairs lies with the organisation or institution that owns the water source.



Findings 178: Mwense District non-domestic most frequent repairs (N=37)

Majority indicated there were none most frequent repairs (30%) while other (27%) and leaking taps (24%).

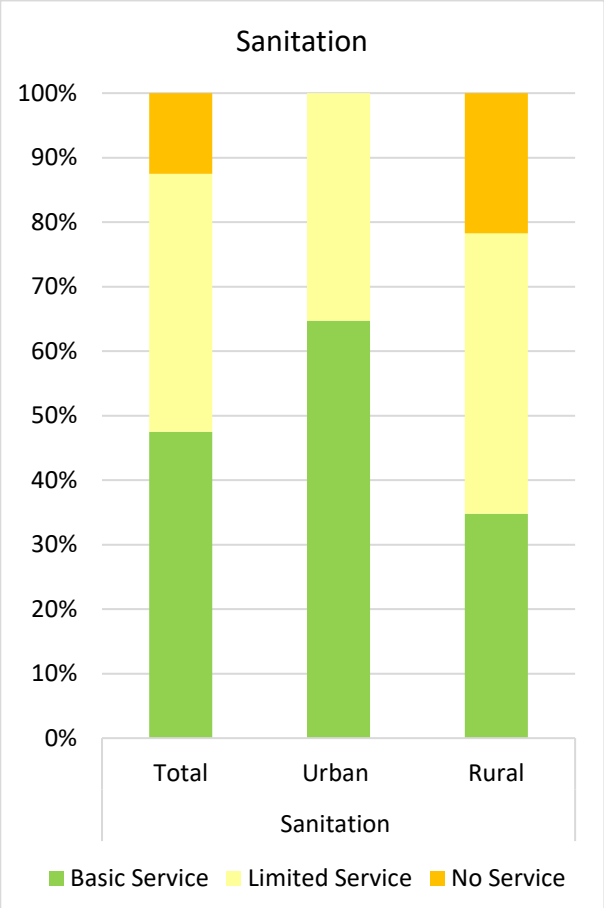


Findings 179: Mwense District non-domestic-availability of spares (N=26)

Majority (50%) of the non-domestic places indicated that spare parts were readily available.

5.5.3 Sanitation Services

Mwense JMP ladder for sanitation services



Findings 180: Mwense non-domestic places JMP ladder for sanitation

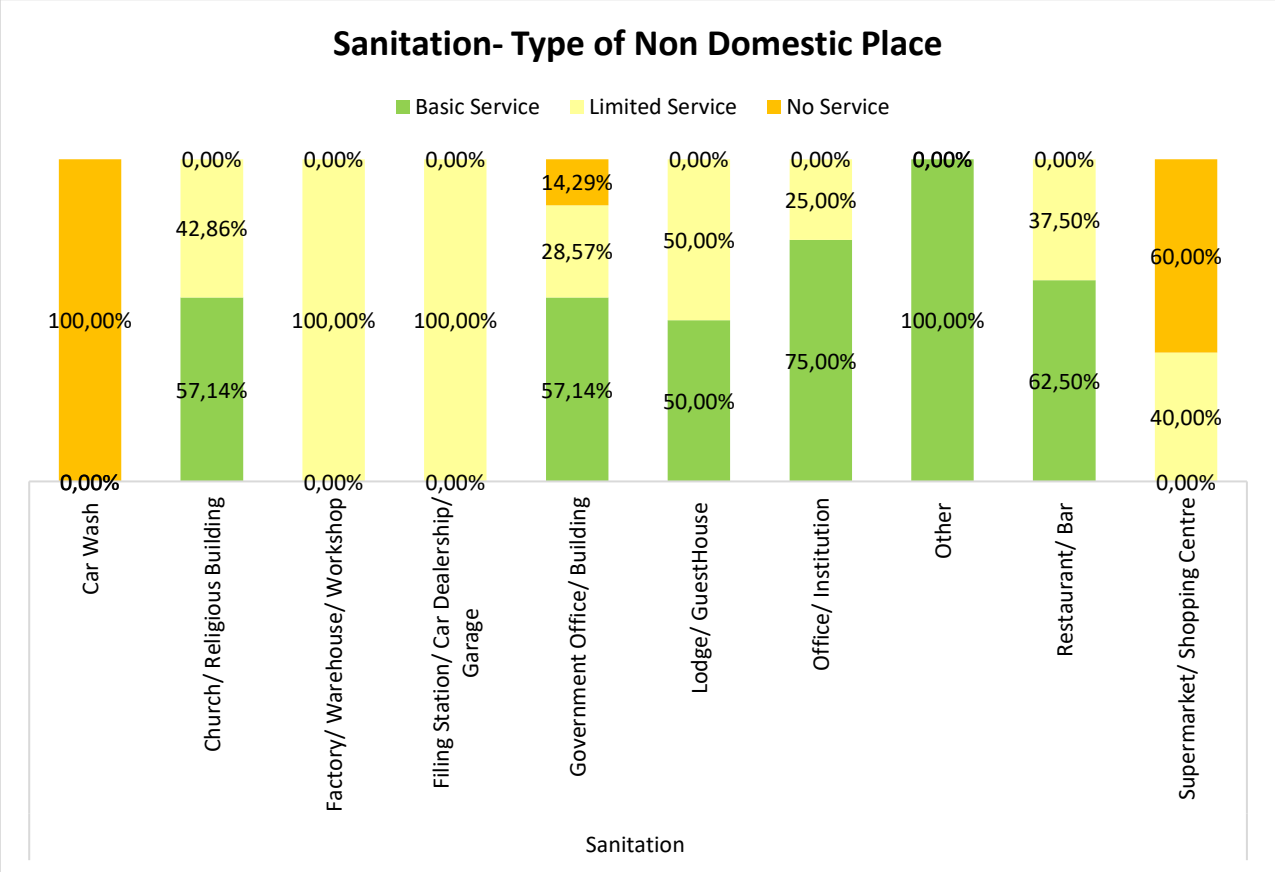
Mwense	Sanitation		
	Total	Urban	Rural
Basic Service	47.50%	64.71%	34.78%
Limited Service	40.00%	35.29%	43.48%
No Service	12.50%	0.00%	21.74%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of non-domestic places in Mwense District using basic services is 47.50%, rural coverage being 34.78% and urban coverage being 64.71%.

In 2021, out of the estimated total of 80 non-domestic places in Mwense District, 42 non-domestic places lacked basic services including 32 non-domestic places with limited services and 10 non-domestic places having no toilet or having access to unimproved facilities.

Please refer to Table 14 for the definition and clarifications on some of the sanitation terms.

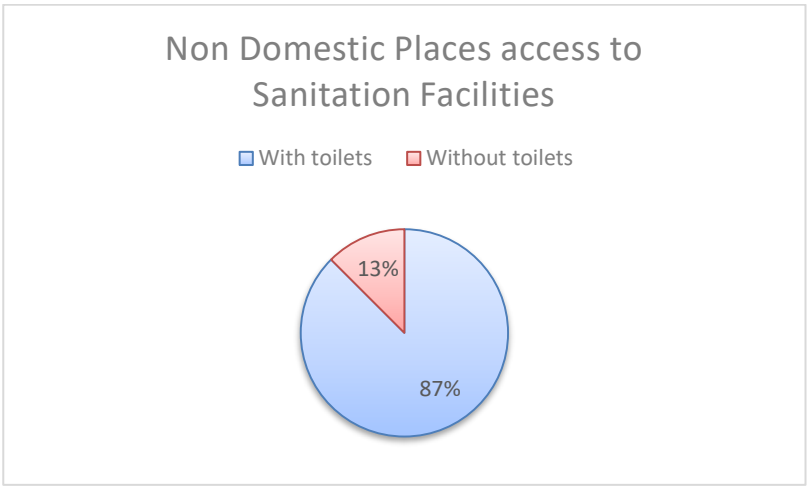
Access to sanitation facilities



Findings 181: Mwense District JMP for non-domestic places - sanitation services by type

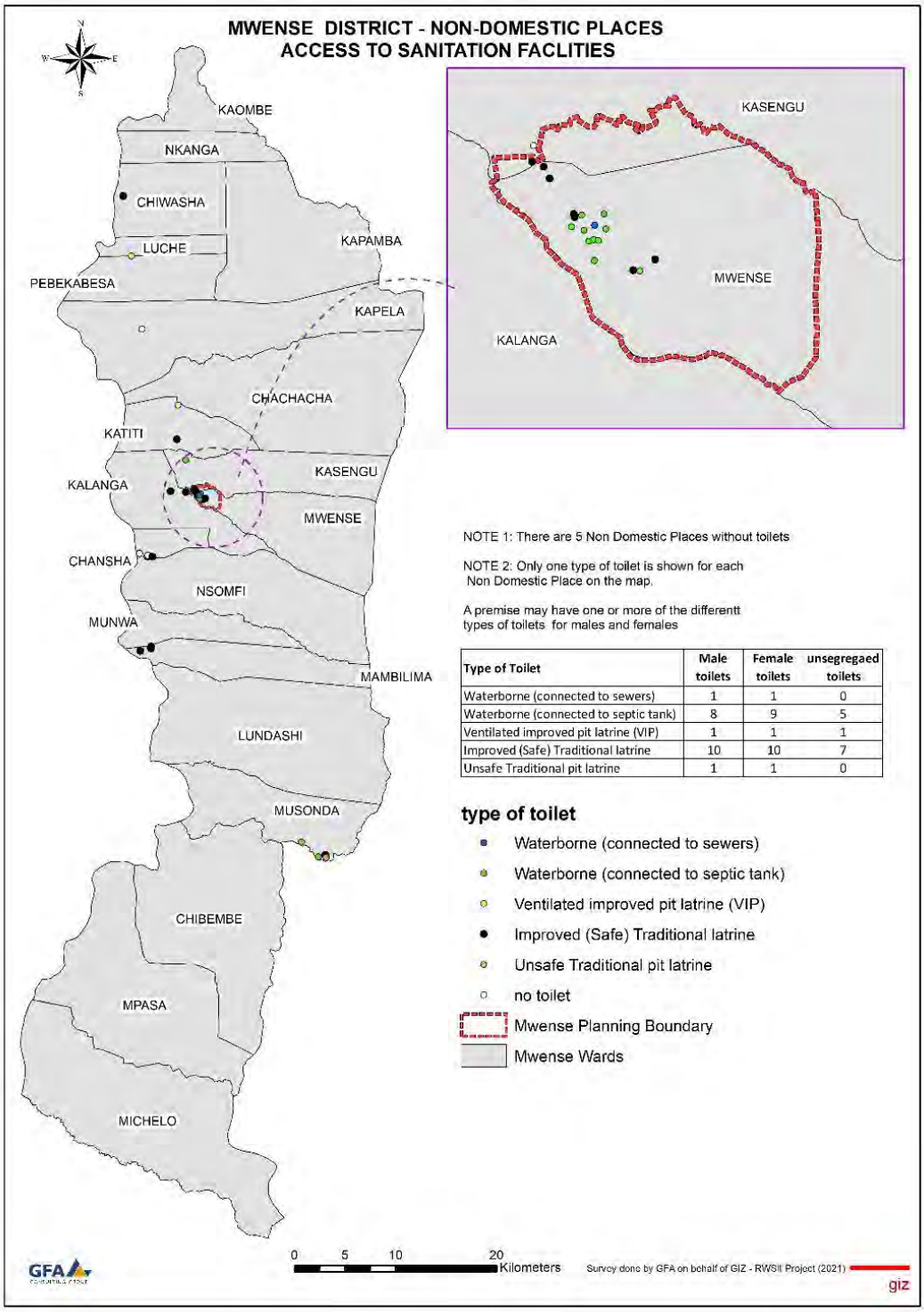
All others (bank) have access to basic services. Majority of private office/ institution, restaurant/bar, Government office/buildings, churches/religious buildings and lodges/ guesthouses have access to basic services. All factory/ warehouse/ workshop and filing station/car dealership/garage have limited service. All car washes have no service with some supermarkets/shopping centre and Government offices.

Access to sanitation facilities



Majority (87%) of the non-domestic places have access to sanitation facilities.

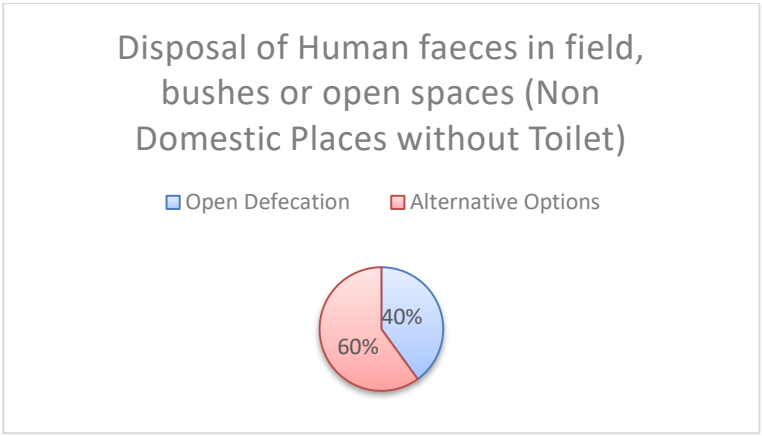
Findings 182: Mwense District non-domestic places - access to sanitation facilities (N =40)



Type of Toilet	Male toilets	Female toilets	unsegregaed toilets
Waterborne (connected to sewers)	1	1	0
Waterborne (connected to septic tank)	8	9	5
Ventilated improved pit latrine (VIP)	1	1	1
Improved (Safe) Traditional latrine	10	10	7
Unsafe Traditional pit latrine	1	1	0

Findings 183: Map of Mwense District non-domestic access to sanitation facilities

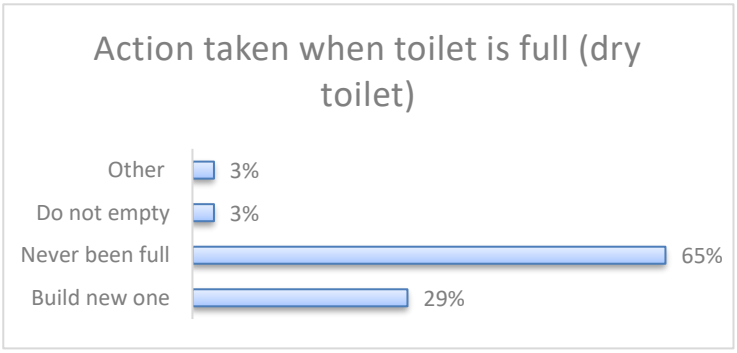
From Findings 183, in general, the main type of sanitation for non-domestic places is the improved safe traditional latrine seconded by the water borne connected to septic tank.



40% of the non-domestic places without toilets are practicing open defecation while the majority use alternative options.

Findings 184: Mwense District non-domestic places - open defecation (N=5)

Emptying practices



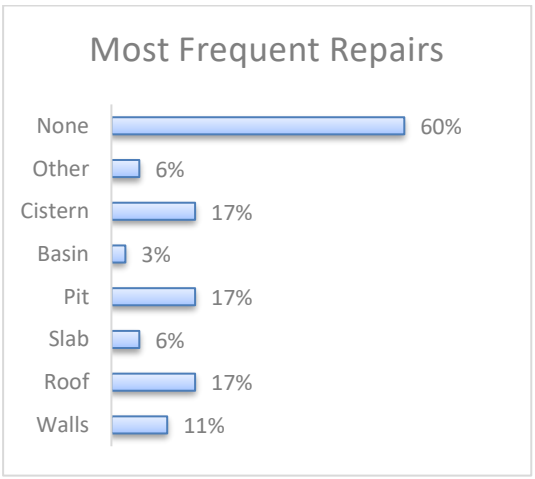
65% of the dry toilets used by the non-domestic places have never been full.

Findings 185: Mwense District non-domestic places - toilet emptying practices (N=34)

Maintenance of sanitation facilities

Findings 186: Mwense District non-domestic places - responsibility for repair of toilet (N=35)

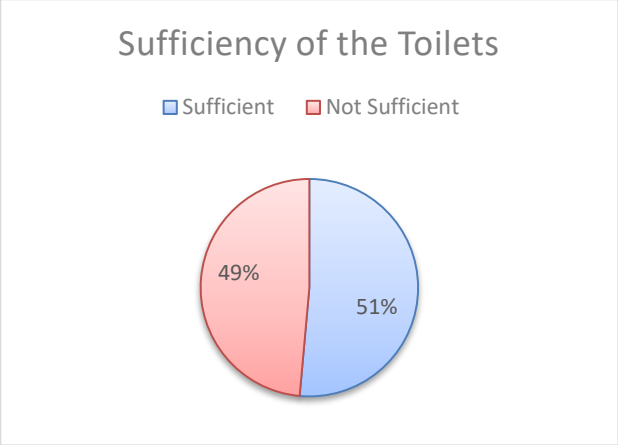
In general, other are responsible for repairing the toilets (34%) in non-domestic places which is mainly the organisation while property owner/landlord & the organization for all facilities (26%) are responsible.



Findings 187: Mwense District non-domestic places - most frequent repairs for toilets (N=35)

For most frequent repairs done on the toilets in non-domestic places it was found that the majority had none while 17% had roof, cistern, and pit.

Sufficiency of toilets

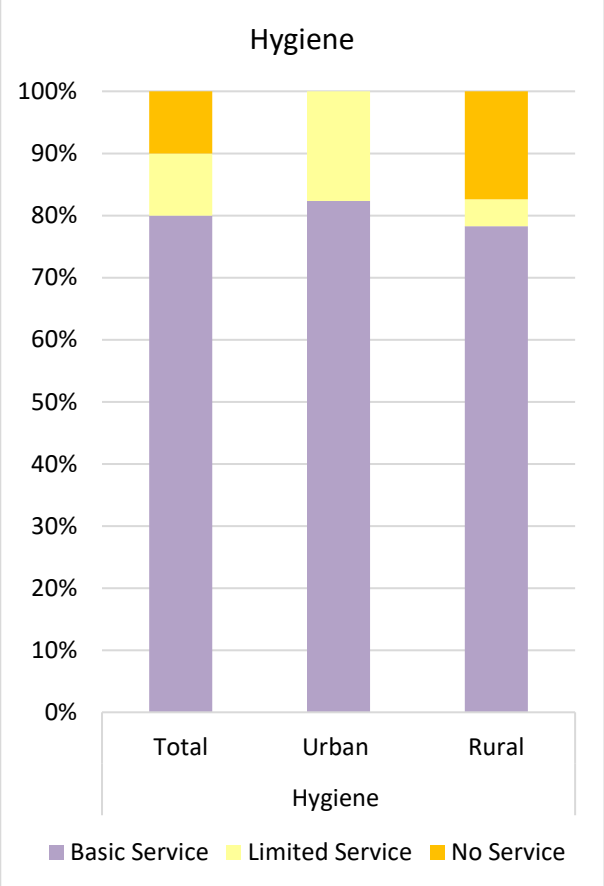


Findings 188: Mwense District non-domestic places - sufficiency of sanitation facilities (N=35)

51% of the non-domestic places in Mwense have sufficient toilets.

5.5.4 Hygiene Services

Mwense JMP ladder for hygiene services



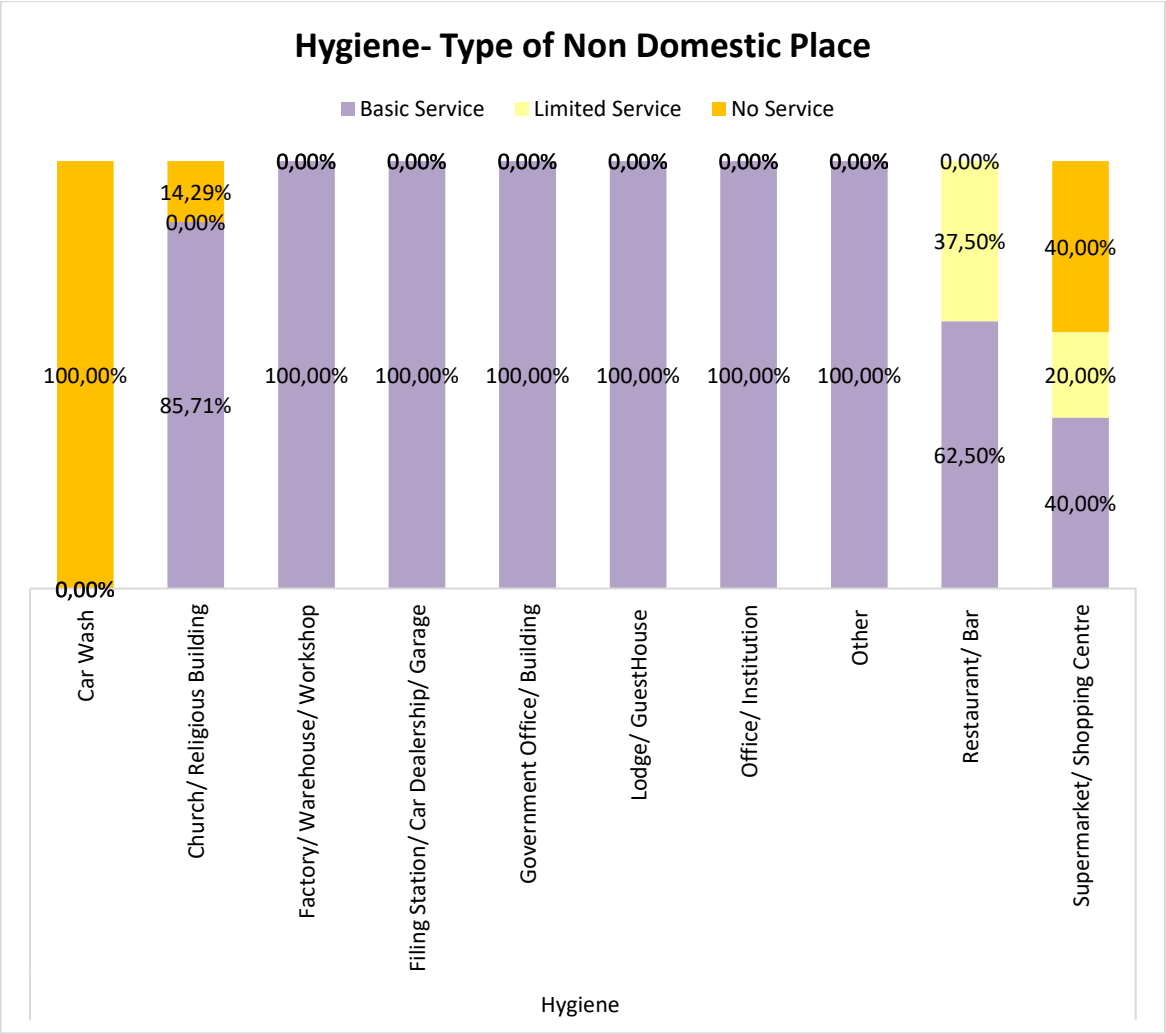
Findings 189: Mwense District non-domestic places JMP ladder for hygiene services

Mwense	Hygiene		
	Total	Urban	Rural
Basic Service	80.00%	82.35%	78.26%
Limited Service	10.00%	17.65%	4.35%
No Service	10.00%	0.00%	17.39%
Total	**100.00%**	**100.00%**	**100.00%**

The proportion of non-domestic places in Mwense District using basic service is 80%, rural non-domestic places being 78.26% and urban coverage being 82.35%.

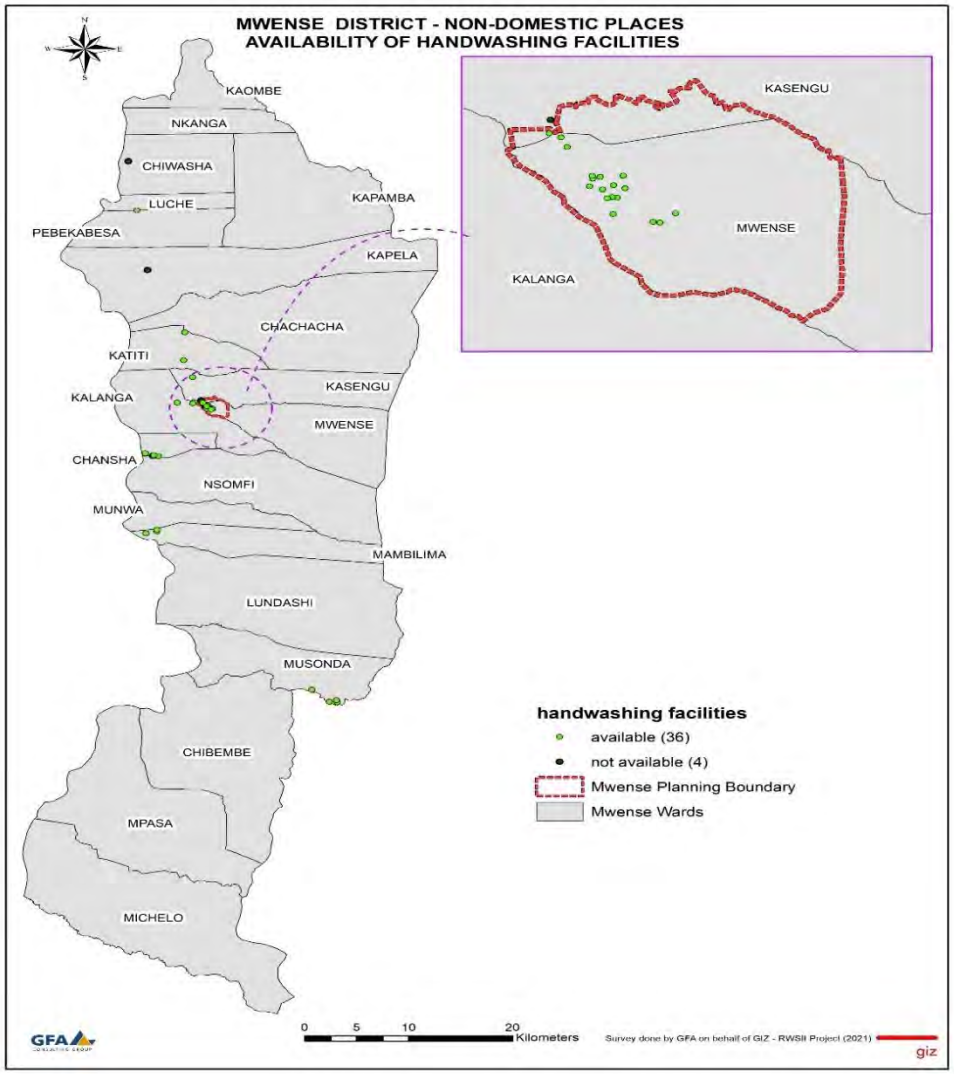
In 2021, out of estimated total of 80 non-domestic places in Mwense District, 16 non-domestic places lacked basic services 8 with limited service and 8 with no service.

Please refer to Table 15 for the definition and clarifications on some of the hygiene terms.



Findings 190: Mwense District JMP for non-domestic places - hygiene services by type

Majority of the non-domestic places have access to basic service with all, factory/warehouse/workshop, filing station/car dealership/garage, Government office/building, lodge/guesthouse, private office/building and others (bank) having access to basic services. There are some restaurant/bar and supermarket/shopping centre that have limited service. All car washes have no service with some supermarkets/shopping centre and churches/religious buildings.



Findings 191: Mwense District non-domestic places access to handwashing facilities

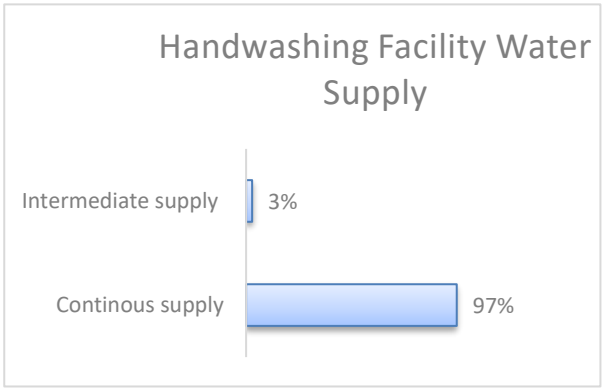
90% of the non-domestic places in Mwense District have access to handwashing facilities.

Type of handwashing facilities

Findings 192: Mwense District non-domestic places - types of handwashing Facilities (N =36)

Majority (86%) of the non-domestic places use the tap bucket.

Continuous availability of water

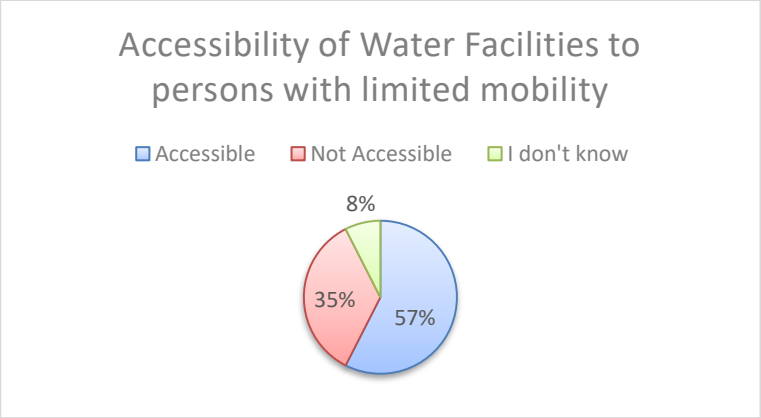


Findings 193: Mwense District non-domestic places-water supply to handwashing facility (N=36)

Majority (97%) of the non-domestic places with hand washing facilities have continuous supply of water to them.

5.5.5 Social Inclusion

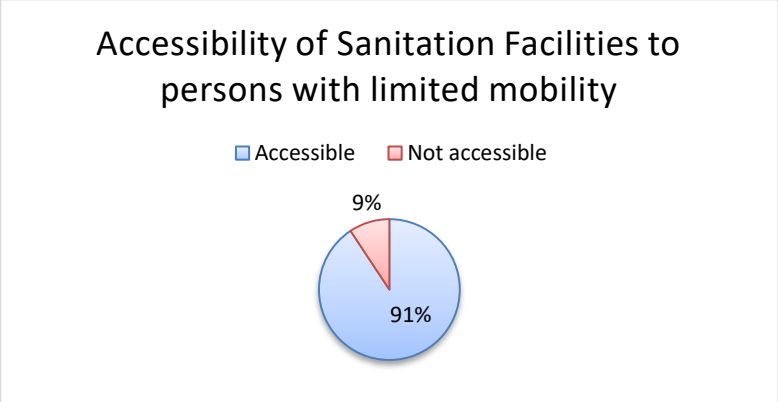
Accessibility of water facilities



57% of the water supply facilities are accessible to differently abled persons and 35% not being accessible.

Findings 194: Mwense District non-domestic places - water facility accessibility to persons with limited mobility (N=40)

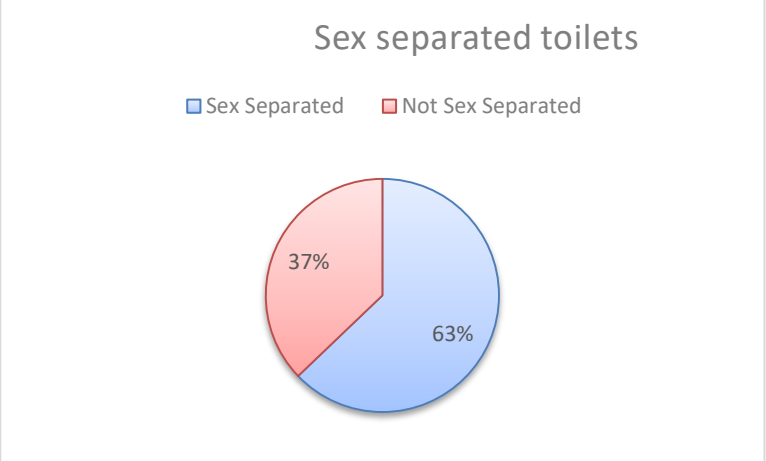
Accessibility of sanitation facilities



91% of the sanitation facilities are accessible to differently abled persons

Findings 195: Mwense District non-domestic places - sanitation facility accessibility to persons with limited mobility N=35)

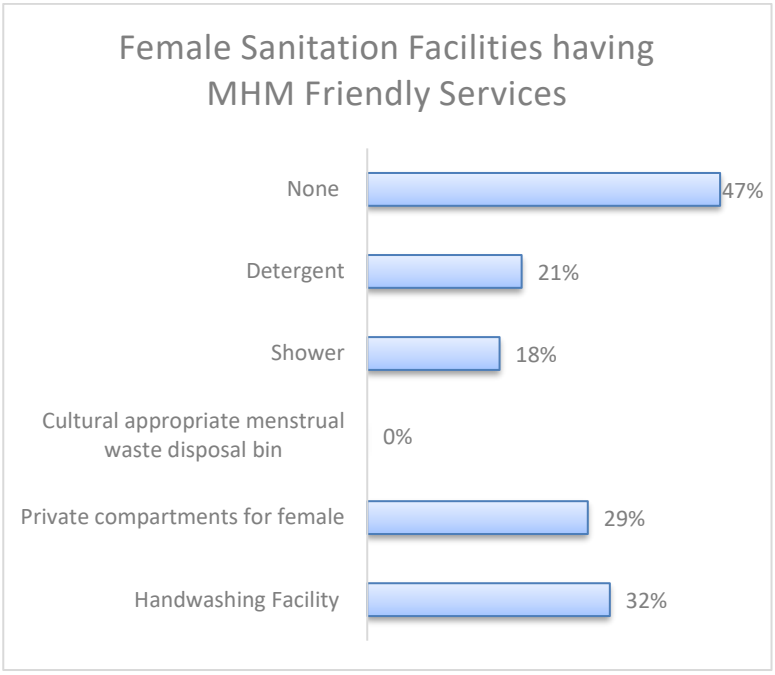
5.5.6 Gender Sensitivity Data and Information



63% of the non-domestic places with toilets have sex separated toilets.

Findings 196: Mwense District non-domestic places sex separated toilets (N=35)

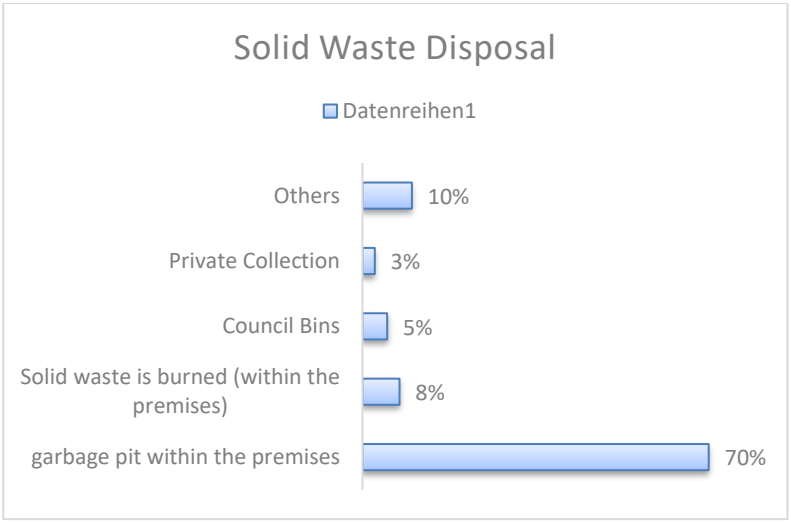
5.5.7 Menstrual Hygiene Management



Findings 197: Mwense District non-domestic places - MHM friendly sanitation facilities for females (N=34)

Majority (47%) of the non-domestic places do not fulfil most of the MHM friendly services for sanitation facilities. Some indicators were fulfilled but not all which included 32% having handwashing facility and 29% having provision for privacy compartments for females. However there are no Non domestic places that have waste bins

5.5.8 Solid Waste Management



Findings 198: Mwense District non-domestic places solid waste disposal (N-=40)

Majority of the non-domestic places use the garbage pit within the premises (70%) to dispose solid waste while some resort to other tendencies (10%) which included nearby household.

5.6 Key Informant Interviews

5.6.1 Luapula Water Supply and Sanitation

The Commercial Utility (CU) is a delegated service provider by the Local Authorities (LA) to provide water supply and sanitation services to the urban and peri-urban areas and the Council where LpWSC is not providing the service. Their role is to manage operations and maintenance as well as to make sure that the production targets are met and the water supplied to the community is of good quality and that its requirements are met in terms of bacteriological absence and that there is adequate water supply.

Water Supply and Sanitation

The District Office ensures that all complaints are taken into consideration and problems such as leakages are attended to, to prevent contamination. This ensures that water reaching the people is up to standard.

The catchment area for the utility is the township and 5 rural growth centres namely Kashiba, Lubunda, Shichama, Lukwesa and Kanyemba. The water supply is consistent except when there are power shortages i.e.: Lubunda would have pump failure because its pump is powered by solar.

There is a consistency in water supply unless there are challenges attributed to electricity i.e. low voltage and power outage. For example in Lubunda that experienced pump failures (solar) which GIZ assisted the replacement of 1 pump. Hours of water supply vary according to location i.e.: township has 10 – 13hrs of supply in day, Kashiba 6hrs, Kanyemba 5 hours, Shichama 6hrs, Lubunda varies due to only one pump working and this very pump does not operate well when there is cloud cover as it uses a solar and lastly, Lukwesa has 6hrs of water supply. Plant hours all have specific times of pumping water, for example Pumping of the water starts at 04:00hrs, and by 05:00hrs water is supplied to the customers and by 13:00hrs, the pump is closed.

The pressure of water pressure is generally good although pipe damages comes with challenges such as low pressure and soil trickling into the water through cracks. There is pressure monitoring though it is not sufficient and this is done by sampling on a daily basis of two areas at a time and observing how long it would take to fill a 20lt container.

There are 10 communal taps in the district township with only 3 functioning as people preferred having individual connections. The water schemes also have kiosks which have proven challenging to operate.

LpWSC has no presence in sanitation but with the extended mandate, they are required to take on this responsibility especially on OSS and FSM. The CU has procured a vacuum tanker which is a step into the direction of sanitation service provision. The district does not have a treatment plant.

Water Quality

The water supplied is generally good and has never failed a quality test i.e., RC tests and turbidity which are conducted frequently. However, for the bacteriological tests, they can only be done in Mansa at the moment as the CU does not have the necessary tools or equipment to conduct these tests.

Customer Relations

Generally the customers are satisfied with the quality of the water that is supplied but as for the quantity there is a big challenge and the CU aims to improve the hours of supply from 5hrs to 12hrs. The CU receives feedback from its clients and its processing depends on its nature which calls for an investigation.

Planning and Coordination

Finalisation of a plan eases the implementation of activities. The CU is not aware if there is community participation in planning from the onset as the CU only is only involved at the later stage of the planning process. There is need for a proper management strategy and engagement that outlines who runs the schemes. There is also a need for the community to have ownership of these schemes. At inception of project development or planning there is also a need to set up or sensitize

the community on the various options and the costs of operation and maintenance (O&M) of those options.

The CU works well with the other stakeholders within the district especially when there is need to maximise on capacity for implementation like transportation.

Operation and Maintenance

The utility has a service provision charter which is a baseline or targets to be met and failure to do so results into the license of the CU being revoked or penalties being slapped to the CU. There is a service charter for the district township but non for the water schemes. This service charter is displayed but the new one hasn't yet been signed.

There are 18 piped water schemes in the district and only 5 are under the CU. The utility runs the schemes under its control i.e., being responsible for their maintenance and commercial activities. The CU also supports with skills for the other schemes though the LA and /or the scheme needs to bare the cost of maintenance. There is low capacity in the piped water schemes and for the schemes under the CU training on operation is conducted and they are considered to be mini branches of the district office.

There is no connection fee for any new connections, but the clients are required to purchase their own connection materials. There is a charge of K80 for reconnection.

The role of the plumbers is to manage the leakages, water quality (RC Tests), meter unblocking, new connection assessments and set up, network inspection, maintenance & repair reports, distribution of bills and revenue collection. The challenges faced with plumber is adherence to the job description. There is a risk with accountability of revenue that is collected, and a mitigation measure put in place is by ensuring the senior officer who acts as team leader overseeing issuing receipts.

Customer billing is done monthly and using the band method. There are 4 tariff structures namely, Domestic (bill of consumption), Communal & Kiosks (K5/m^3), Institutional (0-20m^3 and above 20m^3) and Commercial (0-10m^3 and above 10m^3). There has been several defaulting clients and institutional debt for example police officer housing units. Handling defaulting clients' issues depends on the management and the major challenge that was faced by the utility was related to the announcement made that forbid disconnection of customers. The engagement of stakeholders is challenging especially if they are being requested to pay for a service that was consumed by another.

Cross Cutting Issues

The utility does not have any female district managers and the only female plumber is in Kawambwa. There would be segregation if the CU had to get rid of the males to replace them with females.

There are not efforts to include the old or differently abled now is sure something that will fall into place in time.

Recommendations

1. Move all post-paid to prepaid meters as this will reduce pilferage and enhance revenue collection.
2. There is potential in growth centres to have network extensions of water in Lubunda and Lukwesa but these have erratic supply. Lubunda has 160 individual connections while Lukwesa has 120 communal taps. All growth centres run by the CU have huge potential to be tapped into with extension or increased storage capacity.
3. Issues of sanitation to be looked at as proposed in the Joint Implementation Team, OSS standards enforcement to avoid ground water pollution.
4. To have community operators have a minimum qualification of Grade 12 certificate as those that have no education at all or have very little of it are resistant to change.

5.6.2 Mwense Town Council

The planning department is responsible for development planning, forward planning, and socio-economic planning. Under the WASH section which falls under the department of works, there is a WASH coordinator who works hand in hand with the District Planning Officer (DPO), and they report to the Director of Works, a Senior Manager in the council who in the end reports to the Council Secretary.

Water Supply and Sanitation (Operations and Maintenance)

The coordinator is responsible for quality assurance of rural WASH, ensuring that there is clean and safe water and sanitation. The council ensures water service provision in the district with direct service provision in the rural growth centres and rural settlements. The consistency of water supply depends on the facility i.e. newer facilities have consistent supply while older facilities have intermittent supply. The hours of supply per day also differ according to system namely: systems with solar (12:00hrs – 18:00hrs, 6hrs supply), systems on ZESCO grid (06:00hrs – 18:00hrs, which is highly dependent on the capacity of the customers to pay or demand from the customers) and hand pumps (06:00hrs – 12:00hrs and 14:00hrs – 18:00hrs, this is due to security purposes). The shortages of water are experienced when the boreholes dry out during the dry season and during the rainy season or cloud cover when the Solar's capacity is reduced which results to only 2hrs of water supply.

The water points have a monthly user fee which ranges from K2 – K10. For the piped water schemes, there is a monthly collection which is to cover fixed expenses (electricity and operators) and the remainder is put in the bank for future repairs. This account has dual signatories i.e. the community and the council. Only 100 water points in Mwense District have a communal bank account and the other water points keep the revenue with the committee which risks misappropriation of funds. The communal banking system requires proper monitoring and it is mainly discouraged as there is no proper monitoring system in place.

The council does not provide sanitation services in the township such as sewer network but merely responsible for sensitization on its importance and enforcement of the Public Health Act. The coordinator monitors the open defecation (OD) status of the district and conducts sensitization to end OD. At the moment open defecation free (ODF) status is not being monitored in Mwense as result of funding which affects the motivation of data collectors, transportation and data collection tools. The ODF verification was done in December 2021, but its certification was and had not been done because the situation on the ground has changed. ODF has not been celebrated as well because there have been no resources available to do so. Community Led Total Sanitation (CLTS) is part and parcel but the ODF strategy is low as the ministry has not supported the district this year. UNICEF was helping but at the moment it is focused on water and has brought in CARE which unfortunately does not cover the norms of ODF strategy. Traditional leadership has played a role in placing sanctions that govern the need of having of toilets which if not followed come with consequences. The council constructed VIP toilets in the market and these are fee paying (ZMW 2).

Water Quality

The biggest issue here has been the high levels of iron content in the water especially for borehole users. The rate of water contamination is relatively low. Bacterial content in water is not very concerning as there's seldom cases of water borne diseases in the district as far back as 2012 in some villages.

Unfortunately, the council does not have technology to test and determine the quality of water, so the Public Health Department highly depends on LpWater, District Health Office and EHTs for water quality testing. The public health inspectors within the council were trained to test the water years back but do due a time lapse, they need to be retrained as they have not done any testing of any kind own their own.

Planning and Coordination

The council is responsible for coordination the planning of programmes and projects under WASH for Constituency Development Fund (CDF). Most (75%) of the CDF projects were WASH related projects as WASH is considered to be a priority. The CDF committee works with the WDCs, EHTs and Community Champions (CCs). The CDF application process is zonal (polling districts) and these meet quarterly and send recommendations to the WDCs who then send to the CDF committee. Though for some WDCs, sometimes WASH services are not assumed to be a priority though generally response from the community is positive. There is a reporting system that has been established though the newly established WDCs have limited knowledge on WASH to make informed decisions but resources (fuel) are provided to the EHTs to visits and effectively guide the WDCs. There is local community participation through community project forms, a component introduced under the revised CDF guidelines. Project identification requires capacity building on WASH related issues as the wards are required to provide a list of priorities and needs which are submitted. The community makes a decision and the council may not directly control the technologies that are proposed but so far there has been no suggestions on technology or innovation. The suggestions are often infrastructure or better water solutions. After the councillors make the final say on what is important or need immediate attention. Implementation is influenced by availability of funds.

Mwense has a District Development Coordinating Committee (DDCC), who sit quarterly chaired by the District Commissioner and Town Clerk. The Secretariat is the Director of Development Planning. This committee follows the 5 pillars of the 7NDP to form sub-committees who report to the DDCC.

The Council also has sits for councillors from wards in a full council. There are also various committees that sit before the full council.

Planning for the year begins in september for the budget review, stakeholder consultations are made prior to the finalisation of the budget and councillors are also requested for input.

Data Management

There is no data base to store any data because most of it is paper based and this has been a challenge.

Recommendations

1. Capacity around ODF strategy implementation should be provided
2. Detailed analysis regarding the data base for the district
3. Capacity to train people in terms of operators and plumbers for the piped water schemes as there is no skill to repair or maintain the piped water schemes
4. Transportation issues to be addressed in the District and Sub district to improve monitoring i.e. EHT's/CC.
5. Community engagement and/or sensitization strategy on ownership of WASH facilities especially water schemes
6. Water quality tools and capacity building
7. Data analysis, monitoring, evaluation, capacity building and community data

5.6.3 District Health Office

The District Health Office is responsible for WASH service provision in the health care facilities and also conduct WASH preventive and promotive activities as well as curative as a result of poor WASH service provision. There is no specific department that looks at WASH because this falls under public health. The institutional arrangement is such that there are 21 sub-level structures (Health Facilities), 2 hospitals (1 private clinic).

Water Supply and Sanitation

The DHO oversees the quality of water supply being supplied to the HCFs in the district and the community, health care waste management and WASH related outcomes i.e. diarrhoeal diseases through the disease surveillance and intelligence unit who report weekly. There are interactions with staff at HCF to emphasize WASH services. Quarterly water sampling is done and where there are concerns, the DHO flags such concerns and corrective measures are done such as provision of chlorine for contaminated water.

Planning, Implementation and Coordination

The Neighbourhood Health Committees which are the lowest structure have scheduled meetings to solicit input which is consolidated by the EHTs and submitted to the DHO. The DHO aggregates the various planned needs/activities conducted by the health facilities. The DHO then prioritises the critical activities for implementation given the limited budgets they have and challenges include the fact that the needs are too many and those that are not of high priority are not carried out.

There are also village inspection plans for OD and sanitation. The planned and achieved inspections are standing at 100% at the moment as they do not require much resources to conduct. There are also challenges of the CCs and EHT reports not being submitted regularly i.e. WASH component which goes directly to the LA as the CCs feel aligned to the LA than MoH. In order to address this gap, there is need to harmonise and reduce multiple reporting systems and only have one reporting format. The planning and orientation of champion trainings should be done as a team.

The MoH has different staffing levels, the key being EHTs in areas based on yearly vulnerability assessment which outlines potential areas of public health concerns. There are also community health assistants (CHA), who are basically volunteers i.e. parallel staff that help in WASH related issues, these are usually demotivated as they are neither on government payroll or cooperation partners (CP) support. In Kapamba, there is no EHT nor CHA. The EHTs perform multiple tasks i.e. curative& preventive/promotive.

The priority WASH programmes for 2022 are as follows:

- Risk communication or social mobilisation i.e. advocacy meeting with community leaders, district feedback with stakeholders and health education sessions in markets.
- Multisectoral coordination i.e. WASH and trans-border meetings with Congo.
- Resource mobilisation.
- Enforcement of public health legislation i.e. village inspections, local compliant desk on compliance & WASH related issues and quarterly multi-sectoral inspection meetings (on-spot inspections).
- Health care waste management i.e. 5 sites in need of incinerators.

The implementation of these activities is not on track as only half of the activities have been done. Multi-tasking with COVID 19 which has taken centre stage and so the resources that implement that are being considered a priority. Therefore water and sanitation are suffering while hygiene is doing well as a result of COVID interventions.

The neighbourhood health committee (NHC) is a good structure if properly utilised could be used to implement WASH interventions but there lacks a management system for them as they are too many.

There is need for more community champions to be trained to sensitize the community on the importance of sanitation.

WASH implementation would be successful if there is an integrated plan to outline responsibilities.

Data and Information Management

Although the reporting of outcomes is okay, reports are not submitted regularly as should as there is a gap between the champions and the Ministry of Health and the Local Authority to reduce on the multiplicity of reporting formats. EHT's are geographically placed according to the annual vulnerability assessment and two do not have EHT's. Where there is more work to be done, numbers of EHT's have been doubled and in future, it is expected that EHT's will perform more tasks.

Nutrition and Health

There has been a reduction in the number of diarrhoea cases in the last 2 years which may be due to several factors but mainly attributed to the increase in hygiene. The district has not had any cholera cases since 2020 but due Katuta recorded dysentery as it is near water sources. There has also been periodic outbreaks of typhoid fever in mambilima especially during the period September to October when the water table is low.

When it comes to WASH related nutrition indicators, these are done primarily by partners like GIZ/FANSER. The reports have no specific indicators that track nutrition indicators. There is a tool on hygiene promotion and there are hygiene promotion messages but very scanty. The implementing partners tend not to share the information being done on the ground i.e. the activities that are implemented in terms of health promotion. There is need to coordinate and share reports as there is no report to measure impact that has been submitted.

Women and children are the most affected by water borne diseases in the household primarily due to women's interactions with water and menstrual hygiene and children's vulnerability and most of these are usually common in the 1st, 3rd and 4th Quarter of the year due to rains in the 1st and 4th quarter and drying of wells in the dry season resulting in people sourcing water from contaminated places in the 3rd quarter. The rise in temperatures in the 3rd quarter is the main cause of food poisoning due to the heat. Waterborne diseases are prevalent in the outskirts of the district i.e. Katuta, Chibondo, Mambilima or Kashiba which are closer to the water bodies.

It is mothers who spend their time at the bed side of their sick children when they fall ill as men mainly act as decision makers more than anything, the mothers take the responsibilities. MoH usually deals with a malfunction somewhere in a system and usually the recipients of certain issues gone wrong elsewhere.

Recommendations

1. More investment and collaboration with stakeholders in the districts i.e. schools etc. The roles of each stakeholder need to be properly outlined.
2. NHC are trained in various packages of promotive health and they are so many but poorly managed. These structures if embraced and trained to conduct village inspections and wash activities could drive the WASH agenda at community level.
3. Equipment to conduct water quality monitoring and analysis.

5.6.4 District Education Board Secretary

District Education Board Secretary (DEBS) is the chief administrator for the district and is responsible for schools in Mwense District. The Planning Officer is responsible for planning programs under the district in terms of monitoring and evaluation.

Water Supply and Sanitation

The role of DEBS is to facilitate the planning for School WASH infrastructure i.e. drilling of boreholes and construction of toilets and utilisation of funds from the government and CPs. With the revisions in the new government, the percentage of infrastructure development is in most cases not enough and therefore as result mobilisation of resources is done through other partners.

Most schools use boreholes, and the water supply is good but generally these boreholes have high iron content. Water testing is not done by the schools or the DEBS office directly but is done with the aid of partners like Ministry of Health and LpWSC when they are able to. The norm is that the cooperating partner that desires to sink a borehole in a school does the water quality testing before sinking the borehole and once it has been sank, testing is not done.

DEBS promotes school led total sanitation (SLTS) through programs where people are sensitised and triggered. Learners are encouraged to use toilets and not to practice OD although 1 to 2 schools have had cases of OD. DEBS usually conducts random checks in schools to this effect and have put up parameters to ensure that toilets are always kept clean so that people do not rush to use the bush instead.

Most schools have rubbish pits and when these are full, they are buried, and another pit is dug although it is unknown if others burn their garbage.

Planning and Coordination

Schools are advised to plan and budget termly, and they do this on their own, these plans/budgets are then sent to DEBS who then advise the school if need be. The planning and budgeting start at school level through heads of departments and are consolidated within the school.

With the new government system of free education, money is sent to schools and comes with stipulations on how it ought to be used which leaves gaps for some of the school projects. With this new law, there have been high enrolments in schools. A case of Musonda and Lukwesa that are using piped water schemes, if there is a breakdown which requires more funding than allocated then there will be a water supply challenge that could be faced.

Schools engage the DEBS or council directly because communities use the boreholes installed in the schools as well and the committees formed at these consist of community members and the schools.

Some have piped water schemes and so LpWSC does the maintenance. There is coordination with LpWSC especially with piped water schemes and because water is paid for, they are there to make sure water is provided.

When schools are opening, Ministry of Health goes around the schools to inspect the toilets especially in schools where there is a suspected outbreak of a water borne disease just to make sure that sanitation is at the top.

Cooperating partners are there such as CARE who are promoting SLTS and drilling boreholes in some schools.

Operations and Maintenance

The schools do the maintenance, but this is not the case for some schools that owe LpWSC money and failed to keep up with the bills as is the case for Nsakaluba school where an ablution block was constructed but because there is no water, because it is expensive to get water from LpWSC but instead they have resorted to use pit latrines. Pumping water into a stand tank is a huge electricity cost which is a challenge.

Nutrition and Health

Water is life and it is important that schools have water throughout the day without which there would be high cases of diarrhoea diseases and so far, the cases are very rare. The most common case of diarrhoea has been typhoid in the Mulundu area.

The role of DEBS is to ensure that schools have enough toilets and that these are well maintained as well as hand washing facilities.

COVID 19

With the onset of COVID 19 classes had to be split as sanctioned by the government which meant more classes and not having enough teachers meant that teachers were burnt out having to work longer hours.

Mainstreaming Menstrual Health Management (MHM) in Schools and Focal Point Persons

There are school, health and nutrition (SHN) coordinators within the school who are teachers within the particular school, and these are mainly females as they are encouraged to spear head menstrual hygiene.

It is most notable that girls do not come to school when they have no pads and in terms of disposing off pads, some schools have pad disposal bins while other's do not and those that do not have use pit latrines.

The schools have toilets separate from boys and girl for pupils and male and female for staff members. Some schools go further to separate them from the primary grades and secondary grades.

Cross Cutting Issues

Gender: Females occupy leadership roles in the DEBS office as well as schools and this includes the committees formed in the schools.

SLTS: There are WASH and Health clubs in schools formed to promote SLTS.

Differently Abled: Most children/people differently abled attend Mambiliama Special School and this is mainly for the disabled. Nsakaluba has a centre for the deaf and others with the blind and these schools have toilets designed specifically for them including classrooms.

Recommendations

1. Provision of sanitary towels by the government or cooperating partner to schools.
2. Ensure that all schools have water as there are some without water.
3. All schools with high enrolments to have ablution blocks rather than digging pit latrines every two years which has proven to be unhealthy and expensive.
4. More partners to come on board to help schools in sanitation as the ones that come do not help all the schools but only a few selected ones.
5. Fuel costs to aid in the transportation of officers to visit the schools.

6 LESSONS LEARNED

6.1 Field Data Collection

6.1.1 Logistics

Having to hire 3 vehicles proved very efficient in the process of collecting data in 3 different wards by 3 different groups of enumerators , but also very expensive.

Procuring bicycles to help with navigating foot paths while in the remote areas was a good initiative, but their servicing induced additional costs. Their proper transportation is also required.

6.1.2 Covid-19 Restrictions

In relation to COVID 19, extra costs of sanitisers and masks needs to be properly budgeted for due to intensive interactions with the people in the communities.

6.1.3 Data Sources and Data Verification

There is always need to verify and check data and verify data by comparing with other sources because not all data is of sufficient quality. This helps in better planning and ensuring better accuracy of the desk study the field work commences.

6.1.4 Combination of Different Tools and Techniques

The process involved using of different set of tools and techniques, which included desk study, field survey, data processing and presentation as well data storage and sharing for future use. The use of koboToobox in combination with hand held GPS proved very useful in monitoring enumerators as well as clarifying location based errors.

GRID3 datasets in combination with Google Earth was used to compare other data sources in validating population data, settlements built up and hamlets. Mobile android Google Earth was largely used for navigation once boundaries and sample points were uploaded from ArcGIS. SPSS and other statistical packages were used for data processing and analysis.

Finally, migrating the collected data from KoboToolbox to the mWater platform allowed for data storage, sharing, and various presentations in terms of maps, tables, carts, etc. This ensures for scalability of the approach for all districts in the province.

6.1.5 Up-scaling Comprehensive WASH Baseline Survey Objective

The objective of up-scaling comprehensive WASH baseline survey is to enable evidence-based planning for investment that will identify areas of priority during the implementation of WASH. No wards should be left behind when it comes to interventions, resources and development and the marginalised areas would be identified and strategic approaches developed on how the gap will be bridged.

6.1.6 Components for up-scaling

Developing a suitable scaling up approach means having to manage and overcome many of the challenges and risks outlined below. Figure 17 outlines the different steps and interlinking components that must be addressed. These include laying the foundations for scaling up (WASH indicators, and key implementing actors / partners) as much as setting up key institutional mechanisms for implementation (information systems and financing mechanism). It will be critical to ensure that partners are not only made aware of but also oriented in developed questionnaires, tools, and data analysis strategies for meeting the data requirements of WASH indicators presented in Chapter 3[1].

[1] GIZ, 2015. Closing the Last Mile for Millions

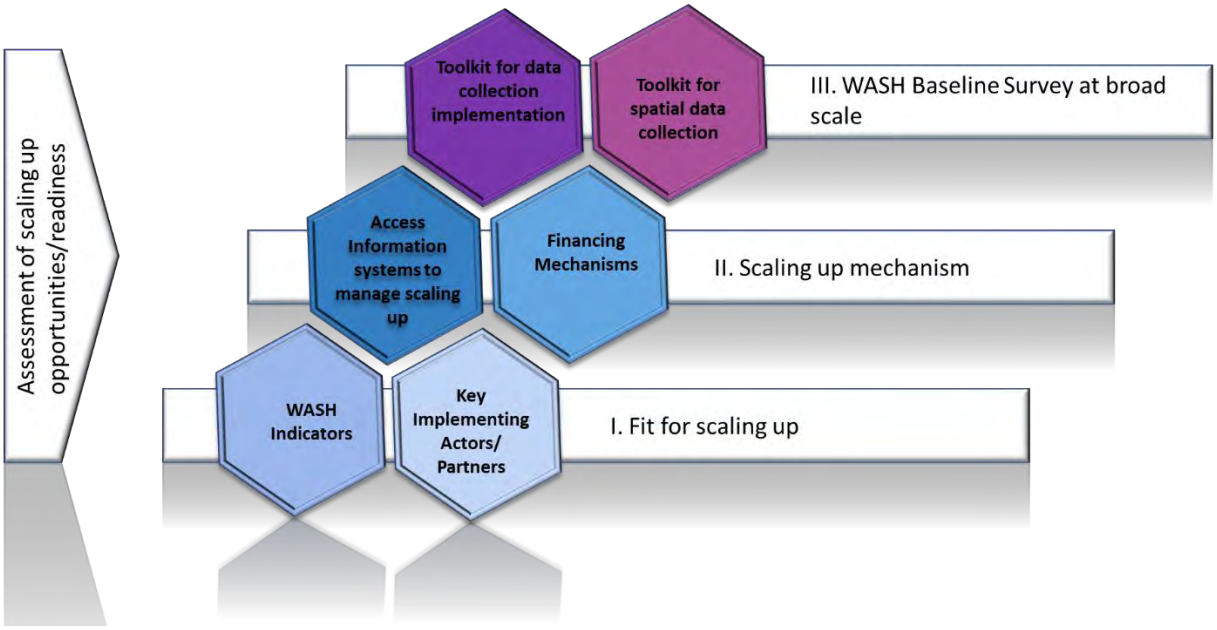


Figure 17: Components for up-scaling WASH baseline survey approach

The components are:

1. **WASH Indicators**: The water sector indicators are framed to categorise according to service levels which are clearly defined and outlined in Chapter 3. These indicators are defined according to households, schools, health care facilities, public places and non-domestic places. The type of data to be collected can be seen from the definitions of the service levels.
2. **Key Implementing Actors/Partners**: It is the overall responsibility of the LAs to ensure all the people have access to adequate WASH services in the district. The LA is further specifically responsible for rural households, public places and non-domestic places as well as provide official ward and township/planning boundaries of the district. The CU is responsible for service provision for urban, peri-urban and growth centres i.e. they are given a license to cover the entire district. The DEBS and DHO are responsible for WASH service provision in the schools and health care facilities. The department of chiefs under the LA is responsible for all chiefs and traditional affairs. The CU, LA, DEBS and DHO should work together in order to elaborate data collection at district level. In terms of official statistics, ZamStats as well as the GRID3 need to be involved to ensure the data being used is official statistics.
3. **Information Systems**: The GIZ WASH Baseline Survey Concept Note with as well as the Joint Monitoring Programme reports, Sustainable Development Goals, Ministerial Guidelines and Standards (MWDS, MoH and MoE) serve as information systems for planning for a comprehensive WASH baseline survey. A key element in a baseline survey is the availability of planning data at ward level i.e. population per ward, number of schools, HCFs and non- domestic places per ward. Public places data is usually never readily available. There is need for spatial information available like district and ward maps, CU service area maps and settlement patterns in the districts which can be accessed through GRID3 platform. There is also need for modes of collected data storage to ensure usability by other stakeholders in the years to come.
4. **Mode of Financing:** Financing in Zambia for WASH projects is normally by GRZ, the Cooperating Partners, individual CUs, NGOs, private sector, etc. The Equalisation Fund by GRZ is provided to districts as part of the decentralisation strategy. This is one possible mode of financing the implementation of district WASH baseline survey in Luapula Province. A financing mechanism needs to be developed for the survey that takes care of integrated and inter-sectoral coordination.

6.1.7 Up-scaling Resources

The preliminary estimated resources required for the up-scaling process for WASH baseline survey are presented in the following **Annex 3**. This initial concept table will eventually need to be further detailed.

However, an estimated budget of over **500,000 ZMW** will be needed just for logistics for transportation and remuneration.

There may be a need to involve external experts (if they are not present) for a period to be determined, in order to support the WASH baseline survey exercise. A preliminary list of experts may be:

- Monitoring and Evaluation/WASH Expert
- Data Analysis Expert
- GIS Expert.

7 RECOMMENDATIONS FOR DWASH IPS

1. The baseline situation in WASH for Mwense established in terms of numbers, covering **households, schools, HCFs, public places and markets, non-domestic**. This shall be used to:
   - ✓ Set WASH district targets linked to National Urban and Rural WSS programmes, the National Development Plans, Regulatory Framework of provision of WASH services (NWASCO), ODF Zambia Strategy, WASH targets according MoE and MoH, aligned to Vision 2030 and SDG.
   - ✓ **Establish target improvement of access to drinking water, sanitation and hygiene services according to JMP ladders for households, schools, HCFs, public places and markets, non-domestic, etc.** Note JMP ladders for school WASH have localised.
   - ✓ Set these above targets by ward, using access to WASH services from the baseline survey and wards population available from Zambia Statistical Agency.
   - ✓ Develop water supply interventions for improving access to drinking water services based on actual development trends guided by the planning boundary of Mwense District, the standards in the NUWSSP and principles in NRWSSP. (Current coverage of CU is based on area serviced by CU and not necessarily the urban area as per LA planning boundary).
   - ✓ Develop Infrastructure Investment Needs based on above and actual situation on the ground, covering WASH in **households, schools, HCF, public places and markets, non-domestic**, in **district wide and inclusive manner.**
   - ✓ Link these infrastructure investment plans to national investment plans, efforts by the MWDS, MoE, MoH in improving WASH services for all: households, schools, HCFs, public places and market places, non-domestic, etc.
2. The baseline for the social economic situation of Mwense established. This includes the average household size, employment status, household income, sources of water, treatment of water, average cost of construction of various types of toilets, willingness to connect, pit latrine emptying practices, etc., covering households, schools, HCF, public places and markets, non-domestic properties. This shall be used to:
   - ✓ All interventions and design of WASH facilities shall use this data.
3. The behaviours and attitudes towards hygiene practices and menstrual hygiene management established. This shall be used to:
   - ✓ Develop key strategies, sensitisation and awareness plans (budgeted) and action plans shall be developed working with our partners such as MTC, LpWSC, DEBS, DHO at district level and sub-district levels. Measures shall be costed.
4. The behaviours and attitudes towards nutrition related hygiene practices established. The role that WASH plays in cutting transmission barriers such as food handling, washing of hands, etc. This shall be used to:
   - ✓ Develop key strategies, sensitisation and awareness plans (budgeted) and action plans shall be developed working with our partners such as MTC, LpWSC, DEBS, DHO at district level and sub-district levels. Measures shall be costed.
5. Operation and maintenance status of WSS in urban, peri-urban and rural areas including growth centres established. This shall be used to:
   - ✓ Develop key strategies and improvement measures for O&M to cover WASH services in urban, peri-urban and rural areas, including growth centres for households, schools, HCFs, public places and markets, non-domestics places.
   - ✓ Equipment, tools and spare needs shall be recommended.
   - ✓ Estimate budget requirements.

6. Institutional Structure Capacities at community and ward levels, including management practices established. This shall be used to:
   - ✓ Develop key strategies and improvement measures for strengthening these institutional structures in terms of building capacity.
   - ✓ Estimate budget requirements.
7. Extent of gender mainstreaming in WASH especially at community and ward levels, including knowledge and barriers of gender mainstreaming established. This shall be used to:
   - ✓ Develop key strategies and improvement measures for improving participation and involvement of women in WASH. Agree with district WASH partners on targets for involving women.
   - ✓ Estimate budget requirements.
8. Baseline indicators for women, children and vulnerable groups established. This shall be used to:
   - ✓ Ensure DWASH IP is inclusive, in terms of taking care of interests of women, children and vulnerable groups.
   - ✓ Estimate budget requirements.
   - ✓ All measures in the above component to be consolidated into the DWASH IP, covering short, medium and long interventions linked to national programmes, frameworks, strategies and guidelines.
   - ✓ All these measure developed in a consultative manner working with our partners, partners taking lead as per mandates.

8 WAY FORWARD

8.1 Data Access, Privacy and Documentation Plan

One of the key features in any survey is the availability of data for reuse and reference in other future WASH related surveys for either households, schools, health care facilities, non-domestic places or public places. Thus, in this survey potential tools were reviewed to help come up with options for data access, privacy and documentation. The main tool that has been proposed is **mWater platform** for storage, sharing and management of the collected data. A description of the platform is included in the next section. All data is yet to be uploaded into the platform.

The final cleaned Excel/ csv files and shape files for each of the questionnaires will be shared with the key partners for their own use in GIS platforms or any systems that they may want to work with. It will be ensured that no household can be identified from the data, and therefore the names and contact details will be removed from the data prior to sharing.

8.2 mWater Platform

mWater is a free, open-source operating system and a web-based platform for digital governance used by governments, civil society organizations, and water and sanitation service providers in over 180 countries. The mWater platform can be used in various data-driven workflows by end-users. mWater users typically focus on using the platform to access data for surveying, monitoring, evaluation, and learning, and management.

1. **Surveying** - Data collection using surveys on a one-off basis. Users can record data for any surveys, track infrastructure data with sites, use the online or offline functionality, and use phones, tablets, browser to input this data. The advantage is that this data is available in real-time and can be imported in a Microsoft Excel spreadsheet format.
2. **Design and manage** – is used to design surveys easily and quickly, localize surveys to any language, manage deployments for any number of users and responses, validate and clean incoming data and send feedback to enumerators.
3. **Monitoring, Evaluation, and Learning** - Data collection using sites and surveys repeatedly informs programming and adapts the monitoring process. Users can analyse and visualize data, create comprehensive reports, perform calculations on their data, visualize collected data on a map, track results over time, share visualizations with stakeholders, and export their data at any point.
4. **Management** - Assignment of in-field actions and reporting to identify, update, resolve, and approve issues in the field. Users can collaborate by managing data collection at any scale, up to national data monitoring. They can also share data with others, set up organizations to keep track of large-scale data collection efforts, harmonize data collection with standard forms and indicators, and connect with other platforms using mWater API.

All features on mWater are free for unlimited use, and anyone can sign up and start collecting data in minutes. Moreover, the users own their data and decide what to share and keep private. mWater is also secure and reliable; that is, all data is stored in secure cloud-based servers, and users can download any or all of their data at any time. More information on mWater, including training materials, can be obtained on the mWater website https://www.mwater.co/platform.

8.3 Data Management and User Access

The mWater platform will used for storing, updating, and sharing data with stakeholders interested in any of the datasets. Those with administrative access can change or modify responses and questions, delete entries, and add entries. In addition, they can create new maps, reports, data grids, charts, dashboards, and consoles. They can share with any user from various organisations. Ordinary users can be given specific access rights to view and download this data, while general users can be given quick access to only visualize the data by giving them a sharable link that can be opened in any browser. The link to the site with the user access information will be shared with each partner responsible for that dataset as the key custodian of the data. It is proposed that the datasets and organisations will be organized in mWater as follows:

Table 31: Data management and user access

Dataset (Questionnaire)	Administrators	Specific access rights	Restricted access rights
Households	Mansa Council, LpWSC	Zambia Statistical Agency (ZAMSTATS)	Any organization interested in the data
Schools	DEBs, LpWSC	Mansa Council	Any organization interested in the data
Health Care Facilities	DHO, LpWSC	Mansa Council and other planning authorities	Any organization interested in the data
Non-Domestic Places	Mansa Council, LpWSC		Any organization interested in the data
Public Places	Mansa Council, LpWSC		Any organization interested in the data

Please note: This is a tentative proposal to have key organisations responsible for data management. Changes can be made at the time of implementation.

8.4 mWater Training

Training of mWater users is going to be done for all the partners who will be involved in the data management or any kind of usage. The training will cover all users at administrative level as well as those who may only view specific data. A training manual will also be provided for any users interested in using the data.

ANNEXES

Annex 1: Definition and Clarifications on Drinking Water, Sanitation and Hygiene Terms

Definition on some Drinking Water Terms	Notes on classification
Protected well: is a dug well that is protected from runoff water by a well lining or casing that is raised above ground level to form a headwall and an apron that diverts spilled water away from the well. A protected well is also covered so that contaminated materials (including bird droppings and small animals) cannot enter the well. Water is delivered through a pump or manual lifting device **Protected spring**: is a natural spring protected by a "spring box", made of brick, masonry, or concrete, that is built around the spring so that water flows directly out of the box into a pipe or cistern, without being exposed to runoff or other sources of contamination **Unprotected well**: is a dug well that lacks any of the following: a lining or casing that is raised above ground level to form a headwall; an apron that diverts spilled water away from the well; a cover which prevents contaminated materials (including bird droppings and small animals) from entering the well; or a pump or manual lifting device. **Unprotected spring**: is a natural spring that lacks a "spring box" to protect against run off and other sources of contamination (including bird droppings and animals).	1. The term **drinking water source** refers to the point from which water is collected (for example the tap or borehole/well/spring) and not the origin of the water supplied (for example surface water or groundwater). 2. **Improved drinking water sources** are those which by nature of their design and construction have the potential to deliver safe water. Improved sources include: piped water, boreholes or tube wells, protected dug wells, protected springs, rainwater and packaged or delivered water. 3. **Protected wells** may be fitted with a range of lifting devices (for example motorized pumps, hand pumps, ropes and windlasses with buckets) but if the well lacks a cover then it should be classified as 'unprotected well'. 4. **Unimproved drinking water sources** are those which by nature of their design and construction are unlikely to deliver safe water. Unimproved sources include: unprotected dug wells, unprotected springs, and surface water 5. The term **drinking water source** refers to the point from which water is collected and not the origin of the water supplied. For example, piped water originating from a surface water reservoir would be classified as piped water, while water collected directly from a lake or river would be classified as surface water.
Definition on some Sanitation Terms	**Notes on classification**
No facility/bush/field: includes defecation in the bush or field or ditch; excreta deposited on the ground and covered with a layer of earth (cat method); excreta wrapped and thrown into garbage; and defecation into surface water (drainage channel, beach, river, stream or sea).	1. **Improved sanitation facilities** are those designed to hygienically separate human excreta from human contact. These include wet sanitation technologies such as flush and pour flush toilets connected to sewers, septic tanks or pit latrines, and dry sanitation technologies such as dry pit latrines with slabs and composting toilets.
Definition on some Hygiene Terms	**Notes on classification**
Handwashing facility: refers to a fixed or mobile device designed to contain, transport or regulate the flow of water to facilitate handwashing. **Soap**: includes bar soap, liquid soap, powder detergent and soapy water.	1. **Handwashing facilities** include sinks with tap water, buckets with taps, tippy-taps, and jugs or basins designated for handwashing. 2. Ash, soil, sand or other traditional handwashing agents are less effective and do not count as '**soap**'.

Source: JMP-2018-core-questions-for-household-surveys.pdf (washdata.org)

Annex 2: KIIs Work Programme Planned for Period 05th May to 09th May, 2022

Date	Time of Day	Activity Session	Purpose	Tools
Day 1 (Thu. 05.05.22)	Morning	Key Informant Interview with Mwense Town Council	Interview with Rural Water Sanitation Coordinator at MTC Planning Department to discuss water quality monitoring systems, sanitation, O&M, planning and coordination (leadership in WASH), solid waste, cross-cutting issues.	
Day 2 (Fri. 06.05.22)	Afternoon	Key Informant Interview with District Health Office Team	Interview with District Health Officer/Public or Environmental Health Officer in order to get more in-depth understanding of WASH related health outcomes, nutrition and health, WASHE service provision, plans and programmes and projects, cross-cutting issues.	
Day 3 (Mon. 09.05.22)	Morning	Key Informant Interview with DEBS	Interview with District Education Board Secretary (DEBS)/ DEBS Representative/DEBS representative for a zone of Schools to establish WASH Knowledge Attitudes and Practices, Plans and Programmes, O&M, planning and coordination (leadership in WASH), solid waste, cross-cutting issues.	
	Afternoon	Key Informant Interview with LpWSC	Interview with District Manager in order to understand issues related to water quality monitoring systems, sanitation, O&M, planning and coordination (leadership in WASH), solid waste, cross-cutting issues.	

Annex 3: Preliminary Estimated Resources required for the Up-Scaling Process for WASH Baseline Survey

Activity	Output	Resources	Budget [2](ZMW)
Enumerator Allowances	• Transportation modalities • Communication Modalities	• Transport and lunch refund • Communication allowances	34,000
Enumerator Wages	• Enumerator services	• Enumerator fees • Supervisor fees	66,000
Workshops	• Stakeholder consultation meetings • Results interpretation Validation meeting Enumerator trained • Enumerator Transport refund	• Meeting rooms • Lunches • Transportation	42,000
Courtesy to Chiefs	• Courtesy call to chiefs • Transportation modalities (fuel)	• Gifts for chiefs • Transportation (fuel)	8,000
Equipment and Stationary	• Implementation modalities	• Tablets • GPS Gadgets • Voice recorders • Bicycles (pumps and locks) • Stationary (books, pens, ink pads etc)	105,000
Transportation Costs	• Transportation Modalities available	• Hiring of vehicles • Fuel Costs	250,000
Focus Group Discussions and Key Informant Interviews	• FGDs and KII conducted	• Transportation • Refreshments	13,000
TOTAL			518,000

[2] The budgets do not include external consultancy expert fee or field allowances for the survey management fees rates. The budgets reflect logistic costs.