DEDZA DISTRICT COUNCIL

WASH
DISTRICT STRATEGIC INVESTMENT PLAN




2022 - 2027

FOREWORD

The District Strategic Investment Plan (DSIP) is a blueprint which will guide Dedza District Council to implement Water Sanitation and Hygiene (WASH) program from 2022 to 2027. The process of developing this plan consisted of a series of workshops and consultations with key players including representatives from the sectors of Water; Education; Health; Gender, Children and Community Development.

The District Coordinating Team with the help of a consultant analysed available data on demographics and current water, sanitation and hygiene coverage and from this analysis gauged how many people to target, with which interventions, in which areas, and in which years. I would like to extend my thanks to the District Coordinating Team for their hard work in pioneering the development of this Water, Sanitation and Hygiene (WASH) District Strategic Investment Plan (DSIP).

The plan provides an overview of the status of water, sanitation and hygiene in Dedza, what the district wants to achieve in the coming five years (2022-2027), and the strategies and resources required to realize this vision. The plan is based on most recent data from various sources.

Not all the water and sanitation interventions outlined in this plan can be financed by Dedza District Council alone. Therefore, I would like to invite friends of the district, including bilateral partners, UN agencies, NGOs, and the private sector, to review the plan carefully to determine where they can provide support. The district pledges to ensure efficient, transparent, and cost-effective use of all resources provided.

Lastly, Dedza District Council wishes to thank the following organizations that are already supporting the district in the area of water and sanitation: Welthungerhilfe (WHH), World Vision, United Purpose and UNICEF. I hope that the vision articulated through this WASH DSIP will inspire many more partners to contribute to the Water, Sanitation, and Hygiene Programmes in Dedza District.

EMMANUEL BULUKUTU
Dedza District Council
District Commissioner
September 2021

ACKNOWLEDGEMENTS

Dedza District Council would like to sincerely appreciate effort and contribution from the following members of the District Coordinating Team (DCT).

Special mention should go to the following:

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Lastly, special thanks should go Mr. James Mambulu -BAWI consultant and his team for facilitating the development of the DSIP and building capacity which came with the process, and all other staff from Government who supported the whole process.

EXECUTIVE SUMMARY

Malawi is a signatory to the Sustainable Development Goals (SDGs) and SDG 6 seeks to ensure safe drinking water and sanitation for all by 2030. The current population of Dedza District is 830,512, of which 395,882 are males and 434,630 are females as projected from the figure in the National Statistical Office (NSO) 2018. The district's annual population growth rate is 2.8%. According to Integrated Household Survey Four (IHS4) 2017 shows that 75.8% of the population has access to safe water.

The main objectives of this strategic plan are: 1) to increase access to safe water supply from 75.8 to 90% by 2027, 2) increase sustainable access and use of improved and appropriate sanitation facilities for individuals and households from (72% to 90% for basic sanitation and from 9.6% to 30% for improved sanitation) .The goal of this WASH DSIP is to ensure that safe water supply, improved sanitation and hygiene promotion services are made available to the communities, and water resources are managed and used sustainably to ensure that water of acceptable quality is provided in sufficient quantity for all people in Dedza District.

In order to address the poor water and sanitation situation in the district, the District Council has decided to focus on the three interrelated components of water supply, sanitation and hygiene promotion and capacity building. It is envisioned that by 2027, **32,000** people will have access to safe water through the construction of one and rehabilitation of three Gravity Fed Piped Water Schemes, **115,000** people will benefit from safe water from **460** new boreholes, while **25,000** people will have access to safe water from **100** rehabilitated boreholes.

The district will target 4 Traditional Authorities (TAs) of Kasumbu, Kaphuka, Kachere and Kachindamoto out of 8 TAs that have not been declared Open Defecation Free (ODF) to improve sanitation and hygiene in communities. Hygiene and sanitation promotions will be conducted in the TAs and relevant by-laws will be developed and enforced in the communities.

The District Coordination Team will have an overall responsibility for planning, coordinating, implementing, monitoring and evaluation of the water and sanitation activities. It is anticipated that the subsequent increase in access to safe water and improved sanitation will reduce water related diseases in communities for both women and men and will in turn contribute towards a reduction in child mortality, an increase in school enrolment and attendance, and an improvement in the well-being for all. The Dedza District Strategic Investment Plan is aligned to the Malawi Vision 2063 (2021) National Water Policy (2005) the Sanitation Policy (2008) the Malawi Rural Water Supply Investment Plan (2015), Decentralization Policy (1998) and the District Development Plan (2020). The Plan is designed to be demand-responsive and participatory, to incorporate a sanitation marketing approach, to promote hygiene improvements and to monitor progress against results.

The main implementing entity will be Dedza District Council and will be complemented by partners such as Welthungerhilfe (WHH), United Purpose, World Vision, UNICEF and other NGOs and private sector organisations. The district will continue to embrace a multi-sectoral approach that involves the District Coordinating Team (DCT), Area Development Committees (ADCs), Area Executive Committees (AECs) and Village Development Committees (VDCs), under the leadership of the District Council (DC).

The district is experiencing poor waste management especially in trading/market centres.

Dedza district faces a number of disasters, both natural and man-made which include strong winds, floods, droughts, hailstorms, pest infestations, and diseases outbreaks (cholera and Covid-19). The magnitude, frequency and impact of disasters have been increasing, in light of climate change, population growth and environmental degradation. The increase in number of disasters has resulted in increased demand for WASH services in areas affected by the disasters.

The methodology that has been used in development of the DSIP has been consultative and comprised of several interviews with key stakeholders and workshops at the district level. The consultative process also involved analysis of existing literature on water, sanitation, and hygiene in the district so that a baseline regarding gaps in WASH sector could be established.

The expected output is to construct water and sanitation facilities at community, schools, health and market centres. The outcome is improved health for all in the district and the impact is improved social economic development in the district. The DSIP has a Monitoring and Evaluation (M&E) framework. The M&E system will generate regular updates on the DSIP implementation and progress that would be useful to different stakeholders including donors.

The total projected investment for the 5 years required to realize the objectives set out in the DSIP amounts to $12,950,000 **(MK10.428 billion)**, disaggregated into $3,560,000 **(MK2.865 billion)** and $3,550,000 **(MK2.775 billion)** for years 1 and 2 respectively, and a total of ($5,950,000**),** (**MK4.788 billion)** for the outer three (3) years. The financial plan consists of 57% allocation towards community investments and 43% targeting education, health institutions and markets.

Table of Content

FOREWORD ..... **i**
ACKNOWLEDGEMENTS ..... **iii**
EXECUTIVE SUMMARY ..... **iv**
List of Figures ..... **x**
List of Acronyms and Abbreviations ..... **xi**
CHAPTER 1: BACKGROUND AND CONTEXT **1**
1.1 Geography of the District 1
1.1.1 Location and Size 1
1.1.2 Population 1
1.1.3 Topography 2
1.1.4 Climate 2
1.1.5 Hydrogeology 2
1.2 Administrative Structure 3
1.2.1 Formal Administrative Structures 3
1.2.2 Traditional Level Structures 3
1.2.3 District Executive Committee [DEC] 4
1.2.4 District Coordinating Team [DCT] 4
1.3 District Planning Process 4
1.3.1 District Level Planning Process in WASH 5
1.3.2 Service Committees 5
CHAPTER 2: CURRENT SECTOR SITUATION **8**
2.1 Current Water Situation in the District 8
2.1.1 Water Facilities and Technologies Inventory 8
2.2 Water Pollution 10
2.2.1 Water Quality Testing 10
2.2.2 Technical Support 10
2.2.3 Water Demand in the District 10
2.2.4 Underlying Assumptions 11
2.3 Stakeholder Analysis 11
2.3.1 Capacity Building 11
2.3.2 Community Mobilization 12
2.4 Sanitation at Community Level 12
2.4.1 Handwashing Facilities 13
2.4.2 School WASH Facilities 13
2.4.3 Early Childhood Development 13
2.4.4 Primary Education 14
2.4.5 Hand Washing Facilities 14
2.4.6 Water, Sanitation and Hygiene situation in primary schools 15
2.4.7 Primary Schools Girls Change Rooms 16
2.4.8 Water, Sanitation and Hygiene Situation in Secondary Education 16
2.4.9 Water and Sanitation in Secondary Schools 17
2.4.10 Secondary Schools Girls Change Rooms 17
2.4.11 Menstrual Hygiene Management in Primary and Secondary Schools 17
2.5 Health Facilities 18
2.5.1 Water Supply Situation in Health Centres 18
2.5.2 Sanitation in Health Facilities 19

2.6 Water Supply Situation in Market Places 19
2.6.1 Sanitation in Market Centres 19
2.6.2 Sanitation Marketing 20
2.7 Status of Major Water Resources in the District 20
2.7.1 Surface Water 20
2.7.2 Groundwater 21
2.7.3 Catchment Degradation 21
2.8 Waste management 22
2.8.1 Waste Generation 22
CHAPTER 3: KEY OBSTACLES TO PEOPLE'S ACCESS TO SAFE WATER, ADEQUATE SANITATION AND HYGIENE 23
3.1 Key Obstacles 23
3.1.1 Water Resources Challenges 24
3.1.2 Protection Measures 24
3.2 Catchment Management, Stakeholder Coordination and Participation 24
3.3 Health Challenges 25
3.3.1 Cholera 25
3.3.2 COVID-19 25
3.4 Waste Management Challenges 25
3.4.1 Waste Treatment 25
3.4.2 Waste Disposal 26
3.4.3 Recycling and Reuse 26
3.5 Natural disasters 26
3.5.1 Strong Winds 26
3.5.2 Hailstorms 26
3.5.3 Floods 27
3.5.4 Dry Spells/Droughts 27
3.6 Life Cycle Cost Assessment 27
3.7 Inclusion of Marginalized Groups 28
3.8 Capacity Building 29
3.9 SWOT Analysis 29
CHAPTER 4: STRATEGIC ANALYSIS AIMS AND OBJECTIVES 31
4.1 Guiding Principles 31
4.1.1 Promoting Behavioural Change 32
4.2 Water Demand in the District 33
4.2.1 Underlying Assumptions and Considerations 33
4.2.3 Rural Water Demand 33
4.3 Implementation Arrangements for Water and Sanitation 34
CHAPTER 5: PLANNED INTERVENTIONS, TARGETS AND EXPECTED RESULTS 36
5.1 Underlying Planning Assumptions 36
5.2 Water Supply 36
5.2.1 Water Supply in Communities 36
5.2.2 Water Supply in Schools 36
5.2.3 Water Supply in Health Centres 36
5.2.4 Water Supply in Markets 37
5.2.5 Water Supply in Emergencies 37

5.3 Sanitation and Hygiene 37
5.3.1 Sanitation and Hygiene in Communities 37
5.3.2 Sanitation and Hygiene in Schools 37
5.3.3 Sanitation and Hygiene in Health Centres 38
5.3.4 Sanitation and Hygiene in Market Centres 38
5.3.5 Sanitation and Hygiene in Emergencies 38
5.3.6 Enforcement of Sanitation and Hygiene Bye-Laws 38
5.4 Intervention/Impact 39
5.5 Water Resources and Waste Management 39
5.5.1 Disaster Risk Management 39
5.6 Monitoring and Evaluation 39
CHAPTER 6: FINANCIAL PLAN 51
6.1 Budget Summary 51
6.2 Community Investment 52
6.3 Cash Flows 52
CHAPTER 7: IMPLEMENTATION, MONITORING & EVALUATION 57
7.1 Progress Monitoring Mechanisms 57
7.2 Sustainability of Impacts 57
7.3 Data Management 57
7.4. M & E Framework 58
CHAPTER 8: REFERENCES 59
CHAPTER 9 ANNEXES 60
Annex 9.1: M &E Framework 60
Annex 9.2: DCT stakeholders mapping tool 73

List of Tables

Table 1: Number of ADCs, VDCs and Villages by TA 5
Table 2: Water points, technologies available and access to safe water 8
Table 3 : Population with access to safe water at boma and other urban areas 9
Table 4: Existing capacity gaps 12
Table 5: Pit latrines coverage per TA 12
Table 6: Hand washing facility coverage by TA 13
Table 7: Primary Schools Number of Water Points by District 15
Table 8: Number of Toilets by type and Urinal Blocks by Zone 15
Table 9: Distribution of secondary schools per cluster 16
Table 10: Number of toilets in secondary schools by clusters 17
Table 11: Distribution of Health facilities by type and ownership 18
Table 12: Key obstacles and mitigation measures 23
Table 13: Population Projections for Rural Water Supply 33
Table 14: Water supply in communities 40
Table 15: Water Supply in Schools 41
Table 16: Water Supply in Health Facilities 42
Table 17: Water Supply in Markets 42
Table 18: Water Supply in Emergencies 43
Table 19: Sanitation and Hygiene in Communities 44
Table 20: Sanitation and Hygiene in Schools 44
Table 21: Sanitation and Hygiene in Health Centres 45
Table 22: Sanitation and Hygiene in Market Centres 45
Table 23: Sanitation and Hygiene in Emergencies 47
Table 24: Water Resources Management 47
Table 25: Disaster Risk Management 49
Table 26: Monitoring and Evaluation 50
Table 27: Estimated Costs by Output 51
Table 28: Community Investments 52
Table 29: Detailed 5-year Financial Projections 53

List of Figures

Figure 1: Map of Dedza showing boundaries and traditional authorities (Source: *Dedza GIS 2018).* 1

Figure 2: SWOT Analysis for WASH Stakeholders in Dedza District 30

List of Acronyms and Abbreviations

ADC	Area Development Committee
AEC	Area Executive Committee
AIDS	Acquired Immune Deficiency Syndrome
AMR	Antimicrobial Resistance
BASEDA	Basic Services Development Agency
ELDS	Evangelical Lutheran Development Service
CADECOM	Catholic Development Commission
CAMFED	Campaign for Female Education
CBO	Community-based Organisation
CBCCs	Community Based Childcare Centres
CDA	Community Development Assistant
CHAST	Child Hygiene and Sanitation Training
CHAM	Christian Health Association of Malawi
CRWB	Central Region Water Board
CU	Concern Universal
DA	District Assembly
DC	District Commissioner
DACC	District AIDS Coordinating Team
DPD	Director of Planning and Development
DCT	District Coordinating Team
DCDO	District Community Development Officer
DEC	District Executive Committee
DEM	District Education Manager
DFO	District Forest Officer
DOF	Director of Finance
DWDO	District Water Development Officer
DSIP	District Strategic Investment Plan
EMIS	Education Management Information System
EPA	Extension Planning Area
GFS	Gravity-Fed Scheme
HIV	Human Immunodeficiency Virus
HSA	Health Surveillance Assistant
ISH-5	Integrated Household Survey 4
JPGE	Joint Program on Girls Education
IWRM	Integrated Water Resources Management
MDG	Millennium Development Goal
MGDS	Malawi Growth and Development Strategy
MIS	Management Information System
MoEST	Ministry of Education, Science and Technology
MoHP	Ministry of Health and Population
MoFNREA	Ministry of Forestry and Natural Resources and Environmental Affairs
M & E	Monitoring and Evaluation
LCCA	Life Cycle Cost Assessment
NSO	National Statistical Office

NGO	Non-Governmental Organisation
ODF	Open Defecation Free
ODL	Open Distance and Learning
PHAST	Participatory Hygiene & Sanitation Transformation
PHC	Population and Housing Census
PRA	Participatory Rural Appraisal
PTA	Parents and Teachers Association
SEP	Socioeconomic Profile
SSHP	School Sanitation and Hygiene Promotion
SMC	School Management Committee
STA	Sub Traditional Authority
SWA	Sector Wide Approach
TA	Traditional Authority
UNICEF	United Nations Children's Fund
VDC	Village Development Committee
VHWC	Village Health and Water Committee
WASH	Water, Sanitation and Hygiene
WES	Water and Environmental Sanitation
WHH	Welthungerhilfe
WHO	World Health Organisation
WMA	Water Monitoring Assistants
WPC	Water Point Committee
WPM	Water Point Mapping
WRMPS	Water Resources Management Policies and Strategies
WVM	World Vision Malawi

CHAPTER 1: BACKGROUND AND CONTEXT

1.1 Geography of the District

1.1.1 Location and Size

Dedza District is located in the Central Region of Malawi, about 86 kilometres South of Lilongwe City, the Capital City of Malawi and about 286 Kilometres North of Blantyre City. Dedza lies at 14.3817° S, 34.3255° E. It borders Lilongwe District to the North and West, Salima District to the North-East, Mangochi District to the East and Ntcheu to the South. It is the fourth largest district in the Central Region of Malawi covering a total land area of 3,624 km^2 which is about 4% of the total land surface area (94,276 km^2**)** of Malawi. The largest Districts are Lilongwe, followed by Kasungu and Salima districts. The district is bordered by Mozambique along the South-West border.

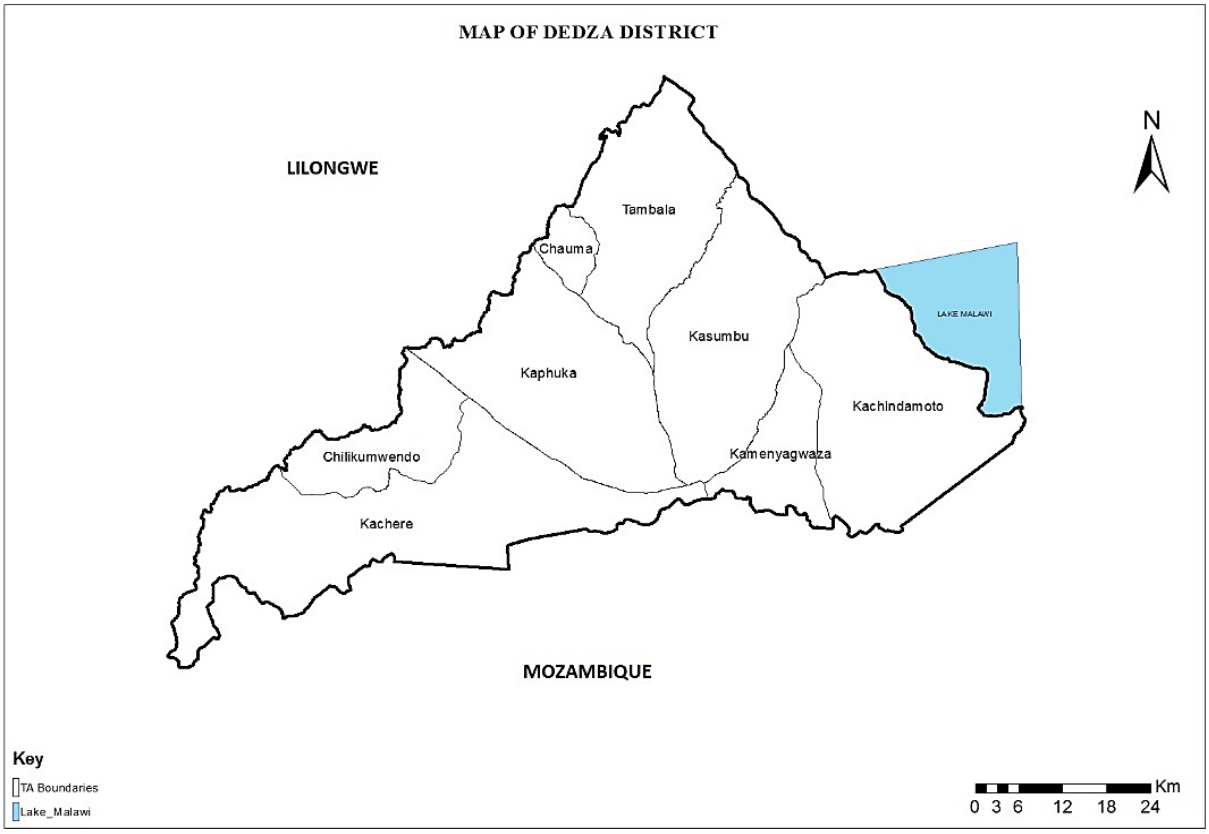

Figure 1 : Map of Dedza showing boundaries and traditional authorities **(**Source: ***Dedza GIS 2018).***

1.1.2 Population

The population of Dedza District is 830,512, of which 395,882 are males and 434,630 are females (NSO 2018). The district's annual population growth rate is 2.8%. The crude birth rate is 42/1000 while the crude death rate is 13/1000 population per year. The fertility rate in the district is estimated at 5.8 children

per woman. The population size has been increasing due to many factors such as high fertility rate, limited access and utilization of modern family planning methods and influx of people from Mozambique who have come to Dedza due to economic reasons or fleeing conflicts.

1.1.3 Topography

The district is divided into three topographic zones namely Lilongwe Plain, Dedza Highlands, and Escarpments. The Lilongwe Plains are in the northern and western parts of the district and situated at an altitude of 1100-1300 metres above sea level. The Dedza Highlands (Kirk Range and Dzalanyama Range) occupy the western part of Dedza Escarpments. The highlands consist of uplands with an altitude varying between 1200 metres to 2200 meters above sea level. The topography is characterized by rolling slopes to hills varying between 13-55 degrees. The soils in the lower escarpments (600-1200 m above sea level) and upper escarpments (700-1500 m above sea level) are moderately deep and well-drained, brown to reddish-brown in colour and course to fine texture. There are no minerals discovered yet in the district except for quarry and sand excavation at Chongoni forestry hills and various rivers/streams.

Dedza continues to experience heavy soil erosions due to vegetative cover losses and unsustainable farming practices which are evidenced by excessive cutting down of trees mainly in most hills and cultivation along riverbanks respectively. According to a soil loss survey commissioned by Food and Agricultural Organisation (FAO) in 2014, Dedza loses on average 10.1 metric tonnes of topsoil per year.

1.1.4 Climate

Climate is defined as weather changes that occur in an area over a long period, usually over a minimum of 10 years. Weather is mostly the effects of wind, rain, and temperature on daily, monthly and yearly periods. Malawi is located south of Equator and has a tropical climate or sub-tropical climate at high altitudes i.e., temperatures vary with altitude. Dedza experiences hot to warm temperatures (15-21 degrees) during the summer season (October to April) and very cold to warm temperatures (7-12 degrees) during Winter (May to September). Climatologically Dedza lies within the Southern Highlands (Shire Highlands, Kirk Range up to Dedza) and lake shore to the eastern part like Golomoti and Mtakataka.

As a result of climate change, the district has experienced disasters of various forms such as hailstorms, fall army worms (FAWs), dry prolonged spells, floods and strong winds. For the past five years, all 8 traditional authorities have been affected by at least one or more of these disasters. The district has put in place mechanisms to reduce vulnerability to disasters in each EPA.

1.1.5 Hydrogeology

According to Africa Groundwater Hydrogeology Atlas of Malawi (2018), the natural quality of groundwater across Malawi is thought to be generally suitable for drinking (Chavula 2012). However,

groundwater chemistry is highly dependent on aquifer lithology (rock type and mineralogy), and so it is highly variable spatially. Groundwater in alluvial aquifers is generally more mineralised than that in basement aquifers, and a number of boreholes in alluvial aquifers have been abandoned due to high salinity (Chavula 2012). Chemical parameters that are elevated in different areas include fluoride, sulphate, iron, chloride, and nitrate.

1.2 Administrative Structure

1.2.1 Formal Administrative Structures

Dedza District Council was established under the Local Government Act of 1998 revised in 2010 and amended in 2017. The District Council is the highest policy-making body responsible for promoting infrastructural and economic development at the district level. The Council is mandated to pass by-laws to govern its operations as well as raise resources for executing its functions under its jurisdiction.

Dedza District Council has two structures namely the political and the secretariat. The Council provides policy direction, and it is currently composed of 37 members i.e., 16 Ward Councillors (14 males and 2 females), 8 Members of Parliament (all males) and 8 Traditional Authorities. It also has 5 representatives of special interest groups drawn from faith groups, people with disabilities, youth, business community representatives and women groups. These five are ex-officio members and have no voting powers. The Council is headed by the Council Chairperson who is elected annually amongst the Ward Councillors and may be re-elected once more for the second term.

The District Council Secretariat is the administrative arm of the Council which is headed by the District Commissioner (DC) with assistance from Directors of the following directorates: Planning and Development, Administration, Finance, Public Works, Health and Social Welfare, Agriculture and Natural Resources and Education, Youth and Sports.

1.2.2 Traditional Level Structures

Traditional Authourities

Dedza district has 8 Traditional authourities namely Chauma, Chilikumwendo, Kamenyagwaza, Kaphuka, Kachere, Kachindamoto, Kasumbu and Tambala.

Area Development Committees: The Area Development Committee (ADC) is a representative body of all Village Development Committees (VDC) working within the jurisdiction under the Traditional Authority (TA). With regards to WASH, the ADC assists in the identification, prioritization, and preparation of community water, sanitation and hygiene needs. The committee is also responsible for supervision, monitoring and evaluation of the implementation of WASH projects within its area of jurisdiction. There are 8 ADCs in Dedza District, each chaired by an elected person.

Village Development Committee: The VDCs are at the lowest planning level in the district. Each village is represented by the following: One (1) elected person from each village within the VDC, four (4) elected women and two (2) representatives of the youth (both sexes). These members elect the office bearers amongst themselves. The VDC is involved in the Village Action Planning (VAP) process. It is during VAP formulation processes that communities are assisted to identify and include water, hygiene and sanitation projects in their local development plans. The other role of the VDCs in implementation of DSIP will be to mobilize community resources to support interventions as well as to monitor progress of interventions.

Area Executive Committee (AEC): The AEC is a technical and advisory arm of the ADC. It comprises of all extension workers of government ministries, non-governmental organizations and statutory corporations working within the jurisdiction of a Traditional Authority. Dedza District has 8 AECs. The AEC will be expected to provide technical guidance on smooth implementation, monitoring and evaluation of WASH projects in the area.

1.2.3 District Executive Committee [DEC]

The District Executive Committee (DEC) is a technical and advisory committee to the council, and it is chaired by the District Commissioner. Members include Directors, Heads of Government Sectors/departments, Non-Governmental Organizations (NGOs) and Statutory Corporations working in the district. The DEC shall provide technical guidance to DCT on efficient implementation of water, sanitation, and hygiene projects.

1.2.4 District Coordinating Team [DCT]

The district has a functional DCT that leads the coordination of WASH activities. The DCT is made up of government sectors which provide WASH services such as environmental health, water, community development, planning, environment, forestry and disaster as well as Non-governmental Organizations (NGOs) which are implementing WASH interventions. The Director of Planning and Development (DPD) is chair for DCT while the District Water Officer is secretariat to DCT.

1.3 District Planning Process

The District Planning process following the District Development Planning Systems Manual developed in line with Local Government Act. The guidelines reinforce the spirit of the decentralization policy, which promotes participatory planning, bottom-up approach, demand driven, and promote open and accountable processes.

1.3.1 District Level Planning Process in WASH

The district plans for WASH interventions through the District Coordinating Team (DCT). The committee is crucial in planning, implementing, monitoring, and evaluating impact of various water, hygiene, and sanitation programs in the district. At community level planning for water, sanitation, and hygiene services is facilitated by the Village Development Committees (VDCs) through inclusion of WASH issues in Village Action Plans (VAPs). The Area Development Committees (ADCs) consolidate plans from VDCs and submit them to the council for further planning and possible funding. The council mobilizes resources from the stakeholders to ensure that community WASH services are provided. The VDCs and ADCs are also responsible for mobilising local resources to complement council secretariat effort and ensure that WASH services are effectively provided.

Table 1: Number of ADCs, VDCs and Villages by TA

Traditional Authority	Number of ADCs	Number of VDCs	Number of Villages
Chauma	1	10	93
Chilikumwendo	1	36	126
Kachere	1	46	331
Kachindamoto	1	20	197
Kamenyagwaza	1	7	61
Kaphuka	1	74	377
Kasumbu	1	19	147
Tambala	1	22	201
TOTAL	**8**	**234**	**1,533**

Source: Dedza Directorate of Planning and Development, 2019

Table 1 shows that TA Kaphuka has the highest number of VDCs representing 31% while Kamenyagwaza has the least number of VDCs representing 3% of VDCs. The total number of VDCs in the district has increased by 6.8% from 219 in 2014 to 237 in 2019. This was because of the reconstitution of these structures which took place in 2019.

1.3.2 Service Committees

The District Council operates through a system of service committees. It has eight committees namely Finance Committee, Development Committee, Health and Environment Committee, Education Committee, Human Resources Committee, Public Works Committee, Agriculture and Natural Resources Committee, Appointments and Disciplinary Committee. The Health and Environment Service Committee shall be responsible for endorsing water, sanitation, and hygiene projects in the DSIP.

1.4 Economic Activities

In Dedza 41.4% of the people are very poor while 42.4% are poor and 12.3% had an average income (IHS4-2017). Since independence in 1964, the agricultural sector has remained the mainstay of Malawi's economy as it accounts between 36% and 39% of the GDP, employs about 80% of the workforce, accounts for over 80% of foreign exchange earnings, and contributes significantly to national and household food security. In Dedza during the period under review (86.5%)of the population was engaged in agricultural activities (IHS4). The high levels of poverty among people in the district is a serious constraint to their ability to afford WASH products and services such as having improved latrines for their households.

1.5 Water, Sanitation and Hygiene Situation in the district

Water, Sanitation, and Hygiene (WASH) is one of the development programmes that Dedza District Council is implementing to improve the socio-economic wellbeing of its citizens. WASH is recognized as one of the key interventions in infection prevention. Safe water, functional hand washing facilities, latrines, and proper hygiene and cleaning practices are especially important for improving health outcomes. WASH is linked to maternal, infant and young childrens' (IYC) wellbeing, as well as carrying out basic infection prevention and control (IPC) procedures necessary to prevent antimicrobial resistance (AMR). WASH services strengthen the resilience of health care systems to prevent disease outbreaks, allow effective responses to emergencies (including natural disasters and outbreaks) and bring emergencies under control when they occur.

During the development of the DSIP, the District Coordinating Team with guidance from the consultant conducted a desk review to identify key WASH issues that need to be addressed through this strategic document. The following key obstacles to access to WASH services were identified:

1) Inadequate water supply in schools, health facilities, markets and wider community which limits accessibility to safe water;
2) Inadequate access to and use of improved and appropriate sanitary facilities;
3) Poor waste management practices;
4) Environmental degradation, climate change and lack of capacity to mitigate disasters;
5) Inadequate financial resources to implement safe water supply programs;
6) Inadequate human capacity: There are few water sector staff at both district and community level to provide the required technical support such as training of water point committees, conducting water monitoring visits among other functions;
7) Theft and vandalism of water supply facilities.
8) Inadequate community capacity to manage and maintain their water facilities. Some communities have not been trained on the management and maintenance of their water facilities, such that they are unable to repair their water facilities when they break down;

9) Operation and maintenance are also affected by mismanagement of funds by the communities, dependence syndrome, low turn-up of community members at WASH meetings and village politics among others;
10) High demand for WASH services against very few NGOs working in WASH sector. Currently the district is supported by Welthungerhilfe (WHH) in all T/As, World Vision working in T/A Tambala, United Purpose working in T/As Kamenyagwaza, Chauma, Kaphuka and Chilikumwendo, and Basic Services Development Agency (BASEDA) working on operation and maintenance in all T/As;
11) Lack of disaster risk management principles in WASH programs;
12) Poor sustainability of the WASH services due to negative mindset by community members where by they think interventions belong to the implementing NGOs.
13) Limited WASH facilities for special needs' groups;
14) Limited investment in sanitation marketing and WASH entrepreneurship;
15) Lack of a catchment management plans
16) Inadequate water storage facilities in health centres;
17) Lack of placenta pits in some health facilities;
18) Lack of incinerators in some health facilities;
19) Lack of menstrual hygiene shelters in schools health facilities and markets.
20) High demand for water, sanitation, and hygiene services due to rapid population growth;
21) Lack of slaughterhouse and refuse pits in markets;
22) Lack of toilets in some markets;
23) Lack of awareness on sanitation marketing to create demand for the products;
24) Lack of optional technologies for sanitation marketing.

1.6 Vision, Mission and Goal

Vision: A district with equitable and sustainable access to water, sanitation, and hygiene services by 2027.

Mission: To develop and manage water resources for the sustainable, effective and efficient provision of safe water and sustainable sanitation services in a more coordinated manner in support of Malawi's development agendas which are MGDS III and Malawi Vision 63.

Goal of the DSIP: The goal of this strategic document is to provide a framework on key interventions and investments that the district council and its partners will implement to improve provision of water, sanitation, and hygiene (WASH) services in the district.

CHAPTER 2: CURRENT SECTOR SITUATION

2.1 Current Water Situation in the District

Water resources in the district serve several purposes such as domestic consumption, agricultural/ irrigation production, development of the fisheries industry, navigation/ water transport, industrial production, mining, and tourism, and maintaining environmental flow. Water sources in Dedza District are comprised of surface and groundwater. These are as follows:

Surface Water Sources

Dedza District has an abundance of surface water sources which vary from rivers, streams, dams and Lake Malawi in Dedza East at TA Kachindamoto. The major rivers in the district are Linthipe, Bimbili, Mwachikula, Diamphwe, Chilunguzi, Nadzipulu, Livulezi and Lifidzi.

Ground Water Sources

Groundwater in the district is accessed mostly through boreholes, hand dug wells and to a lesser extent natural springs and is mostly used for domestic purposes. The district has several technologies currently in use to draw groundwater for different purposes. These technologies include Afridev and Malawi Development Action (MalDa) pumps, solar-powered reticulated water systems, and recently the life pumps by Design Outreach for deep aquifers (up to 150m) have been adopted.

2.1.1 Water Facilities and Technologies Inventory

IHS4 (2017) shows that 75.8% of the population of 830,512 (395,882 male and 434,630 female) (NSO, 2018) has access to safe water, and 72.1% of the population uses boreholes, 3.2% use communal taps, 7.3% use protected public wells, 0.5% use taps at home and 16.8% use unprotected water sources. Note that the District Water Development Office supplies water to rural areas whereas Central Region Water Board supplies water at Dedza town and other few households at Bembeke and Linthipe 1.

Table 2 below summarizes the number of water points, the proportion of the technologies of water sources available in the district and population with access to safe water in 2017 in the rural areas at TA level.

Table 2: Water points, technologies available and access to safe water

TA	Total water points	Number of protected Water Sources				Population		
		Tap	BH	Protected Shallow wells	Protected Springs	Total population	Population with access to safe water	%
Chauma	73	5	57	11	0	22,646	16,531	73%
Chilikumwendo	197	3	184	10	0	78,860	39,430	50%
Kachere	628	8	434	176	10	167,652	130,768	78%

Kachindamoto	554	205	326	21	2	131,195	99,708	76%
Kamenyagwaza	281	100	149	27	5	36,839	22,840	62%
Kaphuka	716	13	496	201	6	168,027	92,414	55%
Kasumbu	489	68	283	136	2	110,262	78,286	71%
Tambala	298	10	262	23	3	84,103	73,169	87%
Total	**3,236**	**412**	**2,191**	**605**	**28**	**799584**	**553,146**	**67%**

Source: Dedza mWater survey, 2019

Table 2 above shows that 69% of the population in the rural areas has access to safe water (NSO, 2018). The total percentage according to the survey done by the district water office in 2018/2019 showed that about 69% of households had access to safe water. The Table above also shows that most water points are in TA Kaphuka with 716 seconded by TA Kachere with 628 water points. TAs with the least number of water points are TA Chauma with 73 water points, seconded by TA Kamenyagwaza with 281 water points. This is the case because these TAs have not benefited from large-scale water supply projects for some time. The number of water points in a particular TA does not indicate real access to safe water because this depends on the population zise of the TAs.

TA Tambala has the highest proportion of people with access to safe water because a good number of boreholes have been constructed and rehabilitated in the area. TA Kaphuka has only 55% of people with access to safe water because it has so many shallow boreholes with an average depth of 20m which easily dry up and also shallow wells were fitted with Malda pumps which are mostly not functioning because of lack of spare parts. As for TA Kachindamoto, access is higher because of a recently rehabilitated gravity-fed scheme and has received a good number of water points over the years. On the other hand, TA Kamenyagwaza and Chilikumwendo have not benefited from WASH projects for some time now.

Even though TA Kamenyagwaza was allocated 100 taps from Mvula water supply scheme, it has never received running water due to massive vandalism and whereas some parts of the scheme were damaged by surface runoff, and hence the scheme requires rehabilitation. Access to safe water at Dedza Boma is summarized in Table 3 below.

Table 3: Population with access to safe water at boma and other urban areas

Supply Area	Total customers	Active customers	% rate of active customers
Dedza town	3046	2849	93.5%
Dedza secondary school	64	59	92.1%
Bembeke	95	81	85.2%
Linthipe1 trading centre	284	253	89.3%
Total	**3489**	**3242**	**92.9%**

Source: Dedza zone monthly report, 2017

The table above shows that there are some sections of the population in these urban centres who do not access water supplied by CRWB. The DCT must investigate this scenario and find possible ways of supporting such people so that they can access safe water.

2.2 Water Pollution

Water quality is mostly affected by the type of deposits in the surface water bodies, this may be caused by soil erosion or direct disposal. Though the District has an abundance of surface water resources, most of them are becoming degraded due to deforestation of catchment areas, poor farming practices like cultivating on riverbanks, and poor management of wetlands.

It has been noted that rivers carry loads of sediments deposited resulting from soil erosion. This has led to a gradual diminishing of carrying capacity of water bodies within the district. Increased use of fertilizer has resulted in salts and other chemicals being carried to the rivers, hence polluting the water.

Poor access to potable water has resulted in the district registering a rise in water-related diseases such as scabies and schistosomiasis. These two have been noted mainly in Traditional Authority Chauma and Tambala for scabies and Kachindamoto for schistosomiasis. All these have been due to water pollution and the unavailability of potable water for consumption. From the major rivers that the district has, most of them are becoming nonperennial due to the different anthropogenic activities in the upper land.

2.2.1 Water Quality Testing

According to the Groundwater Borehole Drilling Guidelines, the contractor is obliged to carryout water quality testing after the drilling of each borehole. The challenge is that, in most cases there is no supervision and monitoring of the drilling processes and water quality testing due to various factors including capacity and lack of resources. It has been observed that most of the drilling contractors including NGOs do not share drilling data information including water quality test results with the district.

2.2.2 Technical Support

Dedza district has spare part outlets that are partly being supported by BASEDA and private traders. Under BASEDA, there are 9 shops with spare parts located in the following areas; Bembeke, Dedza Boma, Lobi, Njonja, Matumba, Kabwazi, Chimbiya, Chiluzi, and Mayani Trading Centres. 53 Area Mechanics are being supported by BASEDA. These Area Mechanics are allocated in all traditional authorities.

2.2.3 Water Demand in the District

The Government of Malawi promotes that access to improved water sources should be within a one-way radius of 500m. This further highlight that the ratio for a borehole fitted with handpump to a number of user individuals is 1:250 whereas for tap and shallow wells is 1:120. The District Council has been

striving to achieve this throughout the district, however, high population growth has proportionally been increasing the water demand, thereby countering this effort in the district. Over the past decade, the population accessing safe water sources within a 500m radius has only increased by 5%*(District water office quarterly reports)*

2.2.4 Underlying Assumptions

For the sake of demand projection in this document, the following assumptions are made:

i. The existing facilities will remain functional and in a good state;
ii. Equitable distribution of water, sanitation and hygiene services will be achieved during the implementation;
iii. All households in urban areas will demand own household connection;
iv. Rural water access to be defined by 500m radius and of 30 litres a person per a day; and:
v. Targets will be 100% for both rural and urban by 2030.

2.3 Stakeholder Analysis

Dedza District Council WASH Sector has been working with several development stakeholders which include both government institutions and non-governmental organisations (NGOs). Government institutions which make up Dedza WASH sector are planning, health, water, community development, forestry, environment and disaster risk management while NGOs include Welthungerhilfe, United Purpose, World Vision, and Basic Services Development Agency (BASEDA) working in interventions such as borehole drilling, maintenance of WASH facilities, capacity building, schools and health centres, WASH and WASH Sector coordination among others. World Vision, Welthungerhilfe and United Purpose are drilling boreholes in public institutions such as schools and health centers, as well as in communities, while BASEDA specializes in the operation and maintenance of boreholes. Currently the district is supported by Welthungerhilfe (WHH) working in all T/As, World Vision working in T/A Tambala, United Purpose working in T/A Kamenyagwaza, Chauma, Kaphuka and Chilikumwendo and Basic Services Development Agency (BASEDA) working on operation and maintenance in all T/As. Attached in **Annex 9.2** is a DCT Stakeholders mapping tool for the district.

2.3.1 Capacity Building

Community Capacity Building empowers communities with organizational and technical skills. It involves community-based management training of water point committees and community leaders in hygiene practices, leadership, resource mobilization, fundraising, record keeping and basic skills on maintenance of water points. The capacity gaps that exist at the moment are at both institutional as well as at individual levels. Currently, Dedza District has some existing capacity gaps right from the District Council level, where the District Water Office has inadequate human and material resources to serve the

district better. For example, the district in the 2019-2020 financial year operated with only 33% of staff required. Table 4 below indicates the existing staff capacity gaps as of the year ending 2020.

Table 4: Existing capacity gaps

Position	Requirement	Available	Gap	%	Comment
DWDO	1	1	0	100%	Central Govt yet to appoint someone on fulltime
ACWSO		2			The two were promoted from WMA
WMAs	8	0	8	0%	The two officers temporarily serving as WMAs were promoted to Grade K
Area Mechanics	52	52	0	100%	Calculated on the standard of one area mechanic servicing 50-100 Water points

Source: District Water Office, 2019

2.3.2 Community Mobilization

This is key to implementing water and sanitation programs in Dedza District. It is a deliberate participatory process to involve local institutions, local leaders, and community members to organize for collective action towards a common purpose.

Communities are sensitized to understand their situation and fully participate and work together to solve problems of water and sanitation. Communities are sensitized to mobilize locally available resources such as sand, bricks, land, and unskilled labour. Community mobilization promotes ownership of water and sanitation facilities in the communities.

2.4 Sanitation at Community Level

In Dedza district, basic latrine coverage varies from one TA to another. There are high basic latrines coverages in the TAs of Tambala (82%), Kamenyagwaza (96%) and Chilikumwendo (99%). There is low basic latrine coverage in TA Kaphuka. Table 5 below shows basic latrine coverage across all the TAs.

Table 5: Pit latrines coverage per TA

TA	Households	Number of pit latrines	% of basic pit latrine coverage	Number of improved pit latrines	Improved pit latrine coverage
Chauma	5556	4282	77	1175	21
Chilikumwendo	16155	16107	99	48	0
Kachere	42578	30614	72	1911	4
Kachindamoto	26048	18728	72	1465	6
Kamenyagwaza	7859	7575	96	223	3
Kaphuka	37478	25353	68	4013	11
Kasumbu	26738	18817	70	1967	7
Tambala	23286	19178	82	643	3
Total	**185698**	**140654**	**80**	**11445**	**7**

Source: District environmental office, 2019

2.4.1 Handwashing Facilities

In Dedza, handwashing facilities coverage varies from one TA to another. There is high coverage of HWFs in the TAs Kamenyagwaza 97% Tambala 91%, Chilikumwendo 99% and Chauma 94%. The high rate in handwashing facilities in these TAs is attributed to the fact that these TAs have been certified ODF. There are low handwashing coverages in the remaining TAs. Kaphuka, Kasumbu, Kachere and Kachindamoto have not been certified ODF hence low coverages.

There is a need for ODF programs to be introduced in the remaining TAs so that sanitation indicators like improved pit latrine and handwashing facilities coverage should improve in these TAs. Other sanitation interventions like Sanitation Marketing are also important to be introduced in Dedza District so that sanitation ladders of all the TAs can improve. Overall HWFs coverage in Dedza is at 46%. Table 6 below shows handwashing facility coverage in Dedza District across all the TAs.

Table 6: Hand washing facility coverage by TA

TA	Number of basic latrines and improve latrines	Handwashing facilities	Handwashing facilities coverage
Chauma	5457	2,733	50%
Chilikumwendo	16,155	16,107	99%
Kachere	32,525	9,081	28%
Kachindamoto	20,193	6,860	34%
Kamenyagwaza	7,798	7,575	97%
Kaphuka	29,366	15,861	54%
Kasumbu	20,784	3,171	15%
Tambala	19,821	8,615	91%
Total	**152,099**	**70,003**	**46%**

Source: District Environmental Office, 2019

2.4.2 School WASH Facilities

These are institutions where people get educated such as Early Childhood Development (ECD) Centres, primary schools and secondary schools formally under Basic Education. The educated community is a catalyst to development and without water, sanitation and hygiene education is compromised and is reflected in failure to access quality education.

2.4.3 Early Childhood Development

The district has a total of 367 Community Based Childcare Centres (CBCCs) of which 80 have full structures and 287 with temporary structures such as churches in the communities. The district enrolled 24,610 children in CBCCs to acquire a foundation of children to primary schools. Empirical evidence through cross-cutting studies have shown that learners who pass through Early Childhood Development do well in primary schools. This motivates communities to lobby for CBCCs to accommodate their children so that they access ECD services. The CBCCs are built with 2 toilets, 1 for boys and another

one for girls. However, they are not given their own water points such as boreholes for portable water. This is because most CBCCs are constructed within an acceptable radius of the community boreholes and hence easily access portable water from these boreholes. However, a total of 76 CBCCs operate outside the standard radius of 500m and they face challenges in accessing portable water to manage water, hygiene and sanitation issues as they travel long distances to access water at a community borehole.

2.4.4 Primary Education

The district has 266 primary schools, out of which, 248 are public and 18 are privately owned. The schools are allocated in 19 educational zones of which 13 are Main (with TDC infrastructures) and 6 are Sub zones (without TDC infrastructures). The primary schools still lack adequate learner toilets in the district as the ratios are still over the recommended of 60:1. The pupil toilet ratio for both boys and girls at an average of 72:1 (64:1 Boys and 81:1 girls). The situation is worse in Kapiri (154:1), Chikololere (134:1), Chimbiya (106:1) and Chitundu (102:1) educational zones. The situation results in congestion in learners' toilets and result in non-conducive learning environment hence affect quality of education. Additional toilets with change rooms for girls should be constructed to reach the recommended ratio of 60:1 on average and only Magomero, Matundu, Kanyenda, Kalinyeke, Chimwangalu and Chilanga zones register below average required ratios. Permanent hand washing facilities will be constructed in the schools for learners practicing washing of their hands after visiting the toilets.

2.4.5 Hand Washing Facilities

The learners usually wash their hands with soap after visiting toilets, urinal blocks or change rooms, it is a requirement to have handwashing facilities in school premises. Currently, the district has 107 handwashing facilities out of 248 needed representing 43% of hand washing facilities in schools. This is to maintain health standards hence preventing different poor sanitation and hygiene-related diseases such as cholera and reflects high to equitable access to quality education. All schools are supposed to have permanently built handwashing facilities but unfortunately some have temporary ones such as buckets.

The primary schools in the district are served with both boreholes and piped water systems. The water points compliment school health, nutrition, and sanitation activities hence increasing access to quality education. The piped water systems are classified into gravity-fed systems and solar systems. The service providers such as CRWB, WUAs and Water Point Committees supply water in schools with charges applied to schools. Table 7 below shows the distribution of water points through the district.

Table 7: Number of Water Points in Primary Schools

Public			Private		
Pipe water	Boreholes	Gap	Pipe water	Boreholes	Gap
15	205	28	12	4	2

Source: Dedza Water Office, 2019

The table above illustrates that 28 public and 2 private primary schools (representing 11.8% of the schools) do not have access to portable water. This is due to poor terrain as water is not found, or there is hard rock at the schools such as at Fumbwa and Kanyerere. Some were provided with solar power systems but did not sustain them due to financial and material resources constraints to schools such as at Mwachikala and Tchetsa primary schools. The situation will be improved as the government through the Ministry of Education will drill boreholes in 14 schools and partners will finish the remaining schools as alternative borehole sites were found to drill boreholes.

2.4.6 Water, Sanitation and Hygiene situation in primary schools

The primary schools are provided with pit latrines or toilets and handwashing facilities to provide hygiene and sanitation to learners and teachers. The toilets are gender-sensitive designed to make sure that privacy for both males and females is maintained. This is to make sure that teaching and learning processes remain conducive for both teachers and learners. The toilets are classified into three namely flush toilets, improved and basic latrines. Table 8 below shows the number of toilets by type and urinals by zone.

Table 8: Number of Toilets by type and Urinal Blocks by Zone

Educational Zone	Learner enrolment	Learners' toilets		Teachers' toilets		Urinal blocks	Pupil-toilet ratio
		Improved	Basic	Improved	Basic		
Bembeke	10346	136	23	27	2	28	65:1
Boma	11830	166	27	32	2	38	61:1
Chikololere	12412	67	26	9	6	20	133:1
Chilanga	12646	210	69	39	11	36	45:1
Chimbiya	16244	144	9	39	2	38	106:1
Chimwangalu	9825	139	58	20	8	34	50:1
Chitundu	11663	93	35	10	7	26	91:1
Kalinyeke	8577	125	26	27	6	26	57:1
Kanyenda	10698	123	60	19	10	26	58:1
Kapiri	11566	65	10	11	2	20	154:1
Katewe	11519	128	41	22	6	28	68:1
Magomero	8550	108	54	15	7	20	53:1
Makota	10951	90	45	14	11	26	81:1
Mankhamba	17236	146	65	18	12	34	82:1
Maonde	12431	138	31	28	2	30	74:1

Matundu	3445	68	5	7	3	15	47:1
Mthandiza	12816	187	28	26	7	36	60:1
Tchetsa	7407	83	22	13	4	20	71:1
Thete	11055	103	24	21	6	22	87:1
Grand Total	**211217**	**2319**	**658**	**397**	**114**	**523**	**71:1**

Source: Dedza DMIS, 2020

Table 8 above illustrates that 77.9% of the primary schools have access to improved toilets and 22.1% with basic toilets. The district registers a [64:1 ratio for boys and 81:1 ratio for girls] giving 71:1 average for learner toilet ratio against the recommended ratio of 60:1. It must be pointed out that the situation is good in Chilanga Zone where the ratios are [43:1 for boys and 48:1 for girls], making the average ratio of 46:1 as compared to Kapiri Zone which registers the ratios of [150:1 for boys and 159:1 for girls] making the average of 154:1, this is much higher than the district average.

The poor sanitation conditions lead to learner' absenteeism and result in the reduction of quality education as pass, transition and promotion rates are decreased and repetition and dropout rates are increased. Additional inclusive toilets should be added to fill in the gaps in order to achieve quality education. The DSIP will strive to construct toilets and urinal blocks in the education zones that do not meet the required standard of the pupil to toilet ratio of 60 to 1.

2.4.7 Primary Schools Girls Change Rooms

Change rooms for girl's menstrual hygiene management need to be provided in all the schools. Currently, the district has change rooms in 25 primary schools only. This represents 10% of all 248 primary schools. There is need to construct change rooms in the remaining primary schools. Mother Groups that are set in the primary schools provide support to the adolescent girls on improved hygiene practices and give counselling to the girl child when it is needed.

2.4.8 Water, Sanitation and Hygiene Situation in Secondary Education

The district has a total number of 59 secondary schools, out of which, 36 are public comprising of 2 National Boarding, 2 District Boarding, 2 District Day, 25 CDSS and 15 Open Distance and Learning (ODL) and 13 private schools.

Table 9: Distribution of secondary schools per cluster **(**Source: Dedza DMIS, 2020)

Cluster	Public					Private	Total
	National Boarding	District Boarding	District Day	CDSS	Open School		
Chawa	1			7	2	3	13
Linthipe		1	1	7	5	2	16
Mtakataka			1	4	2	3	10
Umbwi	1	1		7	6	5	20
Grand Total	**2**	**2**	**2**	**25**	**15**	**13**	**59**

The table 9 above illustrates that 46 schools are public while 13 are private. The 46 public secondary schools comply of 31 main schools and 15 Open and Distance Learning schools which use the same structures for main schools, except for Mtendere Open Secondary which has permanent structures.

2.4.9 Water and Sanitation in Secondary Schools

The district is divided into 4 clusters and regarding water points by clusters are as follows:

- Chawa has 8 boreholes and 3 taps
- Linthipe has 7 boreholes and 4 taps
- Mkakataka has 7 boreholes and 1 tap
- Umbwi has 4 boreholes, 8 taps, 1 protected hand-dug well with a pump and at one school there is no water, and it relies on a primary school borehole nearby.

Table 10: Number of toilets in secondary schools by clusters

Cluster	Flush Toilets	Pit Latrines Improved	Pit Latrines Basic	Disability friendly toilets	Urinal Blocks improved	Urinal blocks Basic	Hand-washing facilities
Chawa	83	93	30	4	6	6	19
Linthipe	26	102	53	12	10	3	20
Mtakataka	4	58	56	3	10	12	12
Umbwi	90	150	24	39	33	11	86
Grand Total	**203**	**403**	**163**	**58**	**59**	**32**	**137**

Source: Dedza DMIS, 2020

The table 10 above shows that Mtakataka cluster has the lowest number of flushing toilets representing 1.9% while Umbwi cluster has the highest representing 44.3% of the total flush toilets. In terms of pit latrines, Mtakataka has again the lowest number representing 14% of the total pit latrines while Umbwi cluster has the highest representing 37% of the total pit latrines. This implies that the district must invest a lot of resources in Mtakataka cluster schools in terms of enabling learners to access improved toilets.

2.4.10 Secondary Schools Girls Change Rooms

The situation regarding change rooms for girls' menstrual hygiene management in secondary schools is better than that of primary schools. This is because according to the available data, a total of 45 secondary schools representing 76% of the total 59 secondary schools have change rooms. The target is 100% so that all secondary school girls have access to quality change rooms so that they do not face sanitation and hygiene challenges when experiencing menstrual periods while in school.

2.4.11 Menstrual Hygiene Management in Primary and Secondary Schools

The district has functional Mother Groups which facilitate management of girls' menstrual hygiene issues in schools. These committees are very active as they conduct guidance and counselling sessions to girls. In some schools such as those found in Tchetsa, Chikololere, Mankhamba Chimbiya and Chilanga educational zones, partners such as UNICEF through Joint Program on Girls Education (JPGE) purchased sewing machines and trained Mother Groups who sew sanitary pads for girls. These contribute

to improved hygiene and sanitation of girls in schools where projects are being implemented. Other partners such as CAMFED support selected vulnerable primary and secondary school girls with soap, sanitary pads, and other items to manage hygiene and sanitation.

Primary and secondary school learners need full support in terms of material support on menstrual hygiene management. This is one of the areas where interventions in the DSIP should focus so that female learners do not stay away from school due to poor sanitation and hygiene issues.

The sanitation facilities and materials are also linked to availability of desks. Girls are mainly affected if classrooms do not have desks and when on menstruation period, do not feel comfortable resulting in absenteeism or even dropout from school. The Government of Malawi through the Ministry of Education, in collaboration with UNICEF has been supplying desks to schools but still, some schools have challenges. Some schools have been procuring desks through School Improvement Grants (SIG) but are failing to meet the required standards due to inadequate funds.

2.5 Health Facilities

The district Health sector serves a population of 830,512 with a density of 213 per sq. km (NSO, 2018). Dedza has a total of 59 health facilities of which 40% are government-owned, 42% privately owned and 18% are owned by CHAM as indicated in the table 11 below.

Table 11: Distribution of health facilities by type and ownership

	Government	CHAM	Private	NGO	Company
Hospital	1	2	0	0	0
Health Centre	17	9	0	0	0
Dispensary	5	0	0	0	0
Clinic	0	0	25	0	0
Total	**23**	**11**	**25**	**0**	**0**

Source: Dedza HMIS, 2018

The table above shows that most health centres are owned by government with a total proportion of 65% while private sector owns about 42% and CHAM about 18% of the facilities.

2.5.1 Water Supply Situation in Health Centres

The major water supply technology in all health facilities in Dedza is boreholes. These have been drilled in all 34 health facilities owned by both government and CHAM and water is pumped with submersible electrical pumps. Water is pumped into tanks and then distributed to the health facility and staff houses. The challenge with Dedza District is the theft of submersible pumps such that Golomoti, Chimoto and Mdeza health facilities now have no submersible pumps.

The status of water supply in health facilities is that three health facilities; Mganja, Kachindamoto and Chimoto have no submersible pumps such that these facilities are getting water directly from the

boreholes. Submersible pumps in these facilities were stolen. Lack of submersible pumps affects the proper running of services in health facilities. Amongst the 34 health facilities, 4 health facilities namely Mganja, Police college, Mphunzi and Mphanthi do not have adequate water storage containers to store water for cleaning and other services. This situation compromises the hygiene and sanitation of health facilities.

2.5.2 Sanitation in Health Facilities

The district has a challenge of improved sanitary facilities in health facilities. Sanitary facilities in health centres include pit latrines, incinerators, placenta pits, menstrual hygiene shelters and rubbish pits/bins. All the 59 health facilities in Dedza have inadequate improved pit latrines. Inadequate pit latrines in health facilities affect normal service delivery in such a way that staff and patients fail to assist themselves comfortably. Not all facilities have incinerators. Out of 34 health facilities, 4 facilities namely Mganja, Kafere, Dzindevu and Tsoyo have no incinerators, five health facilities have incinerators that are not functioning. Placenta pits are constructed in health facilities that provide maternity services. In total 28 health facilities provide maternity services of which 6 facilities namely Police college, Tsoyo, Chimoto, Kaphuka, Mlangali and Kafere have no placenta pits. All facilities have ordinary rubbish pits for the disposal of solid wastes. There is a need to provide concrete rubbish pits that have a long-life span. Plastic Bins are available in all health facilities though they are not adequate. It is a requirement that every health facility should have 5 big plastic rubbish bins for normal functioning. All health facilities have no menstrual hygiene shelters. The private health facilities are run by indivisuals but are supervised by the DHO to ensure adherence to standards.

2.6 Water Supply Situation in Market Places

It is a requirement that all markets must have water points. However, Dedza District Council has thirty-one daily markets with diverse water, sanitation, and hygiene needs of which only four markets have water points. Out of 31 markets, 4 markets have potable water supply representing 12.9%. Each market should have a reliable water point.

Dedza's major Trading Centres are mostly formed along major rivers such that it would be easy for the district to intervene through piped water abstracted from these rivers. For example, trading centres such as Chimbiya, Linthipe 1, lie along the Linthipe River. Some markets could be supplied with piped water from Diamphwe River while Katewe and Thete Trading Centres can abstract water from Linthipe River.

2.6.1 Sanitation in Market Centres

Refuse Pits and Bins: Markets are supposed to have refuse pits, bins, or skips at key locations for refuse disposal. However, only 2/31 (6.2%) of the markets in Dedza have a refuse pit in the markets. Many markets generate large volumes of refuse per day. For example, the central market generates over 6.9

metric tons a day of garbage. Dedza has market sweepers and garbage carriers who sweep around the markets and make them clean. The market has to have a refuse pit or a landfill where the cleaned garbage should be disposed. There is a need for skips at strategic locations where garbage must be sorted before being transported to the final disposal site. This does not happen in all markets in the district.

Slaughterhouses and Slaughter Slabs: For animal carcass dressing and selling, the hygiene bylaws for Dedza require that all carcasses for sale in the district should be slaughtered at designated places. The animal slaughter centres allow for easy meat examination to detect diseased carcasses, but also to monitor how the carcasses are managed. Out of the 31 markets, only one market has a slaughterhouse, and one market has a refuse pit.

Toilets: It is a standard that markets have good toilets. 17 markets in the district have no toilets, only 14 markets have toilets representing 45.6% of the markets.

2.6.2 Sanitation Marketing

This is the approach that uses social marketing skills to create demand for sanitation products by community members. The objectives of sanitation marketing are:

- To ensure improved sanitation in the community;
- To create demand for improved sanitation products;
- To create supply chain for improved sanitation products;
- To develop distribution strategies for improved sanitation products; and
- To provide optimal technologies for sanitation products.

2.7 Status of Major Water Resources in the District

2.7.1 Surface Water

Dedza District has an abundance of surface water sources which vary from rivers, streams, dams and Lake Malawi in Dedza East, TA Kachindamoto. The major rivers in the district are: Linthipe, Bimbili, Mwachikula, Nadzipulu, Livulezi and Lifidzi. River basins of Diamphwe and Linthipe are under severe pressure due to deforestation, unsustainable agriculture settlements and practices. These activities have influenced changes in water quality and quantity due to high levels of siltation and agriculture chemical deposition.

Dedza Mountain Forest Reserve feeds areas like Mngwere and Mpalale VDCs with gravity-fed water supply schemes which has 32 taps, of which only 17 are working representing a 52% functionality rate.

Mvula scheme was constructed in 2010 by the Government of Malawi under National Water Development Program (NWDP) and its sources are streams from Dedza Mountain Forest Reserve. It has got five intakes bearing the names of the streams/springs on which they were constructed, and these are Nkantha, Mpopopo, Ndophola, Chidedza 2 and Chidedza 1.

Ngodzi scheme is another gravity-fed system, construction of this project started in 1997 by World vision Malawi but it was abandoned before completion due to the wash away of intake pipelines. In 2001-2003 the Government came in and completed it. In 2007 the intake pipes were washed away and some were vandalized, but were maintained the same year. In 2012-2014 WVM came in again and constructed another intake weir on Nakaingwa river and a slow sand filter. The filter did not work because it was poorly constructed.

The main sources of water for this scheme are Mulengezi and Nakaingwa rivers. The first intake to be constructed was Mulengezi, but due to shortage of water Nakaingwa was added. The catchment of these rivers is the Mua forest reserve. This scheme supplies water to eight VDCs (Songwe, Msunduzeni, Huwa, Kasakala, Chikomba, Kanzati and Kakhome) with 207 taps in T/A Kachindamoto, and one VDC [Kambalame] with 57 taps in T/A Kambalame in Salima making a total of 264 taps.

2.7.2 Groundwater

There is a lack of management of aquifer recharge systems in the district despite the high reliance on groundwater resources. This has the potential to reduce groundwater availability, decrease the capacity of water supply resilience, increase the vulnerability of groundwater to climate change and climate variability increased hydrological variability and increase the magnitude of floods. The approach of developing high-yielding deep boreholes (with adequate hydrogeological studies) has also not been widely adopted in the district. High-yielding boreholes with reticulated systems may help in increasing access to potable water supply by reducing the walking distance to the water point and hence shorten the time spent on collecting water for domestic use.

The possible challenge that groundwater sources face in Dedza is groundwater abstraction which would result in over exploitation if not controlled. The absence of groundwater mapping makes it difficult to guide water development in the area. At present, groundwater quality is acceptable for domestic use, though there have been incidences where groundwater is not suitable for domestic use. Typical groundwater quality problems include unpleasant smells and high levels of salinity. Currently, groundwater sources are serving a total of 2,598 boreholes of which 2,290 are functional representing 88.14% functionality rate**.***(District water office quarterly progress report, 2018)*

2.7.3 Catchment Degradation

Diamphwe: Diamphwe river originates from Dzalanyama Forest Reserve and is a boundary for Lilongwe and Dedza District. The catchment areas of Diamphwe River are heavily degraded. The major reasons for degradation are agricultural production and deforestation for energy sources (charcoal and firewood). Catchment degradation has negatively affected the water quality and quantity in the area and has increased siltation in the Diamphwe river. This has further deteriorated the water supply in the district.

Linthipe: Linthipe river has its source at Dedza township, and it meanders through mountains and is later joined by two tributaries, the Diamphwe and Lilongwe on its way to Lake Malawi. Linthipe river is highly affected due to high pressure of agricultural production and deforestation.

Dedza Mountain Forest Reserve: The Dedza Mountain Forest Reserve is key to the rural water supply for the district. The reserve serves two TAs through the Gravity Fed Piped Scheme and reaches a population of 2,000 people. Just like the other catchments in the district it has faced a lot of degradation through poor forestry management and illegal activities taking place in the catchment, that has resulted in the dwindling of water resources.

2.8 Waste management

It is the mandate of the Malawi Government through the District Councils to enforce proper management of waste as guided in Environmental Management Act (1996) part IX. Implementation of the Act contributes towards achievement of SDG number 6 which is clean water and sanitation.

2.8.1 Waste Generation

Waste generation has different forms and sources in the district. Waste accumulation has been noted to be coming from markets, schools, residential areas, hospitals, and other public institutions such as offices. Markets have the highest percentage of waste being generated in form of solid waste at 80% and 20 % of the waste are liquid waste. These waste materials range from food staff, diapers, scraps from metals and crop residuals. These have been the case in all major markets in all 8 Traditional authorities of Dedza.

The greatest challenge the district has is the absence of a proper waste collection mechanism that can help to remove all accumulated waste in the district. So far, the only means of maintaining cleanliness in the district is through the council where a private operator is hired to collect waste and dump them at the proposed dumpsite.

Lack of awareness from the community has also contributed to poor waste disposal in residential, and public areas markets and other places. These wastes have contributed to the prevalence of respiratory diseases affecting young children who play around these wastes that have been disposed in open places.

CHAPTER 3: KEY OBSTACLES TO PEOPLE'S ACCESS TO SAFE WATER, ADEQUATE SANITATION AND HYGIENE

3.1 Key Obstacles

The key obstacles for accessing safe water, adequate sanitation, and hygiene from the beneficiary perspective were identified during the consultations with key stakeholders. The consultations included beneficiary communities in the districts and the DCT and other stakeholders at the district level during the workshops that were held at the district level. The obstacle that hinders communities to access WASH facilities and services were identified and proposed mitigation measures are listed in table 12 below:

Table 12: Key obstacles and mitigation measures

No.	Obstacles Identified	Mitigation Measures to Address the Obstacles
i.	Inadequate water supply in schools, health facilities, markets and wider community which limit accessibility to safe water.	Increased investments in water facilities in communities, schools, health centres and markets to increase accessibility.
ii.	Lack of mainstreaming Disaster Risk Management (DRM) principles in WASH programmes	Mainstreaming DRM principles in WASH programmes
iii.	Poor sustainability of the WASH services because some NGOs do not involve district officials when implementing their projects.	All NGOs working in the WASH Sector in the district should go through the District Council.
iv.	Inadequate human capacity: There are few water sector staff at both district and community level to provide the required technical support such as training of water point committees, conducting water monitoring visits among other functions	The District Water Office should be capacitated to respond to the needs of communities in the provision of WASH services
v.	Inadequate community capacity to manage and maintain their water facilities. Some communities have not been trained in the management and maintenance of their water facilities such that they are unable to repair their water facilities when they break down.	The CBM approach should be enhanced in the district by ensuring that WPCs are trained and that refresher trainings are provided regularly.
vi.	Operation and maintenance are also affected by mismanagement of funds in the communities, dependence syndrome, low turn-over of community members and village politics among others	WPCs should be elected by the communities not appointed by chiefs and MPs and councillors should avoid giving handouts to communities
vii.	Limited investment in sanitation marketing and WASH entrepreneurship	Invest in Sanitation Marketing approach for the district
viii.	Theft and vandalism of water supply facilities: Especially in gravity-fed water supply schemes where some communities prefer to use gravity water for irrigation, not domestic purposes	Create awareness of the importance of WASH facilities to the communities and improve the security of the facilities through community policing and other measures
ix.	Economic barriers that lead to lack of investments and mobilization of funds for Operation and Maintenance of WASH facilities	Increased economic activities at the community and district levels and attract more partners to invest in WASH in the district

x.	Environmental degradation, climate change and lack of capacity in mitigating disasters	Dissemination and implementation of catchment protection messages/measures in the district
xi.	Absence of bylaws in the water sector at all levels	Establishment of WASH bylaws by the District Council
xii.	Unavailability of WASH data in the district	Training in the use of the mWater App and funds should be budgeted for updating of the same

3.1.1 Water Resources Challenges

A key challenge in water resources management is that few programmes and projects have applied Integrated Water Resources Management (IWRM) principles such as community ownership and empowerment as this has been on a pilot basis only. There are also coordination challenges in the application of IWRM in catchment areas that cascade to local councils in line with the Local Government Act (1998) which empowers local councils to ensure sustainable management of natural resources. Some catchment areas in the district are severely degraded due to rapid population growth, unsustainable and poor agricultural practices.

3.1.2 Protection Measures

The protection of water resources both surface and ground depend on concerted efforts from the private sector and the public sector. These include and are not limited to Policy Harmonization, Capacity Building, Catchment Management, Stakeholder Coordination and Participation, Monitoring and Evaluation, Water Supply, Sanitation and Hygiene Promotion.

The Government of Malawi strives to empower communities and other water users to manage water resources efficiently and effectively through capacity building at a local level. The government's strategy is to promote local ownership of water resources. The current programs emphasize Integrated Water Resources Management (IWRM), a participatory approach to natural resource management through consultations with communities and stakeholders and integrating indigenous knowledge systems with IWRM.

3.2 Catchment Management, Stakeholder Coordination and Participation

In as much as it is government policy to have Catchment Management Authorities in local councils, Dedza has none which makes it difficult to have a harmonized Catchment Management Plan for the district. Nevertheless, coordinated catchment management falls under several sectors including, Department of Forestry, Department of Fisheries, Department of Land Resources, Environment Affairs Department, Water utilities and the Ministry of Local Government.

3.3 Health Challenges

3.3.1 Cholera

Dedza is one of the districts in the country that is affected by cholera. Cholera mainly affects part of the district that is along Lake Malawi especially TA Kachindamoto but also Kachere and Tambala are sometimes affected by the disease. TA Tambala has a lot of dry wells. There is water scarcity. Some communities depend on unprotected water sources and practice open defication hence resulting in high cases of cholera. In TA Kachere, the main contributing factor to high cases of cholera out-break is that Kachere borders with Mozambique and there are high rates of movements to and from Mozambique for business. The Traditional Authority is also vast and has limited water resources to supply the required water (both in terms of quantity and quality) to its communities.

As for TA Kachindamoto, the area is along the lake side and activities such as drinking water from the lake which is constantly contaminated by human waste and urine contribute to cholera case. People lack safe water and many do not treat the water before drinking it.

3.3.2 COVID-19

Dedza district was among the districts affected by Covid-19 in the 2020/21 year. As of the 18th May 2021 the total cumulative confirmed case was 456, cumulative recoveries 436, cumulative admission in Emergency Treatment Units (ETU) was 15 and cumulative deaths was 9. Some of the reasons that caused Dedza to be greatly impacted by the Pandemic included increased number of returnees from COVID-19 affected countries when borders open, lack of compliance to COVID-19 precautionary measures in the community and easing of restrictions on COVID-19 pandemic. The pandemic has increased demand for water, sanitation and hygiene facilities since one of the most reliable measures of avoiding contracting the virus is regular hand washing with soap.

3.4 Waste Management Challenges

3.4.1 Waste Treatment

Waste treatment in the district has been the greatest obstacle to achieving environmental health so much that the wastes that are generated in the district are simply dumped at the proposed waste disposal site. This is also the case with sewer lines. The district does not have sewer lines as such over 80 % of the households use pit latrines hence the need to encourage WASH in homes. The fact that solid or liquid waste is not treated is of great concern to the district because most of this waste is dumped openly or is directly dumped into water bodies.

The only means of treatment that is there is the use of chlorine on the liquid waste that comes from decomposed waste in hospitals or markets.

3.4.2 Waste Disposal

The district has been using Dedza mountains for quite some time as the dumpsite due to the lack of proper allocation of a dumping site. This was a great concern to the people around as it contributed to bad smell to residents near the disposal site and the waste end up in rivers downstream. Most markets have waste collection points but the challenge that Dedza has is unavailability of waste collection modes to dump them at the appropriate place.

The office of environment has decided to have the dumpsite properly dug so that all waste collected can be dumped at the proposed site. The available means of waste collection have not been able to fully collect all generated waste due to high volumes in marketplaces, public places, hospitals and other institutions.

Most domestic waste is dumped in public places such as Golf Course among others as residents do not have standard refuse sites within their locations. This has also contributed to the waste being disposed of in water bodies resulting in water pollution and rendering the water unsafe for human consumption.

3.4.3 Recycling and Reuse

One of the best ways to reduce waste accumulation is through recycling materials that can be reused. Dedza district has no known interventions where the waste is being recycled and then re-used. Only businesswomen selling Thobwa are known for picking used water bottles for repackaging of Thobwa. The only concern with this practice is that people buying their products will be exposed to bacteria causing diarrhoea since they are not properly treated/disinfected to ensure they are not a threat to human health. Health facility waste is not recycled for safety reasons. Solid wastes are incinerated.

3.5 Natural disasters

3.5.1 Strong Winds

Strong winds affect all the Traditional Authorities but with more cases coming from TA Tambala, Kaphuka and Chauma. The most severe cases of strong winds are recorded at the beginning of the rainy season. Serious injuries, damage to infrastructure, damage to crops and personal property results from the effects of strong winds. Mostly, the likelihood of strong winds is increased by deforestation and poorly designed infrastructure. Strong winds greatly affect education services in the district for example in 2020 strong winds affected 10 school blocks; 3 teacher's houses, as well as 1 CBCC were blown off resulting in failure of students to attend classes.

3.5.2 Hailstorms

During the rainy seasons, many areas within the district are affected by hailstorms (heavy rains associated with strong winds). Most households have their house roofs blown off while other houses

were completely damaged. A total of 1,013 households were affected by hailstorms in the 2020/21 rainy season (Disaster office). The number of death in the 2020/21 rainy season due to the disaster was 6 people while the number of injuries was 21 people.

3.5.3 Floods

The district is mainly affected by floods in areas of Traditional Authorities Kachindamoto, Kaphuka and Chauma. 75% of the total population in the district is yearly at risk of experiencing flooding each year (Dedza District Disaster Contingency Plan 2019/2020). The overflowing of Namkokwe, Nadzipulu and Kakolo rivers negatively impact people's lives by destroying dwelling houses and household property, loss of lives, increased susceptibility to water-related diseases as well as wash away of crops including damage to public infrastructure. The damage to classrooms and bridges result in the failure of students attending classes.

3.5.4 Dry Spells/Droughts

Dedza District is mostly affected by prolonged dry spells/droughts in almost all Traditional Authorities except Kamenyangwaza and Kasumbu. In the table below, shows crop area affected (Ha) by TA during the 2016-2017 growing season. The district experienced dry spells in four Traditional Authorities which included Kaphuka, Chauma, Tambala and Kachindamoto. The other table below shows that in the following season 2018-2019, the district experienced dry spells in six EPA which were Lobi, Chafumbwa, Golomoti, Kabwazi, Linthipe and Kaphuka. The experience in the two seasons (2016-2017, and 2017-2018) puts a higher percentage of the total population at risk of facing dry spells/droughts each year in the district. This has greatly caused food insecurity, inadequate availability of pasture, water scarcity, drying up of ponds, rivers and an increase in the number of cases of waterborne diseases. The district is heavily affected by land degradation. Since most farmers depend on rain-fed cropping with minimal diversification, people's vulnerability to impacts of dry spells/droughts in the district is very high. For instance, in areas such as TA Tambala every year, people complain of being food insecure. For instance, in Group Village Kapanda (TA Tambala), the area usually experiences low levels of rainfall due to its geographical position as well as has poor soil texture which cause crop failure.

3.6 Life Cycle Cost Assessment

During the initial meeting with the DCT and other stakeholder's, the consultant made a presentation on the Life Cycle Cost Assessment (LCCA) of WASH facilities. The aim of making the presentation was to ensure that when the unit costs of the WASH facilities are being calculated all aspects are taken into consideration to ensure sustainability of the facilities. The following factors were considered as well: -

- The DCT need to look at the costs required to reach the district targets.

- The DCT need to look at all costs required to reach the targets within a district regardless of whose responsibility.
- During the financial analysis, the responsibility for the different costs needs to be analysed.
- The District Council need to know the other costs which are outside its mandate to develop the district WASH plan. For example, cost of constructing new infrastructures and the setting of water tariffs.

Some basic information about the lifecycle costs that need to be known and considered when arrive at the cost for various components of WASH infrastructure in the district include:

Capital Expenditure (CapEx): The cost of constructing fixed assets, such as concrete structures, pumps and pipes, and the cost of extending and improving the system.

Operation and minor maintenance Expenditure (OpEx): Covers labour, fuel, chemicals, materials and regular purchases of any bulk water, plus routine maintenance needed to keep systems running at peak performance; it does not include major repairs.

Capital Maintenance Expenditure (CapManEx): Goes beyond routine maintenance to the repair and replacement of equipment to keep systems running; it covers asset renewal, replacements major repairs and rehabilitations. Accounting rules may govern what is included under capital maintenance and the extent to which the replacement assets can be depreciated as well as cost benefit of rehabilitation compared to replacement.

Direct support: Includes expenditure on post-construction activities directed at local stakeholders, users, or user groups. It is usually included in operating expenditures.

Indirect support: Includes government macro-level planning and policy making, plus developing and maintaining frameworks and institutional arrangements and capacity building for professionals and technicians. The expenditures are not tied to a particular programme or project.

Cost of capital: Is the expense of financing a programme or project and includes loan repayments and the cost of tying up scarce capital? In the case of private sector investment, the cost of capital includes what should be a 'fair profit', to be distributed as dividends. The District Wide Approach that looks at visioning, district WASH Planning and monitoring which is an iterative process that needs to be undertaken at the district level.

3.7 Inclusion of Marginalized Groups

Marginalized groups, whether women and girls, people living with disabilities, older adults, or those from different cultures and religions may often be excluded from accessing water, sanitation, and hygiene facilities. Lack of WASH access can mean people do not realize their full potential, it has an unprecedented effect on their health, on their cognitive development, on their physical development, and their well-being. Often, people are unable to access the services because of infrastructure limitations such as an inaccessible path to a latrine could mean a person with a disability is unable to reach it. Shared toilets without latches or doors could put women at heightened risk of sexual assault and lack of

menstrual hygiene facilities for girl learners. Limitations to WASH access can also be attitudinal and institutional setups that are insensitive to addressing the issues.

Attainment of "Sanitation and Water for All (SWA)" requires social inclusiveness of marginalised groups such as women and girls, people living with disabilities, vulnerable adults, or those from different cultures and religions. Often, people are unable to access the services because of infrastructure limitations. For example, an inaccessible path to a latrine could mean a person with a disability is unable to reach it, or shared toilets without latches or doors could put women at heightened risk of sexual assault. Water facilities that are far or require much physical effort such as boreholes may deter those living with disabilities or the elderly form having access to safe water.

Responsive and inclusive WASH services will therefore remove barriers often faced by the marginalised groups, thus facilitating their right to an education, health care, and their participation in communities and other social and economic activities. Designs of WASH facilities therefore need to accommodate the marginalized groups such as having access ramps for those living with disabilities, locking mechanisms in latrines to ensure safety of women and girls, water facilities that require less effort and can easily get closer to homes like taps, non-discriminatory menstrual hygiene facilities for girl learners and many more.

3.8 Capacity Building

Dedza District Council carries out capacity building of WASH stakeholders in form of training in order for them to perform their roles well. The Council has been training Water Point Committees, Area Mechanics, Catchment Management Committees (CMCs), Village Health Committees (VHCs), Water Users Associations (WUAs), Mother Groups, and School Health Clubs among others. With the passing of time, many of these require refresher trainings which normally do not take place due to lack of resources. In addition, extension workers need to undergo regular specialised refresher trainings to keep them up to date; unfortunately, this only takes place once in a while. DCT members too needs specialised training programmes for them to execute their duties well, but this also takes place once in a while, especially when a certain project has set aside resources for a specific training. All in all, what is lacking is to have regular capacity building programmes for the sake of enhancing WASH service delivery.

3.9 SWOT Analysis

This analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT) focuses on WASH stakeholders in the district. Figure 2 below provides the analysis in detail.

Strengths • Availability of Area Mechanics • Collaboration and coordination among WASH Players (functionality of DCT) • Vibrant supply chain of spare parts • Availability of WASH partners with long term programmes • Organisations' flexibility in diverting resources towards WASH responsive interventions during disasters	INTERNAL	**Weaknesses** • Unavailability of DIP which brings uncoordinated interventions • Inadequate funding • Inadequate staff • Some interventions by both Government and stakeholders are done in isolation • High non-functionality rate of WASH facilities • Inadequate community capacity to manage WASH facilities • Inadequate community participation/ commitment
POSITIVE	**SW OT**	**NEGATIVE**
Opportunities • Availability of partners • Availability of community structures such as community policing forum, ADCs etc. • Availability of funding for WASH activities (Borehole Fund)	EXTERNAL	**Threats** • Vandalism of WASH facilities • Some mountainous areas are hard to reach to address water supply challenges • Environmental degradation (climate change) • Political interference in the planning process • Uncertainty on pandemic outbreaks • Rapid population growth • Low sector funding

Figure 2: SWOT Analysis for WASH Stakeholders in Dedza District

CHAPTER 4: STRATEGIC ANALYSIS AIMS AND OBJECTIVES

This section will set out the sectoral strategy to be adopted to meet the challenge of reducing the proportion of people without sustainable access to safe drinking water and basic sanitation by 2030 and beyond. Dedza district will focus on this objective and has therefore developed several strategies to address this overall objective as follows:

- To increase access to safe water supply from 75.8% to 90% by 2027.
- To increase sustainable access and use of improved and appropriate sanitation facilities for individuals and households from (72% to 90%) for basic sanitation, and (from 9.6% to 30%) for improved sanitation;
- To promote WASH technologies that are user-friendly and relevant to needs of community members;
- To promote sustainable waste management practices thereby ensuring a clean and healthy environment.
- To promote sustainable approaches to climate change management, environmental management and disaster risk mitigation processes;
- To promote leadership, coordination, learning and effective resource mobilization to achieve targets in sanitation and hygiene for all;
- To strengthen ownership of water, sanitation, and hygiene resources among communities through capacity buildings of relevant frontline workers and WASH committees; and
- To explore entrepreneurship opportunities in WASH services so that the youth and women are economically empowered.

4.1 Guiding Principles

Dedza DSIP is designed to follow the principles of water and sanitation reforms as outlined by the GoM in the National Water Policy 2005, Sanitation Policy 2008, and Decentralization Policy 2012. It has also been aligned to the National Rural Water and Sanitation Strategic Investment Plan (2017) The following are some of the important guiding principles:

District-Focused: The District Council has the responsibility of facilitating improved water and sanitation services. The district also has partners, who are expected to work in a coordinated manner as stipulated in the National Sector Wide Approach (SWAp). This means that all programmes on water and sanitation have to be jointly monitored and evaluated at district level for record keeping.

Promote Multi-Sectoral Approach: Dedza District Council works with multiple partners and welcomes more partners in the water and sanitation sector to improve the current water and sanitation

situation. The district therefore encourages full participation from both public and private sectors in the implementation of water and sanitation activities;

Demand Responsive: The District council will promote water and sanitation activities, which will be demand driven. Strategies will be put in place to ensure proper feedback on whether communities demand water, sanitation and hygiene services;

Sustainability: With most of water points being non-functional, the District Council will promote community-based management of water and sanitation facilities for them to be sustainable. There should be allocation of budgets for all cost categories, post implementation monitoring, data collection, analysis and response to the data collected to ensure the same. The District Council will also make sure that exit strategies for all implementing partners in the sector are well known and supported by everyone.

Gender: To ensure that there is equal representation of both sexes, the Council will promote involvement of everyone in the design and implementation of village water and sanitation action plans; and

Capacity Building: For significant capacity development at both district and community level, the DSIP will provide capacity building at different levels for effective and efficient implementation of water, sanitation, and hygiene activities.

4.1.1 Promoting Behavioural Change

In the water, sanitation, and hygiene (WASH) sector, it has become evident that providing access to services is not enough to change behaviour. Handwashing with soap (HWWS) is one of the most cost-effective interventions to end preventable child deaths (Cairncross and Valdmanis, 2006) and can reduce the risk of enteric and respiratory infections (Ejemot et al., 2008, Rabie and Curtis, 2006). However, a systematic review found that this behaviour is practiced by fewer than one in five people in the countries where it's most needed (Freeman et al., 2014). Traditional approaches to health promotion have relied on educational messages, particularly around the health risks associated with germs. It is now increasingly acknowledged that educating people on health risks won't necessarily lead to sustained behaviour change (Kelly and Barker, 2016).

Our understanding of the factors that influence WASH behaviours and the adoption of improved practices is still developing. Researchers and practitioners have begun to explore how a range of factors such as emotions, habits, and settings may drive behaviour. Successful WASH behaviour change interventions are often underpinned by theories or frameworks from a range of disciplinary backgrounds, including health psychology (Mosler, 2012, Michie et al., 2011), evolutionary • PAGE 2 POLICY

BRIEF • Behaviour Change for WASH and environmental psychology (Aunger and Curtis, 2016) and behavioural economics (Datta and Mullainathan, 2014).

To increase adoption of key technologies in water, sanitation, and hygiene, the district council will promote IEC aiming at behavioural change.

4.2 Water Demand in the District

The Government of Malawi promotes that access to improved water sources should be within a one-way distance of 500m. It further highlights that the ratio for a borehole fitted with handpump to number of user individuals is 1:250 whereas for a tap and shallow wells is 1:120. The District Council has been striving to achieve this throughout the district, however, high population growth has proportionally been increasing the water demand thereby countering this effort in the district.

4.2.1 Underlying Assumptions and Considerations

For the sake of demand projection in this document, the following assumptions are made:

a. The existing facilities will remain functional and in good state;
b. Equitable distribution will be achieved during implementation;
c. All household in urban will demand own household connection; and
d. Rural water access to be define by 500m radius and consumption of 30 litres per a day per a person

4.2.3 Rural Water Demand

Population Projection for Rural Water Supply

The proportion of population with access to improved water sources within 500m radius in the district is 75.8%, but the population for the rural areas as of 2021 is projected at 902,247. This then means that the current population with access to improved water sources within 500m radius is 683,903. Therefore, the current population without access within this distance is 218,344. Similarly, the projected rural populations for 2027 and 2030 are 1,035,836 and 1,125,305 respectively. This means that, to achieve 100% access, 351,933 people need to be reached by 2027 and 441,403 people by 2030. The **Table 13** below is a tabular presentation of the population projections or rural water supply.

Table 13: Population Projections for Rural Water Supply

Year	Projected population	Baseline population with access (2021)	Projected population without access
2021	902,247	683,903	218,344
2027	1,035,836	683,903	351,933
2030	1,125,305	683,903	441,403

4.3 Implementation Arrangements for Water and Sanitation

The District Coordinating Team (DCT) will have wide overview of all aspects of the DSIP and will have the following responsibilities:

- Ensure support for DSIP from political and traditional leaders and set aside time at DC meetings for DSIP updates;
- Build coordination with partners to ensure that partner activities are in harmony with the DSIP and that there are regular collaborative meetings;
- Ensure compliance with national policies and programmes;
- Supervise and support the extension workers, rural communities, local private sector and special sector groups such as area mechanics, VHWCs and water point caretakers;
- Assess the necessary inputs to meet the plan's objectives and ensure adequate financial and human resources to meet the targets;
- Monitor district progress against the targets of the DSIP;
- Take corrective action to ensure that targets are met on time and within budget; and
- Report on district-wide progress to the ministries and to external support agencies through quarterly and annual reports.

The District Coordinating Team (DCT) will also be responsible for planning community work, training extension workers and overseeing implementation of all social aspects of the water supply and sanitation activities in the district. This is in accordance with the National Decentralization Policy 2012 that aims to integrate government agencies at the district and local level into one administrative unit through a process of institutional integration, manpower absorption, composite budgeting and provision of funds for the decentralized services. Hence, the DCT will spearhead all social aspects of water supply and sanitation activities in the district. It will also define the roles and functions of the local service providers (i.e., the sanitation centres and sanitary marts).

This arrangement at the district level will also be replicated at the traditional authority level with the extension workers forming a sub-committee of the Area Executive Committee (AEC). Membership of the water and sanitation sub-committee includes water monitoring assistants (WMAs) from Ministry of Water and Sanitation, health surveillance assistants (HSAs) from MoH, community development assistants (CDAs) from Ministry of Gender Children, Community Development and Social Welfare and NGO representatives.

The District Council has official responsibility for the water and sanitation sector and allocates funds from the Local Development Fund (LDF). The DEC is responsible for coordination, monitoring and evaluation of the DSIP. The ADCs are responsible for planning projects at the TA level as well as

mobilising the community resources to implement them. The VDCs are responsible for planning and implementation at the village level, and the VHWCs and the WPCs are more specifically responsible for maintenance and management of water points.

The beneficiary communities will be the owners of the programme, contributing both in kind and in cash to the establishment and upkeep of the facilities. This includes managing the initial installation; operating and maintaining the facilities after construction; and taking responsibility for improved hygiene and health status. The Village Health and Water Committees, whose members are selected by and from the community, will represent the users and be responsible for the overall management of water supply and sanitation facilities. This entails setting and collecting fees as well as operation and maintenance. For each water point, a Water Point Committee will be established to take care of operation and maintenance of the facility. Similarly, Sanitation Clubs will be established to facilitate and promote sanitation and hygiene interventions at school and community levels.

The allocating funds for CapManex, Direct support, and providing ongoing support, monitoring and training to the waterpoint management committees and the infrastructure should be budgeted for all the projects that are implemented by the Dedza District Council, NGOs and other partners.

Communities will be involved through community organisational structures. The existing VHWCs and those to be established as part of the plan will be instrumental for the successful implementation of the plan. The communities will select the sites and initiate the construction of water supply and sanitation facilities. They will also take full responsibility for operation and maintenance costs, as well as some capital costs through cash contributions or contributions in kind (e.g., labour or agricultural produce). The communities, especially women, will be empowered through participatory methods to take charge at all stages of the programme cycle from planning stage through construction, operation and maintenance, and finally monitoring and evaluation.

CHAPTER 5: PLANNED INTERVENTIONS, TARGETS AND EXPECTED RESULTS

5.1 Underlying Planning Assumptions

The following underlying assumptions are the basis for the plans:

i. More DPs are willing to enter into bilateral WASH partnerships with the Council;
ii. There are no economic disasters;
iii. There are no impeding physical disasters;
iv. There is political stability;
v. There is political will; and
vi. The population growth rate falls within 3.6 margin.

5.2 Water Supply

A range of interventions has been planned to improve the water supply in the district. The interventions will be implemented in communities, health centres, schools, markets and during emergencies. Appropriate technologies will be employed to achieve the objectives.

5.2.1 Water Supply in Communities

To improve water supply in communities, the district has planned interventions related to construction, rehabilitation, monitoring, water quality testing, and training. The district will target all 8 Traditional Authorities. On construction, the district will construct gravity-fed systems, shallow wells, and drill boreholes. The district will also rehabilitate gravity-fed systems and boreholes that are not functioning. Water Monitoring Assistants (WMAs), Water Users Associations (WUAs) and Area Mechanics (AMs) will be trained on operation and maintenance. Table 14 below shows planned interventions and 5-year targets for water supply in communities.

5.2.2 Water Supply in Schools

In terms of water supply in schools, the district will target 28 primary schools which do not have a water supply to increase access to potable water in primary schools. Different technologies will be employed depending on the topography of the schools to ensure that the schools are provided with potable water. Additionally, the district has planned for the maintenance of water supply systems in all 248 primary schools. Boreholes will also be drilled in 369 CBCCs in the district. Table 15 below shows the planned interventions and five-year targets for water supply in schools.

5.2.3 Water Supply in Health Centres

The district aims to increase access to potable water in health facilities. The current water supply situation indicates that 3 out of 34 health facilities do not have submersible pumps hence get water directly from the boreholes. These health facilities will, therefore, be targeted for drilling and reticulation of the water supply systems. Consideration will be given for the rehabilitation of boreholes before

drilling new boreholes in the health centres. Rehabilitation and maintenance of water supply systems in all 34 health centres will also be targeted. Table 16 below indicates planned interventions, targets, and expected results for five years.

5.2.4 Water Supply in Markets

Regarding water supply in markets, the current water supply situation indicates that only 4 out of 31 markets have a portable water supply. Using various technologies, the district plans to drill high-yielding boreholes for 27 markets without water supply. Table 17 below shows the number of markets to be provided with water supply in the next five years.

5.2.5 Water Supply in Emergencies

During water-related disasters for instance flooding and Covid-19, mostly, it is children, pregnant women, elderly, and persons with disabilities who are affected. A range of interventions have, therefore, been planned in the district, targeting all 8 Traditional Authorities to provide safe water to affected populations. The interventions include sensitization meetings, trainings, and maintenance of infrastructure as shown in table 18 below.

5.3 Sanitation and Hygiene

To improve sanitation and hygiene, the district has planned interventions in communities, health centres, schools, markets and during emergencies. The interventions will be implemented in the next five years and targets for each year have been set as below as follows;

5.3.1 Sanitation and Hygiene in Communities

The district will target 4 out of 8 Traditional Authorities that have not been declared Open Defecation Free to improve sanitation and hygiene in communities. Hygiene and sanitation promotions will be conducted in the TAs and relevant by-laws will be enforced in the communities. The table below shows the planned activity and targets set refer to Table 19. It is critical to plan, budget and implement post ODF monitoring activities as well in the whole district to ensure sustainability.

5.3.2 Sanitation and Hygiene in Schools

To improve sanitation and hygiene in schools, the district will target primary schools with inadequate sanitation facilities. The district will construct a range of sanitation facilities for primary school learners such as gender-sensitive pit latrines and urinals, Menstrual Hygiene Unit for adolescent girls, disability friendly pit latrines and permanent handwashing facilities. For secondary schools, the district will construct toilets in schools with inadequate supplies. Construction of pit latrines in schools (inclusive toilets, change rooms) targets reduced from 550 to 60, Train School Governing Bodies on soap making targets reduced from 748 to 60 and train Mother Group members on locally made sanitary pads targets also reduced from 748 to 60 as well. The two main reasons for the reductions of the targets are;

a) the targets cannot be achieved in the 5 years' period, and
b) when the costs are factored in for the three items, it has been found out that it is higher than investments into the community water supply.

It has been observed that more resources are required to be invested in the promotion of sanitation and hygiene in schools refer to Table 20. It has to be noted that for Malawi, to make improvement in access to quality education, it is key to have improved access to sanitation and hygiene facilities in schools.

5.3.3 Sanitation and Hygiene in Health Centres

The district will target health facilities that have challenges in improved sanitary facilities such as pit latrines, incinerators, and placenta pits. The aim is to increase access to improved sanitation in health facilities. The table 21 below shows the number of health facilities targeted for planned interventions in the next five years.

5.3.4 Sanitation and Hygiene in Market Centres

The current situation in markets shows that the district has challenges in sanitation and hygiene in market centres especially on refuse pits & bins, slaughterhouses & slabs, and toilets. Only 2 out of 31 markets have refuse pits; only 1 out of 31 markets has a slaughterhouse; and only 14 out of 31 markets have standard toilets. To improve sanitation and hygiene situation, the district has planned interventions in these markets as shown in table 22 below.

5.3.5 Sanitation and Hygiene in Emergencies

The district will provide temporary sanitation facilities which are gender-responsive and will conduct hygiene education to the affected population during emergencies. The aim is to improve the sanitation and hygiene conditions of the affected population. Table 23 below shows planned activities and 5-year targets.

5.3.6 Enforcement of Sanitation and Hygiene By-Laws

The hygiene and sanitation situation in Malawi is mixed and complicated, just as in many sub-Saharan countries there is some form of basic sanitation coverage. To control sanitation and hygiene in different parts of the district, by-laws are developed to enforce measures to achieve WASH objectives. Community level enforcement will be done through traditional leaders and community-based organisations. Some of these by laws are as follows:

- No one should be found disposing of diapers on open ground. This restriction will enforce the proper disposal of diapers by communities in the district. Failure to adhere to this by-law results in a penalty (fine) paid to the council;

- All drinking places, schools, lodges, and rest houses should have waste collection points, hand washing facilities and toilets to control the spread of water-related diseases. All those found not adhering to this will have their places closed until further assessments;
- Every household should have a dish rack, toilets, hand washing facility near a toilet and a refuse pit; and
- Every market should have a slaughterhouse that has a waste collection site and running water to ensure that slaughtered animals are not exposed to germs.

5.4 Intervention/Impact

Basic intervention on these by-laws is promotion of sensitization or awareness campaigns. These will help to enhance capacity and information on how best waste can be managed to reduce the spread of diseases in the district.

Provision of refuse pits, running water in markets, schools, and business places to ensure issues of poor waste disposal are controlled before they lead to outbreaks of diseases in the district.

5.5 Water Resources and Waste Management

To manage water resources and wastes, the district has planned interventions targeting the catchment areas, markets, and schools. The interventions include, but not limited to, create buffer zones along riverbanks, train communities on environmental management, construct proper waste disposal facilities, and conduct awareness campaigns on waste management around main markets refer to Table 24.

5.5.1 Disaster Risk Management

To strengthen capacities and resilience of households and communities to protect their lives and livelihoods during disasters, the district has planned interventions targeting all 8 TAs. The activities include awareness campaigns, trainings, establishment of clubs, developing plans, and procurement and distribution of materials as shown in the table 25 below.

Table 14 below summarizes key interventions that will be implemented to improve water, sanitation, and hygiene situation in the district. These interventions were identified from analysis of gaps in the WASH sector as indicated in the DSIP.

5.6 Monitoring and Evaluation

The district will monitor and evaluate all planned interventions to track progress and ensure that objectives are met as outlined in the M and E Framework. To get feedback on progress of interventions, review meetings will be conducted as outlined in table 26 below.

Table 14: Water supply in communities

No.	Activity	Output indicator	5-year target							
				Year 1	Year 2	Year 3	Year 4	Year 5		
				Target	Target	Target	Target	Target	Total Target	
1	**Water Supply in Communities**									
1.1	Construct gravity-fed scheme	Number of gravity-fed schemes constructed	5	0	1	0	0	0	1	Increased access to safe water
1.2	Rehabilitate gravity-fed scheme	Number of schemes rehabilitated	5	1	2	0	0	0	3	Increased access to safe water
1.3	Rehabilitate non-functional boreholes	Number of non-functional boreholes rehabilitated	5	40	40	20	0	0	100	Increased access to safe water
1.4	Boreholes drilling and construction	Number of boreholes drilled and constructed	5	100	100	100	80	80	460	Increased access to safe water
1.5	Rehabilitate unprotected shallow wells	Number of unprotected shallow wells rehabilitated	5	10	10	15	15	20	70	Increased access to safe water
1.6	Construct shallow wells	Number of shallow wells constructed	5	10	10	8	8	6	42	Increased access to safe water
1.7	Conduct Water Monitoring surveillance	Number of water points monitored	5	300	500	300	400	250	1,750	Increased capacity of WPC
1.8	Conduct Water Quality Testing	Number of water points tested	5	300	500	300	400	250	1,750	Increased access to safe water
	Subtotal					743		606		

2	**Establish and Strengthen Institutions' capacity to manage, expand and sustain WASH services**									
2.1	Conduct DCT Planning and review meetings	Number of meetings	5	4	4	4	4	4	20	Promote coordination
2.2	Conduct Joint Monitoring visits	Number of joint monitoring	5	4	4	4	4	4	20	Promote coordination
2.5	Collect Water point data	Number of Sessions	5	12	12	12	12	12	60	Up-date data base
	Subtotal					20		20		
3	Capacity Building to Stakeholders (									
3.1	Train WUA committees	Number of trainings	5	1	3	0	0	0	4	Increased capacity
3.2	Train WUA Front line Staff (Extension workers)	Number of trainings	5	1	3	0	0	0	4	Increased capacity
3.3	Train WMAs	Number of trainings	5	1	1	1	1	1	5	Increased capacity
3.4	Refresher training of area mechanics in water point maintenance and repair	Number of area mechanics trained	5	53		0	0	53	53	Increased capacity

Table 15: Water Supply in Schools

No.	**Activity**	**Output indicator**	**5-year target**						
				Yr. 1	**Yr. 2**	**Yr. 3**	**Yr. 4**	**Yr. 5**	
4	**Water Supply in Schools**			**Tgt.**	**Tgt.**	**Tgt.**	**Tgt.**	**Tgt.**	
4.1	Maintenance of existing BHs in Primary schools	No. of Schools with BHs maintained	205	41	41	41	41	41	Schools will have access to safe water
4.2	Drill boreholes in Primary schools	Number of Boreholes drilled	28	28	0	0	0	0	Schools will have access to safe water
4.3	Drill boreholes in CBCCs	Number of Boreholes drilled	369	75	75	73	73	73	CBCC's have access to safe water
	Subtotal		602	144	116	114	114	114	

Table 16: Water Supply in Health Facilities

No	Activity	Output indicator	5-year target						
				YR 1	YR 2	YR 3	YR 4	YR 5	expected result
5	**Water Supply in Health Facilities**								
5.1	Drilling of boreholes in health facilities	number of boreholes drilled	3	1	1	1	0	0	Increase access to potable water
5.2	Reticulation of water supply system	number of water supply systems reticulated	3	1	1	1	0	0	Increase access to potable water
5.3	Maintenance of water supply system	number of water supply systems maintained	34	7	7	7	7	6	Increase access to potable water

Table 17: Water Supply in Markets

No.	Activity	Output indicator	5-year target						
				Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Year 5 Target	Expected Results
6	**Water Supply in Markets**								
6.1	Construct new water points (boreholes) in Trading centers	Number of Water points constructed	23	3	13	3	13	6	All markets will have a source of water, thereby improving
6.2	Construct reticulated water systems at Thete, Lobi, Katewe, and Golomoti trading centres	Number of Water system constructed	4	1	1	1	1	0	The council intend to establish mini waterboards in the mentioned market trading centres
6.3	Rehabilitate boreholes in Markets and Trading Centers	Number of boreholes Rehabilitated	20	4	4	4	4	4	Will at least maintain 4 BHs a year to keep the systems running
6.4	Extend water pipelines at Chimbiya market	Number of markets extended	1	1	0	0	0	0	The system will be expanded to additional 7 taps

Table 18: Water Supply in Emergencies

No.	Activity	Output indicator	5-year target						Expected outcome
7	**Water Supply in Emergencies**			**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	
7.1	Conduct community sensitization and mobilization meetings on WASH - e.g. CLTS (triggering, follow up, verification, certification, and celebration) promotion of various Sanitation technologies (like disaster resilient pit latrines), promotion of key hygienic practices.	Number of meetings conducted	42	10	10	10	10	2	All areas within the 8 TAs that are prone to flooding and water-borne diseases sensitized
7.2	Establish and train Village Health and Water Committees, and refresher trainings for Area Mechanics to properly operate, repair and maintain their water facilities	Number of VHWC and AM trainings conducted	11	3	2	4	2		100 VHWCs and 10 Area Mechanics established and trained on proper operational, repair and maintain water facilities
7.3	Conduct water quality testing	Water points tested	100	30	20	20	15	15	Water quality improved within the district
7.4	Rehabilitation of damaged water points, sanitation and hygiene facilities in communities and institutions	number of damaged water points rehabilitated	48	10	9	9	10	10	All the 8 TAs having Completed rehabilitation of damaged water points, sanitation and hygiene facilities in communities and institutions
7.5	Immediate maintenance of damaged water facilities	Water facilities maintained	100	40	15	20	15	10	All the 100 Water points maintained

Table 19: Sanitation and Hygiene in Communities

No.	Activity	Output indicator	5-year target					
8	**Sanitation and Hygiene in Communities**			**Year 1**	**Year 2**	**Year 3**	**Year4**	**Year 5**	**Expected result**
8.1	Conduct hygiene & sanitation promotion	No. of TAs declared ODF	4	1	1	1	0	0	Increase access to imp
8.2	Monitoring of sanitation and hygiene in communities		4	1	1	1	1	1	Ensue sustainability

Table 20: Sanitation and Hygiene in Schools

No.	Activity	Output indicator	5-year target					
				Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Expected Results**
9	**Sanitation and Hygiene in Schools**			**Target**	**Target**	**Target**	**Target**	**Target**	
9.1	Construction of permanent handwashing facilities	Number of handwashing facilities constructed	200	40	40	40	40	40	All schools supplied with handwashing facilities
9.2	Construction of pit latrines in schools (Inclusive toilets, Change rooms)	Number of pit latrines constructed	60	20	20	20	20	20	The learner permanent toilet ratios improved
9.3	Train School Governing Bodies on soap making	Number of participants trained	60	20		2012		20	The School Governing Bodies to make soap locally for their schools
9.4	Train Mother Group members on locally made sanitary pads	Number of schools governing body Chairpersons trained	60	20	20	20	20	20	All Schools Mother group committees to make locally made sanitary pads

Table 21: Sanitation and Hygiene in Health Centres

No.	Activity	Output indicator	5-year target						
10	**Sanitation and Hygiene in Health Centres**			**YR 1**	**YR 2**	**YR 3**	**YR 4**	**YR 5**	**Expected Result**
10.1	Construction of improved pit latrines	No. pit latrines constructed	34	7	7	7	7	6	Increase access to improved sanitation
10.2	Construction of incinerators	No. of Incinerators constructed	2	1	1	0	0	0	
10.3	Construction of placenta pits	No. of Placenta pits constructed	3	1	1	1	0	0	
10.4	construction of menstrual hygiene shelters	No of shelters constructed	34	7	7	7	7	6	

Table 22: Sanitation and Hygiene in Market Centres

No.	Activity	Output Indicator	5 -year target						Expected Results
11	**Sanitation and Hygiene in Market Centres**			**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 4**	**Yr 5**	
11.1	Construct toilets in markets	Number of toilets constructed	48	1	3	0	3	1	Some markets will have 2 VIP latrines of two holes. At least all markets will have a VIP latrine for use by vendors and customers
11.2	Implement and urban sanitation projects with the construction of a landfill and refuse dumping locations with well-constructed sorting bays around the Boma and major markets	Number of Urban Projects presented	1	1	1	1	1	1	An Integrated Urban WASH project funded
11.3	Awareness campaigns on early warning systems at all levels.	Number of campaigns	13	13	13	13	13	13	Each of the 13 main markets and their surrounding submarkets will be visited with a campaign each year
11.4	Develop Contingency plan at District, Area and Village levels	Number of plans developed.	13	13	13	13	13	13	All markets will have a source of water, thereby improving
	Waste Management Markets								

11.5	Construct a proper Waste Disposal Facilities	Number of Disposal sites constructed	31	31		31	0	0	These will be pits which once they get filled up, they will be buried and covered up.
11.6	Procure Skip truck	Number of Skip truck procured	2	1	1	0	0	0	Improved market and trading centers environment. The skips will be placed in a key strategic place and the vehicle will be going to empty filled skips
11.7	Procure Skips	Number of Skips procured	2	1	1	0	0	0	Improved market and trading centers environment. The skips will be placed in a key strategic place and the vehicle will be going to empty filled skips
11.8	Construct Waste Management Plant	Number Waste Plant constructed	1	1	0	0	0	0	The council intends to process waste for money. The waste would be sorted and some things would use for making of briquets, others for fertilizers, others for gas and others for manure
11.9	Procure Briquette machines.	Number of machines procured	6	0	2	2	2	0	People will be buying briquets as source of energy and thereby stop using charcoal and firewood
12	**Monitoring and Evaluation**								
12.1	Conduct Quarterly DCT review meetings	Number of meetings	20	4	2	4	2	8	
12.2	Conduct DCT Mid-Term (Bi-Annual) review meeting.	Number of meetings	10	2	2	2	2	4	
12.3	Conduct end of the term (Yearly) DCT review meeting	Number of meetings	5	1	2	1	1	2	
12.4	Presentation of progress reports to DEC members	Number of Minutes	20	4	4	4	4	4	
12.5	Presentation of progress reports to Full Council meeting	Number of Minutes	20	4	4	4	4	4	

Table 23: Sanitation and Hygiene in Emergencies

No.	Activity	Output indicator	5-year target	Year 1	Year 2	Year 3	Year 4	Year 5	Expected Outcomes
13	**Sanitation and Hygiene in Emergencies**			**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	
13.1	Train extension workers on CLTS, disaster-resilient sanitation technologies, key hygienic practices interventions related to disaster risk management	number of trainings conducted	10	2	2	2	2	2	Trained extension workers on CLTS, disaster resilient sanitation technologies, key hygienic practices interventions related to disaster risk management
13.2	Conduct hygiene campaigns to promote good hygiene practices among the affected population	number of campaigns conducted	35	7	7	7	7	7	Good hygiene practices among affected populations
13.3	Undertake regular monitoring and evaluation of WASH response interventions within the affected population	number of monitoring visits conducted	50	10	10	10	10	10	All the Wash interventions monitored, and gaps (Challenges) identified
13.4	Provision of new safe water points, sanitation, and hygiene facilities in institutions	number of water points established	9	5	4	0	0	0	Established safe water points, sanitation, and hygiene facilities in institutions
13.5	Conduct rapid assessment for WASH on the affected population	number of assessments conducted	100	20	20	20	20	20	All the areas affected by disasters assessed

Table 24: Water Resources Management

No.	Activity	Output indicator	5-year target	Year 1	Year 2	Year 3	Year 4	Year 5	Expected results
14	**Water Resources Management**			**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	
14.1	Create buffer zones along riverbanks to prevent flooding.	Number of buffer zones created	40	10	15	11	4	1	Existence of buffer zones to reduce flooding.
14.2	Conduct Environmental management trainings	Number of trainings conducted	40	8	8	8	8	8	Capacity building to local communities enhanced
14.3	Conduct awareness on catchment protection	Number of awareness conducted	40	8	8	8	8	8	Catchment areas will be protected from degradation.

14.4	Develop catchment management plans	Number of catchment management plans developed	8	4	4	0	0	0	Enhanced protection to catchment areas.
14.5	Plant trees in catchment areas	Number of Catchments Areas planted with trees	41	8	8	8	8	9	Reduced siltation of water bodies.
14.6	Train communities on production of Fuelwood efficient stoves	Number of trainings conducted	15	3	2	2	4	4	There will be more trees which will help to increase rains in the district.
	Sub total		184	41	45	37	32	30	
15	**Waste Management**								
15.1	Construct a proper Waste Disposal Facilities (Refuse Pits)	Number of waste disposal facilities constructed.	29	6	6	6	6	5	There will be no open dumping of waste.
15.2	Conduct Training on waste management to market committees	Number of Trainings conducted	31	7	5	6	7	6	Clean and conducive environment around market areas.
15.3	Procure waste bin	Number of waste bins procured	62	6	6	6	6	6	Waste is properly collected, transported and dumped in proposed dumping sites.
15.4	Construct Waste Management Plant	Number Waste Plant constructed	1	1	0	0	0	0	There will be no waste that is dumped in public places or market places.
15.5	Conduct environmental and Waste Management education in Schools.	Number of trainings conducted	19	2	3	5	6	3	Capacity building and increased awareness of pupils in schools.
15.6	Conduct awareness campaigns on waste management around main markets.	Number of awareness campaigns conducted	31	8	5	8	4	6	Enhanced knowledge and awareness on waste management.
15.7	Develop and broadcast Radio Jingles on waste management	Number of Radio Jingles developed.	240	48	48	48	48	48	Enhanced access to information on waste management.

Table 25: Disaster Risk Management

No.	Activity	Output indicator	5-year target						Expected Outcome
16	**Disaster Risk Management**			**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Yr. 5**	
16.1	Awareness campaigns on early warning systems at community based	Number of campaigns	10	2	2	2	2	2	
16.2	Training of CPC structures such as (DCPC), ACPC and VCPC on disaster preparedness, response and recovery activities	Number of CPC Structures trained on DRM	9	3	2	1	2	1	
16.3	Develop Contingency plan at District, Area and Village levels	No of plans developed.	13	13	13	13	13	13	All markets will have a source of water, thereby improving
16.4	Establishment of Disaster Risk Management (DRM) school clubs	DRM clubs established	40	5	10	10	10	5	
16.5	Awareness campaigns on early warning systems at all levels (in markets).	No. of campaigns	13	13	13	13	13	13	Each of the 13 main markets and their surrounding submarkets will be visited with a campaign each year
17	**Emergency Preparedness and Response**								
17.1	assess and identify emergency assembly points in markets		13	3	3	2			
17.2	Procure and distribute large portable fire extinguisher to major markets centres		30	5	5				
17.3	Procure and distribute sand buckets		45	15	15				
17.4	Procure and distribute big horse pipes		4	4	0				
17.5	Awareness campaigns in the marketplaces		13	3	3				

Table 26: Monitoring and Evaluation

No.	Activity	Output indicator	5-year target						
18	**Monitoring and Evaluation**			**Year 1 Target**	**Year 2 Target**	**Year 3 Target**	**Year 4 Target**	**Year 5 Target**	**Expected Results**
18.1	Conduct Quarterly DCT review meetings	Number of meetings	20	4	2	4	2	8	
18.2	Conduct DCT Mid-Term (Bi-Annual) review meeting.	Number of meetings	10	2	2	2	2	4	
18.3	Conduct end of the term (Yearly) DCT review meeting	Number of meetings	5	1	2	1	1	2	
18.4	Presentation of progress reports to DEC members	Number of Minutes	20	4	4	4	4	4	
18.5	Presentation of progress reports to Full Council meeting	Number of Minutes	20	4	4	4	4	4	

CHAPTER 6: FINANCIAL PLAN

6.1 Budget Summary

The following table 27 is a summary of costs by output for year 1, 2 and the aggregate of the latter 3 years.

Table 27: **Estimated Costs by Output**

DISP ESTIMATED COST BY OUTPUT						
		Year I	Year 2	Final 3 years	Total for 5 Years	
o.	Activity	Proposed Budget (K000,000)	Proposed Budget (K000,000)	Proposed Budget (K000,000)	Proposed Budget (K000,000)	Proposed Budget (K000,000)
1	Water Supply in Communities	1280	1265	2,524	5,068	6.30
2	Establish and Strengthen Institutions' capacity to manage, expand and sustain WASH services	2	2		11	0.01
3	Capacity Building to Stakeholders	21	22	86	129	0.16
4	Water Supply in Schools	447	413		860	1.07
5	Promote Sanitation and Hygiene in Schools	392	392	576	1,360	1.69
6	Water Supply in Health Centres:	73	60	137	270	0.34
7	Promote Hygiene and Sanitation in Health Centres	299	289	784	1,373	1.71
8	Water Supply in Market Centres	1 16	1 13	225	453	0.56
9	Water Resources Management	21	18	50	89	0.11
10	Disaster Risk Management	49	38	131	218	0.27
11	Waste Management	8	4	10	22	0.03
12	Monitoring and Evaluation	12	12	36	60	0.07
13	Promote Sanitation and Hygiene in Community	18	18		36	0.04
14	Promote Sanitation and Hygiene in Market Centres	36	51	85	172	0.21
15	Emergency Preparedness and Response	76	61	91	228	0.28
16	Revolting and Reviews	16	16	48	80	0.10
	Totals	**2,865**	**2,775**	**4,788**	**10,428**	
	USD (000,000)	**3.56**	**3.45**	**5.95**	**12.95**	

The total projected investment for the 5 years covered by the financial plan amounts to **K10.428 Billion**, disaggregated into K2.865 Billion and MK2.775 Billion for years 1 and 2 respectively, and a total of MK4.788 Billion for the outer three (3) years. Table 27 (above) provides details of the proposed resource envelope per output.

6.2 Community Investment

The financial plan consists of 57% allocation towards investments that will benefit the communities directly, while 43% are institutional investments.

The following table 28 provides the list of outputs targeting the community as a percentage of total investments per year.

Table 28: Community Investments

DEDZA DISTRICT, DSIP COMMUNITY INVESTMENTS

		Year 1	Year 2	Final 3years	Total for Years 5 years	
No,	Activity	Proposed Budget (MK 000, 000)	Proposed Budget (MK 000, 000)	Proposed Budget (MK 000, 000)	Proposed Budget (MK 000, 000)	Proposed Budget (USD 000, 000)
1	Water Supply in Communities	1,280	1,265	2,524	5,068	6.30
2	Establish and Strengthen institutions' capacity to manage, expand and sustain WASH services	2	2	7	11	0.01
3	Capacity Building to Stakeholders	21	22	86	129	0.16
9	Water Resources Management	21	18	50	89	0.11
10	Disaster Risk Management	49	38	131	218	0.27
11	Waste Management	8	4	10	22	0.03
12	Monitoring and Evaluation	12	12	36	60	0.07
13	Promote Sanitation and Hygiene in Community	18	18		36	0.04
15	Emergency Preparedness and Response	76	61	91	228	0.28
16	Reporting and Reviews	16	16	48	80	0.10
	Totals	1,502	1 ,456	2,982	5,941	7.38
	Grand Total	2,865	2,775	4, 788	10,428	12.95
	USD (000,000)	3.56	3.45	5.95		
	% FOR COMMUNITY INVESTMENT	52	52	62	57	

6.3 Cash Flows

The following table provides cash flow requirements for year 1 and 2, and also the aggregated cash flow requirement for the outer 3 years. For the details of all the 5 years financial projections refer to table 29 below.

DZ - DSIP CASH FLOW				
	July 2021 - June 2022 (MK000,000)	July 2022 - June 2023 (MK000,000)	July 2023 - June 2026 (MK000,000)	TOTAL (MK000,000)
Proposed cash inflows	2,865	2,775	4,788	10,428

Table 29: Detailed 5-year Financial Projections

No.	Outputs	Total units	Unit Cost (MK) 000,000	Total Cost (MK) 000,000	Notes on unit costs	Responsible Office
1	**Water Supply in Communities**					
1.1	Construct gravity fed scheme	2	15	30	**Unit cost is for one GFS based on current market price**	DPD/DWDO/DPW
1.2	Rehabilitate gravity fed scheme	2	8	16		DPD/DWDO/DPW
1.3	Rehabilitate non-functional boreholes	100	2	200		DPD/DWDO/DPW
1.4	Construct Boreholes	100	4	430		DPD/DWDO/DPW
1.5	Rehabilitate unprotected shallow wells	20	1	20		DPD/DWDO/DPW
1.6	Construct shallow wells	2	2	3		DPD/DWDO/DPW
1.7	Conduct Water Monitoring surveillance	200	2	300		DWDO/DEHO
1.8	Conduct Water Quality testing	2000	2	4000		DWDO/DEHO
	Sub Total			**4999**		
	USD (000,000)			**6.21**		
2	**Establish and strengthen Institutions' capacity to manage, expand and sustain WASH services**					
2.1	Conduct DCT Planning and review meetings	20	0	2	unit cost is for one DCT meeting	DPD
2.2	Conduct Joint Monitoring visits	20	0	4	unit cost is for one DCT meeting	DWDO
2.3	Collect Water point data	5	1	5	unit cost is for one DCT meeting	DWDO
	Sub Total			**11**		
3	**Capacity Building to Stakeholders:**					
3.1	Train WUA committees	5	2	8	unit cost is for one committee	DWDO/DPD
3.2	Train WUA Front line Staff (Extension workers)	5	1	4	unit cost is for one training session	DWDO/DPD
3.3	Train WMAs	5	2	8	unit cost is for one training session	DWDO/DPD
3.4	Train water point committees	500	0	54	unit cost is for one committee	DWDO/DPD
3.5	Conduct awareness campaigns on use of water meters in WUA catchment areas.	60	1	78	unit cost is for one committee	DWDO/DPD
3.6	Refresher training of area mechanics in water point maintenance and repair	106	0	10	unit cost is for one committee	DWDO/DPD
	Sub Total			**73**		
4	**Water Supply in Schools**					

4.1	Maintenance of existing BHs in Primary schools	205	0	10	Cost for maintenance of a BH	DWDO/DEM
4.2	Drill boreholes in Primary schools	28	4	112		DWDO/DEM
4.3	Connect piped water supplies in CBCCs	369	2	738		DWDO/DEM
	Sub total			**860**		
	USD (000,000)			**1.07**		
5	**Promote Sanitation and Hygiene in schools**					
5.1	Construction of permanent hand washing facilities in schools	200	2	400		DWDO/DEM
5.2	Construction of pit latrines in schools (Inclusive toilets, Change rooms)	60	13	504		DPW/DHO/DEM
5.3	Train School Governing Bodies on soap making	60	1	90		DEM
5.4	Train Mother Group members on locally sanitary pads	60	1.5	90		
	Sub-Total			**1084**		
6	**Water Supply in Health Centers:**					
6.1	Drilling of boreholes in health facilities	3	7	21		DWDO/DHO
6.2	Reticulation of water supply system	3	5	16		DWDO/DHO
6.3	Maintenance of water supply system	34	7	233		PO/DHO
	Sub total			**270**		
7	**Promote Sanitation and Hygiene in Health Centers**					
7.1	Construction of improved pit latrines	34	4	143		DEHO/DWDO
7.2	Construct incinerators in health centres	2	5	10		DEHO/DWDO
7.3	Construction of placenta pits	3	10	30		DEHO/DWDO
7.4	construction of menstrual hygiene shelters	34	35	1190		DEHO/DWDO
	Sub-Total			**1373**		
	USD (000,000)			**1.71**		
8	**Water Supply in Trading Centres and Markets**					
8.1	Construct new water supply points in Trading centres	23	3	69		DWDO/DPW
8.2	Construct reticulated water systems at Thete, Lobi, Katewe and Golomoti trading centres	4	80	320		DWDO/DPW
8.3	Procure water pumps for Trading Centers	20	2	40		DWDO/DPW
8.4	Rehabilitate boreholes in Trading Centers	4	5	20		DWDO/DPW
8.5	Extend water pipelines at Chimbiya market	1	3	3		DWDO/DPW
8.6	Rehabilitate boreholes in markets	2	1	2		DWDO/DPW
	Sub-Total			**453**		

9	**Water Resources Management**					
9.1	Creation of buffer zones in catchment areas	41	0	5		DFO/EDO
9.2	Conduct environmental management trainings	40	0	6.80		DFO/EDO
9.3	Conduct awareness on catchment protection	40	0	7		DFO/EDO
9.4	Develop catchment management plans	8	1.50	12.00		DFO/EDO
9.5	Plant trees in catchment areas	41	2	62		DFO/EDO
9.6	Train communities on production of Fuelwood efficient stoves	15	0	3.75		DFO/EDO
	Sub-Total			**96**		
10	**Disaster Risk Management**					
10.1	Awareness campaigns on early warning systems at community level	10	2	20		RRO
10.2	Training of CPC structures(DCPC,ACPC,VCPC)	9	2	18		DPD/DCDO/RRO
10.3	Establishment of disaster risk management school clubs	40	1	24		DPD/DCDO/RRO
10.4	Development of contigency plans	13	12	156		DPD/DCDO/RRO
	Sub-Total			**218**		
11	**Waste Management**					
11.1	Construct a proper Waste Disposal Facilities	29	0.15	4		DFO/EDO/DPW
11.2	Conduct environmental and waste management in schools	19	0.23	4		PO/DFO/DEYS
11.3	Procure waste bins for the market centres	62	0.03	2		PO/DFO
11.4	Construct Waste Management Plant	1	2.00	2		DFO/EDO/DPW
11.5	Conduct awareness campaigns on waste management around main markets	31	0.12	4		PO/DFO
11.6	Development of radio jingles on waste management	240	0.01	2		DIO/EDO
11.7	Conduct market committee trainings in waste management	31	0.12	4		DIO/EDO
	Sub-Total			**22**		
12	**Monitoring and Evaluation**					
12.1	Conduct Quarterly DCT review meetings	20	0	4		DPD/DWDO
12.2	Conduct DCT Mid-Term (Bi-Annual) review meeting.	10	4	38		DPD/DWDO
12.3	Conduct end of the term (Yearly) DCT review meeting	5	4	19		DPD/DWDO
	Sub-Total			**60**		
13	**Promote Sanitation and Hygiene in Community**					
13.1	Conduct Hygiene and Sanitation promotion in communities	4	6	24	unit cost is for one promotion	DWDO/DEHO
13.2	Conduct capacity building for Village Health Committees	4	3	12	unit cost is for one capacity building	DWDO/DEHO

13.3	District ODF monitoring	8	5	40	unit cost is for one TA	DWDO/DEHO
	Sub-Total			**36**		
14	**Promote Sanitation and Hygiene in Market Centres**					
14.1	Construct double VIP latrines in Markets	48	2	96		DPW
14.2	Digging Refuse disposal pits	29	2	44		DPW/EDO
14.3	Construction of slaughter houses	13	3	39		DPW/DAENR
	Sub-Total			**179**		
15	**Emergency Preparedness and Response**					
15.1	assess and identify emergency assembly points in markets	13	0.05	0.65		DCDO
15.2	Procure and distribute large portable fire extinguisher to major markets centres	30	0.065	1.95		DYO/DEHO
15.3	Procure and distribute sand buckets	45	0.005	0.225		DYO/DEHO
15.4	Procure and distribute big horse pipes	4	0.65	0.26		DYO/PO
15.5	Awareness campaigns in the market places	13	2	26		DPW/DWDO
15.6	Train School governing bodies on locally made face masks	1240	0.004	5		DEYS / CEO
15.7	Capacity building on Cholera management	4	3	12		DEHO
15.8	Community mobilization on disease outbreak prevention and control	20	1.5	30		DEHO
15.9	Procurement of Chlorine	100	0.02	2		DEHO
15.10	Borehole maintainace	100	1.5	150		DWO
	Sub-Total			228		
17	**Reporting and Reviews**					
17.1	Monthly report writing by the DCT members	60	0.2	12		DPD/DWDO
17.2	Quarterly report writing by the DCT members	20	0.5	10		DPD/DWDO
17.3	By-Annual report writing by DCT members	10	0.5	5		DPD/DWDO
17.4	Annual report writing by DCT members	5	0.5	3		DPD/DWDO
17.5	Presentation of progress reports to DEC members	20	1	20		DPD/DWDO
17.6	Presentation of progress reports to Full Council meeting	20	1.5	30		DPD/DWDO
	Sub-Total			**80**		
	GRAND TOTAL			**10428**		
	USD (000,000)			**12.95**		

CHAPTER 7: IMPLEMENTATION, MONITORING & EVALUATION

7.1 Progress Monitoring Mechanisms

The DSIP will be implemented through various interventions in a multisectoral manner. Th performance of the DSIP will be determined through monitoring of impact of interventions on improving access to water, sanitation and hygiene services by communities. The DSIP will be implemented by the DCT, implementing partners and community governance structures such as the VDC and ADCs and AECs. Participatory monitoring and evaluation on the progress being made shall be encouraged where all these structures will participate in the process.

7.2 Sustainability of Impacts

There will be regular program evaluation and /or studies at mid-term and end-of-year during the life of the plan. The evaluation will be conducted periodically by both external and internal team members to inform on sustainability and impact of the envisaged program and consequently help in reviewing program strategic decisions.

The internal evaluations will include periodic checks conducted by the implementation team members and external evaluation will include periodic checks conducted by the external evaluators. The DSIP calls for engagement of external evaluators to provide an independent view on the program design, quality, sustainability and impacts during implementation hired at mid-term (2023) and end of year evaluations (2026). The evaluations/studies will determine the following: whether the routine monitoring system is effective in recording new users of water and sanitation facilities.

One other way of ensuring sustainability is to make sure that implementation and monitoring uses already existing implementation and monitoring structures. The DCT, the DMECC and DEC will be responsible for carrying regular monitoring from the district level. At community level, the AEC, the ADC and the VDC shall be responsible for implementation of monitoring plans at community level.

7.3 Data Management

Data shall be collected and managed both at community and district level. The extension workers especially those trained HSAs, WMAs, CDAs and PEAs shall be crucial in ensuring that appropriate forms and data collection tools are filled at very prescribed regular intervals. Most of the data will be collected online using smart phones. The District will adopt and institutionalize the use of mWater to help with planning and targeting including monitoring. Using the mWater App, data on the coverage of the water points in the district will be updated on a quarterly basis to determine the functionality levels of the water points. The district coordinating team will be oriented on data entry analysis and reporting and in turn orient extension workers on field level data collection using mWater Survey software and mWater data collection will be deployed quarterly in order to have updated data quarterly. The

information generated will help to ensure that new services are provided to the areas with lowest safe water coverage and functionality. It is envisaged that the periodic spot checks will reveal non-functioning water points and consequently engage remedial action. The MIS will also provide information on served and un-served villages on quarterly basis. The information will form a basis and vital tool for planning and decision making by the DCT and other stakeholders.

7.4. M & E Framework

The Monitoring and evaluation framework is a collection of Key Performance indicators that will be collected and reported on during the DSIP life span refer to annex 9.1. Most of the indicators are output indicators that shows the targets achieved over a period of one year. The indicators are defined on how they will be calculated and also explaining what they really mean. The matrix also shows the baseline for each indictor and the source where the data could be collected, the methods of data collection and the person responsible for collecting and reporting that indicator.

8 CHAPTER 8: REFERENCES

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CHAPTER 9 ANNEXES

Annex 9.1: M&E Framework

	Indicator	Indicator Definition	Base line	Target						Data Source	Data Collection Methodology	Who is responsible
				2022	2023	2024	2025	2026	2027			
1	Number of boreholes drilled	AfriDev boreholes in health facilities	34	1	1	1	0	0		DEHO	Coordinator reports	DEHO
2	Number of water supply systems reticulated	Boreholes fitted with submersible pumps and reticulated with storage tanks	26	1	1	1	0	0		DEHO	Coordinator reports	DEHO
3	Number of water supply systems maintained	Maintenance for boreholes (spare parts, pipes, storage tank, broken or stolen submersible pump	34	7	7	7	7	6		DEHO	Coordinator reports	DEHO
4	Number of pit latrines constructed	Improved pit latrines with vent pipes, concrete floor, brick wall and pit lined with bricks	134	7	7	7	7	6		DEHO	Coordinator reports	DEHO
5	Number of incinerators constructed	Roofed and fenced constructed using with fire resistant bricks	29	1	1	0	0	0		DEHO	Coordinator reports	DEHO
6	Number of placenta pits constructed	Fenced and with a slab lid cover, pit lined bricks and cemented	29	1	1	1	1	0		DNO	Coordinator reports	DEHO
7	Number of shelters constructed	Roofed with a door and a tap with soap.	0	7	7	7	7	6		DNO	Coordinator reports	DEHO
8	Number of TAs declared ODF	TAs declared and certified ODF	0	1	1	1	1	0		DEHO	Coordinator reports	DEHO

	Indicator	Indicator Definition	Base line	Target						Data Source	Data Collection Methodology	Who is responsible
				2022	2023	2024	2025	2026	2027			
1	Number of gravity fed schemes constructed	New scheme targeting unreached population	3	1	0	0	0	0	0	Contractor's report; Quarterly Council reports; DWDO reports	WMA reporting tools Joint monitoring reports Council meeting minutes	DWDO
2	Number of schemes rehabilitated	Major and minor rehabilitation of existing schemes	0	1	2	0	0	0	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
3	Number of non-functional boreholes rehabilitated	Afridev boreholes requiring major maintenance	100	40	40	20	0	0	0	Quarterly Council reports; DWDO reports	Joint monitoring reports.	DWDO
4	Number of boreholes constructed	New boreholes constructed	2,598	100	100	100	80	80	0	Quarterly Council reports; DWDO reports	Council meeting minutes	DWDO
5	Number of un-protected shallow wells rehabilitated	Apron, lining, cover to protect the water source	606	10	10	15	15	20	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
6	Number of shallow wells constructed	Excavation, lining, covering/protection	606	10	10	8	8	6	0	Quarterly Council reports; DWDO reports	Joint monitoring reports.	DWDO
7	Number of water points monitored (surveillance)	Done on quarterly basis by DCT	2,598	300	500	300	400	250	0	Quarterly Council reports; DWDO reports Partners reports	Council meeting minutes	DWDO
8	Number of water points tested	Water Quality Testing and yield testing	40	300	500	300	400	250	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO

9	Number of review meetings	Done on quarterly basis	4	4	4	4	4	4	4	Quarterly Council reports; DWDO reports	Joint monitoring reports.	DWDO
10	Number of joint monitoring	Done by DCT on quarterly basis	4	4	4	4	4	4	4	Quarterly Council reports; DWDO reports	Council meeting minutes	DWDO
11	Number of Sessions	Collection of water point data		12	12	12	12	12	12	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
12	Number of trainings	Training WUAs		1	3	0	0	0	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
13	Number of trainings	Training WUA frontline staff		1	3	0	0	0	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
14	Number of trainings	Train WMAs	0	1	1	1	1	1	1	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
15	Number of trainings	Train Area Mechanics in CBM2	1	1	0	0	0	0	0	Partner reports; Quarterly Council reports; DWDO reports	Area Mechanics reports; Partner reports WMA reporting tools	DWDO
16	Number of campaigns	T/A based Maintenance campaigns triggering community participation	8	8	8	0	0	0	0	Quarterly Council reports; DWDO reports	Area Mechanics reports; Partner reports WMA reporting tools	DWDO
17	Number of area mechanics trained	Trained in CBM2, Basic Business skills and community mobilization	52	52	52	52	52	52	52	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO

WASH IN SCHOOLS

	Indicator	Indicator Definition	Base line	Target						Data Source	Data Collection Methodology	Who is responsible
				2022	2023	2024	2025	2026	2027			
1	Number of schools with boreholes maintained	All schools with functional and non-Functional boreholes which needs minor or major maintenance	205	248	250	255	260	265	266	EMIS	Monthly Activity reports	DEYS/CEO
	Number of Bore holes drilled	Drill boreholes in all schools without portable water	28	28	10	10	10	10	10	DWO/ EMIS	Monthly Activity reports	DEYS/CEO
2	Number of Bore holes drilled	Drill boreholes in all CBCCs without portable water	369	75	75	73	73	73	73	DWO/ Social Welfare	Monthly Activity reports	District Social Welfare Office
3	Number of hand-washing facilities constructed	Construction of permanent hand washing facilities in schools	**200**	40	40	40	40	40	40		Monthly Activity reports	DEYS/CEO
4	Number of pit latrines constructed	Construction of inclusive toilets with girls change rooms	520	104	104	104	104	104	104	EMIS	Monthly Activity reports	DEYS/CEO
5	Number of school governing bodies trained	Train school governing bodies such as SMC, MG and PTA on soap making	748	150	150	150	150	150	148	EMIS	Monthly Activity reports	DEYS/CEO
6	Number of participants trained	Train	748	150	150	150	150	150	148	EMIS	Monthly Activity reports	DEYS/CEO

	Indicator	Indicator Definition	Base line	Target						Data Source	Data Collection Methodology	Who is responsible
				2022	2023	2024	2025	2026	2027			
WATER RESOURCES MANAGEMENT												
1	Number of trainings conducted on environmental management.	Management of the environment will look at ensuring that natural resources are not being depleted but protected for the sake of restoration.	40	8	8	8	8	8	0	EDO office	Reports	DFO/EDO
2	Number of catchment management plans developed	Catchment are parts of river banks that borders land. Plans developed will guide in providing protection to the identified catchment area.	8	4	4	0	0	0	0	DFO	Minutes & Reports	DCDO and EDO
3	Number of Catchments Areas planted with trees	The marginalized lands identified will be planted with trees to ensure there is cover to the land and reduce runoff as well as increase infiltration.	41	8	8	8	8	9	0	EPA, DFO and EDO office.	Reports	DFO and EDO
4	Number of trainings conducted on fuel stoves.	Trainings will guide the communities on ensuring that trees are not being cut in search of fuel.	15	3	2	2	4	4	0	EDO office	Reports	EDO and DFO
5	Number of buffer zones created	Creation of a buffer zone will enhance protection of rivers from siltation after trees have been planted and so will it protect people from floods.	41	8	8	9	8	8	0	DFO office	Reports	DFO and EDO

WASTE MANAGEMENT												
1	Number of waste disposal facilities constructed.	Waste disposal facility is a site that is specifically used to dump all kinds of waste that is generated in a specified area.	29	6	6	6	6	5	6	EDO office	Reports	DPW/EDO
2	Number of Trainings conducted on waste management.	Trainings is provision of knowledge through capacity building during lectures or focus group discussions. This will help to have clean environment and control spread of disease outbreak.	31	7	5	6	7	6	7	EDO office	Reports	EDO/TO
3	Number of waste bins procured	Bin is a waste collection tool used for dumping waste at a particular point. They can be movable or stationery based on design.	62	6	6	6	6	6	6	DPW office	Reports	DPW/EDO
4	Number Waste Plant constructed	Waste plant is an area designed as the final dumping place of waste that cannot be re-used or recycled. A plant is used to burn materials as the final means of disposing waste. waste.	1	1	0	0	0	0	1	DPW/EDO office	Reports	DPW/EDO
5	Number of trainings conducted on fuel stoves production.	Cooking stoves are improved cooking tools that enhance saving energy/ fuel when using them.	19	2	3	5	6	3	2	DEYS/EDO office	Reports	EDO
6	Number of awareness campaigns conducted on catchment management.	Awareness campaigns will look at people have the knowledge on managing marginalized area along river banks making boundary with water bodies and land.	31	8	5	8	4	6	8	EDO office	Reports	EDO

7	Number of Radio Jingles developed.	Radio jingles are pre-recorded messages that will inform people on how waste can be managed and where it can be dumped.	240	48	48	48	48	48	48	DIO office	Audio recordings being broadcast	DIO/EDO

Indicator		Indicator Definition	Base line	Target						Data Source	Data Collection Methodology	Who is responsible
				2022	2023	2024	2025	2026	2027			
1	Number of boreholes drilled	AfriDev boreholes in health facilities	34	1	1	1	0	0		DEHO	Coordinator reports	DEHO
2	Number of water supply systems reticulated	Boreholes fitted with submersible pumps and reticulated with storage tanks	26	1	1	1	0	0		DEHO	Coordinator reports	DEHO
3	Number of water supply systems maintained	Maintenance for boreholes (spare parts, pipes, storage tank, broken or stolen submersible pump	34	7	7	7	7	6		DEHO	Coordinator reports	DEHO
4	Number of pit latrines constructed	Improved pit latrines with vent pipes, concrete floor, brick wall and pit lined with bricks	134	7	7	7	7	6		DEHO	Coordinator reports	DEHO
5	Number of incinerators constructed	Roofed and fenced constructed using with fire resistant bricks	29	1	1	0	0	0		DEHO	Coordinator reports	DEHO
6	Number of placenta pits constructed	Fenced and with a slab lid cover, pit lined bricks and cemented	29	1	1	1	1	0		DNO	Coordinator reports	DEHO
7	Number of shelters constructed	Roofed with a door and a tap with soap.	0	7	7	7	7	6		DNO	Coordinator reports	DEHO
8	Number of TAs declared ODF	TAs declared and certified ODF	0	1	1	1	1	0		DEHO	Coordinator reports	DEHO

Indicator		Indicator Definition	Base line	Target					Data Source	Data Collection Methodology	Who is responsible
				2022	2023	2024	2025	2026	2027			
1	Number of gravity fed schemes constructed	New scheme targeting unreached population	3	1	0	0	0	0	0	Contractors' reports; quarterly Council reports; DWDO reports	WMA reporting tools Joint monitoring reports. Council meeting minutes	DWDO
2	Number of schemes rehabilitated	Major and minor rehabilitation of existing schemes	0	1	2	0	0	0	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
3	Number of non-functional boreholes rehabilitated	Afridev boreholes requiring major maintenance	100	40	40	20	0	0	0	Quarterly Council reports; DWDO reports	Joint monitoring reports.	DWDO
4	Number of boreholes constructed	New boreholes constructed	2,598	100	100	100	80	80	0	Quarterly Council reports; DWDO reports	Council meeting minutes	DWDO
5	Number of un - protected shallow wells rehabilitated	Apron, lining, cover to protect the water source	606	10	10	15	15	20	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
6	Number of shallow wells constructed	Excavation, lining, covering/protection	606	10	10	8	8	6	0	Quarterly Council reports; DWDO reports	Joint monitoring reports.	DWDO
7	Number of water points monitored (Surveillance)	Done on quarterly basis by DCT	2,598	300	500	300	400	250	0	Quarterly Council reports; DWDO reports Partners reports	Council meeting minutes	DWDO
8	Number of water points tested	Water Quality Testing and yield testing	40	300	500	300	400	250	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO

9	Number of review meetings	Done on quarterly basis	4	4	4	4	4	4	4	Quarterly Council reports; DWDO reports	Joint monitoring reports.	DWDO
10	Number of joint monitoring	Done by DCT on Quarterly basis	4	4	4	4	4	4	4	Quarterly Council reports; DWDO reports	Council meeting minutes	DWDO
11	Number of Sessions	Collection of water point data		12	12	12	12	12	12	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
12	Number of trainings	Training WUAs		1	3	0	0	0	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
13	Number of trainings	Training WUA frontline staff		1	3	0	0	0	0	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
14	Number of trainings	Train WMAs	0	1	1	1	1	1	1	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO
15	Number of trainings	Train Area Mechanics in CBM2	1	1	0	0	0	0	0	Partner reports; Quarterly Council reports; DWDO reports	Area Mechanics reports; Partner reports WMA reporting tools	DWDO
16	Number of campaigns	T/A based Maintenance campaigns triggering community participation	8	8	8	0	0	0	0	Quarterly Council reports; DWDO reports	Area Mechanics reports; Partner reports WMA reporting tools	DWDO
17	Number of area mechanics trained	Trained in CBM2, Basic Business skills and community mobilization	52	52	52	52	52	52	52	Quarterly Council reports; DWDO reports	WMA reporting tools	DWDO

WASH IN SCHOOLS

	Indicator	Indicator Definition	Base line	Target						Data Source	Data Collection Methodology	Who is responsible
				2022	2023	2024	2025	2026	2027			
1	Number of schools with boreholes maintained	All schools with functional and non-Functional boreholes which needs minor or major maintenance	205	248	250	255	260	265	266	EMIS	Monthly Activity reports	DEYS/CEO
	Number of Bore holes drilled	Drill boreholes in all schools without portable water	28	28	10	10	10	10	10	DWO/ EMIS	Monthly Activity reports	DEYS/CEO
2	Number of Bore holes drilled	Drill boreholes in all CBCCs without portable water	369	75	75	73	73	73	73	DWO/ Social Welfare	Monthly Activity reports	District Social Welfare Office
3	Number of handwashing facilities constructed	Construction of permanent hand washing facilities in schools	200	40	40	40	40	40	40		Monthly Activity reports	DEYS/CEO
4	Number of pit latrines constructed	Construction of inclusive toilets with girls change rooms	520	104	104	104	104	104	104	EMIS/	Monthly Activity reports	DEYS/CEO
5	Number of school governing bodies trained	Train school governing bodies such as SMC, MG and PTA on soap making	748	150	150	150	150	150	148	EMIS	Monthly Activity reports	DEYS/CEO
6	Number of participants trained	Train	748	150	150	150	150	150	148	EMIS	Monthly Activity reports	DEYS/CEO

	Indicator	Indicator Definition	Base line	Target						Data Source	Data Collection Methodology	Who is responsible
				2022	2023	2024	2025	2026	2027			
WATER RESOURCES MANAGEMENT												
1	Number of trainings conducted on environmental management.	Management of the environment will look at ensuring that natural resources are not being depleted but protected for the sake of restoration.	40	8	8	8	8	8	0	EDO office	Reports	DFO/EDO
2	Number of catchment management plans developed	Catchment are parts of river banks that borders land. Plans developed will guide in providing protection to the identified catchment area.	8	4	4	0	0	0	0	DFO	Minutes & Reports	DCDO and EDO
3	Number of Catchments Areas planted with trees	The marginalized lands identified will be planted with trees to ensure there is cover to the land and reduce runoff as well as increase infiltration.	41	8	8	8	8	9	0	EPA, DFO and EDO office.	Reports	DFO and EDO
4	Number of trainings conducted on fuel stoves.	Trainings will guide the communities on ensuring that trees are not being cut in search of fuel.	15	3	2	2	4	4	0	EDO office	Reports	EDO and DFO
5	Number of buffer zones created	Creation of a buffer zone will enhance protection of rivers from siltation after trees have been planted and so will it protect people from floods.	41	8	8	9	8	8	0	DFO office	Reports	DFO and EDO

WASTE MANAGEMENT												
1	Number of waste disposal facilities constructed.	Waste disposal facility is a site that is specifically used to dump all kinds of waste that is generated in a specified area.	29	6	6	6	6	5	6	EDO office	Reports	DPW/EDO
2	Number of Trainings conducted on waste management.	Trainings is provision of knowledge through capacity building during lectures or focus group discussions. This will help to have clean environment and control spread of disease outbreak.	31	7	5	6	7	6	7	EDO office	Reports	EDO/TO
3	Number of waste bins procured	Bin is a waste collection tool used for dumping waste at a particular point. They can be movable or stationery based on design.	62	6	6	6	6	6	6	DPW office	Reports	DPW/EDO
4	Number Waste Plant constructed	Waste plant is an area designed as the final dumping place of waste that cannot be re-used or recycled. A plant is used to burn materials as the final means of disposing waste. waste.	1	1	0	0	0	0	1	DPW/EDO office	Reports	DPW/EDO
5	Number of trainings conducted on fuel stoves production.	Cooking stoves are improved cooking tools that enhance saving energy/ fuel when using them.	19	2	3	5	6	3	2	DEYS/EDO office	Reports	EDO
6	Number of awareness campaigns conducted on	Awareness campaigns will look at people have the knowledge on managing marginalized area along river	31	8	5	8	4	6	8	EDO office	Reports	EDO

	catchment management.	banks making boundary with water bodies and land.										
7	Number of Radio Jingles developed.	Radio jingles are pre-recorded messages that will inform people on how waste can be managed and where it can be dumped.	240	48	48	48	48	48	48	DIO office	Audio recordings being broadcast	DIO/EDO

Annex 9.2: DCT stakeholders mapping tool

Name of sector/organization	Name of WASH project	Specific area of intervention	Project duration	Impact area TA/GVH	Project beneficiaries	Donor
Basic Services for Development Agency (BASEDA)	Madzi Mjigo (MM)	- Capacity building - M&E - Enhance coordination	2017-2022 (6years)	All TAs	Area mechanic	InterAide
BASEDA	Strengthening WASH governance and sustainable water supply services in Dedza	- Capacity building - Support operation and maintenance in the district	2019-2022 (3 years)	All TAs	Entire communities	WHH
World Vision	Tchesa and Chitundu WASH Projects	Construction of BHs, rehab of BHs, capacity building of WPC Specific area of intervention: CLTC, SLTS provision of materials for construction of improved pit latrines (Institutions)	2020-2024	T/A Tambala In all 22 GVHs	Health Care Facilities, patients, clients, Markets, Schools and Community members	South Korea and Australia
United Purpose	FNSP	CLTS & SLTS Hygiene promotions	2020-2022	-TA Tambala, Chauma, K/gwaza and Kasumbu	Community & schools	GIZ-Food and Nutrition Security Project
United Purpose	European Union Humanitarian Aid and Civil Protection {ECHO}Project	Restoring and repairing water supply in health care facilities, Capacity building /training of community and Government frontline workers on COVID-19 and Hygiene promotion Procure, Distribute and Preposition WASH supplies for Health Centres, ETUs and Public Places,	August 2020-June 2021 (11 Months)	T/A's Kamenyagwaza Kachindamoto Chauma Kasumbu Kachere Tambala Chilikumwendo	Health Care Facilities, patients, clients, Markets, Schools and Community members	European Union Humanitarian Aid and Civil Protection {ECHO}

		Hygiene promotion and hand washing campaigns in communities and public places with a focus on practical demonstrations and COVID-19 tailored behaviour change communication approaches"				
Welthungerhilfe	Collective action for sustainable WASH services in Dedza district	Systems strengthening, Water points infrastructure development Hygiene promotion Community based management	2018-2022	District wide approach	DCT, AECs, ADCs Area mechanics Community members, Learners in Primary schools	BMZ Krombacher
Welthungerhilfe	Participatory Hygiene and Nutrition Education	Hygiene promotion through community health club and school health clubs, construction of school infrastructure and provision of safe water	2017-2024	T/A Chauma, Tambala, Kaphuka	Community members, Primary school earners	WHH Own Funds
District council	Borehole fund Water supply project	Borehole drilling Community based management (CBM) trainings	2020- on wards	All T/As	Community members	GOM Borehole fund
District Education Manager	Water Supply Project	Borehole drilling	2020-2021	All TAs	Primary school learners	COVID-19 response fund
Malawi resilient drought recovery management project (MRDRMP)	Water supply project	Rehabilitation of 2 gravity fed piped water systems	2021-2022	Kamenyagwaza Kasumbu Kachindamoto	Community members	World Bank