



REPUBLIC OF ZAMBIA

NATIONAL WATER POLICY

2024



FOREWORD



It is universally acknowledged that water is vital for the sustenance of human life, fostering socio-economic development and maintenance of the environment. Water plays a critical role in fostering energy and food security as well as enhancement of public health. Water also supports other economic sectors such as mining, tourism and manufacturing among others. Access to improved water supply and sanitation services contributes to sustainable livelihoods, improved school attendance and promotes human dignity, which helps create healthy and resilient communities. In recognising the important role water plays, Government, in this National Water Policy, has prioritised the attainment of national water security and universal access to sanitation through the implementation of interventions on water resources conservation, protection, restoration and rainwater harvesting.

Other interventions include water and sanitation infrastructure development, upgrade, rehabilitation and maintenance, as well as construction of waterborne sanitation facilities in public institutions and places such as schools, markets, health facilities and bus stations, among others. In order to ensure the effective implementation of these interventions Government will leverage various sources of financing including Public-Private Partnerships (PPPs).

This Policy brings together the two sub-sectors namely: water resources management and development, and water supply and sanitation to ensure integrated and effective development, management and provision of water supply and sanitation services. The Policy also takes into account cross cutting issues such as gender and social inclusion, and climate change, among others.

This Policy will, therefore, serve as a guide to the Government, regulators, service providers, the Cooperating Partners, the Private Sector, Non-Governmental Organisations, Faith-Based Organisations and Civil Society Organisations in the attainment of national water security and universal access to sanitation.

A handwritten signature in black ink, appearing to read 'Collins Nzovu'.

Hon. Eng. Collins Nzovu, MP

MINISTER OF WATER DEVELOPMENT AND SANITATION

ACKNOWLEDGEMENTS



On behalf of the Ministry of Water Development and Sanitation, I wish to extend my profound appreciation to all who through partnership with the Government of the Republic of Zambia, supported and facilitated the development of this National Water Policy.

The Ministry is grateful to stakeholders in the water sector, made up of line ministries, provincial administrations, Local Authorities, statutory bodies, Cooperating Partners, Private Sector, Non-Governmental Organisations, Civil Society Organisations, research and academia for their invaluable support and contributions in the process of developing this Policy.

A handwritten signature in black ink, appearing to be 'RK' followed by a flourish.

Eng. Romas Kamanga

PERMANENT SECRETARY

WORKING DEFINITIONS

Ambient Water Quality Standards and Guidelines:	Approved provisions that describe the desired condition of a water body or the level of protection or mandate how the desired condition will be expressed or established for such waters in the future. The standards and guidelines are meant to help protect and maintain water quality necessary to meet and maintain designated or assigned uses, such as recreation, domestic, agricultural, and protection of aquatic life.
Aquifer:	Any geological formation which absorbs, stores and transmits groundwater.
Catchment:	A geographical area which naturally drains into a water resource and from which the water resource receives surface or ground flow that originates from rainfall.
Ecosystem:	A living functional system which contains all organisms including human beings, their environment and the relationship that exists between them.
Environmental Flows (e-flows):	Water provided within a water resource to maintain ecosystems and their benefits where there are competing users and where flows are regulated by means of waterworks or management instruments.
Groundwater:	Any water resource found under the surface of the ground.
Hygiene	Behaviors that can improve cleanliness and lead to good health, such as frequent handwashing, facial cleanliness, and bathing with soap and water.
Hydro – Meteorological Network	A set of stations at which observations of hydrologic phenomena are made as a function of time, and they are meant to provide information to aid in planning, management and decision making.
Integrated Water Resources Management:	A process that promotes the coordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.
Precipitation	A process that takes place in the atmosphere, through the condensation of water vapour to form rain droplets, snow, or hail.
Rainwater Harvesting:	A process of capturing rainwater from surfaces such as roofs and land.

Surface Water:	All water found on or below the bed of a water resource and includes water in storage works, drainage works or permanent pools.
Troika	A grouping of sector coordination partners comprising the Ministry responsible for Water Development and Sanitation; Cooperating Partners; and Civil Society Organisations.
Water Resources:	Includes water, any river, spring, hot spring, pan, lake, pond, swamp, marsh, stream, watercourse, estuary, aquifer, artesian basin or other body of naturally flowing or standing water.
Sanitation:	Safe collection, containment, transportation, treatment and disposal or reuse of human excreta, domestic liquid waste and industrial effluents.
Shared Water course:	A water resource that forms, or is bisected by, an international border between Zambia and another State or among States including Zambia.
Water Supply:	The abstraction, treatment, storage and distribution of water for domestic, commercial and industrial use.
Riparian State:	Any country on, or along the boundary of the whole or any portion of, which a water resource exists.
Water Security:	The capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.

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4. ACRONYMS

CPs	Cooperating Partners
CICOS	Commission Internationale du Bassin du Congo-Obangui-Sangha / International Commission of the Congo-Obangui-Sangha
DTF	Devolution Trust Fund
GRZ	Government of the Republic of Zambia
HYCOS	Hydrological Cycle Observing System
IWRM	Integrated Water Resources Management
JICA	Japanese International Cooperation Agency
MDGs	Millenium Development Goals
MEWD	Ministry of Energy and Water Development
MWDS	Ministry of Water Development and Sanitation
NWASCO	National Water Supply and Sanitation Council
NWP	National Water Policy
SDG	Sustainable Development Goal
WASH	Water, Sanitation and Hygiene
WARMA	Water Resources Management Authority
ZDHS	Zambia Demographic and Health Survey
ZRA	Zambezi River Authority

CHAPTER ONE

1.0. INTRODUCTION

Water is a basic natural resource, which sustains all forms of life. Access to clean water, sanitation services and proper hygiene practices are crucial for public health. Water resources play a crucial role in fostering socio-economic development and supporting ecosystem. Water resources support agricultural production, energy generation, mining activities, tourism, domestic use, industrial activities as well as a healthy and thriving ecosystem.

The demand for water resources has increased over the past few decades. In 1995, the annual demand for surface and groundwater were 2.26km³ and 0.73km³ respectively (YEC, 1995). By 2022, the annual figures increased to 17.2km³ and 1.3km³ for surface and groundwater respectively (WARMA, 2022). This implies that the annual demand for surface water has increased by more than seven (7) times that of 1995. As the population grows, economic activities also increase, thereby exerting significant pressure on Zambia's water resources, leading to a range of water related challenges. Further, anthropogenic activities such as deforestation, unsustainable agriculture practices, pollution, and encroachment on water sources, headwaters, recharge zone and wellfields continue to pose a serious threat to water resources. The situation is further compounded by climate change and climate variability.

Further, despite making investments in water and sanitation infrastructure, the country still has an investment gap and unmet water and sanitation demand due to the growing population and increased economic activities. This, therefore requires the Government to accelerate investment in climate resilient water and sanitation infrastructure.

The Government has been undertaking and implementing water sector reforms since the early 1990s. These reforms led to the development of the first National Water Policy (NWP) in 1994, which was aimed at promoting sustainable water development by facilitating equitable provision of adequate quality and quantity of water for all competing users at acceptable costs and ensuring security of water supply. The National Water Policy, 1994 saw the enactment of the Water Supply and Sanitation Act No. 28 of 1997 which established the National Water Supply and Sanitation Council (NWASCO) to regulate the water supply and sanitation sub-sector. The Policy was revised in 2010 with a vision to optimally harness water resources for the efficient and sustainable utilisation of the natural resource to enhance economic productivity and reduce poverty. The National Water Policy, 2010, led to the enactment of the Water Resources Management (WRM) Act No. 21 of 2011 which established the Water Resources Management Authority (WARMA) to regulate water resources in the country. However, the National Water Policy, 2010 focused on the water resources management and development sub-sector and did not adequately cover the water supply and sanitation sub-sector. As a result, the National Water Supply and Sanitation Policy was developed in 2020.

Despite these developments, the sector still faces a number of challenges in attaining water security and universal access to water supply and sanitation services. These include: inadequate water harvesting infrastructure; inadequate water supply and sanitation infrastructure; inadequate legislative and structural reforms; inadequate sector financing; inadequate public- private partnerships; non cost

reflective tariffs; inadequate research and development; and climate change, among others.

This National Water Policy, brings together the two (02) subsectors namely: water resources management and development, and water supply and sanitation. This will help the sector to be guided by one (01) comprehensive Policy and avoid fragmented frameworks. The Policy is aimed at ensuring national water security and universal access to sanitation. It is designed to enhance cross-sectorial water resources planning; resource mobilization; equitable water allocation; harness water resources; accelerate attainment of universal access to water supply and sanitation; enhance legal and institutional frameworks and coordination mechanisms; and promote gender and social inclusion in the water sector.

The Policy is presented in Five Chapters. Chapter One is the introduction, Chapter Two is the situation analysis, providing the background, status and challenges of the Water Sector in Zambia. Chapter Three, is the vision, rationale and guiding principles. Chapter Four outlines the objectives of the Policy and measures to be employed in the implementation of the Policy. Chapter Five highlights the implementation framework providing insight into the institutional arrangement, legal framework and resource mobilisation, as well as monitoring and evaluation.

2.0. SITUATION ANALYSIS

2.1. Background

Zambia's renewable water resources comprises of surface water and groundwater with the rainfall being its main source. The Water Resources Master Plan for Zambia (JICA, 1995), indicates that the country is endowed with the average renewable surface water potential estimated at 100 cubic kilometres per annum (km^3/yr) and the average renewable groundwater potential estimated at 49.6 cubic kilometres per annum (km^3/yr). The Water Resources Master Plan for Zambia further indicates that surface water resource potential in Zambia is approximately 86.62 km^3 per year in a normal year and 49.71 km^3 per year in a drought year. The groundwater potential is approximately 8% of the annual rainfall. According to FAO (2005), the average annual precipitation for Zambia is estimated to be 1,020mm, but it varies considerably across the years.

The distribution of these surface water resources varies across the six major river catchments, namely Zambezi, Kafue, Luangwa, Chambeshi, Luapula and Tanganyika. The river catchments in the north, namely Chambeshi, Luapula and Lake Tanganyika have more surface water potential than those in the western and southern parts of the country namely the Zambezi, Kafue and Luangwa rivers. The low water potential in the south is partly owing to evaporation losses from the Barotse flood plains, the Kariba dam and the Kafue flood plains (JICA, 1995). Furthermore, climate change and human activities such as encroachments and deforestation of recharge areas as well as the rapidly increasing water demand pose a threat to the surface water resources. Other processes such as an increase in population, land use changes, and economic development have also had major influences.

Groundwater is used as an additional water source in areas of frequent water stress. Groundwater is the major source of safe water supply for rural populations and forms a major part of municipal water supply. However, in recent years, there has been a growing threat to groundwater resources. Prior to the regulations (SI No. 20 of 2018) groundwater was basically unregulated which led to concerns of groundwater depletion and deteriorating water quality especially in urban areas. Pit latrines and septic tanks pose a potential threat to the underlying aquifer, which is a particular concern where wells or boreholes are located in close proximity. Groundwater contamination is still a concern in urban areas coupled with the ever-increasing demand for water due to population growth. Encroachment of groundwater recharge areas and well fields is also a major source of groundwater contamination. Expansion of areas of irrigation in agriculture and increased demand for water for economic activities has also led to localised pressure on groundwater resources in some areas.

In 2020, renewable water resources per capita for Zambia was 5,700.6 cubic meters per year. Between 1971 and 2020, renewable water resources per capita in Zambia was declining at a moderating rate to shrink from 24,263.6 cubic meters per year in 1971 to 5,700.6 cubic meters per year in 2020 (World Bank, 2020).

The demand for water resources has increased over the past few decades. In 1995, the annual demand for surface and groundwater were 2.26km³ and 0.73km³ respectively (JICA, 1995). In 2022, the annual figures for water demand had increased to 17.2km³ and 1.3km³ for surface and groundwater respectively (WARMA, 2023). This entails that, the annual demand for surface water had increased more than seven (7) times that of 1995. On the other hand, groundwater demand had only increased by 1.7 times compared to that of 1995. Given this scenario, surface water demand is expected to continue to rise at a faster rate than groundwater. Moreover, population growth and increased economic activities will contribute further to both surface and groundwater demand. The distribution of the demand is uneven with some parts of the country having greater demand than others. The northern part of the country has higher catchment yields for both surface and groundwater. However, the greatest demand occurs in the southern part which is also faced with water scarcity.

Further, there is uneven distribution of water resources with the northern parts of the country having more than the southern parts, which poses enormous water development and management challenges. This is also compounded by yearly rainfall variability. The implication of this situation is that while water resources seem abundant, shortages and competing demands have been experienced in some areas due to rainfall variability and the rapidly declining renewable water resources per capita. Additionally, human activities such as indiscriminate cutting of trees, and bad agricultural practices coupled with the effects of climate change, have led to a serious negative impact on Zambia's water resources availability. It is therefore imperative to strengthen integrated water resource planning so that water is developed, allocated, managed and utilized in an equitable and sustainable manner.

2.2. Water Resources Planning and Management

2.2.1 Water Resources Planning

Water resources planning is a prerequisite to effective sustainable water resources development, management and utilisation. Water resources planning, among others, comprises continuous hydrological and hydrogeological assessments; determination of water resources availability and water demands; preparation of plans for water allocation and utilisation; plans for catchment protection; conservation and restoration; and plans for investments in primary and secondary water infrastructure.

Over the years, the Government, in collaboration with key stakeholders and Cooperating Partners in the water sector, have developed and implemented several initiatives to address water resources planning challenges in Zambia. These include:

- i. Development of the National Water Resources Master Plan in 1995. The National Water Resources Master Plan was aimed at attaining water security for the social and economic development of the country;
- ii. Development of the Integrated Water Resources Management and Water Efficiency (IWRM/WE) Plan (2007 - 2030);
- iii. Enactment of the Water Resources Management (WRM) Act No. 21 of 2011 which has enabling provisions for the declaration of Water Resources Protection Areas (WRPAs) to safeguard

sensitive and critical water resources;

- iv. Development of the National Water Resources Strategy and Plan (NWRSP) in 2022; The Strategy is a vital instrument for the management, use, development, conservation, preservation, protection, control and regulation of water resources;
- v. Development and implementation of Early Warning Systems (EWA) for floods; and
- vi. Development and deployment of the Zambia Drought Monitoring System (ZADMS). The system provides information needed to forecast, monitor and manage agriculture-related drought.

Despite Government efforts, challenges still remain emanating from population growth, increased economic activities, and uncoordinated and integrated land use planning. These challenges have resulted in increased water demand, reduced renewable water resources and encroachment of water resources. Further, the impact of climate change on water resources is prominent. Moreover, the 1995 National Water Resources Master Plan (NWRMP) which expired in 2015 was not extensively implemented due to inadequate matching resources and lack of an implementation plan. However, it has been close to three decades since the Plan was developed and a lot of socio-economic and environmental changes have occurred. Updating the National Water Resources Master Plan is required to take into account the various socio-economic and environmental changes that have happened. Therefore, there is a need to enhance water resources planning to address the country's water security challenges.

2.2.2 Water Resources Management

Sustainable water resources management ensures the long-term availability of water resources for both the current and future generations. In addition, sustainable water resources management ensures that the country's water resources are managed in an integrated and participatory manner. Government has made strides towards the attainment of integrated water resources management in the country through the enactment of the WRM Act No 21 of 2011 which has provided for decentralised water governance structures.

Despite Government's efforts to decentralize water resources management, water governance structures have not yet been operationalized due to financial constraints. This has hampered the effective management of water resources at lower levels as well as the participation of stakeholders.

Financial constraints have further affected key water resources management functions such as comprehensive water resources assessment for both surface and groundwater. In addition, there is limited equipment for effective and periodic water resources assessments in the country. This, coupled with inadequate human capital, has adversely affected planning for all sectors.

In addition, emerging methods and technologies to enhance water resources management have not been adequately implemented due to limited capacities and water statistics. The adoption of these emerging methods and technologies would aid in equitable and efficient water resource allocation, permitting and utilisation to spur social and economic development.

Conservation and protection of water resources is essential to maintain water security for socio-

economic development and ecological preservation. Zambia's water resources are under pressure from the impact of human-related activities. Degradation of some catchment areas is mainly caused by human-related activities such as deforestation, unsustainable agriculture practices, unplanned settlements, and encroachment of water resources within the buffer zone, leading to reduced water availability, reduced water quality and unhealthy ecosystems.

For instance, mining generates huge volumes of waste at various stages of production. Such wastes contain, in most cases, heavy metal pollutants that pose health and ecological risks. Open-pit mining results in change of land surface and drainage patterns. In most cases, water resources in streams, rivers, and dams including groundwater are threatened by mining activities. Furthermore, the prevalence of inadequate sanitation facilities and poor waste management practices causes contamination of water resources.

Government has put in place measures to conserve and protect Zambia's water resources by:

- i. Ensuring that the WRM Act has enabling provisions for the declaration of Water Resources Protection Areas (WRPAs) to safeguard sensitive and critical water resources;
- ii. Developing and implementing Ambient Water Quality Standards and Guidelines;
- iii. Developing catchment or river restoration plans such as the Restoration and Protection Plan for Magoye River Catchment to protect and restore degraded river catchment; and
- iv. Setting up a national water quality monitoring network for water quality assessment.

Despite the above-mentioned efforts by Government to ensure that the country's water resources are conserved and protected, some of these are yet to be fully implemented. For instance, the Ambient Water Quality Standards and guidelines were developed but are yet to be implemented. Additionally, there is also a need to replicate the Restoration and Protection Plan for Magoye River Catchment in other degraded catchments. Furthermore, there is still a need to make the existing water quality testing laboratories fully functional.

2.3 Urban Hydrology

Assessment and monitoring of water resources in the country has mostly been undertaken at a large scale with monitoring and assessment initiatives being focused on remote and uninhabited areas. This has resulted in inadequate management of water resources for large urban centres and peri-urban areas. For instance, drainage systems and management of storm waters for the built environment have not been effective. This has led to perpetual flooding of major cities and damage to critical infrastructure such as roads, bridges and buildings. This scenario needs to be addressed if infrastructure investments which are undertaken at huge costs are to be safeguarded by undertaking effective stormwater management in the built environment based on sound urban hydrology.

2.4. Transboundary and International Water Cooperation

Since the enactment of the WRM Act No. 21 of 2011, Zambia has institutionalised the management of transboundary water resources in both the Zambezi and Congo Basins so as to effectively participate in transboundary water governance, cooperation and management.

Zambia is a party to the key instruments pertaining to the management of shared watercourses, namely: the Revised Protocol on Shared Watercourses in the Southern African Development Community; the Agreement for the Zambezi Watercourse Commission; the Zambezi River Authority (ZRA); and the Lake Tanganyika Convention among others. However, institutional capacity for coordinated basin planning for transboundary water resources development to attain national and regional water security, and benefit sharing is limited. In addition, basin management in terms of preparation of plans for transboundary protection, conservation and restoration is also limited. In terms of monitoring stations on the transboundary rivers, there are seven (07) Hydrological Cycle Observing Systems (HYCOS) in the Zambezi Basin. These stations are there to facilitate effective assessment and management of shared water resources but are considerably few, expensive to maintain and need cost sharing among riparian states to operate effectively. Zambia also needs to domesticate some international instruments as an important element of International Water Law.

The Congo Basin is made up of nine riparian states namely: Angola, Burundi, Cameroun, Central African Republic, Democratic Republic of Congo, Gabon, Rwanda, Republic of Congo, Tanzania and Zambia. However, out of the ten riparian states, Zambia is not yet a party to the Agreement for the International Congo- Oubangui-Sangha Commission (CICOS) which was set up in 1999 to coordinate and facilitate an IWRM approach in the Congo Basin. This platform would provide opportunities for Zambia to participate in equitable and sustainable utilisation of shared water resources, climate change adaptation, benefit sharing, water resources planning and management, poverty alleviation and conflict resolution.

2.5. Water Resources Development

Water resource development plays a key role in attaining water security to facilitate the socio-economic development of the country. According to the Zambia Water Resources Master Plan (1995), Zambia had a target of constructing twenty-five (25) large dams with a total estimated storage capacity of 4,977 million cubic meters. However, the country only managed to construct three (3) large dams with a storage capacity of 242 million cubic meters bringing the total number of large dams in the country to Eight (8). As of 2018, the country had over 2,000 small dams located in various parts of the country with an estimated storage of 1,500mm³ of water (7NDP, 2017). The total storage capacity of the country could be estimated to be 1742 mm³.

The situation of inadequate water storage capacity exposes the country to water insecurity, particularly during dryer periods. The current situation has affected the country's ability to store sufficient water for onward utilization. Inadequate water storage infrastructure has a cascading effect on food and energy security in the country thereby potentially affecting the growth of Gross Domestic Product (GDP). Further, water-dependent sectors such as irrigated agriculture, hydropower, water supply and others continue to be negatively affected by inadequate water storage.

Zambia, like other countries in the Southern African region, is faced with water security challenges arising from climate change, rapid population growth, increased economic activities and establishment of farming blocks. The adverse effects of climate change coupled with inadequate water harvesting infrastructure have profoundly affected national water security thereby hindering social and economic activities. For the country to attain water security and resilience, reliable water storage infrastructure is required to cover the reported shortfall.

Groundwater is the major source of domestic water and its use for irrigation is predicted to increase substantially to combat growing food insecurity. Despite this, there is little quantitative information on groundwater resources in Zambia and groundwater storage is consequently omitted from assessments of freshwater availability. While groundwater resources offer essential livelihood mechanisms as noted above, they represent an essential part of climate change adaptation strategies. Its strategic importance will probably intensify under climate change and human development (population growth, urbanization) in the future. Groundwater constitutes the most important buffer and reserve of water during surplus periods as well as a source of water for streams and/or direct withdrawals in times of shortage and thus is expected to play an essential role in climate change adaptation. However, there are major gaps in the knowledge of groundwater resources in Zambia with inadequate knowledge of the groundwater resources in both quantity and quality for the current, short and long-term periods with significant uncertainty regarding the impact of climate change on groundwater resources and groundwater-dependent ecosystems in Zambia.

2.6. Water Supply

Access to clean and safe water is a human right recognized by the United Nations General Assembly which Zambia is a party to. The Government of the Republic of Zambia has made progress in the implementation of interventions aimed at accelerating universal access to clean and safe water in urban, peri-urban and rural areas. The key milestones include:

- i. Development and implementation of the National Urban Water Supply and Sanitation Program 2011-2030;
- ii. Development and implementation of phase two of the National Rural Water Supply and Sanitation Program 2019-2030;
- iii. Development and implementation of the National Non-Revenue Water Framework 2016-2018;
- iv. Development of the National Non-Revenue Water Management Strategy 2022 - 2026;
- v. Establishment of the eleventh commercial water supply and sanitation utility; and
- vi. Development of the frameworks regulation of urban onsite sanitation and rural water supply.

These milestones have contributed to improved water supply coverage in the country. According to the Zambia Demographic and Health Survey Report (ZDHS, 2018), 72 per cent of households (92 per cent in urban and 58 per cent in rural areas) obtain drinking water from improved sources. This represents a 7 per cent improvement from 65 per cent (90 percent urban and 47 percent rural).

Despite the above achievements, the country still needs to provide basic water supply services to over 660,000 people per year in order to achieve universal access to clean and safe water by the year 2030. Zambia still faces challenges in providing access to clean and safe water which is attributed to inadequate investments, high cost of water treatment and high non-revenue water owing to old and dilapidated infrastructure. This situation demands for more investment and a robust operation and maintenance programme for the existing infrastructure in order to sustain the provision of water services in the country. It is worth noting that the challenge of inadequate infrastructure is more

pronounced in rural areas where the main sources of clean and safe water are boreholes equipped with hand pumps.

Further, low access to clean and safe water is attributed to inadequate innovations among the water supply and sanitation utilities in the country. According to the National Water Supply and Sanitation Council Urban and Peri-urban Water Sector Report (2022), the sector's non-revenue water is at 57 percent which is higher than the 25 percent sector benchmark. This translates to over 11 billion kwacha total revenue loss for the period 2001 to 2022, which would have been used for the improvement of service provision.

Even though the Local Authorities have created and delegated the provision of water and sanitation services to the water supply and sanitation utilities in their jurisdiction, water supply and sanitation utilities have only been able to provide these services in urban and peri-urban areas where there is water and sanitation infrastructure. On the other hand, Local Authorities have continued to provide the services in rural areas. There is need to increase investment in water and sanitation infrastructure for water supply and sanitation utilities to be able to effectively provide services in rural areas. Although legislation provides for private sector participation in the provision of water supply and sanitation, there are no specific guidelines to effectively promote and implement this undertaking in the sub-sector. Additionally, the water supply and sanitation sub-sector continues to face challenges in meeting the service level guarantee on water quality due to inadequate water monitoring infrastructure and equipment.

2.7. Sanitation and Hygiene

2.7.1. Sanitation

Government has been implementing key sector interventions and initiatives in order to ensure universal access to sanitation and hygiene services such as: construction and rehabilitation of waterborne sanitation facilities in public institutions, wastewater treatment plants and sewer networks. This is also aimed at meeting the required effluent standards, eliminating environmental risks and protecting public health. In an effort to implement the above mentioned interventions, Government developed the National Open Defecation Free Strategy (2018-2030), the National Urban Sanitation Strategy (2015-2030), and Guidelines for Regulation of Onsite Sanitation and Rural Water Supply and Sanitation.

The Government has also developed the National Rural Water and Sanitation Programme which has been under implementation since 2007 resulting in over 5 million people reached with sanitation and hygiene messages. Furthermore, over 57 out of 288 chiefdoms have been declared Open Defecation Free (ODF), by mainly employing community approaches to sanitation. Traditional and Civic leaders have taken the lead in championing community participation at local level and ensuring communities construct toilets. These milestones have contributed to improved sanitation coverages in the country. According to ZDHS (2018), 54 percent (78 percent urban and 37 percent rural) of households had access to improved sanitation facilities. The report also shows that 36 percent (21 percent urban and 47 percent rural) of households had access to unimproved sanitation facilities. Additionally, the ZDHS Report (2018) shows that 10 percent of the population (1 percent urban and 16 percent rural) had no toilet facilities and therefore practiced open defecation while, in 2017 the JMP report showed that, 15 percent of the population (25 percent rural and 1 percent urban) practiced open defecation. This

indicates a 5 percent decline in the population practicing open defecation between 2017 and 2018.

Despite these achievements, the provision of sanitation services has been negatively impacted by low capital investment and poor construction of sanitation facilities leading to groundwater contamination. Furthermore, waterborne diseases such as cholera and dysentery are common and are directly related to poor hygiene practices and inadequate sanitation. Good hygiene practices play a significant role in reducing the spread of diseases. However, even when communities have knowledge about the importance of practicing good hygiene, most either lack the necessary clean water, soap and washing facilities or have low adherence to required measures. The Zambia Scaling Up Nutrition (SUN) 2.0/ First 1000 Most Critical Days Programme (MCDP II) Report (2020) indicates that poor sanitation and hygiene contributes to stunting and child morbidity and mortality more especially in low cost and vulnerable communities. To achieve universal access to improved sanitation services and end open defecation in the country, there is need for concerted effort from all partners and more investment are needed.

2.7.2. Hygiene

Good hygiene has been identified as one of the important and effective means of disease prevention. Good hygiene practices involve washing hands with soap or any other hygienically acceptable materials at all critical times such as every after using the toilet, before eating, after changing nappies and requires that people have access to clean and safe water supply and hand washing facilities. Washing hands with soap could typically help prevent the spread of water borne diseases and any other diseases of public health importance.

Government has developed the Water, Sanitation and Hygiene (WASH) Communication Strategy (2019-2030) to stimulate behaviour change and sustain positive knowledge, attitudes and practices at individual and community level.

The ZDHS Report (2018), shows that the percentage of the population with a basic hand washing facility stood at 23.5 percent (36.2 percent urban and 15.3 percent rural), an increment of 6.2 percent from 32.4 percent of the households (42.8 percent urban and 17.3 percent rural) recorded in 2014. It is evident that a considerable proportion of households in Zambia do not have access to basic sanitation facilities. Poor hygiene is compounded by limited availability of clean and safe water and lack of hand washing facilities mostly in peri-urban and rural areas.

Lack of clean and safe water, hand washing facilities with soap coupled with poor sanitation facilities in some public institutions and particularly schools, have been blamed for poor school attendance among the girl children in menstrual ages. Therefore, provision of clean and safe water, hand washing facilities with soap and adequate sanitation facilities are key to the practice and maintenance of good menstrual hygiene. Further, the availability of a hand washing facility with soap and clean and safe water is considered as a key criterion for the practice of basic hygiene.

2.8. Water and the Environment

Zambia is endowed with a range of natural resources that include water, forests, fisheries, wildlife, land and minerals. The country depends on these natural resources in fostering its economic growth and alleviating poverty among the citizens. Government has made strides in environmental conservation

specifically in the area of water resources restoration and protection through the enactment and enforcement of the Environmental Management Act (EMA) No. 12 of 2011 and the Water Resources Management Act No. 21 of 2011, development and implementation of the Restoration and Protection Plan for Magoye River Catchment (2022-2030), Reducing Emissions through Deforestation and Degradation Programme (REDD+) and the implementation of the Wealth Accounting and Valuation of Ecosystem Services (WAVES) for water, land and forests, among others.

However, as the country's population grows, extraction and utilisation of these resources to support the country's economic growth and social wellbeing also increases. In recent years, the country's natural environment has been adversely affected by land-use, land-use changes and forestry (LULUCF) activities. The National Investment Plan to reduce Deforestation and Forest Degradation of 2018-2022 indicates that the rate of deforestation in Zambia is estimated to be between 250,000 to 300,000 hectares per annum. The high level of deforestation has negative effects on water resources as it destroys important water sources or catchment areas. Other activities that cause negative impacts on the environment include infrastructure development projects, agriculture, extractive industry (mining), inadequate waste management and encroachments in ecologically sensitive areas, among others. These activities have resulted in pollution and degradation of water as well as increased surface runoff leading to siltation thereby compromising the ecological integrity of water bodies. The compromised ecological integrity of water bodies has potential to disrupt social and economic activities.

Zambia's water resources such as wetlands, rivers, aquifers and lakes are fundamental natural resources that support the environment, society and economy. These resources are essential and vital for life as they directly provide a range of ecosystem goods and services. These include drinking water, water for food and industry, energy, habitats for aquatic life, and natural solutions for water purification and buffering floods, mitigating risks, promoting stability and trust-building measures and bridging drought periods. Despite the importance of these resources to national development, there have been a lot of uncoordinated and unsustainable developmental activities taking place within and around headwaters and recharge zones including some ecologically sensitive areas.

Therefore, the country needs to enhance and promote the management, protection and restoration of the environment and its freshwater ecosystems in an integrated approach. This will enhance human well-being, promote inclusive growth, enhance environmental health, boost resilience and reduce risk from natural and man-made disasters. This will, in turn, contribute to the socio-economic development of the country.

2.9. Water for Social-Economic Development

Water is a key enabler of socioeconomic development as it contributes significantly to economic diversification, wealth generation and job creation. Water supports energy, tourism, agriculture, mining, manufacturing, health and education, among other sectors. In this regard, the Government has provided an enabling environment for public and private investment in hydropower generation, hospitality industry, irrigated agriculture, aquaculture, dam construction, water supply and sanitation infrastructure investments at all levels.

Energy as an economic driver plays a vital role in the enhancement of industry competitiveness, improvement of service delivery and poverty reduction. Water is the main source of electricity

generation in the country as one of the forms of energy. The hydropower generation potential in Zambia is 6,000 MW while the current generation capacity stands at about 3,350 MW representing 56% of the total generation capacity. Government has made strides in investing in water resource infrastructure to support hydropower generation. Some of the key hydropower generation infrastructure include: Kariba North Bank, Kafue Gorge upper and lower, Victoria Falls, Lunsemfwa, and the Itzhi Tezhi Hydropower Stations, among others.

Despite the development of water resources infrastructure to support electricity generation, the water sector continues to face the challenges which include, lack of water resource allocation plans, lack of protection of hydropower potential sites and uncoordinated development of agriculture investments upstream of existing and potential hydropower sites. Furthermore, competing water use among the sectors such as irrigated agriculture and hydropower generation potentially creates water related conflicts particularly during periods of water scarcity. The interdependence between water and energy sectors requires integrated planning and management. Water scarcity affects energy generation, while energy shortages hinder water supply and sanitation. There is, therefore need to implement coordinated policies and strategies to address the Water-Energy-Food-Ecosystem (WEFE) Nexus to enhance resource efficiency and resilience.

Agriculture is one of the key economic sectors of Zambia's economy, employing a significant portion of the population (about 58.68% of the population in 2012) and contributing 20% to the country's GDP (World Bank, 2021). However, uneven distribution of water resources, limited infrastructure for water storage, conveyance and inefficient irrigation practices hinder optimized utilization of water resources for irrigated agriculture, aquaculture and livestock farming. The water sector has made substantial investments in water storage infrastructure to support irrigated agriculture, aquaculture and livestock farming. However, there is still an investment gap. Investments in water infrastructure, including dams, canals, and water storage facilities, are crucial to support irrigated agriculture, aquaculture and livestock farming.

The tourism industry is important for economic diversification and is instrumental to minimising the country's reliance on copper mining and agriculture. Water resources play a critical role in supporting the tourism industry in Zambia as most tourism activities are dependent on the availability of water resources for productivity. For example sites such as the Victoria Falls, Samfya Beach, the Kafue Flats and Lake Kariba attract numerous tourists annually. Apart from recreation activities, tourism also utilises water resources through consumption in hosting facilities. However, there lacks an integrated approach to planning and management of water resources that impacts on tourism activities. It is also important to note that animal-human conflicts are on the rise due to climate change-induced water scarcity.

2.10. Research and Training

The range of skills and competencies required to effectively advance water security is both very broad and highly specialised. This is because water issues are broad and complex and require a critical mass of specialists in the different areas of specialization that pertain to water such as water governance, water management, water supply, sanitation, hygiene, water accounting, hydraulic engineering, water resources planning, borehole drilling and groundwater exploration to mention but a few.

In the area of applied research for the water sector, the country has undertaken research on geospatial mapping of water bodies, water hardness in Petauke and groundwater salinity in Western Province, and groundwater resources for Southern Province, among others. In addition, the country developed and produced a Ground Water Vulnerability Map of Lusaka Province and a Hydro-Atlas on environmental characteristics of all sub-basins and river reaches of Zambia. Despite these efforts, there has been a challenge in sustained research and implementation of research findings and recommendations. This is attributed to inadequate funding and collaboration with research institutions.

The country has made some strides in enhancing human resources development through the introduction of specific water and sanitation academic programmes in tertiary institutions such as Water Engineering, Land and Water, Integrated Water Resources Management (IWRM) and Sanitation, among others. However, there are still inadequate training institutions offering specialised programmes in these areas. This has resulted in the country failing to create and maintain a critical mass of human capital in the different water and sanitation specializations, ultimately affecting service delivery. Furthermore, there is a huge gap between training and practice because most of the programmes are academic in nature.

Inadequate specialised training in the various sub-fields of water is compounded by the absence of well-organised and coordinated research that focuses on water. Inadequate research and development in the water sector has caused the country to forego the opportunities for continuous improvement and innovations in water practice and technology. In addition, the sector has no Integrated Management Information System to capture routine data and track progress on the implementation of interventions. This has also affected evidence-based decision-making, planning and policy formulation. Consequently, this has led to varied and non-standardised approaches to addressing water issues and less than optimal performance of both public and private water sector institutions.

2.11. Legal and Institutional Framework

2.11.1 Legal Framework

The legal framework in the water sector is guided by the Constitution which is the supreme law of the land. The Constitution provides for the principles to guide the management and development of Zambia's environment and natural resources, including water. These principles include conservations of ecologically sensitive areas, respect for the integrity of natural processes and ecological communities and equitable access to water and sanitation services. In an effort to achieve these principles, the Government has been undertaking water sector reforms.

In 1994, Government developed the National Water Policy, which saw the enactment of the Water Supply and Sanitation Act No. 28 of 1997. The Act provides for the establishment of the NWASCO and the regulation of water supply and sanitation utilities. It also provides for the Local Authorities to establish water supply and sanitation utilities under the Companies Act. Under the water supply and sanitation sub-sector, Government also developed the 2020 National Water Supply and Sanitation Policy which was aimed at promoting sustainable and equitable access to safe water supply, adequate sanitation and improved services.

Nevertheless, the following issues have remained a challenge and include: inadequate regulation of

onsite sanitation services, lack of clarity on the regulation of self-supplies, unclear service delivery models in rural areas, weak penalties and lack of cost-reflective tariffs and protracted processes for approval of tariffs. These challenges require legal and institutional reforms.

In 2010, the Government developed a second National Water Policy which saw the enactment of the Water Resources Management Act No. 21 of 2011. The Act provides for the establishment of the WARMA and decentralised water governance structures.

The Water Resources Management Act, which empowers the regulator to undertake both water resources management and regulatory functions has not been fully operationalized due to financial and human resource constraints. Consequently, the management of water resources has adversely been affected. Furthermore, the country has a limited regulatory framework, guidelines and institutional framework for rainwater harvesting at all levels.

2.11.2 Institutional Framework

The water sector comprises two subsectors namely: water resources management and development, and water supply and sanitation. The water sector functions are performed by the Ministry responsible for water and sanitation. The Ministry provides policy and strategic oversight for water resources management and development, and water supply and sanitation. The sector has two statutory bodies and eleven (11) institutions. The two statutory bodies are the WARMA and the NWASCO. The WARMA is responsible for the regulation, management, development, conservation, protection and preservation of water resources and its ecosystems while NWASCO is responsible for the regulation of the provision of water and sanitation services.

The eleven institutions are water supply and sanitation utilities which are responsible for the provision of water and sanitation services in urban and rural areas. These include Chambeshi Water Supply and Sanitation Company; Eastern Water Supply and Sanitation Company; Kafubu Water Supply and Sanitation Company; Luapula Water Supply and Sanitation Company; Lukanga Water Supply and Sanitation Company; Lusaka Water Supply and Sanitation Company; Mulonga Water Supply and Sanitation Company; Nkana Water Supply and Sanitation Company; North-Western Water Supply and Sanitation Company; Southern Water Supply and Sanitation Company; and Western Water Supply and Sanitation Company.

Other key stakeholders in the sector include the Local Authorities who are the major shareholders of the eleven (11) water supply and sanitation utilities and also provide water supply and sanitation services in rural areas where water supply and sanitation utilities do not provide services. In addition, the Zambia Environmental Management Agency monitors the discharge of effluent into the aquatic environment and establishes raw water quality and pollution control standards.

2.12. Cross-Cutting Issues

2.12.1. Gender

The vital role played by women in the water sector is well recognised. Government has made strides in mainstreaming gender in national programmes to increase women's participation in decision-making and management of resources. Some of the key milestones include the development of the National Gender Policy. The rural population in Zambia is characterized by having low access to basic services

including safe water and sanitation facilities. There is, therefore, a need to improve access to water in rural and peri-urban areas whose burden of responsibility disproportionately falls on women than men. Although considerable milestones have been achieved since the water sector reforms in Zambia, progress in the rural areas continues to lag behind than that of urban areas, hence disadvantaging the rural population, especially women, children and the elderly.

It is well understood that social and economic development can only be attained when there is equal participation of both men and women in the development process. The sector requires gender mainstreaming and social inclusion in the design and delivery of WASH facilities, products and services, especially in rural areas. There is also a need to increase women's participation in water resources management and build institutional knowledge and competency for gender issues in water resources management. Currently, the national statistics in terms of access to water and sanitation for men and women are not disaggregated therefore, the creation of gender-responsive institutional MIS is critical in gender transformation in the water sector.

2.12.2. HIV/AIDS

The country has made considerable progress in reducing the stigma attached to HIV/AIDS. The availability of Anti-Retro Viral (ARV) drugs has made it possible for people living with HIV/AIDS to live normal lives both in urban and rural areas. However, ensuring that people living with HIV/ AIDS have access to clean water and sanitation is still one of the strategies to manage opportunistic infections. There is a need for infrastructure development especially in rural areas so that clean water supply is within reach for people living with HIV/AIDS. In addition, there is still a need to enhance the promotion of HIV/AIDS wellness programmes in the water sector to avoid reluctance of taking ARV drugs.

2.12.3. Persons with Disabilities

According to the Disability Survey of 2015, the national disability prevalence rate among the adult population (18 years old and above) was 10.9% with 181,856 (2.4%) persons with disabilities living in rural areas and 69,571 (1.4%) persons with disabilities in the urban areas. The Government has made strides in mainstreaming the needs of persons with disabilities in the inclusion of policies, laws and strategies.

Despite, the mainstreaming need of persons with disability in the legal and policy framework, there are still a number of challenges in the water sector. Service provision, site selection, designs and construction of water supply and sanitation infrastructure have not adequately taken into account requirements for persons living with disabilities. This has caused challenges for persons with disabilities to equitably access water and sanitation services. In addition, organisations or associations meant to protect the interests of the disabled are rarely consulted in the design and implementation of programmes and projects in the water and sanitation sector. This has resulted in some facilities not being accessible by disabled people.

2.12.4. Climate Change

Zambia is considered to be among the world's most vulnerable countries to climate change, ranking 26 out of 182 countries in the 2018 Global Climate Risk Index and classified as having high to extreme risk in the 2018 Climate Change Vulnerability Index (Global Climate Risk Index, 2018). Zambia's climate

has high natural variability, with frequent droughts, seasonal and flash floods, extreme temperatures and dry spells, all of which are expected to intensify with climate change. Recent climate trends based on records from 1960 to 2003 indicate that mean annual temperature has increased by 1.3 degrees Celsius, including since 1960, an average rate of 0.34 degrees Celsius per decade. On the other hand, the mean rainfall over Zambia has decreased by an average rate of 1.9 mm/month (2.3%) per decade since 1960 (Zambia NDC, 2015).

Floods and droughts have increased in frequency over the past three decades, costing the nation more than US \$13.8 billion in disaster losses, which translate to approximately 0.4% loss in annual economic growth, while adversely impacting food and water security, water quality, energy and livelihoods of the people, especially in rural communities (Zambia NDC, 2015). Between 2014 and 2015, droughts caused significant reduction in water availability which led to approximately 50% decline in hydropower generation. Consequently, the Gross Domestic Product (GDP) growth rate for the country dropped from around 6% to as low as 2.6% following the droughts and subsequent blackouts (Oxford Policy Management, 2020).

These trends are expected to intensify in the future: projected temperatures are expected to increase by 3-5 degrees Celsius by 2100, with average precipitation declining during the early rainy season (October to December) and intensifying thereafter (NAPA, 2007). The climate change hazards will seriously undermine the efforts to improve the livelihoods of Zambians if left unaddressed. Without adaptation, rainfall variability alone could keep an additional 300,000 people below the poverty line over the next decade, and reduce annual GDP growth by 0.9% (World Bank and PPCR, 2013). The assessment conducted by the Government projected negative impacts of climate change on key economic sectors including water, agriculture, forestry, wildlife, tourism, mining, energy, infrastructure and health.

In an effort to tackle the effects of climate change, the Government has developed a Climate Change Policy which provides a framework for coordinating climate change programmes. Some of Zambia's adaptation measures include: the promotion of irrigation and efficient use of water resources, strengthening early warning systems and preparedness, and using GIS/remote sensing in mapping of drought and flood-prone areas. However, there is a need for more investment in climate resilience water and sanitation infrastructure services as well as enhanced climate change awareness.

2.13. Water Sector Financing

Government recognises the critical role the water sector plays in the development agenda of the country, hence the need for establishing a sustainable financing mechanism for the sector as guided by the various pieces of legislation. The existing financing modalities for the water sector include treasury, tariffs, water fees and charges, grants, loans, and donations from Cooperating Partners. Furthermore, the Water Supply and Sanitation Act No. 28 of 1997 and the Water Resources Management Act No. 21 of 2011 provide for financing mechanisms through the establishment of trust funds in relation to their respective objectives.

In 2003, Government operationalized the Devolution Trust Fund (DTF) under the Water Supply and Sanitation Act through SI No. 65 of 2001. DTF operated as a basket fund to assist licensed water supply and sanitation utilities to improve and extend water supply and sanitation services especially to low-

income urban areas until December 2018. In addition, the Fund bridged the gap between the service levels for low and high-income urban areas through the implementation of innovative and efficient approaches to servicing densely populated urban residential areas. The DTF financing of water supply and sanitation utilities interventions up to December 2018, resulted in over 1.1 million persons having access to sustainable and safe water supply in the peri-urban and low-cost areas of Zambia. On the sanitation front, the Fund financed projects that benefited over 15,000 residents. The DTF was discontinued because Government wanted to come up with one comprehensive Fund that would cover both water resources development and management as well as water supply and sanitation. Hence, in 2020 Government established the Water Development Trust Fund provided under section 155 of the Water Resources Management Act No. 21 of 2011. The Fund is aimed at mobilizing financial resources for the development, conservation and management of water resources. However, the Fund has not been operationalized as the financing mechanism has not yet been developed.

The water sector continues to face a number of financing challenges which include: fragmented financing frameworks, non-operationalization of decentralized water management governance structures, lack of sector-specific Public-Private Partnerships (PPP) guidelines, lack of resource mobilization strategies, and outdated tariff setting guidelines. The non-cost reflective tariffs, fees and charges have consequently made the water sector unattractive for private sector investors' participation.

CHAPTER THREE

3.0. VISION, RATIONALE AND GUIDING PRINCIPLES

3.1. Vision

“A water secure nation with universal access to sanitation”

3.2. Rationale

The Government of the Republic of Zambia started reforming its water sector in the early 1990s to optimize the development and utilisation of water as a resource in the country which culminated into the development of the 1994 National Water Policy. The Policy was revised in 2010, but the revision focused on the water resources management and development sub-sector and did not adequately cover the water supply and sanitation sub-sector. As a result, the National Water Supply and Sanitation Policy was developed in 2020 to adequately address the water supply and sanitation sub-sector. In order to have one (01) comprehensive Policy to guide the water sector, the National Water Policy, brings together the two sub-sectors namely: water resources management and development, and water supply and sanitation.

Other challenges and issues which necessitated the development of the National Water Policy, include the need to accelerate the achievement of universal access to water supply and sanitation; inadequate climate resilient water harvesting infrastructure; inadequate framework for rainwater harvesting; inadequate groundwater exploration and aquifer mapping; climate change adaptation; inadequate transboundary and international water cooperation; need for legislative and structural reforms; alignment from Millenium Development Goals to Sustainable Development Goals; financial viability of water supply and sanitation utilities; inadequate public-private partnerships; and exploration of innovative and alternative water sector financing, among others.

The National Water Policy, therefore, seeks to ensure national water security. Other key aspects of the Policy include the need to attain universal coverage of basic water and sanitation; conservation, protection and restoration of water sources and associated ecosystems; harnessing water resources; improving access to water for socio-economic development; enhancing public-private partnerships; and enhancing resource mobilization for water and sanitation interventions. In addition, the Policy seeks to promote gender equality and social inclusion in the water sector as well as build climate resilience interventions and investments.

3.2. Guiding Principles

The National Water Policy is guided by the following principles:

- a) **Accountability:** In implementing this Policy, stakeholders in the water sector shall be responsible to the public for the decisions and actions taken and answerable for any appropriate scrutiny.

- b) **Human Dignity, Equity, Social Justice, Equality and Non-Discrimination:** In implementing this Policy, stakeholders shall ensure that the human rights approach is applied to water and sanitation opportunities for women, men, youth, children, older persons and persons with disabilities and their needs taken into account. There shall be non-discrimination for persons with disabilities neither shall there be any discrimination based on gender in accessing and utilization of water. Water has a social value and all domestic and non-commercial use of water will not be required to obtain a permit.
- c) **Good Governance:** In implementing this Policy, stakeholders shall follow a consultative approach in the decision making and implementation of programmes and projects in the water sector.
- d) **Integrity:** In implementing this Policy, stakeholders in the water sector shall conduct themselves in a manner that is honest and beyond reproach.
- e) **Sustainable Development:** In implementing this Policy, stakeholders shall follow a sustainable approach in the management and utilization of water at all levels. The Policy seeks to promote water use efficiency through the usage of appropriate technology and innovative water management approaches. Efforts aimed at wealth creation shall be incorporated into all decisions related to the economic utilization of water resources.

4.0. OBJECTIVES AND MEASURES

This Policy will pursue the following objectives and measures:

4.1. Objectives

1. To enhance cross-sectorial water resources planning for sustainable management, development and utilization for socio-economic development;
2. To ensure effective stormwater management in the built environment;
3. To ensure that water resources are sustainably managed and equitably allocated;
4. To harness water resources and ensure water security for enhanced access and utilization;
5. To ensure universal access to improved water supply;
6. To ensure the provision of adequate sanitation and hygiene services for all;
7. To conserve, protect and restore water resources and associated ecosystems;
8. To improve access to water for socio-economic development;
9. To strengthen human capacities, research and information management for water and sanitation service provision;
10. To enhance legal frameworks, institutional effectiveness and coordination mechanisms;
11. To mainstream crosscutting issues in water and sanitation interventions; and
12. To enhance resource mobilization for water and sanitation interventions.

4.2. Water Resources Planning and Management

Objective:

To enhance cross-sectorial water resources planning for sustainable management, development and utilization for socio-economic development.

Measures:

- i. Enhance water resources planning;
- ii. Enhance Integrated Water Resources Management (IWRM);
- iii. Promote private sector participation in water resource management;
- iv. Enhance decentralization of water resources management governance structures;
- v. Enhance assessments of water resources;
- vi. Enhance adoption of emerging techniques and technologies for effective water resources management; and
- vii. Enhance groundwater management and development.

4.3. Urban Hydrology

Objective

To ensure effective stormwater management in the built environment.

Measure

- i. Promote urban hydrology for effective management of stormwater; and
- ii. Strengthen capacity development and awareness of urban hydrology and stormwater management.

4.4. Transboundary and International Water Cooperation

Objective:

To ensure that water resources are sustainably managed and equitably allocated.

Measures:

- i. Strengthen transboundary and international water cooperation;
- ii. Strengthen human and institutional capacity for coordinated transboundary water resources planning and management;
- iii. Strengthen Hydrological Cycle Observing System (HYCOS) monitoring;
- iv. Enhance the domestication and ratification of instruments for the management of shared watercourses; and
- v. Develop and implement transboundary water protection, conservation and investment plans.

4.5. Water Resources Development

Objective:

To harness water resources and ensure water security for enhanced access and utilization.

Measures:

- i. Establish mechanisms that ensure environmental considerations are included in the design for water resources infrastructure and mitigate the effects of climate change;
- ii. Enhance the development of rainwater harvesting infrastructure, national reservoir storage capacity and flood control; and
- iii. Promote Inter/Intra bulk water transfer.

4.6. Water Supply

Objective:

To ensure universal access to improved water supply.

Measures:

- i. Strengthen strategies and systems for continuous construction, maintenance, expansion and rehabilitation of the water supply infrastructure;
- ii. Promote a culture of preventive maintenance at all levels;
- iii. Strengthen potable water quality monitoring facilities and systems;
- iv. Create an enabling environment for private sector participation in water supply, sanitation and hygiene service provision; and

- v. Enhance corporate governance for water supply and sanitation utilities.

4.7. Sanitation and Hygiene

Objective:

To ensure the provision of adequate sanitation and hygiene services for all.

Measures:

- i. Strengthen systems for continuous development, expansion and rehabilitation of the sanitation and hygiene infrastructure;
- ii. Enhance human and technological capacity for the efficient and sustainable provision of sanitation and hygiene services;
- iii. Enhance standards and guidelines for on-site sanitation service chain and faecal sludge management;
- iv. Strengthen operation and maintenance programmes for the sustainable provision of sanitation and hygiene services; and
- v. Create an enabling environment for community and private sector participation in sanitation and hygiene services provision.

4.8. Water and Environment

Objective:

To conserve, protect and restore water resources and associated ecosystems.

Measures

- i. Enhance environmentally friendly water and sanitation services;
- ii. Enhance prevention of water resources pollution; and
- iv. Enhance restoration of catchment and ecologically sensitive water resources areas.

4.9. Water for Socio-Economic Development

Objective:

To improve access to water for socio-economic development.

Measures:

- i. Enhance productive use of water resources;
- ii. Promote the cooperative approach to ownership, development, operation and maintenance of water resource infrastructure;
- iii. Develop the capacity of communities to own and effectively operate businesses that focus on economic water resource utilization;
- iv. Enhance Water-Energy-Food-Ecosystem (WEFE) Nexus coordination; and
- v. Enhance water resources infrastructure to support tourism, energy and agriculture.

4.10. Research and Training

Objective:

To strengthen human capacities, research and information management for water and sanitation service provision.

Measures:

- i. Establish a national competence framework for water professionals at various levels of qualifications;
- ii. Strengthen education and research in water and sanitation;
- iii. Enhance national statistics on water and sanitation;
- iv. Strengthen water and sanitation information management system;
- v. Promote Monitoring and Evaluation in the water sector;
- vi. Promote research and development for enhanced water and environmental management;
- vii. Strengthen the national inventory of water resources infrastructure; and
- viii. Strengthen capacity building for the water sector.

4.11. Legal and Institutional Framework

Objective:

To enhance legal frameworks, institutional effectiveness and coordination mechanisms.

Measures:

- i. Review and develop legal and institutional frameworks;
- ii. Strengthen institutional frameworks; and
- iii. Strengthen water sector coordination.

4.12. Cross-Cutting Issues

Objective:

To mainstream crosscutting issues in water and sanitation interventions.

Measures:

- i. Promote gender transformation in water and sanitation programmes;
- ii. Promote inclusivity in water and sanitation programmes;
- iii. Mainstream HIV/AIDS in water and sanitation programmes; and
- iv. Promote climate resilience in water and sanitation programmes.

4.13. Water Sector Financing

Objective:

To enhance resource mobilization for water and sanitation interventions.

Measures:

- i. Strengthen and harmonize water sector financing mechanisms;
- ii. Promote public-private partnership in the water sector;
- iii. Promote a Cooperative and Small Medium Enterprises (SMEs) approach to economic multi-purpose water investment; and
- iv. Promote cost reflective tariffs, fees and charges for the water sector.

5.0. IMPLEMENTATION FRAMEWORK

5.1. Institutional Arrangements

The role of Government in the water sector is to provide a clear policy and regulatory framework and institution set up. This is meant to foster integrated water resource planning so that water is developed, allocated, managed and utilized in an equitable and sustainable manner.

5.2. Coordination Mechanism

5.2.1. National Level Structures

At national level, the coordination structures include: the National Development Coordinating Committee (NDCC), Cluster Advisory Groups (CAG) and Technical Working Groups established to monitor the implementation and monitoring of programmes in line with national development plans.

5.2.2. Sector Level Structures

At sector level, the coordination is undertaken through meetings namely: Donor Coordination, Troika and Technical Working Groups. These structures have been established to coordinate, implement, monitor and evaluate programmes and projects in the water sector.

5.3. Roles and Responsibility of Stakeholders

The implementation of this policy shall be complemented by various stakeholders as outlined in Table 1.1 below:

Table 1.1: Stakeholder Complementing the Policy

Name of the Institution	Roles and Responsibilities
1. Ministry responsible for Water	The portfolio Ministry shall be the lead institution in overseeing the overall implementation of this Policy. It shall be responsible for management, administration, monitoring and evaluation and sector coordination.
1. Institution responsible for disaster management and emergencies	Coordinating emergency response and mitigation measures.
2. Ministry responsible for home affairs	Ensuring peace and security, and enforcement of water resource management and regulations

Name of the Institution	Roles and Responsibilities
3. Ministry responsible for finance and national planning	The Ministry shall be responsible for mobilizing and providing financial resources including collection of adequate taxes and provision of tax incentives. The Ministry shall also be responsible for coordinating national plans and programmes as well as overall monitoring and evaluation of programmes and policies. Further, the Ministry shall promote public-private partnership investments in the water sector
4. Ministry responsible for Agriculture	The Ministry will be responsible for investment in irrigated agriculture and ensuring that activities relating to agriculture do not negatively impact water resources.
5. Ministry responsible for fisheries and livestock	The Ministry shall be responsible for aquaculture and ensuring that activities relating to fisheries and livestock do not negatively impact water resources.
6. Ministry responsible for commerce, trade and industry	The Ministry shall be responsible for promoting the economic use of water for various socio-economic activities
7. Ministry responsible for small and medium enterprise development.	The Ministry shall be responsible for promoting small and medium enterprise investments in the water sector.
8. Ministry responsible for mines and minerals	The Ministry shall be responsible for promoting sustainable use of water resources for mining operations and ensuring that mining operations do not impact negatively on water resources.
9. Ministry responsible for energy	The Ministry shall be responsible for promoting sustainable use of water resources for energy production.
10. Ministry responsible for tourism	The Ministry shall be responsible for using water resources to promote and develop tourism.
11. Ministry responsible for infrastructure, housing and urban development	The Ministry shall promote the sustainable use of water relating to infrastructure and housing development and avoid negative impacts on water resources.
12. Ministry responsible for lands and natural resources	The Ministry shall ensure that land use change, allocation and exploitation of natural resources do not threaten water resources/ water security.
13. Ministry responsible for green economy and environment	The Ministry shall ensure awareness creation on the growing scale of environmental and climate problems, loss of biodiversity and increased pressure on the ecosystem and the importance of sustainable management of water resources.
14. Ministry responsible for health	The Ministry shall ensure the Protection and Promotion of public health by reducing transmission of communicable diseases through appropriate disposal of healthcare waste.

Name of the Institution	Roles and Responsibilities
15. Ministry responsible for information and media	The Ministry shall promote public awareness of sustainable water management
16. Ministry responsible for education	The Ministry shall be responsible for mainstreaming integrated water resource management in school curricula in all learning institutions.
17. Ministry responsible for technology and science	The Ministry shall be responsible for ensuring evidence based research in the use of technology and science in supporting effective water resources management
18. Ministry responsible for local government and rural development	The Ministry shall coordinate the implementation of activities, programmes and projects through water supply and sanitation utilities in their jurisdictions. They shall also coordinate activities on stormwater management, sustainable water resource management, community-led total sanitation and community awareness in chiefdoms.
19. Ministry responsible for justice	The Ministry shall be responsible for putting in place an appropriate legal and institutional framework for the water sector.
20. Ministry responsible for community development	The Ministry shall be responsible for promoting community participation in sustainable water resource management and providing policy guidance on mainstreaming disability issues in the planning and implementation of programmes in the water sector.
21. Ministry responsible for youth, sport and arts	The Ministry shall be responsible for promoting the participation of the youths in sustainable water resource management and providing policy guidance on mainstreaming sport and art in the water sector.
22. Institution responsible for gender	The institution shall be responsible for promoting gender transformation and mainstreaming in the water sector.
23. Private Sector	The private sector shall promote sustainable water resource management, utilisation and funding to the water sector.
24. Water Resource Management Authority	The Authority shall be responsible for the regulation of water resources in the country.
25. Zambia Environmental Management Agency	The Agency shall be responsible for the protection of the environment, prevention and control of pollution.
26. Cooperating Partners and Non-Governmental Organizations	The Cooperating Partners and Non-Governmental Organizations shall be responsible for providing technical and financial support to GRZ and play advisory roles to the sector.
27. Civil Society and Faith Based Organizations	The Civil Society and Faith Based Organizations shall support the support the implementation of the Policy in-line with their mandate in service provision and complement the efforts of the Government and provide alternative financing and investment.

Name of the Institution	Roles and Responsibilities
28. Media	The Media shall promote public awareness on sustainable water and sanitation management
29. Academia	The Academia shall promote research and development in water and sanitation.

5.4. Legal and Regulatory Framework

The implementation of the Policy shall be complemented by existing legal frameworks including the following:

Table 1.2: Enabling Legislation Complementing the Policy

Enabling Legislation	Purpose
1. The Constitution – Chapter 1 of the Laws of Zambia	The Constitution provides for devolution of functions, responsibilities and resources from the national government and provincial administration to the Local Authorities in a coordinated manner.
2. Environmental Management Act, No. 12 of 2011	The Act provides for sustainable management of natural resources, protection of the environment and the prevention and control of pollution. Some provisions will need to be amended to include climate change adaptation measures.
3. Water Resource Management Act, No. 21 of 2011	The Act provides for regulation of water resources management. The Act will need to be reviewed to address emerging issues in the water sector.
4. Water Supply and Sanitation Act No.28 of 1997	The Act provides for regulation of water supply and sanitation services. The Act will need to be reviewed to address emerging issues and harmonise the two pieces of legislation in the sector.
5. Public Health Act, Chapter 295 of the Laws of Zambia	The Act provides for the prevention and suppression of diseases and generally regulates all matters connected with public health in Zambia. There is need to show connection between the Act and water.
6. Disaster Management Act, No. 13 of 2010	The Act provides for disaster preparedness and responses. There is need to show connection between the Act and water
7. Urban and Regional Planning Act, No. 3 of 2015	The Act provides for physical planning for all land in Zambia. There is need to harmonise on the issues of encroachment.
8. Business Regulatory Act, No. 3 of 2014	The Act provides for requirements for a public body that intends to introduce any Policy or law for regulating business activity. There is need to show the connection between the act and water

5.5. Resource Mobilization and Financing

The implementation of the Policy measures will require substantial financial resources. Funds for implementing this Policy will be secured from the following sources:

- i. Government through the national budget;
- ii. Private Sector financing through PPPs;
- iii. Cooperating Partners (bilateral and multilateral agencies);
- iv. Civil Society Organisations participating in local development projects;
- v. Trust Fund (upon operationalisation); and
- vi. Other alternative funding sources.

5.6. Monitoring and Evaluation

Monitoring and evaluation of the implementation of the Policy will be anchored on the National Monitoring and Evaluation Policy which seeks to establish a framework that supports improved coordination, implementation and conduct monitoring and evaluation of activities at national, provincial, district as well as sub-district levels. The water sector currently lacks a robust management information system to ensure the availability of relevant, accurate, timely and accessible data, to support the planning, coordination, monitoring and evaluation of water resources development and management, and water supply and sanitation. In this regard, priority will be placed on the operationalisation of the Integrated Management Information System.

The Policy will be implemented through successive national development plans, ministerial strategic plans and programmes related to water resources development and management, and water supply and sanitation. Its implementation shall be closely monitored to ensure that it is properly institutionalized across key players in the water sector in line with Government objectives. The Ministry responsible for water and sanitation will ensure effective implementation and monitoring of the Policy across all Government institutions and regulatory bodies.

The Policy will have a mid-term review after five years and a final term review after ten years. The mid-term assessment will focus on progress made in the implementation of the Policy. The final evaluation will focus on the impact/outcome of the Policy.

