



THE UNITED REPUBLIC OF TANZANIA  
**MINISTRY OF WATER**

**DRAFT NATIONAL WATER POLICY 2002**  
**VERSION 2023**

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## LIST OF ABBREVIATIONS AND ACRONYMS

BCM	Billion Cubic Metres
BOD	Biochemical Oxygen Demand
CBO	Community-Based Organisation
CBWSOs	Community-Based Water Supply Organisations
CM	Cubic Metres
COD	Chemical Oxygen Demand
EFA	Environmental Flow Assessment
EMA	Environmental Management Act
EWURA	Energy and Water Utilities Regulatory Authority
FBO	Faith-Based Organisation
FYDP	Five-Year Development Plan
IWRM	Integrated Water Resources Management
IWRMD	Integrated Water Resources Management and Development
JNHPP	Julius Nyerere Hydropower Plant
M&E	Monitoring and Evaluation
MCM	Million Cubic Metres
MIS	Management Information System
MoW	Ministry of Water
MW	Megawatt
NAWAPO	National Water Policy
NGO	Non-Governmental Organisation
NSC	National Sanitation Campaign
PO-RALG	President's Office, Regional Administration and Local Government
RUWASA	Rural Water Supply and Sanitation Agency
SDGs	Sustainable Development Goals
TDV	Tanzania Development Vision 2025
TSF	Tailings Storage Facility
WRM	Water Resources Management
WSDP	Water Sector Development Programme
WSSAs	Water Supply and Sanitation Authorities

WUAs

Water Users Associations

## **DEFINITIONS OF TERMS**

### **Ambient Water Quality**

Ambient water quality means the natural untreated water in rivers, lakes and ground waters and it represents a combination of natural influences together with the impact of all anthropogenic activities.

### **Basin**

A basin means an area of land where rainfall collects and drains water into a common outlet.

### **Water Service Coverage**

Water service coverage means the percentage (proportion) of the population's access to clean and safe water from improved water sources.

### **Sanitation Coverage**

Sanitation Coverage means the proportion of the population with access to sanitation services.

### **Tailing Dam**

A tailings dam refers to a structure constructed to create a tailings pond for storing mining tailings and processing water.

### **Domestic Purpose**

Domestic purpose means the use of water solely for the purpose of meeting household and domestic needs and excludes any commercial activities.

### **Faecal Sludge**

Faecal sludge means the slurry that contains both solid and liquid waste that accumulates in onsite sanitation systems. Specifically, it may refer to a semi-solid slurry of excremental nature, accumulated in pit latrines, septic tanks, wastewater stabilization ponds and other liquid waste treatment systems.

## **Faecal Sludge Management**

Faecal sludge management (FSM) means organized programmes that provide safe and hygienic septic tank and pit emptying services, along with proper treatment of liquids and re-use of bio-solids where possible.

## **Groundwater**

Groundwater means water naturally stored or flowing below the surface of the ground and not apparent on the surface of the ground.

## **Public Tap**

Public tap means any fountain, standpipe, tap, trough, valve or other appliance or structure erected, provided or maintained by or on behalf of a water supply and sanitation authority or a community-based water supply organisation for the purpose of supplying water to its consumers.

## **Pollution**

Pollution, in relation to water resources, means any direct or indirect alteration of the physical, thermal, chemical or biological properties of the water resource so as to make it (a) Less fit for any beneficial purpose for which it is or may reasonably be expected to be used; or (b) Harmful or potentially harmful to (i) the welfare, health or safety of human beings; (ii) any aquatic or non-aquatic life or property; or the environment.

## **Non-Revenue Water**

Non-Revenue Water means the amount of water that a water utility produces (or purchases from other water utilities) minus the amount that is sold to consumers, presented as a percentage of water produced and/or purchased.

## **Sanitation**

Sanitation means access to and use of facilities and services for the safe disposal of human urine and faeces.

**Sanitation Service Chain**

Sanitation Service Chain means all components and processes comprising a sanitation system, from toilet capture and containment through emptying, transporting, treatment (in-situ or offsite) and final disposal or end use.

**Sanitation Works**

Sanitation works means sewers, drains, pipes, ducts or channels, whether open or closed, used for the drainage of human excreta or wastewater from buildings or land, and on-site systems for the reception of human excreta and wastewater which do not connect to a sewer as well as treatment to the recommended standards before disposal to environments.

**Sewage**

Sewage means liquid waste conveyed in sewers but does not include stormwater.

**Sewerage**

Sewerage means a network of pipes, pumping stations and appurtenances that convey sewage from its points of origin to the point of treatment or disposal.

**Sewer**

Sewer means any pipe or conduit other than a drain used, or that which is there for use or for the conveyance of sewage.

**Surface Water**

Surface water means all water flowing over the surface of the ground, or contained in a spring or natural lake or reservoir or swamp and all the water contained directly underneath a river bed.

**Transboundary Water**

Transboundary water means the water resources contained within drainage or river basins which cross the geographical boundaries and are shared with more than one sovereign country.

**Wastewater**

Wastewater means liquid waste of excremental and non-excremental nature but does not include stormwater.

**Water sector**

Water sector comprises of water resources development and management; water quality, water supply and sanitation services.

**Water Quality**

Water quality means chemical, physical, biological, and radiological characteristics of water relative to the requirements of the ecosystem or to any human need or purpose.

**Water Resources**

Water resources refer to a water course, surface water, estuary water and groundwater.

**Water Source**

Water source means (a) a river, tributary, estuary, lake, swamp, marsh or other wetland; (b) an aquifer or a spring; (c) sea waters and interface between seawater and freshwater (d) a dam, pond or reservoir.

**Water Supply**

Water supply means the provision of appropriate facilities and services for the sourcing, treatment and distribution of potable water.

**Waterworks**

Waterworks means all gathering grounds, off-takes, reservoirs, dams, weirs, tanks, cisterns, tunnels, filter beds, conduits, aqueducts, mains, pipes, meters, fountains, sluices, valves, hydrants, pumps, prime movers and all other structures and appliances used or constructed for the storage, conveyance, supply, measurement or regulation of water, which are used or have been constructed by or on behalf of a water supply and sanitation authority or a community-based water supply organization.

## FOREWORD

Water is a shared common natural resource fundamental to life and in sustaining the environment and plays a central role in the social, cultural and economic development of Tanzania. It touches all spheres of life including domestic, agriculture and food security, environment, livestock, fisheries, wildlife, industry, mineral processing, hydropower production, transportation, forestry, recreation, sanitation, cultural and other socio-economic activities necessary for sustainable economic development.

The government enacted the first National Water Policy of 1991 with a set goal of providing clean and safe water to the population within 400 metres of their households. Due to the challenges of implementation of the National Water Policy 1991, the changing global trends in the water sector and taking into account other national policy reforms, the Government launched the National Water Policy of 2002, (NAWAPO 2002). The Policy aimed to develop a comprehensive framework for water resources management; improve health and alleviate the poverty of the rural population through improved access to adequate and safe water; and achieve sustainable, effective and efficient development and management of urban water supply and sewerage services. This set out the direction for the water sector in achieving sustainable social and economic development.

The implementation of NAWAPO 2002 has notable achievements including:- Established institutional frameworks for both water resources management and water supply and sanitation service provision; Enhanced credibility of hydrological data and information; Adoption of the Integrated Water Resources Management and Development (IWRMD) planning; conservation and protection of water sources; enhanced collaboration with riparian states through joint protocols, conventions, agreements for development and management of transboundary water resources; provision of water quality services and management; provision of access to clean and safe water to the rural and urban population to 77 and 88 per cent, respectively; Increased proportion of the urban population connected to sewer services to 13;

Improvement of the transportation of faecal sludge facilities through the supply of exhauster trucks to Water Supply and Sanitation Authorities; and Constructed faecal sludge treatments facilities.

Despite these notable achievements, there are policy gaps that have necessitated the review of the NAWAPO 2002. The policy did not take into consideration the issue of constructing sewerage infrastructure and provision of sewerage services in rural areas. It also not considered the development of water resources, including the construction of large strategic dams and rainwater harvesting infrastructure for water security, but it has placed emphasis on plans and guidelines for the development of water resources. Furthermore, the NAWAPO 2002 stated that for sustainability of rural water scheme, communities will own and manage their water schemes. However presently, the government is constructing large water projects using reliable sources that are not necessarily be close to the service delivery areas and the cost of construction, technology used and operations are high and need a special attention and expertize in its management, so the community cannot own and operate them. The policy also did not reflect water and wastewater quality management in the provision of rural water supply services. Moreover, the policy emphasizes on privatizing water supply and sanitation services in small towns, this policy has never been implemented and privatization is not the current direction of the government.

To address policy gaps, the government has come up with the National Water Policy of 2002, Version 2023 to provide the water sector with policy guidance and direction in order to cope with the current socio-economic development in the country.

I call upon the commitment and engagement of all stakeholders to join this endeavour with the understanding that water is a precious resource for present and future generations.

**Hon. Jumaa Hamidu Aweso (MP)**

# MINISTER FOR WATER

## CHAPTER ONE

### INTRODUCTION

#### 1.1. Background

Water is a shared natural resource fundamental to life and in sustaining the environment and plays a central role in the social, cultural and economic development of Tanzania. It touches all spheres of life including domestic, agriculture, food security, livestock, fisheries, wildlife, industry, mineral processing, hydropower production, transportation, forestry, recreation, sanitation, cultural and other socio-economic activities necessary for sustainable economic development.

Water resources in the country include rivers, lakes, wetlands, springs, reservoirs and groundwater aquifers of which some are shared with neighbouring countries. These together make an annual renewable surface and groundwater resources estimated at 126 BCM of which 105 BCM is surface runoff and 21 BCM groundwater recharges. The inland water area counts for 61,500 square kilometres out of 947,300 square kilometres of its total area. The three major lakes of Victoria, Tanganyika and Nyasa store 29,425 BCM which is about 25% of the world's fresh surface water of which Tanzania has a significant share. Generally, most of the rivers in Tanzania are perennial in nature, while others are intermittent or ephemeral. The longest river in Tanzania is Ruvuma with 800 kilometres and the Rufiji River has the highest flow of 31 BCM per year.

Rainfall patterns indicate that most parts of the country receive bimodal rainfall between October-December and March-May periods and other parts especially the central zone have a unimodal pattern and receive rainfall between December-April. More than half of the country receives an average rainfall between 900mm and 1,200mm. Wet areas receive relatively high annual rainfall which ranges from 1,200 - 2,600mm. Dry areas receive rainfall between 400mm-550mm per year. Groundwater availability is variable and is mainly controlled by geology and climate.

It is estimated that the total water demand will increase to 80 BCM in the year 2035 from 47 BCM in the year 2015 in various sectors, entities and activities. An increase in population reduced the estimated amount of water available from 3,678 m<sup>3</sup>/ca/yr in 2002 to 2,250 m<sup>3</sup>/ca/yr in 2019. The internationally acceptable water stress level is 1,700 m<sup>3</sup>/ca/yr and it indicates that Tanzania is not water stressed.

The management of water resources in the country is through the nine hydrological zones or river and lake basins which are Wami/Ruvu, Rufiji, Pangani, Lake Victoria, Lake Tanganyika, Lake Rukwa, Lake Nyasa, Internal Drainage, and Ruvuma and Southern Coast. Tanzania has embraced integrated water resources management (IWRM) as its framework for managing and developing the nation's water resources. The basins manage and develop water through the Integrated Water Resource Management and Development (IWRMD) plan for the purpose of promoting coordinated management and sustainable development of water resources. Basin Water Boards are the responsible institutions for overseeing implementation of the basins' plans. In addition, the water quality is managed through legislations, standards, guidelines, strategies, water laboratories and water quality research to conserve ambient water quality for surface and groundwater bodies; and to check quality compliance of drinking water and wastewater.

Water availability to meet the domestic and social-economic needs is still hampered by erratic rainfall, inadequate investment in water storage facilities, competing uses, degradation of water sources and catchments due to (i) poor land use practices which are reducing topsoil and vegetative cover resulting in changes in the runoff and infiltration rates, and increased sediment transport and deposition; (ii) encroachment of land for agriculture and urbanisation which is impacting wetlands, important watershed areas and recharge areas; as well as the impact of climate change. This necessitates targeting for optimal use of water resource through planning, development, and distribution. Water harvesting, and self-sustaining water grid have not been opted for water supply sustainability. The use of such innovative techniques in the available water resources will enhance and ensure water security.

Water resource in the country is exploited for various uses and is fueled by rapid increase in population in rural and urban areas plus industrial development and other economic activities. The allocation of water is diverted to a range of domestic, agricultural, industrial, hydro electrical, and ecological needs. Some of these water uses are consumptive (e.g. irrigated agriculture). Also, after water use, the wastewater must be treated before discharged to the environment. However, sometimes this has not been done hence polluting the environment. The NAWAPO has considered quality of water resource, urban water and wastewater generation, but this practice was not extended to rural water.

## **1.2. Situation Analysis**

The main goal of the National Water Policy of 2002 is to establish a stable and sustainable system for managing and developing water resources and to establish a strong legal and institutional framework to manage the policy implementation. It further aims at ensuring beneficiaries in the rural participate fully in planning, construction, operation, maintenance and management of water supply schemes; and achieving sustainable, effective and efficient development and management of urban water supply and sewerage services. The Policy also aim to change roles of government from that of service provider to coordination, policy and guidelines formulation, and regulation for sustainable development and management of water resources.

The National Water Policy of 2002 had three broad objectives which are development of comprehensive framework for promoting optimal, sustainable and equitable development of water resources for the benefit of all Tanzanians; improvement of health and alleviate the poverty of the rural population through improved access to adequate and safe water; and achieving sustainable, effective and efficient development and management of urban water supply and sewerage services.

The following sections analyse the situation analysis on the achievements, challenges and initiatives deployed to address the challenges during the implementation of the

NAWAPO 2002. The analysis focus in water resources management; water supply services, sanitation; and private sector participation.

### **1.2.1 Water Resources Management**

Tanzania has abundant water resources including rivers, lakes, springs and underground water. In these resources others are transboundary sharing with other countries. There are also constructed dams used for water production and other economic activities. With this immense resources, there should be a well-established institutional set up for planning, and managing them in terms of both quantity and quality across all water uses. Water Resources Management (WRM) includes the institutions, infrastructure, incentives, and information systems that support and guide water management.

Management of water resources in the country is through nine Basin Water Boards (BWBs) which are Pangani, Wami/Ruvu, Rufiji, Ruvuma and Southern Coast, Lake Nyasa, Lake Rukwa, Lake Tanganyika, Lake Victoria, and the Internal Drainage basins. The basins manage water through Integrated Water Resource Management Framework for the purpose of promoting coordinated management and sustainable development of water resources. Functional areas of water resources management include water resources data and information system, assessment and planning; water allocation, use and demand management; water sources conservation and pollution control; dam development and management; trans-boundary water resources; and water and wastewater quality management.

#### **1.2.1.1 Water Resources Data and Information System, Assessment and Planning**

The process of water resources data collection, processing and analysis for water resources management is undertaken by Basin Water Boards (BWBs). Data are collected in established monitoring networks which have 405 hydrological network stations across the country and they include 382 river stations, 18 water level in lakes and 15 water level in dams. There is also a meteorological network for supporting

hydrological functions that include 183 and 125 rainfall and weather stations, respectively. The information on the analysed data support the decision making on the development and management of water resources. It has been observed that some of the monitoring stations facing challenges of un-sustainability due to wear and tear and vandalism of equipment. Also, the operation of the available network are obsolete due to rapid technology changes.

Water resources assessments are conducted at the basin level by determining the location, quantity, quality of water resources through studying the current status and future trends relating to availability, accessibility and demand of water. Extensive water resources assessments have ascertained existing and future water availability, and sectoral water demands and proposed optimum water resource monitoring systems for the respective basins. Reliable water resource assessments are hampered by inadequate hydrological monitoring networks as well as data and information.

Water resources planning is carried using the Integrated Water Resources Management and Development (IWRMD) planning system. This providing a blueprint for rational management and development of the nation's water resources for multi-sectoral needs. The Government has established platforms for stakeholders discussion of effective water resources planning and development. The platforms include the National Multisectoral Forum, Basin Multisectoral Fora and Catchment Stakeholders Fora. The fora have improved stakeholders' involvement in implementation of the plans. Furthermore, key achievement of the implementation of the planning system is the construction of the Julius Nyerere Hydroelectric Power Project (JNHPP). The implementation of water sector plans face a challenge of institutional coordination and the module of operand of IWRM Plans is not uniformly or fully understood by the majority of sectors and stakeholders.

#### **1.2.1.2 Water Allocation, Use and Demand Management**

Effective water allocations have been aiming at ensuring equity in the apportionment of water for different uses and it is one of the major components in water resources

management. Water uses and demand has been increasing during the last twenty years. By the year 2015, water demand for different sectors was 47,460 MCM and increased to 60 BCM by the year 2022 and it is projected to rise to about 80 BCM in the year 2035. Allocation is through water use permits whereby as of 2021, a total of 10,904 water use permits for various uses in the basins had been issued. Challenges of water allocations include inadequate compliance of permitted water uses, inadequate water demand management and encroachment of wetlands.

#### **1.2.1.3 Water Sources Conservation and Pollution Control**

Water sources conservation and pollution control are implemented through various interventions including identification, demarcation, gazettelement and restoration of degraded water sources. The effective enforcement of water and related laws and regulations, promotion of good agricultural, mining and land use practices, and awareness creation have been among the efforts made to enhance pollution control and conserve water sources. Up to 2022, a total of 1,213 potential water sources have been identified and 133 of these have been demarcated and 18 have been gazetted as protected areas. In addition, a total of 167 wastewater discharge permits have been granted to industries countrywide. Despite these Government efforts, water resources depletion and quality deterioration remain a growing concern. Encroachment of water sources for various socio-economic developments have increased to the extent that the sustainability of water sources is threatened. These challenges are coupled with increasing demand for water due to increasing population, socio-economic development and climate change.

#### **1.2.1.4 Dam Development and Management**

Water dams are constructed for water storage, drought mitigation, flow regulation and flood suppression, supplementing groundwater recharging; and tailing dams for storage of mine discharged material (tailing or processing water tailings). Dam management includes a system of monitoring the state of dams as well as external physical threats to dams and issuing emergency warnings at various degrees of automation. Up to 2022, 776 water dams with various capacities and 43 tailings dams had been constructed.

The government has developed Dam Safety Regulations to guide the implementation of dam safety issues that include monitoring, issuance of construction permits, registration of dams with and without safety risk, and registration of Approved Professional Persons (APPs) who are authorized to deal with all aspects of dam safety management from designing, construction, commissioning, operation, maintenance and decommissioning.

The use of Dam Safety Regulations has improved the consideration of safety measures in dams' design construction, operations and maintenance. Risks associated with dam failure or leakage of hazardous water from tailing dams have also been minimized as regular monitoring and safety tests are conducted. The government will continue to improve dam development and management by preparing and enforce technical guidelines, standards, and design manuals for both water dams and tailing dams. Also, the government will create awareness to the community on risks associated with mining processing chemicals.

#### **1.2.1.5 Transboundary Water Resources**

Tanzania is riparian to several water bodies which include six (6) transboundary lakes of Victoria, Tanganyika, Nyasa, Natron, Chala and Jipe; eight (8) transboundary rivers: Kagera, Mara, Malagarasi, Momba, Mwiruzi, Ruvuma, Songwe and Umba; eight (8) trans-boundary aquifers, Kagera (Tanzania/Uganda/Rwanda), Kilimanjaro (Tanzania/Kenya), Coastal Sedimentary Basin (Tanzania and Kenya), Karoo Sandstone (Tanzania/Mozambique), Weathered Basement (Tanzania/Malawi/Zambia), Tanganyika Aquifer (Tanzania/Burundi/DRC/Rwanda), Rift Aquifer (Tanzania/Kenya/Uganda) and Coastal Sedimentary Basin (Tanzania/Mozambique).

To manage the transboundary water resources, riparian countries have joined to form regional and international transboundary institutions for ensuring equity in sharing the resource. Tanzania is a strategic and active partner in those institutions. Through the institutions, a number of programmes and projects are being implemented of which Tanzania is also benefiting. The institutions are Joint Songwe River Basin Commission (SONGWECOM); The Nile Basin Initiative (NBI); Joint Tanzania Mozambique Water

Commission; Zambezi Watercourse Commission (ZAMCOM); Lake Victoria Basin Commission (LVBC) and Lake Tanganyika Authority (LTA). Additionally, Tanzania, in collaboration with other member states, implements development strategies and programmes including Africa Water Vision for 2025, Nile Basin Initiative Strategy 2017-2027, African Ministers' Council on Water Strategy 2018–2030, Zambezi Watercourse Strategic Plan 2018-2040, and Songwe River Basin Development Programme among others.

The benefits that Tanzania has gained from the bilateral, regional and international cooperation on trans-boundary waters include: capacity development of water experts, implementation of Lake Victoria Environmental Management Project (LEVMP), construction of Rusumo Falls Hydroelectric Power Plant, Kenya-Tanzania interconnection power line project, Regional Agricultural Trade and Productivity Project through Lake Victoria Basin Commission; Ruvuma Shared Watercourses Support Project, the proposed Lower Songwe multipurpose dam for production of 180 MW of electricity to be shared between Tanzania and Malawi; and 6,200Ha irrigation system, water supply and livelihood projects through Southern African Development Community.

Despite the establishment of transboundary cooperation institutions there is inadequate capacity of trans-boundary institutions, un-harmonized legal frameworks, differences in socio-economic set up, different capacities and priorities between member states and geopolitics that have led to competition over water allocation and uses. Also, national capacity in management of transboundary water affairs such as determining Tanzania share in transboundary water sources is still limited.

### **1.2.2 Water Resources Development**

Water resources in the country include rivers, lakes, wetlands, springs, reservoirs and groundwater aquifers, some of which are shared with neighbouring countries. These together make an annual renewable surface and groundwater resources estimated at 126 BCM whereby 105 BCM is surface runoff and 21 BCM groundwater recharges. Up to 2021, there were about 776 existing man-made dams and natural reservoirs with an

estimated storage of 40 BCM. The Government is developing Kimbiji aquifer with estimated yield capacity of 250 MCM per day for augmenting water supply in Dar es Salaam as a strategic groundwater development project. Water resource development is compounded by challenges including inadequate construction of water storage reservoirs and rainwater harvesting systems, insufficient investment in inter-basin water transfer systems and inadequate exploitation of the available groundwater resources. Other untapped water resource potentials include desalination and reuse of treated wastewater.

### **1.2.3 Water and Wastewater Quality Management**

Water and wastewater Management is essential for ascertaining quality of water for various uses and pollution control. The water and wastewater management is implemented through monitoring and assessment programs conducted by water quality laboratories in collaboration with other water quality stakeholders. The monitoring and assessment programs involve the collection of samples from water sources, water supply systems and wastewater treatment systems that are analysed to produce data used to generate useful information. The information of water and wastewater quality is important for proper planning and informed decision-making on the development of water sources for various uses, suitability of potable water for health protection as per Tanzania standards specifications, and pollution control for the ecosystem health.

The challenges pertaining water sources are deterioration of water quality due to human development activities, which is evident in many parts of the country. Inadequate water quality management including water quality monitoring, lack of ambient water quality standards and pollution control practices, and low institutional capacity have led to the deterioration of the quality of water resources as well as limiting their use and/or made water treatment costly.. In addition, water sources quality management is characterised by limited understanding and utilisation of water quality data and information among institutions and community.

In water supply systems, water quality management has been undertaken through assessment of various water quality variables such as physicochemical and bacteriological parameters; Watershed management interventions; and application of various technology for making water suitable for various intended uses and for the protecting public health. The Government developed National Guidelines on Drinking Water Quality Monitoring and Reporting; Operational guidelines for Optimization of Water Treatment Chemical Dosing and the Guidelines for Preparation of Climate Resilient Water Safety Plans for urban and rural water supply that support the water quality management. Also, the Government has operationalized Ngurudoto Defluoridation Research Station for developing an appropriate solution for water supplies in high Fluoride areas.

Challenges in water quality management include: pollutions emanating from both point and non- point sources; inadequate monitoring and assessment system; non-adherence to standards by some stakeholders; inadequate water treatment; and limited research on drinking water quality and treatment technologies especially in rural areas where the Water Policy did not put high emphasis on matters pertaining to water quality. Many of the rural water supply schemes do not have water treatment facilities, hence affecting the safety and cleanness of the water supplied.

In wastewater, initiatives have been taken by the government and other stakeholders to manage wastewater quality to control pollution. Generally, there is noticeable improvement in compliance of effluent from the municipal sewerage systems and industries. There is lowering in pollutants concentration in wastewater wherever still higher than the Environmental standard values for receiving water bodies due concentration of pollutants indicators such as BOD and COD. The government has advised a number of ways to legally manage discharges of pollutants from various sources, with the aim of protecting public and ecosystem health. In addition, the Government has been regularly reviewing the wastewater standards to enhance the management of wastewater quality.

Sixty percent compliance has been currently experienced; as such, more efforts are needed to increase the compliancy level since wastewater treatment and disposal in urban areas has not been accorded due priority, hence wastewater is haphazardly discharged leading to contamination of water sources and the environment. Furthermore, some of the existing industries have no wastewater treatment facilities leading to toxic substances being disposed of the environment. Also there is inexistence of research and development on wastewater treatment technologies. This has been attributed to inadequate and ineffective proactive measures to curb pollution. As the water quality management was not given priority in rural areas, likewise the management of wastewater quality is also poorly addressed in these areas.

#### **1.2.4 Access to Water Supply Services**

The access to clean and safe water services in rural and urban areas has been increasing since 2002. This has been possible through government investment in construction, rehabilitation and extension of water projects. Through the investment, access to water supply service in rural and urban has increased from 50% and 73% in 2002 to 77% and 88% in December, 2022 respectively.

##### *Rural Water Supply*

In rural, a significant population has access to safe and clean water through public water points and house connection. The government has invested in the construction of rural water projects, rehabilitation and extension of existing projects whereby 2,238 water projects with 159,986 water points and 169,043 house connections were constructed as of 2022 to serve the rural population.

The provision of water supply services in rural areas has been affected by the scattered nature of the settlements which resulted failure to achieve the policy direction that require a water point to serve 250 people in a distance of 400 meters. In addition, there has been increase house connection whereas some public water points are used by few people or have been abandoned. Furthermore, water projects were small and

constructed purposely to serve respective communities and due to its nature, people could contribute in their investment. The projects also, used water sources that were not reliable and susceptible to climate change. In other areas, implementation of community water projects was not possible due to absence or inadequate water sources. This required the use of reliable sources that are far from service areas and implementation of big projects intended to serve larger population so as to meet operation and maintenance cost. Due to the complexity of the technology and cost for these projects, the community could not own and contribute to investment.

### *Urban Water Supply*

In urban, water supply infrastructure development covers water sources development, transmission main or water conveyance, water treatment plants, reservoir or storage water tanks, distribution networks, customer connections and water meters. There has been increasing construction of water infrastructure; rehabilitation of existing water supply networks; and creation of a good working environment by the provision of tools and staff capacity building. The efforts have led to an increase in the total length of the water network in the regional centres from 8,661.7 kilometres in the year 2015 to 18,314 kilometres in the year 2022 and the capacity of storage water tank increased from 712,933 CM to 750,226 CM. Most of the regional water utilities have the potential to increase their customer base and generate more revenue from the construction, rehabilitation and expansion of existing networks.

The provision of water services in urban areas has been affected by rapid urbanization, dilapidated infrastructure and the growth of unplanned areas. The rapid increase of population density that exceeds the capacity of the existing infrastructure reduces the expected quality of water service. Also, the growth of economic activities in urban areas has created more pressure on water demand fuelling water shortages and rationing. Cities are also expanding to create a peri-urban that require more investment on water supply infrastructure. The result of rapid urbanization creates the need for replacement of the existing infrastructure with ones that can manage provision of the service.

Also, most of the constructed water infrastructure have been dilapidated leading to water losses (Non-Revenue Water) impeding the accessibility of quality and sufficient potable water. Dilapidated water infrastructure also adversely contributes in high non-revenue water which affects the capacity of water entities to meet operation and maintenance costs. On the other hand, most of unplanned urban areas have a significant number of informal settlements/slums whereas access to basic service including water supply is limited. The absence of comprehensive town plans, irregular and unauthorised nature of the settlements hampers the efficient delivery of water service, increase of non-revenue due destruction of water pipes and deterioration of water quality.

#### *Water for Other Uses*

Other uses of water include water for public and private institutions such as schools, markets places, health facilities and water for livestock.

Water demand for public and private sector institutions has been increasing both in rural and urban areas with a wide range of water consumers. Availability of adequate water supply to these facilities is crucial for personal hygiene, drinking, medical use, cleaning, sanitation and human wellbeing. Up to 2019, the Government through the WASH initiative managed to provide water access to 2,105 health facilities through water taps and 3,220 health facilities through rainwater harvesting storage tanks. In total 8,832 out of 19,995 schools have access to clean and safe water through taps, wells and rainwater harvesting tanks. Moreover, emphasis has been placed on integrating water supply and sanitation services and hygiene education to improve the health conditions of people in rural areas. Lack of inter-sectoral planning during implementation of WASH has resulted in lack of access to clean and safe water in some institutions.

Water for livestock in communities living in rural areas is important because over 70 per cent of the livestock in Tanzania is kept there. Without water facilities for livestock, livestock keepers usually temper with water supply infrastructure and as such

construction of water projects must include provision of water for livestock. This is stipulated in Design, Construction, Supervision, and Operation and Maintenance Manual of 2020 whereas, planning for water supply infrastructure must include requirements and facilities to serve livestock. By June 2022, the government has constructed a total of 1,384 charcoal dams, 458 Cattle Troughs and drilled 103 boreholes for livestock. Inadequate water supply infrastructure to serve livestock requirements leads to the migration of livestock keepers to other areas in search for water. The migration has led to contamination and destruction of water sources and water supply infrastructure which in turn caused water use conflicts among users.

### **1.2.5 Management of Water Supply Service**

Water supply and sanitation Act No. 5 2019 mandates water supply and sanitation services function to water entities. In rural the mandate is vested to Community Based Water Supply and Sanitation Organizations (CBWSOs) and in urban is the responsibility of Water Supply and Sanitation Authorities (WSSAs). As of December, 2022, the estimated rural population with access to safe and clean water was 77% and in urban was 88%. This institutional setup has led into improved provision of water supply service in rural and urban areas.

#### *Rural Water Supply Service Management*

In rural, the management of rural water supply infrastructure has been under the ownership and operation of communities and the aim is to ensure the sustainability of rural water supply services. A CBWSO is formed after completion of a project, and is given responsibility of managing the water scheme by ensuring sustainable availability of the water service, collecting water sales and paying for operation and management (O&M) costs. The leadership of a CBWSO is selected by the general meeting of the village(s) and it employs a technician for undertaking scheme's maintenance and accountant for safe keeping entity's money. According to the institutional set up and composition of CBWSOs, its capacity is to manage simple small projects as opposed to high technical and large complex projects. Currently, CBWSOs are regulated by Rural Water Supply and Sanitation Agency (RUWASA) which is a body with responsibility of

constructing rural water projects, monitoring and ensure sustainability of water supply services in the rural. As of June 2022, a total of 2,488 CBWSOs were registered to manage and maintain water supply facilities in 7,531 villages out of 8,958 villages with water services.

In some areas, water schemes operated by CBWSOs are performing well especially, those using gravity or simple solar technology and the community is enjoying the service at manageable price. The challenge is for CBWSOs operating water schemes which require pumping technology using a lot of diesel or electricity and the community economically cannot pay for high tariff and this cause water service in those areas to deteriorate. Furthermore, in other areas the used water sources are affected by climate change and dry up or the amount of water decreases and requires finding water sources apart from the service area which necessitates building a large project to serve a large area. These big projects require a lot of money to construct and use advanced technology that the community cannot contribute to the investment and neither they can operate or own them as per current policy directives. In addition, people are getting awareness of connecting water to their homes rather than fetching water from public domestic points which is a model of operand by CBWSOs.

#### *Management of Urban Water Supply Service*

In urban, the Water Act gives a Minister concern with water affairs the mandate of establishing a Water Supply and Sanitation Authority (WSSAs). In Tanzania, in the year 2022, there are 93 which provides water and sanitation services in urban areas. The main function of water authorities is to provide water supply and sanitation services in their service area. In exercising this responsibility, it will adhere to water demand management (WDM) approach to promote efficient and equitable use of water. Water demand management has acquired great importance in the framework of sustainable urban water management. Technological, economical, institutional and communicational means can be used to realize efficient water demand management to achieve water consumption levels that are consistent with equitable, efficient and sustainable use of the finite water resource.

To ensure sustainable and good quality water supply in urban centers, it is the responsibility of a water authority to ensure non-revenue water is kept minimum, increase water production, metering of all customers, use of appropriate tariffs and put aside some funds for service expansion and rehabilitation. Major water projects commanding huge investment are implemented by the government in collaboration with stakeholders whereas various new and rehabilitation projects have been implemented throughout the country. From the year 2015 to the year 2022, various water projects were implemented including big four projects of Tabora–Igunga-Nzega, Mugango–Kiabakari–Butiama, Orkesumet and Arusha City. The efforts have led to decreasing non-revenue water from 43% to 36.6%; increasing the metering ratio from 95.4 per cent to 99.9 per cent; increasing production of water from 234.50 MCM per year to 321.82 MCM per year and using an appropriate tariff to minimize wasteful use of water.

Challenges with provision of water services in urban is increase in water demand at a rate which is not proportional to the rate of expansion of water supply services. For example, water demand in regional centres has increased from 435.04 MCM per year (2015) to 572.24 MCM per year (2022) and this is due to the high rate of urbanization and increase of socio economic activities as well as inefficient use of water. In addition, water supply services are faced with problems of wasteful use of water; and leakages and illegal connections resulting into high non-revenue water. The increased water demand is unveiled by the existence of water rationing and lack of water supply services in some areas.

### **1.2.6 Sanitation**

Sanitation is one of the most important aspects for community well-being because it protects human health, extends life spans, and is documented to provide benefits to the economy. It is known that, about 80% of water uses for domestic purposes, industrial production and in mining results in production of wastewater which contains toxic substances or biological process inhibitors. In this case, wastewater must be treated before being discharged into the environment.

Access to the use of sanitation facilities and services for the safe disposal of human urine and faeces over the last twenty years has been slightly increasing. The government has been constructing sewerage network and waste stabilization ponds in some areas of the country. The interventions have increased the sewer network length from 652.29 kilometres in 2010 to 1,228.11 kilometres in 2021. By the year 2022, 11 regional headquarters out of 26 had sewerage infrastructure with average coverage of 13 per cent. The regions are Dodoma, Songea, Iringa, Arusha, Tanga, Moshi, Mbeya, Tabora, Morogoro, Mwanza and Dar es Salaam. The remaining 15 region centers use non-sewered sanitation infrastructures. In addition, the government has constructed 21 faecal sludge treatment facilities in areas without sewerage network. Also, it has improved the transportation of faecal sludge through the supply of exhauster trucks to WSSAs.

Inadequate sewerage network and treatment facilities, unsafe sludge disposal and dilapidated infrastructure adversely affect the environment including contamination and pollution of surface and groundwater sources. Other challenges include the presence of non-emptiable toilets, leaking containments, unsafe emptying and transportation facilities and inadequate faecal sludge treatment facilities. In addition, there are ineffective regulatory monitoring and enforcement of minimum quality of service in each segment of the non-sewered sanitation chain. Also, most town planning does not consider setting aside land for sanitation infrastructure.

### **1.2.7 Private Sector Participation**

Private sector participation (PSP) involve engagement of private sector in project implementation with the aim of leveraging skills and efficiencies, shared risks and provide financing to accelerate development to align with inclusivity objectives of governments. In Tanzania, framework for PSP has been developed and aims at providing conducive environment for the private sector to support the government in the provision of services. The framework includes Public Private Partnership (PPP) Policy of 2009, Public Private Partnership (Amendment) Act, 2023 and Public Private

Partnership Regulations (2020). The same, the National Water Policy of 2002, identifies private sector as among key partners in supporting government initiatives in the provision of water supply and sanitation services.

Initiatives made in the water sector include establishment of institutional set up for engaging PPPs. Currently, private sector participation is limited to corporate social responsibilities activities as well as through consultancies and construction of water supply infrastructure. Involvement of private sector in financing and management of water schemes remains insignificant. The challenge is low interest of private sector to invest in the water sector due to huge investment costs and long payback period and inadequate knowledge on PSP both for government institution and the private sector. This is also revealed by assessment of Implementation of National Water Policy (NAWAPO 2002 Report of 2020) which shows that there is very limited private participation in the Tanzania water and sanitation sector both in financing and service provision. Despite that, there has been some attempt to promote public, private partnerships.

## **Cross-Cutting Issues**

### **1.2.8 Climate Change**

Climate change due to global warming is likely to have mixed impacts on the water supply in Tanzania. But it has also been demonstrated that the water resources which we highly depend on for survival is a finite resource which is under pressure and growing scarcer as a result of increasing multi-sectoral demands from a rapidly growing population. At the same time, it is a very vulnerable resource because of (a) increasing degradation, (b) natural disasters (floods, and droughts) due to climate variability and climate change.

Climate change has been affecting ecosystems and communities in a range of different and often harmful ways. The climate of Tanzania varies from place to place in accordance with geographical location, altitude, relief and vegetation cover. Increase in

temperature has great implications on water availability, functionality and sustainability of water and sanitation works. There has been observed increased temperature over the highland areas, as well as decreasing rainfall amounts and seasonal shifts in rainfall patterns in most parts of the country. These have been attributed by the shift of systems and subsystems within the hydrological cycles triggered by the increased temperature. The impacts are not only observed in water sources but also to the water and sanitation works.

The government has ratified climate change related multilateral agreements to join global efforts in addressing climate change and also benefit from the opportunities of agreements in addressing climate change challenges in various sectors including the water sector. In addition, the Government has developed and been implementing the National Climate Change Strategy since 2012. In the water sector, action plans have been developed for the implementation of this strategy. These include formulating actions, frameworks, programs and Climate change resilient water safety plans to address climate change and embedding these within the long-term national development plans. The frameworks have facilitated the Government to implement Simiyu Climate Resilient Project, Climate Adapted Urban Infrastructure an Integrated Water Resources Management Programme and construction of Kidunda dam along Ruvu River in adaptation to climate change impacts in the water sector. The initiatives have facilitated in building resilience of the communities to adverse impacts of climate change. The government provides baseline information for subsequent assessments of climate change mitigation and adaptation.

Despite these efforts, the water sector is still vulnerable to climate change in terms of decreased or increased runoff in river basins (droughts and floods respectively); prolonged dry periods; erratic rainfall; sea level rise due to climate change leading to intrusion of sea water into the water sources along the coast; encroachment into stream ecosystems; water pollution; increasing evapotranspiration; reduced groundwater recharge; water-logging due to increased water flow; and destruction or disruption of water and sanitation works. Also, there is inadequate climate change information

systems, coordination and capacities to explore opportunities resulting from climate change among stakeholders which results in low preparedness and adaptation in the water sector.

### **1.2.9 Environmental and Social Safeguard**

Environmental and social safeguards issues have been taken into account during the preparation and implementation of water resource, water supply and sanitation projects. The government has developed various environmental and social safeguard frameworks to facilitate the protection and management of water sources and associated water and sanitation infrastructures. These include the Environmental and Social Management Framework; Resettlement Management Framework; and Guidelines for Good Environmental and Social Practices for the Water and Sanitation Sector. The ministry has been strengthening the environmental and social safeguard compliance mechanism through training, providing technical support in enhancing compliance of water and sanitation projects to environmental and safeguards guidelines; and undertaking Environmental Audits in the implementing agencies.

Compliances with environmental and social safeguard requirements have been improving gradually due to increased awareness among water and sanitation practitioners. The impact of compliance with environmental and social safeguard requirements in the water sector cuts across different sectors, thus triggered collective initiatives on environmental conservation and protection. These have led to social stability, protection and conservation of water and sanitation infrastructure and natural systems.

Despite the Government's efforts, environmental and social safeguard concerns in the water sectors have been land degradation, deforestation and pollution. In addition, competing water use demands, inadequate enforcement of wastewater management and implementation of some projects without adherence to environmental and social guidelines have been leading to environmental degradation, pollution and social grievances which have significant effects on the socio-economic developments.

### **1.2.10 Gender**

Gender mainstreaming in Water Sector has been ensuring equity and equality in managing water resources and services related to access to clean and safe water and adequate sanitation services. Gender equity has been noticed in the position of management, decision-making, operations and implementation of water projects in the country. Up to April 2022, out of 9,207 Water Sector institutions, a total of 2,762 are women, which is equal to 30 per cent compared to 6,445 men equal to 70 per cent.

In 2005, the Government prepared the National Strategy for Gender Development (NSGD) which provides guidance and roles towards promoting equity, equality and empowerment of women, men and vulnerable groups. Also, the Ministry of Water prepared a gender strategy to significantly guide the participation of women and men in the management, decision-making, use and operation of water resources, water supply and sanitation services. However, there are remains some gender inequality in provision of water and sanitation services as well as inequalities in decision making positions in the water sector.

### **1.2.11 Good Governance**

In water sector, good governance has ensured sustainable and equitable use and distribution of water, better use of water resources, and effective delivery of water supply and sanitation services. Accountability, integrity and transparency in the provision of water services have improved availability and access of information on water use fees and charges, stakeholders' engagement and management in implementation of water supply and sanitation projects. There is also increased community participation in water resources management and water supply and sanitation services through establishing community governing bodies such as Water Users Associations (WUAs) and Community-Based Water Supply Organisations (CBWSOs) that adhere to good governance. This has increased communities'

awareness on water fees and charges hence improving the willingness to pay for the services.

Due to the importance of good governance in the water sector, the government will continue to adhere to good governance practices on management and development of water resources, water quality and water supply services provision.

### **1.3 Achievements of the Implementation of National Water Policy 2002**

The implementation of the NAWAPO 2002 was done through annual water sector budgets, National Water Sector Development Strategy (2006 – 2015); Water Sector Development Programme (WSDP-2006-2025), the Water Resources Management Act No. 11 of 2009 and the Water Supply and Sanitation Act No. 5 of 2019 which repealed the Water Supply and Sanitation Act No. 12 of 2009.

The Government continues to invest in the management and development of water resources and increasing access to safe and clean water as part of a broader development strategy. In that regard, various interventions have aimed at the protection, conservation and efficient utilization of water resources for social and economic development as well as improving access to water supply and sanitation services in rural and urban areas. The implementation of NAWAPO 2002 has realized several achievements including the following:

- (i) 279 surface and underground water sources have been legally protected and among them, 59 sources have been declared as protected areas;
- (ii) Enhanced availability of hydrological data and information which is central for effective management of water resources through the installation of a network of 405 hydrological stations across the country, construction of 183 meteorological stations networks, 125 rainfall and weather stations and installation of 109 groundwater monitoring stations;
- (iii) Enhanced water security due to construction of medium and small dams where a total of 776 dams were built and 172 potential underground water sources which can be developed by drilling wells were identified;

- (iv) A total of 12,312 water use permits for various uses in the basins had been issued to ensure effective allocations and equity in the distribution of water for different uses resulting to reduction of water use conflicts;
- (v) 361 monitoring stations and 69 pollution control stations for quality monitoring of water sources were constructed and controlled;
- (vi) Increased the percentage of the rural population's access to clean and safe water from 50 per cent in the year 2002 to 77 per cent in December, 2022; and
- (vii) Increased the percentage of the urban population's access to clean and safe water from 73 per cent in the year 2002 to 88 per cent in December, 2022.

#### **1.4 Constraints and Challenges of NAWAPO 2002**

NAWAPO 2002 has been implemented for over 20 years and has faced several constraints and challenges including: -

##### **(i) Unsustainability of rural water projects**

Rural water projects have continued to face the challenge of sustainability due to various reasons including the low awareness of communities in contributing to the costs of operation and maintenance, the limited capacity of CBWSOs in managing projects, the drying up of water sources, damage and theft of water infrastructure.

##### **(ii) Inadequate involvement of the private sector in the provision of water supply and sanitation services**

Weak participation of the private sector in the provision of water supply and sanitation services is due to the fact that the water sector is not financially enticing to investors for various reasons including high investment costs with long payback period. In addition, water has been perceived as a human right that should be provided as a service and is not considered as a commodity for profit making, thus its price does not reflect the real cost of investment. In order to attract private sector engagement, the government will put conducive and supportive environment that will enable private sector investment in water sector.

**(iii) Inadequate investment of sanitation infrastructure**

Investment in sanitation infrastructure has been insufficient due to high investment costs, limited financial resources and limited response of the private sector. This situation has contributed to unsatisfactory access to sewage removal and treatment services. Example: until June 2023, the availability of the service has reached 13 percent for urban areas that include 11 regional centres with sewerage infrastructure. For other urban areas, sewage disposal service is provided using wastewater trucks. On the rural side, no investment has been made in the area of sewage disposal, the community use pit latrines which are abandoned when they are full and replaced by digging of new pits.

**(iv) Inadequate water storage infrastructure**

Water insecurity is compounded by inadequate construction of water storage dams to buffer against the impact of droughts and floods (climate variability). This results in a seasonal water shortages.

## **CHAPTER TWO**

### **RATIONALE, VISION, MISSION AND OBJECTIVES**

#### **2.1 Rationale and Justification**

The National Water Policy 2002 has been implemented for more than 20 years and since then various changes have occurred in policies, legal and regulatory and social and economic transformations and these have affected the water sector development. Major water-related national policy changes include the Mineral Policy of Tanzania (2009); National Fisheries Policy (2015), National Irrigation Policy (2010); National Private Public Partnership Policy (2010); Agricultural Policy (2013) and National Environmental Policy (2021).

The implementation of the National Water Policy 2002 has brought significant achievements in the water sector development in the country. Despite the achievements which have been observed, the implementation of the National Water Policy 2002 has been facing various complex and emerging policy management and implementation constraints and limitations. The emerging policy issues that justify the need to review the NAWAPO 2002 include the following:

#### **(i) Sanitation Service in Rural Areas**

The National Water Policy of 2002 has recognized the importance of sanitation issues in urban and rural areas. However, on the rural side, the Policy has considered the provision of hygiene education and sanitation but did not emphasize on the construction of sewage disposal infrastructure and the provision of sewage disposal services. Due to the social and economic development in rural areas that involve the construction of modern houses, sanitation services needs to be improved in the reviewed Policy by ensuring sanitation projects are prioritized in the rural.

**(ii) Development of water resources**

The National Water Policy of 2002 did not put policy directions regarding the development of water resources, including the construction of large strategic dams and rainwater harvesting infrastructure for water security and to deal with climate change, but it has placed emphasis on plans and guidelines for the development of water resources. Thus, in the revision of the proposed Policy, the construction of water storage infrastructure for water security will be considered including construction of big water conveyance systems for transferring water from water abundant areas to water scarce area.

**(iii) Ownership and operation of rural water schemes**

The NAWAPO 2002 has stated that for sustainability of rural water scheme, communities will own and manage their water schemes. The policy also required beneficiaries in the rural to contribute in kind or financially in the construction of water supply projects. However, due to the challenges of climate change that have contributed to the drying up/decreasing of some water sources, the Government is currently constructing large water projects that use reliable sources that are not necessarily be close to the service delivery areas. The cost of construction, technology used and operation of these projects are high and need a special attention and expertize in its management, so the community cannot own and operate them. The proposed Policy will focus on the management and operation of rural water projects under entities capable of carrying out those responsibilities.

**(iv) Water quality and wastewater management**

The National Water Policy of 2002 has recognized the importance of water quality in the management of water sources as well as in the provision of water services in urban areas. However, water quality management is not considered in the provision of rural water supply services and as such most of rural water projects do not comprise water treatment facilities. In addition, the Policy did not address wastewater quality management in rural areas and as a result no wastewater infrastructure were

constructed in the rural. The proposed Policy will focus on water and wastewater quality management in both rural and urban areas.

#### **(v) Privatization of water supply and sanitation services in small towns**

The NAWAPO of 2002 emphasizes on privatizing water supply and sanitation services in small towns. This policy direction has never been implemented and privatization is not the current direction of the government. However, also the government has enacted the Public Private Partnership Policy (PPP) of 2009, which put a framework on how to engage private sector. The government will use the PPP Policy on issues related to involvement of private sector in the water sector.

Basing on the above emerging issues in the implementation of NAWAPO 2002, the government has decided to review the policy so as to provide a direction towards enhancing water resources management and development, water and wastewater quality management and improving access to water supply and sanitation services.

### **Vision, Mission and Objectives**

#### **2.1.1 Vision**

A country with accessible, affordable, and reliable water services for socio-economic development.

#### **2.1.2 Mission**

Through innovative, ethical and motivated staff, protect and conserve water sources, control water quality and pollution, improve sanitation services, and develop water resources and infrastructures for water supply in Tanzania.

#### **2.1.3 Policy Objectives**

The main objective of the National Water Policy 2002, version 2023 is to ensure optimal, reliable, sustainable and equitable development and use of water resources for the benefit of all in the most cost-effective manner possible. The specific objectives of the Policy are as follows:

- (i) To enhance Water Resources Management
- (ii) To have Sustainable development of water resources
- (iii) To enhance water and wastewater quality management
- (iv) To improve access to clean, safe, reliable and sustainable water supply services for all uses
- (v) To have efficient and effective management systems for water supply service
- (vi) To have reliable, affordable and sustainable sanitation services
- (vii) To enhance Private Sector involvement in the water sector
- (viii) To have effective climate change resilience in the water sector
- (ix) To have sustainable environment and social safeguard systems in the water sector
- (x) To promote gender mainstreaming in water sector
- (xi) To enhance good governance in the water sector

## CHAPTER THREE

### POLICY ISSUES, OBJECTIVES AND STATEMENTS

This chapter highlights the policy issues, objectives and statements.

#### **3.1 Water Resources Management**

Management of water resources in the country is through nine Basin Water Boards (BWBs) which are Pangani, Wami/Ruvu, Rufiji, Ruvuma and Southern Coast, Lake Nyasa, Lake Rukwa, Lake Tanganyika, Lake Victoria, and the Internal Drainage basins. The basins manage water through the Integrated Water Resource Management Framework for the purpose of promoting coordinated management and sustainable development of water resources in order to maximize social and economic benefits from the use of water. Roles and responsibilities of the BWBs include to provide guidelines and standards for construction and maintenance of water source structures; collect, process and analyse data for water resources management; maintain and update assessments of the availability and potential demand for water resources; and approve, issue and revoke water use and discharge permits.

Effective water resources management requires a balance between water supply and demand which is currently facing inadequate information on water requirements for different uses, inefficient water use technologies, illegal water use, inefficient irrigation practices, and inadequate proper abstraction control facilities. In addition, the encroachment of water sources for various socio-economic developments is increasing to the extent that threatening sustainability of water resources. Moreover, the trans-boundary water resources management is hampered by inadequate capacity of sector institutions, lack of effective management of transboundary water resources among riparian member states, differences in socio-economic set-up and priorities between member states, geopolitics, and competition over water allocation, security and uses.

## **Policy Objective**

To enhance water resources management

## **Policy Statements**

*The Government in collaboration with stakeholders will:*

- (i) Ensure water resources data and information systems is available for informed decision making;
- (ii) Ensure effective water resources assessment;
- (iii) Ensure efficient utilization of water resources and demand management;
- (iv) Enhance water sources conservation and protection; and
- (v) Ensure effective management of transboundary water resources for the interest of the country.

## **3.2 Water Resources Development**

Water resources is vital for sustainable socio-economic development and play a pivotal role in poverty alleviation. It is fundamental for enhancing domestic water supply, agriculture and food security, livestock, energy security, industrial development, mining, navigation, environment, wildlife, fisheries and other social economic sectors. Proper water resources development is of paramount to support socio-economic development, especially for water, energy and food security.

Though the country is endowed with immense water resources including rivers, lakes, wetlands, springs and groundwater aquifers, still these resources need to be developed so as to be used for different social and economic purposes. Water resources development in the country is constrained by various issues including inadequate construction of water storage reservoirs and rainwater harvesting systems, inadequate use of the large natural storage in freshwater lakes, limited inter-basin transfer systems and inadequate exploitation of available groundwater resources. Other undeveloped water resource potentials include recycling and reuse of treated wastewater and desalination.

## **Policy Objective**

To have sustainable development of water resources.

## **Policy Statements**

*The Government in collaboration with stakeholders will:*

- (i) Ensure water storage infrastructure for socio-economic development and water security;
- (ii) Ensure development of inter and intra-basin water transfer infrastructure;
- (iii) Promote development of technologies to augment fresh water resources; and
- (iv) Enhance groundwater development.

### **3.3 Water and Wastewater Quality Management**

Water and wastewater quality management are critical aspects of ecosystem protection and public health. Both water and wastewater quality management are essential for ensuring the safety and sustainability of water resources, protection of human health and the environment and supporting economic activities. Water quality management encompasses a range of activities aimed at ensuring that water sources, such as rivers, lakes, and groundwater, meet the required quality standards for various intended economic uses but also provision of safe and clean drinking water. This includes monitoring and testing water quality, implementing treatment processes to remove contaminants, and regulating the discharge of pollutants into water bodies. The goal of water quality management is to protect human health and the environment by ensuring that water sources are free from harmful substances and pathogens. Wastewater quality management, on the other hand, focuses on the treatment and disposal of wastewater generated from various human activities, such as domestic, industrial, and agricultural processes. This involves collecting and treating wastewater to remove pollutants, nutrients, pathogens and confirming it's quality before discharging it back into the environment. Wastewater quality management also includes the regulation of industrial discharges and the implementation of measures to prevent contamination of water sources by sewage and other pollutants.

Both water and wastewater quality management require the implementation of various technologies and processes, including filtration, disinfection, and chemical treatment, to ensure that water meets the required quality standards. Additionally, regulatory frameworks and monitoring programs are essential for enforcing compliance with water quality standards and for detecting and addressing potential sources of contamination.

Overall, water and wastewater quality management are essential for protecting public health, safeguarding ecosystems, and ensuring the sustainable use of water resources. Through effective management and regulation, water quality can be maintained at levels to make it suitable for various social, economic and for the overall health of the environment.

**Policy Objective:**

To enhance water and wastewater quality management.

**Policy Statements**

*The Government in collaboration with stakeholders will:*

***Policy statement***

- (i) Strengthen water sources and wastewater quality monitoring and assessment for protecting the ecosystems and biodiversity;
- (ii) Safeguarding Public Health through water quality monitoring and assessments in public and private water supply schemes in rural and urban areas;
- (iii) Promote public awareness and education to build public support for water and wastewater quality management through encouraging responsible water use, and foster a culture of environmental stewardship;
- (iv) Enhance water and wastewater quality infrastructure investment to ensure the delivery of high-quality drinking water and the safe disposal of wastewater;
- (v) Promote innovation and research in water and wastewater quality management and technologies; and

(vi) Enhance inter-sectoral and trans-boundary water quality management.

### **3.4 Access to Water Supply Services**

The government has been investing in construction, rehabilitation and extension of water projects with the aim of improving access to water supply service. Presently, about 77% and 88% of the rural and urban population has access to water supply services respectively. Despite of these achievements, provision of water supply service in rural and urban areas encounters a number of challenges.

In rural areas, projects constructed were small to meet demand of the community, however with increasing population these projects could not suffice. Furthermore, the scattered nature of the population in rural areas has resulted into difficulties in provision of water service. Also, ineffective sector coordination in the implementation of the water sector programmes, has resulted in a insufficient water services, poor hygiene and sanitation services contributing to major causes of waterborne diseases.

Moreover, it has been difficult to separate water requirement for people and livestock especially for livestock keeping community in rural and semi-arid areas. This is because, livestock is the main economic activity that support living. Construction of water projects in rural areas has been taken into consideration provision of water for livestock. In addition, in some areas there is inadequate water infrastructures for livestock. This has led livestock keepers to encroach in water sources resulting to contamination and destruction of water sources, and vandalism of water supply infrastructure.

Urban areas are experiencing increase in socio economic activities and urbanization of peri-urban areas which has exerted pressure on delivery of water supply service to the extent that some people remain unserved including those with special needs. Also some of the infrastructure are dilapidated leading to high non – revenue water and revenue loss. This has necessitated the need to improve the existing water supply infrastructure to meet the increased water demand.

## **Policy Objective**

To improve access to clean, safe, reliable and sustainable water supply services for all uses.

## **Policy Statements**

*The Government in collaboration with stakeholders will*

- (i) Enhance development of large-scale water projects using reliable water sources;
- (ii) Promote cross-sectoral collaborative planning;
- (iii) Ensure the provision of adequate, clean and safe water supply for different uses;
- (iv) Enhance investment in construction, expansion and rehabilitation of water supply infrastructures in rural and urban areas; and
- (v) Enhance reduction of non-revenue water.

### **3.5 Management of Water Supply Service**

Water supply service in the country has been managed by mandated legal entities whereby in rural the responsible entity is Community-Based Water Supply Organisations (CBWSOs) which are under Rural Water Supply and Sanitation Agency (RUWASA), and in urban, provision of the service is vested to Water Supply and Sanitation Authorities (WSSAs) which are in regional centres, small towns and district headquarters. This institutional setup has led into improved provision of water supply service in rural and urban areas.

However, due to the challenges of climate change that have contributed to the depletion of some water sources in rural areas, the Government is currently constructing large water projects that use reliable sources. In addition, the construction and operation of most of these projects have high costs and require high expertise according to the technology used, so the schemes cannot be owned or operated by CBWSOs. In addition, due to socio – economic development in rural areas, there is increased demand for house connections and thus reduces the need to use of public water points which is a modal of management under CBWSOs.

In urban areas, water supply services are also faced with challenges of water demand management due to wasteful use of water. The increased demand and uses have been unveiled by the existence of water rationing, insufficient water production and lack of water supply services in some areas.

### **Policy Objective**

To have efficient and effective management systems for water supply service

### **Policy Statements**

*The Government in collaboration with stakeholders will*

- (i) Ensure rural water supply schemes are operated and managed by the appropriate legal entity;
- (ii) Promote public awareness on efficient water use and management and strengthen systems for control of wasteful use of water; and
- (iii) Promote research and development on the operation and maintenance of water supply infrastructure.

## **3.6 Sanitation**

The provision of appropriate facilities and services for the collection, conveyance, treatment and disposal of human excreta and wastewater is important for ensuring health protection and is civilization. Currently, sewerage infrastructure has been developed in 11 regional centres out of 26 regions and access to sewer service in those centres has reached 13%. This indicates that much has not been done with regards to sanitation service in the country. Despite of low access to the service, yet the cost of connecting to sewer services are high and some of the infrastructures are old and inadequate and in some areas due to unplanned dwellings access has been difficult and faecal sludge is unsafely discharged into water streams and the environment. In addition, a significant proportion of the population uses non-emptiable and latrines which do not comply with national building codes. Also, most of the existing wastewater treatment facilities do not cater for the treatment of faecal sludge which causes the

deterioration of treatment facilities, hence the quality of both treated faecal sludge and effluents do not meet disposal standards. Biological treatment facilities are not periodically dislodged resulting in the inefficiency of facilities.

Non-sewered sanitation is the most applicable type of sanitation system in urban areas and is the main system used in the rural areas. In some urban areas initiatives have been taken whereas, faecal sludge facilities have been constructed in townships of Kahama, Nansio, Sengerema, Sumbawanga, Kigoma, Geita, Lamadi, Musoma, Magu, Misungwi, Lindi, Bukoba, and Arusha. Moreover, public and private exhauster trucks have been used to transport human excreta and faecal sludge to wastewater stabilization ponds. Despite of the initiatives, there still problems of non-emptiable toilets, leaking containments, unsafe emptying and transportation facilities, inadequate faecal sludge treatment facilities and unsafe disposal practices. In addition, many urban centres have not set aside land for sanitation infrastructure. Also, there are ineffective regulatory monitoring and enforcement of minimum quality of service in each segment of the non-sewered sanitation chain.

### **Policy Objective**

To have reliable, affordable and sustainable sanitation services in rural and urban areas.

### **Policy Statements**

*The Government in collaboration with stakeholders will*

- (i) Enhance investment for sanitation infrastructure and service provision in all areas;
- (ii) Strengthen regulatory monitoring and enforcement of minimum quality of sanitation services;
- (iii) Promote city-wide and rural inclusive sanitation planning;
- (iv) Promote appropriate technologies for sanitation management; and
- (v) Promote communities to connect to sewer.

### **3.7 Private Sector Participation**

The National Water Policy of 2002, Public Private Partnership (PPP) Policy of 2009, The Five Year Development Plan III (FYDP-III), Water Sector Development Programme (WSDP), Public Private Partnership (Amendment) Act, 2023 and Public Procurement Act (2011) underscore the importance of private sector involvement in socio-economic development in the country. The frameworks provide a policy and legal basis for private sector and public private partnerships engagement in various sectors including the water sector. The National Water Policy of 2002, identifies private sector as among key partners in supporting government initiatives in the provision of water supply and sanitation services in the country. Despite, the available policy and legal frameworks, private sector engagement and contribution in the water sector remains inadequate with involvement mainly in provision of capacity building, supplies, consultancy services and construction. In addition, private sector participation in financing, investing and implementation of water projects is limited. This leaves the Government with a burden of all the capital investment and operation of the water sector projects. With the available resources and unlimited needs in various sectors, enhancing involvement of the private sector will realize a burden relief in government finances, increase efficiency in service delivery and advancement in technology.

#### **Policy Objective**

To enhance Private Sector involvement in the water sector.

#### **Policy Statements**

*The Government in collaboration with stakeholders will:*

- (i) Promote predictable legislative and institutional framework for private sector engagement in water resources management and development, water quality, water supply and sanitation;
- (ii) Promote incentives and opportunities for attracting private sector participation in the water sector; and
- (iii) Coordinate and support private sector initiatives in the water sector.

## **Cross-Cutting Issues**

### **3.8 Climate Change**

The climate of Tanzania varies from place to place in accordance with geographical location, time, altitude, relief and vegetation cover. Climate change has been affecting ecosystems and communities in a range of different and often harmful ways. There has been observed increased temperature over the highland areas, as well as decreasing rainfall amounts and seasonal shifts in rainfall patterns in most parts of the country.

In addressing the problems of climate change, the government has developed and implementing the National Climate Change Strategy since 2012. In the water sector, action plans, frameworks and programs have been developed for implementation of the strategy with the aim of addressing the impacts of climate change in the sector. Also, the government provides baseline information for subsequent assessments of climate change mitigation and adaptation.

Despite the efforts, the water sector is vulnerable to climate change in terms of decreased or increased runoff in river basins (droughts and floods respectively), prolonged dry periods, erratic rainfall, intrusion of sea water into the water sources along the coast, encroachment into stream ecosystems, water pollution, increasing evapotranspiration, reduced groundwater recharge, water-logging due to increased water flow, and destruction or disruption of water and sanitation works which more often are accompanied with ecosystem and public health risks. Also, there is inadequate climate change information systems, coordination and capacities to explore opportunities resulting from climate change among stakeholders which results in low preparedness and adaptation in the water sector thus affecting the water security in the country.

#### **Policy Objective**

To have climate change resilience initiatives in the water sector.

## **Policy Statements**

*The Government in collaboration with stakeholders will*

- (i) Strengthen flood forecasting and early warning systems;
- (ii) Promote climate change adaptation and mitigation measures in the water sector;
- (iii) Promote cross-sectoral collaboration on climate change adaptation and mitigation; and
- (iv) Promote public awareness of climate change.

### **3.9 Environmental and Social Safeguard**

Promotion of good environmental quality and social safeguard systems have been among the key aspects and focus of the country towards implementation of water projects. Environmental and social safeguard concerns in the water sectors have been on pollution, land acquisition for water sources conservation, water and sanitation works, catchment degradation and deforestation attributed by land use and land use change. In addition, competing water use demands, inadequate initiatives on wastewater management and implementation of some projects without adherence to environmental and social guidelines have been leading to environmental degradation, pollution and social grievances which have significant effects on the socio-economic developments.

In addressing the impact of environmental and social safeguard, the water sector has developed and implementing Resettlement Management Framework, Environmental and Social Management Framework and Guidelines for Good Environmental and Social Practices for the water and sanitation sector. Despite of developing and implementing the frameworks and guidelines, the challenges related to environmental and social safeguard still prevails and requires policy directives.

### **Policy Objective**

To have sustainable environment and social safeguard systems in the water sector

## **Policy Statements**

*The Government in collaboration with stakeholders will*

- (i) Ensure land acquisition and management for water sources, water and sanitation works;
- (ii) Ensure compliance of water projects to environmental and social safeguard guidelines;
- (iii) Promote safe reuse, recycling and disposal of wastewater to the environment;  
*and*
- (iv) Promote public awareness on environmental and social safeguard issues.

### **3.10 Gender**

Gender plays a pivotal role in the management and development of water resources, as well as water supply and sanitation services. In the water sector, gender equality has given due consideration whereas both women and men are equally involved in decision making in water service provision as well as management of water resources. In order to strengthen gender mainstreaming efforts in the country, the Government has prepared the National Strategy for Gender Development (NSGD, 2005) which provides guidance and roles towards promoting equity, equality and empowerment of women, men and vulnerable groups. The Ministry also prepared Gender Strategy for guiding the participation of women and men in the management, decision-making, use and operation of water resources, water supply and sanitation services. Gender mainstreaming in the water sector remains important and will continue to be strengthened.

### **Policy Objective**

To promote gender mainstreaming in water sector

## **Policy Statements**

*The Government in collaboration with stakeholders will*

- (i) Strengthen gender mainstreaming in the water sector;
- (ii) Promote public awareness on the role of gender in the water sector; and

(iii) Empower and ensure inclusiveness of vulnerable groups in water related issues.

### **3.11 Good Governance**

In the water sector good governance is one of the important aspects in the management and development of water resources as well as provision of water supply services. Good governance practices in terms of participation in decision making, transparency and accountability are observed and have been mainstreamed in legal frameworks, strategies, plans and programmes. To maintain good governance in the water sector, the government in collaboration with stakeholders will continue to monitor and enforce laws, prevent corruption and maintaining political stability of the country.

#### **Policy Objective**

To enhance good governance in the water sector.

#### **Policy Statements**

*The Government in collaboration with stakeholders will:*

- (i) Strengthen accountability, impartiality, transparency and the rule of law in the water sector; and
- (ii) Promote public awareness on good governance in the water sector.

## CHAPTER FOUR

### LEGAL AND REGULATORY FRAMEWORK

Tanzania has put in place the necessary legal and regulatory frameworks facilitating management, coordination and implementation of the National Water Policy of 2002 objectives, strategies and activities. The legislation is aligned to the collection of acts, codes of practice and regulations under a general water law which as a whole governs the functioning of the water sector.

The existing legal and regulatory frameworks include the Water Resources Management Act, 2009; the Water Supply and Sanitation Act, 2019; The Energy and Water Utilities Regulatory Authority Act, 2001; The Environmental Management Act No. 20 of 2004; and Natural Wealth and Resources (Permanent Sovereignty Act 2017). Other national legislations relevant to supporting and facilitating the implementation of NAWAPO 2002 include Forest Act No. 14 of 2002; National Irrigation Act No. 5 of 2013; The Grazing Land and Animal Feed Resources Act No. 13, 2010; The Village Land Act No. 5, 1999; The Land Act No 4 of 1999; The Wildlife Conservation Act No 5-2009; The Local Government (District Authorities) Act No.7, 1982; The Local Government (Urban Authorities) Act No. 8, 1982; The Mining Act, 2010; The Roads Act No. 13 of 2007; The Standard Act of 2009; The Public Health Act No. 01 of 2009; The National Security Act, No. 03 of 1970; Land Acquisition Act, No. 47 of 1967; and The Urban Planning Act No. 08 of 2007.

The regulatory frameworks will form a basis for implementing the reviewed NAWAPO 2002 Version 2023 and they will be reviewed/amended where necessary to enable the effective implementation of the reviewed policy.

## CHAPTER FIVE

### INSTITUTIONAL FRAMEWORK, MONITORING AND EVALUATION

#### 5.1 Institutional Framework

The National Water Policy of 2002, version 2023 will use the existing institutional framework for management, coordination and collaboration between ministries, private sector and other stakeholders for sustainable development of the water sector. Furthermore, the Policy, may lead to review parts of the existing institutional framework and where necessary, amend, or where appropriate, dissolve or establish new institution in areas of water resources management and development; water quality; and water supply and sanitation. This will enable to put in place effective and comprehensive legal and institutional framework that is aligned to the reviewed policy.

The roles and responsibilities of the key institutions and stakeholders are outlined in the following table:

#### Role and responsibilities of Key Stakeholders

SN	Organization	Roles and Responsibilities
1	Ministry responsible for Water	Formulate water related policies and strategies.
		Oversee and monitor implementation of policies and strategies.
		Formulate regulations, technical standards and guidelines
		Facilitate sectoral coordination and in policy implementation
	Promote inter-sectoral coordination with other sectors	
2	Ministry responsible for Health	Develop guidelines, standards and strategies for sanitation and hygiene which support the implementation of water policy.
		Promotion of hygiene through sufficient safe water supply and hygiene sensitization in order to reduce water borne diseases
		Enforce construction of sanitation and hygiene capture and containment facilities
		Promote behaviour change regarding to sanitation and hygiene

<b>SN</b>	<b>Organization</b>	<b>Roles and Responsibilities</b>
3	Ministry responsible for Regional Administration and Local Government Authorities	Monitor the performance and good corporation between the public water and sanitation utilities, as well as sanitation related to disposal of excreta
4	Ministry responsible for Finance and Planning	Mobilization of financial resources for policy implementation
5	Ministry responsible for Education, Science and Technology	Promote hygiene and basic sanitation as well as protection of water sources and efficient use of education to school children and at community level.
6	Ministry responsible for Agriculture	Support and promote the construction of irrigation infrastructures for efficient water use from water sources such as rivers and lakes
		Promote agricultural activities which are friendly with water sources protection and environment conservation.
7	Ministry responsible for Livestock and Fisheries	Support and promote the construction of livestock infrastructures for purpose of protecting water sources from livestock destructions
8	Ministry responsible for Energy	.Ensure availability of electricity supply as the source of energy for water supply pumping schemes
		Cooperate in protection and conservation of water sources which are potential and useful for energy production
9	Ministry responsible for Natural Resources	protection of forest and wildlife as the major water sources for water resources management
10	Ministry responsible for Land Housing and Human Settlement	Ensure water sources are protected and conserved during land use planning in urban and rural areas.
		Ensure water supply and sanitation infrastructures are part and parcel during the land use planning in both urban and rural areas
11	Ministry responsible for Environment	Coordinate protection of the environment and conservation of water sources
		Control of effluent and disposal of excreta which are likely to affect raw water quality.
12	Ministry responsible for Disaster Management	Coordination of management of civic contingencies (relief) especially on drought, flood and other related disasters which effect water infrastructures and water sources.
13	Ministry responsible for Foreign Affairs and East Africa Cooperation	Facilitate Coordination of bilateral and multilateral on shared water resources for national interest
14	Ministry responsible for Public Service and Good Government	Ensure the availability of skilled and sufficient human resources for policy implementation
15	Local Government Authorities	Creating a conducive environment for community and private sector participation in management and development of water resources, operation and management of water supply and sanitation services
		Ensure water services and water resources management

SN	Organization	Roles and Responsibilities
		are executed in plans and implementation strategies at the community level.
		Formulate and enforce bylaws on water resources management.
16	Development partners	Support the government of resources mobilization (financial and technical) for the implementation of water programmes and projects.
		support the government in capacity building for effective implementation of the policy
17	Non- government organization	Community sensitization on water sources protection and management of water schemes.
		Support on the provision of water supply and sanitation services
18	Private Sector	Develop and manage water resources and water supply infrastructure.
		Operate contracted water resources and water supply infrastructure.
		Drilling of boreholes for water supply.
		Participate in water supply, sanitation and water resources management through private sector participation.
19	Academic and Research Institutions	provide education, training and conduct research related to water resource management, water supply and sanitation

## 5.2 Monitoring and Evaluation Framework

Monitoring and Evaluation (M&E) will be done at all levels through existing Integrated Water Sector Monitoring and Evaluation System, NAWAPO 2002 Version 2023 M&E Strategy and other national M&E frameworks. The regular monitoring of the implementation of the policy will be conducted and mid- evaluation will be conducted after every five years of the policy implementation. The Ministry will play a key role in the coordination, implementation, monitoring and evaluation of this policy.

## 5.3 Conclusion

The purpose of reviewing the National Water Policy of 2002 is to provide policy guidance for issues related to the water sector considering the changes that occurred during the implementation of this policy on the economic, social and technological aspects of water resources management, water quality management and provision of

water supply and sanitation services. Therefore, the Government invites all stakeholders to participate in the implementation of this Policy in order to build resilience through optimal, reliable, sustainable and equitable development and use of water resources for the benefit of all in the most cost-effective manner possible.