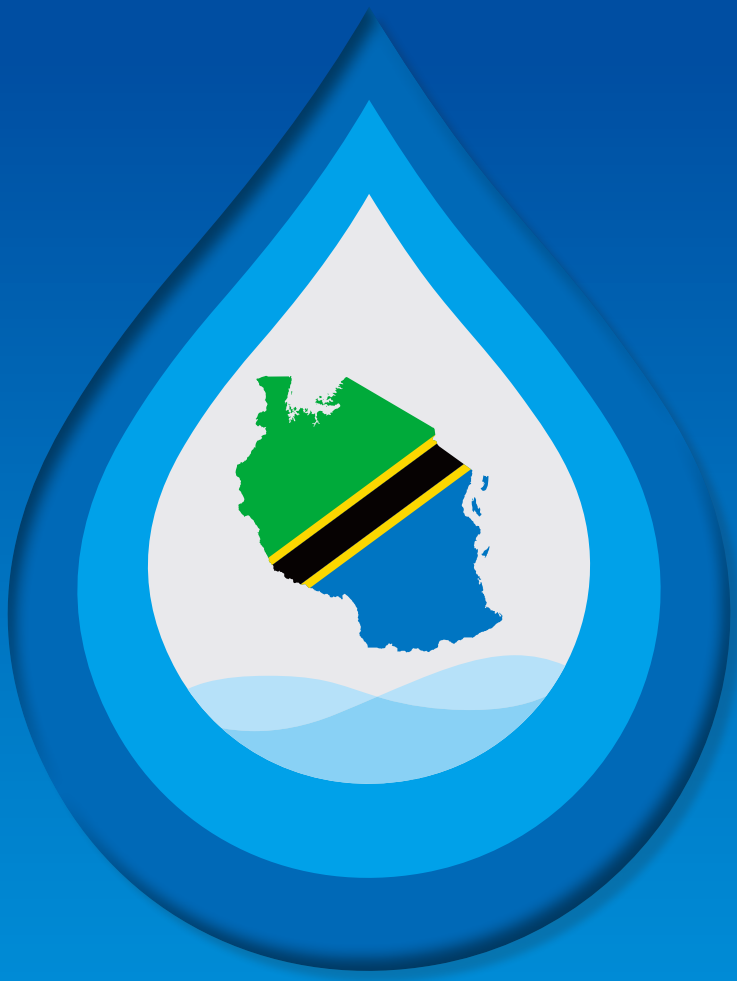
THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WATER



NATIONAL WATER POLICY 2002

VERSION 2025

MARCH 2025

THE UNITED REPUBLIC OF TANZANIA

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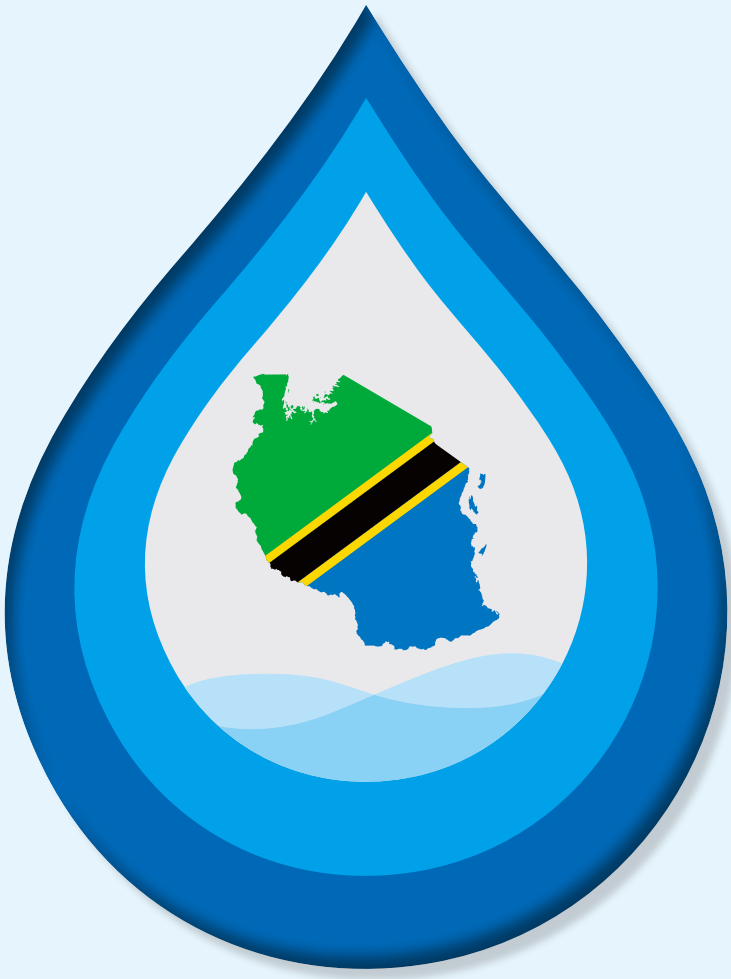

NATIONAL WATER POLICY 2002

VERSION 2025

MARCH 2025

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LIST OF ABBREVIATIONS AND ACRONYMS

BCM	Billion Cubic Meters
BOD	Biochemical Oxygen Demand
CBO	Community Based Organisation
CBWSOs	Community-Based Water Supply Organisations
CM	Cubic Meters
COD	Chemical Oxygen Demand
EFA	Environmental Flow Assessment
EMA	Environmental Management Act
EWS	Early Warning System
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 Meters
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
WASH	Water, Sanitation and Hygiene
WRM	Water Resources Management
WSDP	Water Sector Development Program
WSSAs	Water Supply and Sanitation Authorities
WUAs	Water Users Associations

DEFINITIONS OF TERMS

Ambient Water Quality
The quality of natural untreated water in rivers, lakes and ground waters, representing a combination of natural influences together with the impact of all anthropogenic activities

Basin
An area of land where rainfall collects and drains water into a common outlet

Domestic Purpose
The use of water solely for meeting household and domestic needs and excluding any commercial activities

Faecal Sludge
The slurry containing both solid and liquid waste that accumulates in on-site sanitation systems. Specifically, it may refer to a semi-solid mixture of human excrement accumulated in pit latrines, septic tanks, wastewater stabilisation ponds, and other liquid waste treatment systems. It can also refer to animal waste that collects in holding pens.

Faecal Sludge Management
Organised programs 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
Water which is naturally stored or flowing below the surface of the ground but can rise to the surface in, e.g. wetlands and springs

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

Pollution
In relation to water resources, any direct or indirect alteration of the physical, thermal, chemical or biological properties of the water resource which makes it (a) less fit for any beneficial purpose for which it is or may be reasonably 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; (iii) property; or (iv) the wider environment.

Public Tap
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 to supply its consumers.

Sanitation
Access to and use of facilities and services for the safe disposal of human urine and faeces

Sanitation Coverage
The proportion of the population with access to sanitation services

Sanitation Works
Sewers, drains, pipes, ducts or channels, whether open or closed, are 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 the environment.

Sewage
Liquid waste conveyed in sewers, not including stormwater

Sewer
Any pipe or conduit, other than a drain, which is intended for the conveyance of sewage

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

Water Stakeholders
Individuals, organisations, and communities that are interested in water resources and their management include, but are not limited to, government agencies, environmental organisations, development partners, agricultural producers, industrial suppliers, the private sector, and local communities.

Surface Water
All water flowing over the ground or contained in any visible water body, such as a lake, pond, reservoir, or river, is of any size and permanent or temporary.

Tailing Dam
A specially constructed tailings pond for storing mining tailings and processing water

Transboundary Water
These are water resources contained within drainage or river basins that cross political boundaries and are shared by more than one sovereign country. These can be surface or ground waters.

Wastewater
Liquid waste of both excremental and non-excremental nature but which does not include stormwater.

Water pan
An informal term used to collectively describe small, permanent, or seasonal water bodies created through the capture of rainwater runoff and used as a water source for livestock, agriculture, domestic purposes, and wildlife. The term is applied to deliberately constructed water works such as excavated ponds, small dams, and water bodies created naturally or as a by-product of other human activities such as mining or road construction.

Water Quality
Chemical, physical, biological, and radiological characteristics of water relative to the requirements of the ecosystem or to any human need or purpose

Water Quality Management
This is a process of monitoring, assessing, and improving the quality of water resources to ensure they are safe for human consumption, environmental health and recreational use. It involves a range of practices and policies aimed at protecting or restoring water quality from pollution and degradation.

Water Resources
These are watercourse, surface water, groundwater or estuary water.

Water Scheme
This is a structured plan or program designed to manage, distribute, and improve water resources within a specific area, typically encompasses the development and maintenance of infrastructure, such as pipelines, treatment facilities, and storage systems, to ensure access to clean and safe drinking water.

Water Sector
Water resources development and management, water quality, water supply and sanitation services

Water Service Coverage
The percentage (proportion) of the population accessing clean and safe water from improved water sources

Water Source
This could be a river, tributary, estuary, lake, swamp, marsh, or other wetland; an aquifer or a spring; seawater and the interface between seawater and freshwater; or a dam, pond, or reservoir.

Water Supply
The provision of appropriate facilities and services for the sourcing, treatment and distribution of potable water

Waterworks
Waterworks include canals, channels, reservoirs, embankments, weirs, dams, wells, boreholes, and other works constructed for, or in connection with, the diversion, damming, storage, or abstraction of water, the protection of rivers, lakes, or any other water sources, the conservation of water sources, drainage, or the use of water for any purpose.

FOREWORD

Water is a shared natural resource essential to life and the environment. It plays a crucial role in any country's social, cultural, and economic development. It influences all aspects of life, including the environment, productive and social sectors.

In 2002, the Government published the National Water Policy (NAWAPO) to ensure that water resources are effectively managed to support the nation's social and economic growth while protecting the environment. The policy aimed at creating a comprehensive framework for water resource management, improving health and reducing poverty in rural areas by increasing access to adequate safe water, while achieving sustainable development as well as effective management of urban water supply and sewerage services.

The implementation of NAWAPO 2002 resulted in the formulation of the Water Sector Development Program (WSDP 2006–2025), which is the largest water programme in Sub-Saharan Africa, and the enactment of two key water laws - The Water Resources Management Act No. 11 of 2009 (amended by the Miscellaneous Amendment Act No. 8 of 2022) and the Water Supply and Sanitation Act No. 12 of 2009 (repealed by the Water Supply and Sanitation Act No. 5 of 2019). These initiatives enabled the establishment of an institutional framework for water resource management and water supply and sanitation services, which included the National Water Board, Basin Water Boards, Water Supply and Sanitation Authorities, the Rural Water Supply and Sanitation Agency, Community-Based Water Supply Organisations, the National Water Fund and Water Institute.

Additionally, implementing the policy has led to improved water quality management and provision of water supply and sanitation services. Priority interventions and investment needs were identified in water resource management, urban water supply, sewerage services, and rural water supply. The implementation of these interventions have led to increased access to clean and safe water in rural areas from 50 to 83 per cent and in urban areas from 73 to 91.6 per cent from 2002 to 2024, respectively. Despite these achievements, various gaps in the policy have prompted its review. One of the gaps was the inability of rural communities to implement the policy's directive that required them to contribute to capital

investment and to own and manage their rural water schemes. Large-scale water projects have continued to be constructed in rural areas that require substantial investment, advanced technology, and professional expertise, and their costs are beyond the capacity of local communities. The policy was also silent on managing wastewater quality in rural areas. This led to slower progress in service delivery and subsequent poor water quality management in rural areas. Furthermore, the policy's directive to privatise water supply and sanitation services in small towns has not been realised and is no longer a Government priority.

To address these gaps, the Government has reviewed the National Water Policy of 2002, now presented as Version 2025, through a consultative process where all stakeholders were involved. The updated policy aims to ensure optimal, reliable, sustainable, and equitable development and use of water resources for the benefit of all in the most cost-effective way. It offers guidance to stakeholders on addressing challenges in water resource management and development, water quality in both rural and urban areas, and water supply and sanitation services of which are critical to achieving socio-economic development and water security in line with national and international goals. The policy also emphasises private sector engagement and the importance of research and development.

Lastly, I appreciate the contribution of all stakeholders and partners who supported the process of reviewing the policy. I urge all of us to commit and actively participate in implementing this policy, recognising that water is a precious resource essential for the well-being of both present and future generations.

Hon. Jumaa Hamidu Aweso (MP)

MINISTER FOR WATER

Chapter

1

Introduction

INTRODUCTION

1.1 Background

Water is a shared natural resource fundamental to life and the sustenance of the environment of which human beings depend upon. It plays a central role in Tanzania's social and economic development, touching on all aspects of life necessary for sustainable economic development and stability. For the environment, water supports ecosystem biodiversity, including flora and fauna, to maintain a viable population.

To improve water and sanitation services in the country, the Government enacted the first National Water Policy of 1991 to guide the provision of clean and safe water to the population within 400 meters of their households. Due to challenges in implementing the 1991 Policy emanating from changing global trends in the water sector and other national policy reforms, the Government launched the National Water Policy of 2002 (NAWAPO 2002).

The NAWAPO 2002 established an institutional framework for the management and development of water resources and the development and sustainable management of water supply services in rural and urban areas. The framework enabled the establishment of various institutions in the water sector, including the National Water Board, which serves as an advisory body to the Minister on water and sanitation issues; Basin Water Boards (BWBs), responsible for managing and developing water resources; Water Supply and Sanitation Authorities (WSSAs), tasked with providing water and sanitation services in urban areas; Community-Based Water Supply Organisations (CBWSOs), responsible for delivering water and sanitation services in rural areas; the Rural Water Supply and Sanitation Agency (RUWASA), which oversees the development and sustainable management of rural water supply and sanitation projects; the National Water Fund (NWF), which mobilises resources and provides investment support for water service provision and the management of catchment areas; and the Water Institute (WI) which is responsible for provision of trained and skilled personnel in the water sector.

The implementation of NAWAPO 2002 enhanced the credibility of hydrological data and information, the adoption of Integrated Water Resources Management and Development (IWRMD) planning, the conservation and protection of water sources, and enhanced collaboration

with riparian states through joint protocols, conventions, and agreements for the development and management of transboundary water resources.

In 2020, a review of NAWAPO 2002 revealed some challenges and gaps. Under water resources management and development these challenges include minimal consideration of the impacts of climate change in the sector, and inadequate investment in water storage facilities and water demand management. This is on and above less emphasis on water harvesting technologies and supporting a transformative national water grid to enhance sustainable water supply and ensure water security in the country.

In water quality and wastewater management, there have been challenges in implementing the policy, especially due to persistent pollution of water sources resulting from improper treatment and discharge of wastewater into the environment. The policy also considered water quality at the source, treatment of urban water and wastewater, but excluded the same in rural areas since water quality and sanitation were not a problem in such localities at the time. The increased rural population and enhanced economic development and change of lifestyles have led to increased water demand in such localities. This has led to the construction of small dams in rural areas and the use of unimproved surface water sources, including rivers and water pans, which calls for consideration of water quality and sanitation issues in such localities. This has led to the construction of small dams in rural areas and the use of unimproved surface water sources, including rivers and water pans, which calls for consideration of water quality and sanitation issues as well.

There are several identified water supply and sanitation challenges. One is low investment that cannot cope with rapid urbanisation, industrial development as well as other economic activities. Another critical challenge is physical and commercial water loss, which accounts for high non-revenue water (NRW) caused by dilapidated infrastructure and inefficient water management (leaks, unauthorised usage and metering inaccuracies). The population increase in rural areas has outrun the planned water schemes. Additionally, some schemes have been unsustainable due to the impacts of climate change that have caused water sources to dry up. This has necessitated investment into large water infrastructure projects using reliable water sources. Thus, it has been difficult to implement the policy directive requiring rural communities to contribute part of the project

capital cost. Moreover, rural sanitation services have not developed and have been limited in urban areas. The private sector has also not been active in investing and operating water supply and sanitation schemes. Their contribution has been limited to a few Corporate Social Responsibility (CSR) activities or consultancies and construction of water supply infrastructure. Furthermore, attempts to promote Public Private Partnerships (PPPs) in the water sector have had very limited success.

In addition, the policy emphasised the importance of Research and Development (R&D) in effecting and adapting technological changes and innovation in the sector. To date, there has been limited progress in this area, with only a few studies that were either demand-driven with minimal impact on sectoral transformation. New Information and Communication Technology (ICT) tools, for example, the use of Artificial Intelligence (AI) in the water sector, have not been fully explored.

1.2 Situation Analysis

The main goal of NAWAPO 2002 was to establish a robust system for managing and developing water resources and to institute a strong legal and institutional framework for managing policy implementation. It further aimed at ensuring beneficiaries in rural areas participate fully in the 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 aimed at changing the government's role from service provision to coordination, policy and guidelines formulation, and regulation for sustainable development and management of water resources. The three main objectives of NAWAPO 2002 are:

i) **Water Resources Management:** To establish a comprehensive framework that promotes the optimal, sustainable, and equitable development of water resources for the benefit of all Tanzanians;
ii) **Rural Water Supply:** To improve public health and reduce poverty in rural areas by enhancing access to adequate and safe water; and
iii) **Urban Water Supply**: To ensure the sustainable, effective, and efficient development and management of urban water supply and sewerage services.

This section narrates the current situation in implementing the three main objectives and highlights the policy gaps that have necessitated a policy review.

1.2.1 Water Resources Management

Tanzania is endowed with abundant natural freshwater resources, including lakes, rivers, springs and aquifers, some of which are shared with neighbouring countries as transboundary water resources. There are also constructed dams and many water pans, which are used as unimproved water sources for domestic and socio-economic purposes. With all these resources, there is a need for a well-established and efficient institutional set-up for water allocation, resource development, and management of both quantity and quality across all water uses. The NAWAPO 2002 provides a basis for supporting and guiding water resources management (WRM), including institutions, infrastructure, and information systems.

To ensure good management of water resources in the country, nine Basin Water Boards (BWBs) were established, namely, Pangani, Wami/ Ruvu, Rufiji, Ruvuma and Southern Coast, Lake Nyasa, Lake Rukwa, Lake Tanganyika, Lake Victoria, and the Internal Drainage Basin. BWBs are the institutions responsible for overseeing the implementation of basin plans. The BWBs develop and manage water resources through the Integrated Water Resource Management and Development (IWRMD) and Catchment Conservation Plans (CCPs) to promote coordinated management and sustainable development of water resources. IWRMD plans were prepared by the BWBs in collaboration with other water-related sectors and stakeholders, with implementation plans involving all parties. Functional areas of WRM include water resources data and information systems, assessment and planning, water allocation and demand management, water sources conservation and pollution control, dam development and management, and transboundary water resources management. Despite the success of NAWAPO 2002 in establishing a sound policy framework for water resources management, over the last twenty-three years, there has emerged some challenges that require a new policy guidance as narrated herein.

1.2.1.1 Water Resources Data and Information System, Assessment and Planning

The task of collecting water resources data, processing and analysis for water resources management is performed by BWBs. They are responsible for ensuring the availability of hydrological and hydrogeological data and information, which is central to the effective management of water resources. In achieving this, a network of 832 monitoring stations has been installed across the country, including 756 hydrometeorological stations

and 76 groundwater monitoring stations. The collected and analysed data support decision-making in managing and developing water resources. During the implementation of NAWAPO 2002, it was observed that some of the monitoring stations faced sustainability challenges due to wear and tear, lack of regular maintenance, outdated technology and equipment vandalism. Additionally, the available network is manually operated, leading to delays in data collection, processing and dissemination.

Water resources assessment is conducted at the basin level by determining the point of assessment, quantity, and quality, as well as analysing the current status and trends related to availability, accessibility, and demand for water. Extensive water resources assessments have supported ascertaining existing and future water availability, disaster forecasting, establishing sectoral water demands and optimum water resource monitoring systems for the respective basins. Reliable water resource assessments have been hampered by inadequate hydrological, hydrogeological and meteorological monitoring networks, resulting in insufficient data and information for evidence-based planning and decision-making.

Water resources planning is conducted by using IWRMD plans. The plans provide blueprints for rational management and development of the nation's water resources for multi-sectoral needs in each basin. To ensure proper implementation of the plans, the Government established platforms for stakeholder engagement for effective water resources planning and development.

These include the National Multi-Sectoral Forum, Basins Multi-Sectoral Fora and Catchment Stakeholders Fora. The fora have improved stakeholders' involvement in the implementation of the plans. One such success story of implementing basin IWRMD through stakeholder engagement is the construction of the Julius Nyerere Hydroelectric Power Project (JNHPP), where all stakeholders were engaged.

However, the implementation of sectoral plans is faced with inadequate coordination, as most sectors still do not adhere to IWRMD plans in implementing their respective water projects. This has led to sectoral conflicts on water use and inefficiency in water allocation. There has also been a lack of capacity and resources to reach and effectively engage constituents in remote areas with dispersed populations, especially in lower-level catchment areas.

1.2.1.2 Water Allocation, Use and Demand Management

Effective water allocation aims at ensuring equity in apportioning water to different uses. In allocating water, priority is always given to domestic use, followed by the environment, and lastly, economic activities. The allocation process is done through issuing water use permits. As of June 2024, 13,579 permits had been issued across all BWBs, significantly improving control of water use and demand management. Challenges observed in water allocation include inadequate compliance within permitted volumes of water and insufficient water demand management. Enhancing compliance for all water users, especially during the dry season, is essential.

Water use and demand have risen over the last 20 years because of increased population and economic activities. In 2015, water demand for different sectors was 47.5 Billion Cubic Meters (BCM); by 2024, it had reached 62 BCM. This is projected to increase to 80.2 BCM by 2035, with a risk of the country being subjected to water stress if no appropriate action is taken. In 2002, the population of Tanzania was 33,584,607, which translated to a water per capita of 3,678 m^3/ca/yr. In 2022, the population was 59,851,357, with a water per capita of 2,105 m^3/ca/yr.

The internationally acceptable threshold for water stress is 1,700 m^3/ca/yr, indicating that Tanzania is not water-stressed. However, water demand is increasing due to population growth, lifestyle changes, rapid urbanisation and increased production across all sectors. Alongside the increasing demand, there is limited awareness of efficient water use across various sectors, leading to the deterioration of water quality.

This calls for urgent actions to increase water productivity, prevent deterioration of water quality, make effective use of innovative technologies and approaches to increase water availability, harness other freshwater sources, increase strategic water storage to ensure water security, maximise seawater desalination and reuse of wastewater. These critical areas were not emphasised in NAWAPO 2002.

1.2.1.3 Water Sources Conservation and Pollution Control

Water source conservation and pollution control have been implemented through various interventions, including the identification, demarcation, gazettement and restoration of degraded water sources. This is on and above enforcing water and related laws and regulations; promoting sustainable agricultural, mining and land use practices; efficient water

allocations; issuing discharge permits; and creating awareness. All these initiatives have supported the conservation and protection of water sources. By June 2024, 3,339 water sources had been identified; out of these, 350 have been demarcated and 62 gazetted as protected areas. In addition, 254 wastewater discharge permits have been granted to industries countrywide to control the quality standards of wastewater discharged into the environment.

Despite these efforts, water resource depletion and quality deterioration remain a growing concern. Encroachment into water sources due to socio-economic developments and the impacts of climate change are now threatening their sustainability. This calls for a new policy direction especially in ensuring climate resilience in the water sector.

1.2.1.4 Dam Development and Management

Water dams are constructed mainly to mitigate droughts' effects, regulate flows, control floods, and supplement groundwater recharge. Tailing dams, commonly known as Tailings Storage Facilities (TSFs), are used to store effluents from mines. Dam owners are responsible for such structures' operation, maintenance, and surveillance, while the government is responsible for oversight. Dam safety management includes a system for monitoring the state of dams, physical threats to the dams, and issuing safety warnings when necessary. By June 2024, there were 651 formally registered dams with various capacities, 29 of which were large, and the remaining were of medium and small sizes. There are also 43 tailings dams.

The government has developed the Dam Safety Regulations of 2020 to guide the enforcement of dam safety. This includes monitoring, issuance of construction permits, registration of dams with and without safety risk and registration of Approved Professional Persons (APPs) who are authorised to deal with all aspects of dam safety management - designing, construction, commissioning, operation, maintenance and decommissioning.

The Dam Safety Regulations have enhanced safety measures in dam design, construction, operations, and maintenance. Following regular monitoring, risks associated with dam failure or leakage of hazardous water from tailing dams have also been minimised. The government will continue to improve dam development and management by preparing and enforcing technical guidelines, standards, and design manuals for water dams and tailings storage facilities.

1.2.1.5 Transboundary Water Resources

Tanzania shares with neighbouring countries several water bodies which include the six transboundary lakes, namely Victoria, Tanganyika, Nyasa, Natron, Chala and Jipe; eight transboundary rivers, namely Kagera, Mara, Malagarasi, Momba, Mwiruzi, Ruvuma, Songwe and Umba; and eight transboundary aquifers, namely 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 ensure equity in sharing the transboundary water resources, riparian countries have formed regional and international transboundary institutions. Tanzania is a strategic and active partner in these regional institutions, through which programs and projects that benefit Tanzania are implemented. The institutions include the Joint Songwe River Basin Commission (SONGWECOM), Nile Basin Initiative (NBI), Joint Ruvuma Basin 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 programs that include Africa Water Vision 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 Program.

Benefits that Tanzania has gained from bilateral, regional and international cooperation on transboundary waters include the development of capacity for water experts, implementation of the Lake Victoria Environmental Management Project (LVEMP), construction of the Rusumo Falls Hydroelectric Power Plant, Kenya - Tanzania Interconnection Project and Regional Agricultural Trade and Productivity Project.

Others are the Ruvuma Shared Watercourses Support Project and the proposed Lower Songwe Multipurpose Dam for producing 180 MW of electricity to be shared between Tanzania and Malawi. The latter will provide water for irrigating 6,200ha and for domestic use targeting the communities in the area. Despite establishing these transboundary cooperation institutions, inadequate capacity, incoherent and conflicting legal frameworks, differences in socio-economic setups, differential

capacities and priorities among member states, and geopolitics have led to competition over water allocation and uses. Also, the national capacity to manage transboundary water affairs is still limited.

1.2.2 Water Resources Development

The country is endowed with vast water bodies such as rivers, lakes, wetlands, springs, and groundwater aquifers. They add up to annual renewable water resources estimated to be 126,000 BCM. This figure includes an estimated storage capacity of 40 BCM in 651 registered dams (as of June 2024). This does not include the water storage capacity of unregistered, unmanaged and unmonitored reservoirs, particularly the numerous natural and man-made water pans used as water sources in rural areas. In this regard, the storage capacity is underestimated in the country's renewable water resources because it does not account for the significant contribution of rainwater harvesting to socio-economic development. Despite these abundant water resources, NAWAPO 2002 did not adequately guide the development to ensure lasting water security in the country. Instead, the policy only provided guidelines for dam construction. The construction of strategic water storage facilities is necessary to increase water security, reduce the impacts of climate change and support disaster management through drought and flood management. This includes constructing a national water grid that draws water resources from the main water bodies for distribution across all parts of the country.

During the review of NAWAPO 2002, it was revealed that, although issues of preparedness against water-related disasters were provided, their implementation was not given priority. The construction of water storage infrastructure and Early Warning Systems (EWSs) was inadequate, and the Water, Sanitation, and Hygiene (WASH) sector was always unprepared to respond promptly and effectively due to a lack of funding. In addition, there has been disjointed planning of water-related projects implemented in different sectors, resulting in duplication of efforts and wastage of resources. Assessment of investments in inter-basin water transfer systems was noted to be insufficient to mitigate extreme water stress in heavily impacted areas or to distribute water-related risks more evenly across different parts of the country. There are also other untapped water resource potential, such as desalination and reuse of treated wastewater, including development of water pans which could augment the available water resources if targeted investments are made.

Groundwater is one of the most indispensable natural resources and accounts for about 17 per cent of available water resources in Tanzania, with numerous boreholes drilled to supplement surface water supply. The government gives groundwater special consideration and has been exploring the resource. By June 2024, 172 potential groundwater sources were identified for development. Normally, groundwater helps to replenish and maintain levels of surface water bodies such as lakes, streams and rivers. Sustainable utilisation of groundwater has been challenging because of inadequate data and continuous monitoring due to limited investment. Deliberate initiatives must be taken to ensure sustainable investments in the monitoring of groundwater resources.

1.2.3 Water and Wastewater Quality Management

Water and wastewater quality management is essential for ensuring that quality is within acceptable standards for various uses and for control of pollution. Quality management is implemented through monitoring and assessment programs performed by Water Quality Laboratories in collaboration with other water quality stakeholders. The formulation and implementation of NAWAPO 2002 led to remarkable achievements in water and wastewater quality management. This include strengthening water quality analytical services through expansion of the service coverage and scope, ISO/IEC 17025 accreditation of water laboratories on testing and calibration, and upscaling of water treatment interventions for improving the quality of drinking water in the country. The Government developed National Guidelines on Drinking Water Quality Monitoring and Reporting, Operational Guidelines for Optimization of Water Treatment Chemical Dosing, and Guidelines for Preparation of Climate Resilient Water Safety Plans for urban and rural water supply that support water quality management.

Monitoring and assessment programs performed by Water Quality Laboratories involve collection of samples from water sources, water supply systems and wastewater treatment systems. Data are collected from water quality and pollution control stations established in water bodies and water supply /distribution networks in various parts of the country. The collected data are analysed to generate useful information for planning and informed decision-making on the development of water sources to determine the suitability of water for various intended uses.

In many parts of the country, deterioration of water quality caused by human development activities is evident. The water quality assessments have revealed the presence of harmful chemicals in water from industrial processing, mining and agriculture. There is concern about emerging contaminants in water sources which are not fully regulated. The long-term effects of these contaminants on human health and ecosystems are still being studied. Furthermore, there is inadequate water quality management - a lack of regular water quality monitoring and assessment, particularly in water sources, a lack of ambient water quality standards and inadequate water pollution control practices. This leads to further deterioration of water quality, limits effectiveness and increases the cost of water treatment. Polluted water, as well as water-borne and related diseases, not only cause misery, morbidity and mortality but also impose high socio-economic costs through loss of human productivity and potential. Water quality management is also affected by low institutional capacity, inadequate implementation and enforcement of the legal provisions for water quality management, limited understanding and utilisation of water quality data, and inadequate information sharing among institutions and communities.

Water quality management in water supply and distribution networks in both urban and rural areas is challenged by pollution from both point and non-point sources; inadequate monitoring and assessment systems; non-compliance with drinking water standards by some utilities; inadequate water treatment; limited research on drinking water quality, storage and treatment; and a lack of adapted and practicable technologies and strategies for water quality management in rural areas for both man-made facilities such as small dams and natural water collecting facilities. Water quality management in water supply networks for rural areas was not stipulated in NAWAPO 2002. The new version has emphasised water quality in rural projects.

The government and other stakeholders have taken initiatives to manage wastewater quality and control pollution. These include advising on ways to legally manage discharges of pollutants from various sources to protect public health and integrity of ecosystems. The Government has also been regularly reviewing wastewater discharge standards to enhance the management of effluent prior to discharge to the environment. These initiatives have achieved only 60 per cent compliance. Some industries have no wastewater treatment facilities, resulting in toxic substances

being discharged directly into the environment. Haphazard wastewater discharges have contaminated water sources, threatening public and ecosystem health. This highlights the need for more efforts to increase compliance. There is also limited research and development on wastewater treatment technologies leading to inadequate and ineffective proactive measures to curb pollution. Similarly, water quality management facilities were not given priority in rural areas during the implementation of NAWAPO 2002. This was because the small projects that were implemented in such localities had no serious pollution challenges. Also, there was no priority in managing wastewater in rural areas as people used traditional pit latrines. However, with change of lifestyles in rural areas where modern houses are being built, there is a need to address management of wastewater and hence the reviewed policy will give high priority to wastewater management in both rural and urban areas.

1.2.4 Access to Water Supply Services and Water Management Systems

1.2.4.1 Access to Water Supply Services

Access to water supply services for rural and urban populations has increased since 2002. In rural areas, access has increased from 50 per cent in 2002 to 83 per cent in June 2024. This improvement is as a result of Government investment in the construction of new water projects, and rehabilitation and extension of existing ones. As of June 2024, 2,943 water projects with 169,515 water points were constructed in rural areas, including 194,591 house connections. Some of the water projects being constructed in the rural areas are big enough to serve more than one village. Also, other villages benefit from water transmission mains for towns. These initiatives have enabled 34,950,360 out of 39,232,990 people, as per the 2022 census, to access water supply services in rural areas.

Despite these achievements, some challenges are notable. NAWAPO 2002 directives require a water point to serve 250 people within a distance of not more than 400 meters. This has proved impractical because of the scattered nature of settlements. Furthermore, small water projects were intended to serve small communities, with beneficiaries contributing to investment costs. However, population growth and water demand have outstripped advances in water supply. Currently, the Government is developing large and high-tech projects intended to serve many villages. With these types of projects, it is difficult for communities to contribute to investing and

operating new water schemes or extend their water supply service outside areas designated by the Government at the time. Therefore, the NAWAPO 2002 directives were not sufficient to respond to rural developments. In this regard, the policy need to be reviewed to include more adaptable and multi-pronged strategies to address the rapidly changing situations especially in rural areas.

In urban areas, access to water supply services increased from 73% in 2002 to 91.6% in 2024. This improvement results from Government initiatives to invest in water supply infrastructure, including developing water sources, transmission mains, water treatment plants, storage reservoirs or tanks, distribution networks, customer connections and water meters. These efforts have significantly expanded the water networks in regional centres, which have extended from 8,662 kilometres in 2015 to 27,534 in 2024.

Likewise, the cumulative storage tanks capacity increased from 712,933 cubic meters to 857,900 cubic meters by 2024. Water supply services in urban areas are expected to continue improving, as most regional water utilities have the potential to expand their customer base, generating more revenue to fund service extensions and new connections.

Despite the achievements in providing water services to urban areas under the NAWAPO 2002, the assessment shows that the quantity of water available per person remains below national standards, and some households still need to travel long distances to fetch water. Additionally, the assessment highlights Tanzania's growing population and economy. Population is expected to reach 138 million by 2050, with 50 per cent living in urban areas. There will thus be a significant increase in water demand. Battered water infrastructures and increasing population density due to unplanned urbanisation present further challenges.

The rapid population growth has outpaced the capacity of existing infrastructure, reducing the quality of water services. Economic growth in urban areas has also increased the water demand. As cities expand, slum-like peri-urban areas have emerged, requiring new investments in water supply infrastructure. The deterioration of existing infrastructure has resulted in higher Non-Revenue Water, thus undermining the ability of water utilities to cover operational and maintenance costs.

1.2.4.2 Water for Other Uses

NAWAPO 2002 outlined three key areas of water demand i.e domestic use, environmental needs and economic activities. During its implementation, the policy focused primarily on meeting water needs for domestic and pastoral communities. However, with significant rural and urban economic growth, it is necessary to widen the scope to focus more on ensuring water security rather than meeting water needs.

Currently, water demand for agriculture, hydropower, mining industry, environmental services, and other sectors is rising due to increased economic activities. Despite the importance of water in these sectors, there has been minimal cross-sectoral planning on water issues. Joint planning is useful especially to avoid duplication of efforts e.g inadvertently allocation of a water source for multiple purposes of which could have a direct impacts on downstream water users. Joint planning would trigger early warning systems for overuse of water sources, enhance water productivity, and prevent duplication and wastage of public resources. The revised policy emphasises cross-sectoral coordination in design and implementation of all water-related projects.

Another area not sufficiently addressed in NAWAPO 2002 is the provision of water services to public institutions such as schools, markets and health facilities. Adequate water supply to these facilities is essential for hygiene, drinking, medical use, cleaning, sanitation, and overall well-being of surrounding environment. By 2019, through the WASH initiative, the Government had provided water access to 2,105 health facilities through tap connections and 3,220 through rainwater harvesting storage tanks. Additionally, 8,832 out of 19,995 schools gained access to clean and safe water through tap connections, wells, and rainwater harvesting storage tanks. Integrating water supply, sanitation services and hygiene education has been a priority in improving health conditions, particularly in rural areas. However, the lack of inter-sectoral planning has led to gaps in accessing clean water in some institutions.

Water supply for livestock is also crucial in rural areas where over 70% of Tanzania's livestock is reared. Water projects must, therefore, include provision for watering livestock, as prescribed and outlined in the Design, Construction, Supervision, and Operation and Maintenance Manual (2020). By June 2024, the Government had constructed 1,384 Charco dams and 458 cattle troughs and drilled 103 boreholes for providing water to

livestock. Inadequate water supply for livestock leads to herders migrating in search of water. This can result in land degradation, contamination and destruction of water sources and infrastructure, and conflicts among water users. The reviewed policy includes directives to promote water supply for livestock in rural areas through inter-sectoral cooperation and dialogue with all stakeholders.

1.2.4.3 Management of Water Supply Services

The Water Supply and Sanitation Act No. 5 of 2019 assigns responsibility for water supply and sanitation services to water entities. In rural areas, this mandate is bestowed to Community-Based Water Supply Organisations (CBWSOs), which manage water schemes, collect water tariffs, and manage operational and maintenance (O&M) costs. CBWSO leadership is elected at village meetings and is tasked to employ a technician for maintenance works and an accountant to manage funds. As of June 2024, 1,018 CBWSOs were registered, serving 9,203 villages. The Rural Water Supply and Sanitation Agency (RUWASA) was also established to improve water and sanitation services in rural areas. It is mandated to construct and monitor rural water projects and ensuring the sustainability of rural water supply services. While RUWASA oversees and regulates rural water services, its dual role in construction and regulation may create conflict of interest or lack of impartiality in their mandate.

In rural areas, water service beneficiaries are expected to contribute to investment costs and pay tariffs to cover O&M costs. Some water schemes function well, while others struggle because of poor resource management. This includes disinterest among people in paying for water services, inadequate capacity of CBWSO leadership, and theft or damage of water infrastructure. All these threaten sustainability of rural water service delivery. The review of NAWAPO will address these challenges in rural water services especially operational and regulatory issues.

In urban areas, the Minister responsible for Water is empowered to establish Water Supply and Sanitation Authorities (WSSAs). By 2024, there were 88 WSSAs providing water and sanitation services in urban centres. Their primary function is to ensure efficient and equitable water supply by implementing Water Demand Management (WDM) strategies. These include technological, economic, institutional, and communication measures to promote sustainable water use. To maintain high-quality water supply services in urban areas, WSSAs must minimise non-revenue

water (NRW), increase water production, assess water use through water meters, apply appropriate tariffs, and set aside funds for service expansion and infrastructure rehabilitation. The Government typically carries out major water projects requiring significant investment in collaboration with development partners. The National Water Fund (NWF) provides financial support to WSSAs through soft loans for rehabilitation and service expansion projects. Between 2015 and 2024, several major water projects were completed, including the Tabora–Igunga–Nzega, Mugango–Kiabakari–Butiama, Orkesumet and Arusha City projects. These efforts reduced national average of NRW from 43% to 36.6%, increased the metering ratio from 95.4% to 99.9%, boosted water production from 234.50 MCM to 334.7 MCM per year, and promoted the use of appropriate tariffs to minimise wasteful water use.

Challenges in urban water service provision include the increasing water demand, which is not matched by the expansion of supply services. For instance, cumulative water demand in all regional centres increased from 435.04 MCM in 2015 to 681.87 MCM in 2024 due to rapid urbanisation, increased economic activities, and inefficient water use. While the Government continues to establish water projects and commission them to WSSAs, the authorities are responsible for collecting water tariffs and using the same to cover O&M costs, including minor rehabilitation. Investment in major infrastructure rehabilitation remains the responsibility of the Government. Despite the substantial investments by the Government, leakages and illegal connections contribute to high NRW, leading to revenue loss, poor service delivery, and water rationing. The revised policy will emphasise effective water supply management to ensure sustainability and high-quality water services in urban areas.

1.2.5 Sanitation

Sanitation encompasses a broader system of managing waste and ensuring a clean environment and prevent the spread of diseases. It includes providing and maintaining facilities for the proper disposal of human excrement, managing wastewater, and promoting good hygiene practices. It involves constructing and maintaining toilets and latrines, waste collection and treatment, installing hygiene facilities, and public education on health and cleanliness. Implementing and promoting sanitation in the country, including hygienic behaviour and solid waste and stormwater management, is crucial because they are all related to human health, cleanliness and environmental entegrity. All these require collaborative actions among

various actors, including the Ministry of Health, which deals with sanitation and hygiene in rural areas; the Ministry of Education, dealing with school sanitation and hygiene; and Local Governments, dealing with sanitation in their areas, including solid waste and stormwater management. There has been fragmented planning among these key stakeholders dealing with overall issues of sanitation and effective coordination is required.

Wastewater is generated from different sources including domestic water use which 80% of its water supplies is converted to wastewater. Other sources include industrial processes and mining. Wastewater usually contains toxic substances or biological process inhibitors. Therefore, it must be treated before being discharged into the environment. In the last 20 years, there has been a slight increase in access to sanitation facilities and services to safely dispose of human excreta. By 2024, 11 regional centres out of 26 had constructed sewered sanitation infrastructure with an average access of 13 per cent. The regions are Dodoma, Songea, Iringa, Arusha, Tanga, Moshi, Mbeya, Tabora, Morogoro, Mwanza and Dar es Salaam. The Government has been constructing sewerage networks and waste stabilisation ponds in different areas of the country.

Construction of conveyance infrastructure has increased the length of the sewer network from 652.29 kilometres in 2010 to 1,477.63 kilometres in 2024 in regional centres. The remaining 15 regions use non-sewered sanitation, and in some townships, the Government has constructed faecal sludge treatment facilities. These are Kahama, Nansio, Sengerema, Sumbawanga, Kigoma, Geita, Lamadi, Musoma, Magu, Misungwi, Lindi, Bukoba and Arusha. Emptying and transporting faecal sludge in areas without a sewerage network is through public and private exhauster trucks.

During the implementation of NAWAPO 2002, although there was some emphasis on constructing sewerage systems in urban centres, it was insufficient because more attention was on providing potable water and relatively low investments were channeled to sanitation. This has resulted in inadequate sewerage network and treatment facilities, unsafe sludge disposal and dilapidated sewerage infrastructure. Investment in sanitation infrastructure has been low because of high costs and limited financial resources. Access to sewage removal and treatment services has, therefore, been unsatisfactory. For example, by June 2024, availability of sewerage service was only 13 per cent in regional centres. For other urban areas, sewage disposal service is being provided using wastewater

trucks. Another challenge in wastewater management is ineffective regulatory monitoring and unreliable enforcement of minimum quality of service in each segment of the non-sewered sanitation chain. This results in non-emptiable toilets, leaking containments, unsafe emptying and transportation facilities and inadequate faecal sludge treatment facilities. For rural areas, NAWAPO 2002 remained silent, and no investment has been made in sewage disposal in such localities. Communities use pit latrines, which are abandoned when they are full. Enhanced socio-economic development in rural areas has empowered people to construct modern houses requiring wastewater treatment facilities, including faecal sludge collection. Untreated wastewater adversely affects the environment, causing contamination and pollution of surface and groundwater sources. The reviewed policy considers wastewater infrastructure construction in rural and urban areas.

1.2.6 Private Sector Participation

There has been a deliberate effort by the Government to enhance Private Sector Participation (PSP) in the water sector especially in supporting the provision of goods and water services to the public. The Government has multiple national responsibilities and faces financial constraints and hence it's prudent to seek alternatives sources of funds to support the water sector. The private sector is often more advanced in leveraging skills and efficiencies - bringing in new technologies, sharing risks and providing financing to accelerate development that aligns with the inclusive objectives of the Government. In Tanzania, the government has created an enabling environment for PSP, including the enactment of the Public Private Partnership Policy (2009), the Public Private Partnership (Amendment) Act, 2023, and the Public Private Partnership Regulations (2020). NAWAPO 2002 identifies the private sector as among the key partners in supporting government initiatives to provide water supply and sanitation services.

NAWAPO 2002 emphasises the construction of water infrastructure, rehabilitation and building the capacity of WSSAs to operate commercially as areas that the private sector could invest and or add value. Various initiatives have been undertaken to implement the policy directive, including capacity building at all levels in the sector through PPP training, development of project concept notes, and convening forums to discuss PSP development. Achievements realized include motivated Implementing Agencies (IAs) to engage the private sector, some of which have already developed a pipeline of projects. Tanga WSSA has managed to prepare

a project that has raised about TZS 53 billion through Green bonds, and other WSSAs are preparing projects of the same nature. Despite these achievements, PSP in water resources has been limited, relying mainly on corporate social responsibility (CSR) activities, consultancy services, project construction and provision of goods and services. NAWAPO 2002 evaluation report shows that the private sector not motivated to invest and operate water projects due to relatively high investment costs and long payback periods. Moreover, Section 76 of the Water Supply and Sanitation Act No. 5 of 2019 and Regulation 14(1) of the Water Supply Regulation of 2019 requires a private entity to vacate a service area once a water authority extends its operations to the area earlier serviced by the private service provider. These legal directives discourage private sector investment and operation in water projects.

To attract PSPs to the water sector, the reviewed policy will prioritise creating a conducive and supportive environment to encourage private sector engagement and investments. The Government will create opportunities for private sector partners as part of an integrated strategy, placing them alongside government funded water schemes in non-viable areas.

NAWAPO 2002 also directed the privatisation of water supply and sewerage entities in small urban centres to improve water supply and sewerage services. According to the policy, water supply and sewerage entities in small urban centres were to be encouraged to form private liability companies or any other legal autonomous commercial arrangement. Attempts to privatise service provision in other sectors showed unfavourable results and hence the policy directive was not implemented. This prompted the Government to change the mode of engagement from privatisation to public-private partnerships. PPP policy, legislation and guidelines have been prepared and are used to engage the private sector. The review of this policy considers changing the modality of private sector engagement in line with the PPP enabling environment.

1.2.7 Research and Technology Development

NAWAPO 2002 emphasised strengthening the capacity of Research and Development (R&D) through enhancing collaboration with sector stakeholders and local and international research institutions. The objective was to undertake strategic water sector research initiatives, establish water resources research and technological development centres, and encourage local researchers to take lead in such strategic initiative. To this end, the

Government has established the Water Resources Center of Excellence (WRCoE) and conducted a few research studies on water-related issues. Research institutions, including the University of Dar es Salaam, Sokoine University of Agriculture (SUA), Nelson Mandela African Institution of Science and Technology and others, have continued to conduct academic research in the water sector. However, the challenge is bridging the gap between academic findings and practical applications that could directly benefit the sector. Furthermore, the Water Institute (WI), a college under the Ministry of Water, undertakes research related to water and sanitation, but the scope and dissemination of its findings remain limited. Similarly, the Ngurdoto Defluoridation Research Center has produced groundbreaking innovations in safe water provision. However, the Center's potential is not fully exploited. A stronger focus on prioritising and facilitating strategic research and development within the water and sanitation sector is imperative to address these challenges. It is also acknowledged that most of the research undertaken is externally funded through partnerships with international institutions. For the water sector to maximumly benefit from local research efforts, a dedicated commitment is required to fund strategic research in earmarked sectoral areas of concern through public resources. This is also supported by the NAWAPO 2002 assessment report that highlights that the reviewed policy will need to motivate the sector to adopt local emerging innovations and technologies by investing in R&D. In the long run, this will generate additional revenue and improve operational efficiency.

1.2.8 Cross-Cutting Issues

1.2.8.1 Environmental and Climate Change Resilience

NAWAPO 2002 directed environmental and climate change issues to be considered during the planning, preparation and implementation of water resource management and in water supply and sanitation projects. This is due to inherent impacts of climate change on water availability in the country. Water is a finite resource with existential importance and currently under pressure, getting scarcer, due to growing population and increased multi-sectoral demands. Primary livelihood and development strategies strongly rely on extracting natural resources from the environment, with limited options for decoupling economic growth and resource use. The increase in temperature, due to climate change, has affected water availability as well as functionality and sustainability of some water supply and sanitation works. Temperatures over the highland areas have been

rising, while rainfall has been decreasing amid seasonal shifts in rainfall patterns in most parts of the country. Other areas have continued to receive heavy rains leading to hazardous floods. These are attributed to changing of hydrological cycle triggered by increase in temperatures. The impacts of such changes are observed not only in water resources but also in water and sanitation works.

To ensure environmental issues are considered, the Government has developed various environmental and social safeguard frameworks to protect and manage water sources and associated water and sanitation infrastructure. These include the National Climate Change Strategy of 2021, the Environmental and Social Management Framework, the Resettlement Management Framework, the Climate Resilient Water Safety Plans Preparation Guidelines, and Guidelines for Good Environmental and Social Practices for the Water and Sanitation Sector. These frameworks have facilitated government's implementation of the Simiyu Climate Resilience Project, Climate Adapted Urban Infrastructure, and Integrated Water Resources Management Programs.

The construction of the Kidunda dam along the Ruvu River is intended address the impacts of climate change on river flows in the Ruvu river. The frameworks and other initiatives have facilitated building the resilience of communities that have adversely been impacted by climate change. In addition, the frameworks have improved compliance to environmental and social safeguard mechanisms through training, providing technical support on enhancing compliance of water and sanitation projects to guidelines on environmental and social safeguard, and undertaking environmental audits on the implementing agencies.

Furthermore, compliance with environmental and social safeguard requirements to address hydrological ecosystems and climatic matters has gradually improved 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 and hence enhances 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 to address concerns on environmental and social safeguard in the water sector, land degradation, deforestation,

and pollution have continued to be a challenge.
Besides, competing water use demands, inadequate enforcement of wastewater management and implementation of some projects without adherence to environmental and social guidelines have led to environmental degradation, pollution and social grievances, which significantly affect socio-economic development.

Some of the existing rainwater harvesting structures, such as charco dams, are located specifically to intercept surface water run-off of which is expected to flow downstream for environment and other water uses. In this regard, research is needed to explore sustainability issues, address environment concerns and possibility of utilising such waterworks in effectively channelling and managing floodwaters, feeding secondary water storage systems and increasing drought resilience.

In addition, natural disasters (floods and droughts) induced by climate variability and climate change has led to various environmental impacts including decreased or increased runoff in rivers, prolonged dry periods, erratic rainfall, and sea level rise. The latter has often led to seawater intrusion affecting freshwater resources along the coastal areas. The reviewed policy will promote strengthening environmental safeguards and climate resilience in the water sector to overcome identified challenges.

1.2.8.2 Gender

NAWAPO 2002 emphasised active and effective participation of women and men in rural water supply programs through fair representation of women in village water-user entities. Water supply programs were established based on what both men and women in rural communities knew, wanted, could manage, maintain and pay for. This was on and above raising awareness, training, and empowering women to actively participate at all levels of implementing water programmes, including decision-making, planning, supervision, and management.

This policy directive has been implemented where gender has been mainstreamed ensuring equity and equality in managing water resources and services related to access to clean and safe water as well as sanitation services. In 2005, the Government prepared the National Strategy for Gender Development (NSGD), which provides guidance on promoting equity, equality and empowerment of women, men and vulnerable groups. Also, the Ministry of Water prepared a gender strategy to guide the participation of women and men in management, decision-making, use

and operation of water resources, water supply and sanitation services. In implementing the policy directive, gender mainstreaming in rural water supply has shown notable success in enhancing equity and efficiency. Women, often the primary water collectors and users in rural areas, have continued to be involved in planning and decision-making. This has made water projects more responsive to the community's needs. For example, gender equity has been noted in management positions, decision-making, operations and implementation of water projects in the country. As of 2022, out of 9,207 employees in water sector institutions, 2,762 are women, equal to 30 per cent of the total workforce. Despite women increasing their presence in decision-making roles in the water sector, progress has been uneven across the different institutions. In the 2020-2024 period, women accounted for an average of 35 per cent of Ministry of Water leadership, 37 per cent of the National Water Fund, 22 per cent of Basin Water Board directors, and six per cent of WSSA leadership. Within RUWASA, women comprise 28 per cent of managers and directors and 14 per cent of regional managers.

Additionally, gender considerations in the water sector have empowered women, increasing their participation in local governance and development activities. This inclusive approach ensures that water supply systems are more effectively managed and contributes to broader social and economic benefits by fostering gender equality and community resilience. Despite the achievements, women and girls remain disproportionally affected by water challenges, for example, carrying the burden of care duties for family members suffering from water-borne diseases, lack of good hygiene facilities in schools, and spending more time and effort to collect water and other resources from degrading ecosystems. The reviewed policy will continue to assess gender disparities in decision-making and access to water to ensure the water sector draws on the capabilities of women, youth and the disable and responds to their needs.

1.2.8.3 Good Governance

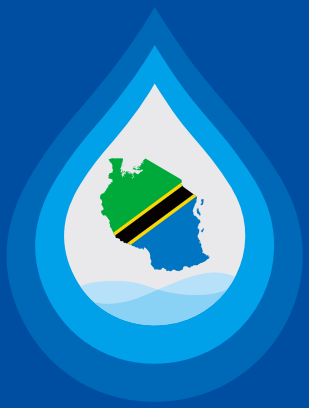
NAWAPO 2002 does not have directives for promoting good governance in the water sector. However, good governance practices have been adhered to using various guidelines issued by the Ministry that are aligned with the same. Good governance in the water sector has improved the sustainable and equitable use and distribution of water while ensuring better use of water resources and effective delivery of water supply and sanitation services. Accountability and integrity in the provision of water

services have improved through greater transparency regarding water use fees, active stakeholders' engagement and effective management in implementation of water supply and sanitation projects. There has been increased community participation in water resources management and water supply and sanitation services through community governing bodies such as WSSA Boards, Water Users Associations (WUAs) and CBWSOs that adhere to good governance. This has increased communities' awareness of water charges, thus making them more willing to pay for various services.

Good governance in the water sector is a priority issue and hence the reviewed policy has provided targeted policy statements for promoting its functionality in all thematic areas of management and development of water resources, water and wastewater quality, and water supply services provision.

Chapter

2



Rationale, Vision, Mission and Objectives

RATIONALE, VISION, MISSION AND OBJECTIVES

2.1 Rationale and Justification

The foundation of NAWAPO 2002 was the management of water resources and delivery of water supply in both urban and rural areas. However, over the last twenty-three years of implementing the policy, the water sector has experienced biophysical changes and socio-economic transformation in urban and rural areas, requiring a new policy focus on ensuring water security and service delivery. The new policy focus must also align with the Tanzania Development Vision 2050, emphasising climate resilience and water security. The latter may include constructing strategic water storage and reticulated infrastructure for enhancing water security and resilience against risks associated with climate change and water-related disasters. In particular, some of the key gaps that were noted in NAWAPO 2002 and have been addressed in the revised policy include:

2.1.1 Community Contribution and Management of Water Projects in Rural Areas

NAWAPO 2002 had provided that, for the sustainability of rural water schemes, they were best owned and managed by the communities. The policy also required beneficiaries in rural areas to contribute financially or in kind to the construction of water supply projects. However, due to diminished freshwater sources caused by climate change and impacts of land use change, the government is currently constructing large water projects that draw water from reliable sources that are not necessarily close to service delivery areas. The construction, technology and operation costs of these projects are high and need special attention and expertise. Hence, communities cannot own or operate them. The revised policy provides for managing and operating rural water projects by entities with the requisite capacity to deliver services at the desired standards. Such an approach enhances the resilience of the infrastructure and the water supply services. The revised policy also encourages communities, especially those in underserved areas, to improve water access by utilising sources within their reach, while at the same time the Government creates an enabling environment for them.

2.1.2 Sanitation Services in Rural Areas

NAWAPO 2002 recognised the importance of sanitation in both urban and rural areas. However, while the policy provided for hygiene and sanitation education in rural areas, it did not emphasise the construction of sewage

conveyance and disposal infrastructure. In addition, the policy did not address wastewater quality management, and as a result, the requisite wastewater infrastructure to complement water supply services was not constructed in rural areas.

Due to the ongoing socio-economic transformation in rural areas that involves the construction of modern houses, the provision of total sanitation services, including sewage management, needs to be covered in the revised policy. This will ensure the implementation of integrated water supply and sanitation projects and prioritising and supporting initiatives that improve effluent quality in rural areas.

2.1.3 Privatization of Water Supply and Sanitation Services in Small Towns

NAWAPO 2002 emphasised privatising water supply and sanitation services in small towns. This policy direction has never been implemented, and privatisation of such entities is no longer a Government priority after the exercise failed to deliver in other sectors. However, the Government enacted the Public-Private Partnership Policy (PPP) of 2009, establishing a sound and progressive framework for engaging the private sector. In this regard, in alignment with the PPP policy, the revised water policy guides engaging the private sector in investing in water and sanitation services. This is useful, especially in widening the water sector's funding sources.

2.1.4 Adaptation to Climate Change and Disaster Management

The impacts of climate change are often manifested through water, either in droughts or floods. The country has continued to experience frequent unprecedented disastrous events such as floods and droughts that have led to loss of lives and property. NAWAPO 2002 did not have adequate provisions on adaptation measures to climate change in the water sector. For example, it did not provide for integrating climate adaptation and resilience measures in all planning and implementation strategies, including establishing integrated flood and drought Early Warning Systems (EWSs).

The lack of integrated EWSs makes the country vulnerable to disasters, which can be easily managed by providing adequate lead information to enable relevant authorities to take appropriate measures. The new policy provides for such measures with a view to enhancing climate resilience and managing disasters in the water sector.

2.2 Vision, Mission and Objectives

2.2.1 Vision

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

2.2.2 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 water supply infrastructure in Tanzania while ensuring climate resilience.

2.3 Policy Objectives

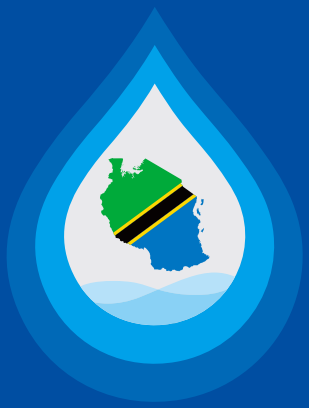
The main objective of NAWAPO 2002, Version 2025, is to ensure water security for all through optimal, reliable, sustainable, and equitable development and use of water resources in the most cost-effective manner.

The specific objectives of this policy are:

i) To enhance sustainable management of water resources;
ii) To improve water resources development;
iii) To improve water and wastewater quality management;
iv) To enhance sustainable water supply services and water management systems;
v) To enhance reliable and sustainable sanitation services;
vi) To strengthen private sector participation in the water sector;
vii) To enhance research and technology development in the water sector; and
viii) To promote cross-cutting issues, which include environmental and climate change resilience, gender and good governance.

Chapter

3



Policy Issues, Objectives and Statements

POLICY ISSUES, OBJECTIVES AND STATEMENTS

This chapter highlights policy issues, objectives, and statements.

3.1 Sustainable Management of Water Resources

Effective water resources management requires an adequate understanding of the balance between available water resources and water demand. This has to be based on robust data and information to facilitate strategic decision-making processes. There is inadequate data and information on key areas, including water availability, water requirements for various uses, and water productivity for assessing and managing competing water demands. Management of water resources is also affected by different factors, including (i) inefficiency in existing water use technologies, (ii) illegal water use, (ii) high non-revenue water, (iii) inefficient irrigation practices, (iv) inefficient abstraction control facilities, and (v) ineffective preparedness to water-related disasters such as floods and droughts.

In addition, the framework for implementing Integrated Water Resources Management Plans (IWRM) requires all sectors using and or dependent on water resources to plan together, especially on water-related projects that serve multiple socio-economic needs. This includes dams that supply water for domestic water, irrigated agriculture, electricity production, drought and flood control, among others. Lack of collaborative planning and coordination in implementing IWRM plans among sectors has sometimes caused duplication of efforts and wastage of resources.

There are also natural rainwater harvesting structures, man-made ponds, rural water pans and pit lakes, which are poorly monitored or not well documented with proper guidelines on their sustainable use. In addition, the rate of encroachment of water sources to create space for other socio-economic developments is increasing to the extent that the sustainability of water resources in many localities is being threatened. Such bad practices and illegal activities can be controlled and managed through effective stakeholder engagement processes, especially at the community level. Moreover, management of transboundary water resources is hampered by inadequate capacity of sectoral institutions, lack of effective management of transboundary water resources among riparian member states, differences in socio-economic set-ups and priorities between member states, geopolitics, and competition over water allocation, security, and uses.

Policy Objective
To enhance sustainable management of water resources.

Policy Statements
The Government, in collaboration with stakeholders, shall:

i) ensure water resources data, information, and early warning systems are available for informed decision-making;
ii) ensure effective water resources assessment for determining water availability, quality, distribution, scarcity, pollution and climate change impacts;
iii) ensure collaborative planning, allocation and efficient utilisation of water resources and water demand management across sectors;
iv) ensure water source conservation, protection, pollution control, and catchment management;
v) ensure effective management of transboundary water resources for the interest of the country; and
vi) promote stakeholders' awareness of sustainable management of water resources in both urban and rural areas.

3.2 Water Resources Development

Water resources development in the country is constrained by various issues, including inadequate investment in strategic water storage and rainwater harvesting systems, limited use of the large natural freshwater lakes, limited inter-basin transfer systems, partial development and non-optimal exploitation of the immense potential of groundwater resources, including enhancing recharge systems. This calls for change of approach in the water sector by aligning more on ensuring water security and quality service. A good example is envisioning a national water grid system that is able to tap onto sustainable and unlimited water sources e.g lakes and conveying it to all parts of the country through inter-basin transfer schemes. One area that has not been fully explored is maximising the development of multi-purpose water storage infrastructure to cater for different sectors. Such an approach has the benefit of reducing costs and avoiding duplication of efforts while promoting integrated water resources planning and development. Other areas that have not been fully explored are maximizing the potential of alternative sources of water such as recycling, reuse of treated wastewater and desalination.

Policy Objective
To improve water resources development.

Policy Statements

The Government, in collaboration with stakeholders, shall:

i) ensure development and management of climate-resilient multi-purpose water storage infrastructure for socio-economic activities, enhancement of water security, and reduction of drought and flood risks across sectors;
ii) promote rainwater harvesting technologies;
iii) ensure and coordinate integrated planning, development and management of water resources infrastructure across sectors;
iv) ensure development and management of inter and intra-basin water transfer infrastructure;
v) explore and promote the development of alternative sources of water, including recycling of wastewater and desalination; and
vi) assess and enhance groundwater development and recharging systems.

3.3 Water and Wastewater Quality Management

Managing the quality of water supplies and wastewater is critical to ecosystem protection and sustaining public health. Ensuring the desired quality of both water supplies and wastewater is essential for protecting and sustaining water resources, guaranteeing the safety of human health and the integrity of the environment. The quality of water and wastewater has continued to face numerous challenges, mainly as a result of anthropogenic activities. Various assessments of water quality have indicated the presence of harmful chemicals with threats of emerging contaminants in water sources. Deterioration of water quality contributes to the spread of water-borne and water-related diseases. It also limits the effectiveness of water treatment and increases the overall cost of ensuring water quality thresholds for different uses.

Additionally, water quality management lacks regular monitoring and assessment, particularly in water sources. There is also a lack of ambient water quality standards, inadequate technical and institutional capacity, weak inter-sectoral collaboration among water quality management-related sectors, weak enforcement of existing water quality and wastewater management regulations and inadequate water pollution control.

On the other hand, water supply projects in rural areas were constructed without reticulated treatment infrastructure since they were small schemes and sourced water from wells and springs that did not have

water quality challenges. However, enhanced socio-economic growth, improved livelihoods and change of lifestyles in rural areas have led to the pollution of previously pristine water sources. In this case, water quality issues must be considered in both urban and rural areas. NAWAPO 2002 did not provide for consideration of water quality in rural water projects. Hence, the revised policy has addressed this anomaly by emphasising water quality issues in rural water projects. Additionally, the revised policy has addressed issues of technical and institutional capacity, inter-sectoral collaboration, and legal and regulatory framework for water and wastewater quality management.

Policy Objective:
To improve water and wastewater quality management.

Policy Statements
The Government, in collaboration with stakeholders, shall:

i) Strengthen monitoring and assessment of the quality of water sources and wastewater for the safety and well-being of the people and to protect ecosystems and biodiversity;
ii) safeguard public health through monitoring and assessment of water quality in public and private water supply schemes in both 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 fostering a culture of environmental stewardship;
iv) enhance water and wastewater quality infrastructure investment to ensure the delivery of safe drinking water and the safe disposal of wastewater in rural and urban areas;
v) enhance inter-sectoral and transboundary water quality management and
vi) improve the institutional, legal, and regulatory frameworks for water and wastewater quality management.

3.4 Sustainable Water Supply Services and Water Management Systems

3.4.1 Rural Water Supply

Most water projects constructed in rural areas were small to meet the growing community demands. Furthermore, the scattered population due

to unplanned rural development has caused challenges in providing water service using domestic water points (DPs) that earlier were designed to serve 250 people in a radius of 400 meters. In addition, climate change has led to drying of boreholes and water springs in some rural areas, especially during dry seasons, making the sources unsustainable and unreliable. All these factors have led to insufficient water supply and sanitation services, as well as poor hygiene, thus contributing to waterborne diseases in rural areas. These challenges disproportionately affect women and girls, who are usually responsible for fetching water and caring for household members who fall sick from contaminated water.

High operational and maintenance costs have hampered the sustainability of some rural water schemes. Some CBWSO schemes have depleted their water sources due to impacts of climate change. To address such failures, the Government is currently constructing large water projects that use reliable sources, covering both rural and urban areas. The design and implementation of these projects do not align with the NAWAPO 2002 guidance, which directed small water supply projects to be constructed and managed by local communities. The large projects require advanced expertise and technology, which local communities can neither afford nor manage. Likewise, socio-economic transformation in rural areas has led to increased demand for house connections, thus reducing the need for public water points, the model on which CBWSOs are based upon. In this regard, reflecting afresh on service delivery and providing policy directives on restructuring water supply services in rural areas is useful.

In addition, separating water requirements for people and livestock has been difficult in rural and semi-arid livestock-keeping communities. Livestock keeping is one of the main economic activities supporting many rural livelihoods. There is a need for the construction of more infrastructure for watering livestock to prevent conflict with and contamination of water for domestic use. This also calls for new designs of water abstraction and treatment systems for domestic water use that can draw water for multi-purpose water uses. The integrated management of such multi-purpose water supply systems needs to be well coordinated to avoid conflicts between competing users.

3.4.2 Urban Water Supply

In urban areas, water supply services face water demand management challenges due to wasteful water use and unmanageable non-revenue

losses. Increased population density and enhanced economic activities have strained water service management. Insufficient water production by utilities, increased water demand, and high non-revenue water losses have led to water rationing and even lack of water supply services in some areas. Nevertheless, the Government has continued to invest in new water supply infrastructure, including major rehabilitation on some of the water infrastructure. Plans are underway to design a national water grid that will tap water from reliable water sources for supplying across the country. However, some water utilities still depend on the Government for operation and maintenance costs (salaries and electricity), service extension and infrastructure rehabilitation. These WSSAs must be restructured to enable them to use their revenues to meet operation and maintenance costs, including rehabilitation.

Since clean and safe water is a basic need and right for all, entities providing water services must do so at affordable costs and within a reasonable distance to reduce time poverty, especially for women and children. The revised policy has considered this.

Policy Objective

To enhance sustainable water supply services and water management systems.

Policy Statements

The Government, in collaboration with stakeholders, shall:

i) develop large-scale water projects, including a national water grid using reliable water sources for socio-economic development;
ii) enhance reduction of non-revenue water to acceptable levels;
iii) ensure rural water supply schemes are effectively regulated, operated, and managed sustainably by well-capacitated legal entities;
iv) ensure full cost recovery by water supply and sanitation authorities;
v) ensure good quality water supply services for household and other uses;
vi) ensure sustainability of water supply services in both rural and urban areas; and
vii) promote public awareness of the efficient use and management of water.

3.5 Reliable and Sustainable Sanitation Services

Sewerage infrastructure has been developed in 11 of the 26 regional centres where only 13 per cent of the population in these localities have access to sewerage services. Some areas use faecal sludge facilities to treat wastewater, while others do not have sustainable sanitation services and hence unsafely discharge their wastes into the environment. Provision of sanitation services in the country is limited mainly due to low coverage of sewerage services, high connection costs, unplanned dwellings and dilapidated infrastructure.

Most households continue to use unsustainable onsite sanitation, which risks contaminating groundwater sources and polluting the environment. Likewise, most of the existing wastewater treatment facilities do not cater to treating faecal sludge. Such an anomaly has led to the deterioration of wastewater treatment facilities. Hence, the quality of both the faecal sludge and effluents does not meet the desired disposal standards.

Non-sewered sanitation is used in many urban areas and is the dominant system in rural areas. Despite some initiatives to construct faecal sludge treatment facilities in 16 townships, progress has been slow and falls short of service requirements. A significant proportion of the population in the country uses non-emptiable pit latrines that eventually contaminate groundwater.

The sanitation challenge in the country is further compounded by unsafe emptying of pit latrines, improper transportation facilities, inadequate faecal sludge treatment facilities and unsafe disposal practices. In addition, many urban centres have not planned for sanitation services, such as setting aside land for sanitation infrastructure. Also, regulatory monitoring and enforcement of minimum service standards in each segment of the non-sewered sanitation chain is largely ineffective.

Implementing and promoting sanitation in the country, including hygienic behaviour, solid waste and stormwater management, has become critical. All these touch on human health, so their proper handling requires collaborative action among various actors.

Policy Objective

To enhance reliable and sustainable sanitation services.

Policy Statements

The Government, in collaboration with stakeholders, shall:

i) enhance investment and appropriate technologies for sanitation infrastructure and service provision in rural and urban areas;
ii) enhance regulatory monitoring and enforcement for quality sanitation services;
iii) promote and coordinate risk-based management approach in the sanitation value chain among sectors;
iv) promote city-wide and rural inclusive sanitation planning; and
v) promote community hygiene practices.

3.6 Private Sector Participation in the Water Sector

Private sector engagement and contribution in the water sector remains minimal, limited to capacity building, supplies, consultancy services and construction. Their participation in financing, investment and implementation of water projects has been low because of high investment requirements and long payback periods. Existing regulations, such as the Water Supply and Sanitation Act No.5 of 2019 and the Water Supply Regulations, regulation 14(1), are also not attractive for private sector investment and operation of water supply schemes. Thus, the government has remained burdened with all capital investment and the operation of water sector projects. With overcommitted financial resources and the many needs in the water sector, greater private sector involvement will relieve government finances for other critical purposes, increase service delivery efficiency and advance modern technology in the sector.

Policy Objective

To strengthen private sector participation in the water sector.

Policy Statements

The Government, in collaboration with stakeholders, shall:

i) promote private sector engagement in water resources management and development, provision of water supply and sanitation services, and
ii) coordinate and support private sector initiatives in the water sector.

3.7 Research and Technology Development

Emerging innovations and technologies in the water sector require dedicated learning from different experiences and continuous, purposeful research in different areas. Some areas that require such interventions

are data and information management systems, climate resilience, non-revenue water losses, wastewater reuse and resource recovery, sanitation, desalination, revenue management and all aspects of water resource management. The absence of a robust knowledge base and continued reliance on traditional and conventional approaches impede effective water resources management, water and wastewater quality management, as well as the provision of sustainable water supply and sanitation services. This requires prioritising research and development and strategic investments in transformative technologies to revolutionise the water sector. Actions needed include fostering and promoting research, technology, and innovation as key drivers of a thriving water sector. Through research, cost-effective and efficient technological alternatives in water and sanitation can be identified to suit current and future needs.

In addition, Information and Communication Technology (ICT) plays a pivotal role in enhancing Research and Development (R&D) by providing tools such as Artificial Intelligence (AI) and platforms for streamlining processes, facilitating collaboration and accelerating innovation. It enables researchers to access vast databases, shares findings in real-time, and utilise advanced analytical tools to derive insights from complex data sets. ICT in the water sector must adapt and innovate digital technologies and related tools to facilitate timely informed decisions on water resources management, water quality management, water supply and sanitation services, and infrastructure management. Considering the importance of ICT, the revised policy will continue to strengthen and promote ICT in the water sector.

A clear policy direction is required to ensure continued research and technological innovations in the water and sanitation sector, such as categorisation, piloting, approval, and implementation of research findings and technological innovations. A policy environment that allows and encourages experimentation and entrepreneurial thinking, or where WASH innovations are remunerated, is likely to provide an incentive to Basin Water Boards, water utilities and other entities across the sector to invest in R&D. Such investment will, in the long run, lead to well-managed water resources, quality and effective water and sanitation services, more revenue generation by WSSAs and reduction in operational expenses.

Furthermore, integrating ICT into water sector R&D will enhance water resource planning, allocation, development, and conservation.

Policy Objective
To enhance research and development in the water sector.

Policy Statements
The Government, in collaboration with stakeholders, shall:
i) promote and encourage Research and Development (R&D) in the water sector;
ii) promote enabling R&D environment; and
iii) promote the use of ICT in the water sector.

3.8 Cross-Cutting Issues

3.8.1 Environment, Climate Change and Disaster Resilience Systems

The climate in Tanzania is mainly influenced by biophysical factors such as location, seasons, vegetation cover, and proximity to natural dominant bodies such as lakes, oceans, and mountains. Climate change has continued to affect the functioning of ecosystems and has had direct, often harmful, impacts on human well-being.

In addressing the challenges and impacts of climate change, the Government developed and is implementing the National Climate Change Strategy of 2021, covering all sectors. However, the water sector is still vulnerable to climate change, where numerous impacts have been observed, including higher temperatures, droughts, floods, and sea level rises. Floods have disrupted water and sanitation services and destruction of critical infrastructure such as river monitoring stations, roads and bridges. Droughts have led to the drying of rivers and reservoirs, crop failures and depletion of pastures. Generally, climate change has disrupted most productive sectors and negatively impacts rural communities' livelihoods. Notably, the impacts have affected men and women differently - for example, increasing water scarcity forces women and girls to walk longer distances to access clean water, thus reducing time for education and income-generating activities.

Despite these observable changes and recorded impacts, the capacity to guide responses is inadequate, and there is generally low resilience against climate shocks. The latter could encompass strategic water security investments, e.g., dams to cushion the country against droughts and promotion of risk-based planning in all water projects, among others. Information systems are uncoordinated, and levels of preparedness

for water-related disasters remain low, making the water sector more vulnerable to the impacts of climate change.

In addition, promoting environmental integrity and social safeguards are key aspects to be considered in implementing water and sanitation projects. Some of the key aspects include pollution and contamination of water resources; purposeful land acquisition for conserving water sources, water supply and sanitation works; catchment degradation and deforestation attributed to land use and land use change; competing water use demands; and inadequate initiatives on wastewater management.

There have been cases where some projects have been implemented without adherence to environmental and social guidelines, leading to environmental degradation, pollution and social grievances. These unwarranted impacts have led to significant effects on socio-economic development. In order to address environmental and social safeguards in surface and groundwater projects, a catchment approach is needed. This recognises that all hydrological and environmental systems in the catchment are integrated and dependent on each other. A good example is the change of hydrological water balance across catchments where inter-basin transfer schemes have been implemented.

In addressing the potential impact of environmental and social safeguards in water projects, the Ministry of Water has developed and implemented the Resettlement Management Framework, the Environmental and Social Management Framework, and Guidelines for Good Environmental and Social Practices for the water and sanitation sector. However, challenges continue to exist regarding environmental and social safeguards, which require policy guidance.

Policy Objective

To promote environmental and climate change resilience.

Policy Statements

The Government, in collaboration with stakeholders, shall:

i) promote environmental and social safeguards and compliance in the water sector;
ii) ensure land availability for water projects;
iii) promote mainstreaming of climate change resilience interventions in the water sector;

iv) promote risk-based climate change adaptation and mitigation measures in the water sector; and
v) promote cross-sectoral coordination and collaboration in managing the impacts of climate change and environmental issues.

3.8.2 Gender Mainstreaming and Social Inclusion

Gender equity and social inclusion play a pivotal role in ensuring the effective management and development of water resources and the provision of water supply and sanitation services. Women, girls and those with disabilities often have unique WASH challenges, and WASH practices are usually steeped in traditional norms and stigma. Strengthened WASH and IWRM practices often require the empowerment of marginalised voices within the home, workplace, community, and society to have equal opportunities in the sector.

This includes the youth, who form the main structural base for the Tanzanian population. The Government recognises the importance of social inclusion, especially women's active participation in water management decision-making, the gendered nature of water collection and the resulting consequences for economic development. In the water sector, efforts to promote gender equality have increased the gender balance in some decision-making bodies for water resource management and Water Supply and Sanitation Authorities.

However, the leadership in several of these bodies remains male-dominated, especially in WSSA, where women in leadership positions are less than 10%. By promoting social inclusion in decision-making and using a gender lens to inform decisions within the water sector, the revised policy aims to ensure that relevant water infrastructure is accessible to all and sustainably addresses respective water needs.

Policy Objective

To promote gender and social inclusion in the water sector.

Policy Statements

The Government, in collaboration with stakeholders, shall:
i) strengthen gender mainstreaming in the water sector;
ii) promote public awareness of the role of gender in the water sector; and
iii) ensure inclusiveness of socially vulnerable groups in water-related matters.

3.8.3 Good Governance

Good governance is important in managing and developing water resources and providing water supply and sanitation services. Some good governance practices ensure participatory decision-making processes, equal capacity-building opportunities, transparency and accountability. These must be observed and mainstreamed in legal frameworks, strategies, plans and programs. To mainstream good governance in the water sector, the Government, in collaboration with stakeholders, will continue to monitor and enforce legal frameworks that prevent corruption and maintain the political stability of the country; enhance transparency and accountability in all implementing agencies by publicly availing various reports and engaging the public on issues of interest relating to the water sector. This is useful so that people are aware of ongoing activities and effectively contribute to development initiatives.

Apart from the Government, other partners and stakeholders, e.g., development partners, the private sector, well-wishers, and communities, have continued to provide financial resources to support the water sector. These resources require accountability and transparency on their expenditures in financing water projects.

Policy Objective

To promote good governance in the water sector.

Policy Statements

The Government, in collaboration with stakeholders, shall:

i) strengthen accountability, Impartiality, transparency, and the rule of law in the water sector;
ii) enhance staff capacity building;
iii) enhance stakeholders' engagement in water sector activities and
iv) promote public awareness of good governance in the water sector.

Chapter

4

Legal and Regulatory Framework

LEGAL AND REGULATORY FRAMEWORK

Tanzania has established the legal and regulatory frameworks facilitating the management, coordination, and implementation of NAWAPO 2002 objectives, strategies, and activities. The legislation is aligned to various Acts, Codes of Practice, and Regulations under a general water law that guides the functioning of the water sector. The existing legal and regulatory frameworks that are directly related to water and sanitation 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).

To effectively implement the revised policy and avoid ambiguity and duplication of functions, there is a need to undertake a comprehensive review of some of the above Acts, especially the Water Supply and Sanitation Act, 2019 and the Regulations for Water Supply and Sanitation of 2019. This Act states that when a WSSA extends services to an area serviced by a community organisation or a person, the latter's services shall cease to exist, and provision of such services will be undertaken by the WSSA. In contrast, the revised policy encourages investments from private and other entities in the provision of water supply services. The new Act should be able to recognise and appreciate existing private investments and services and provide for the continuation of such services with clear engagement frameworks with the respective WSSAs.

Another provision in the Act that needs to be revised is the functions of RUWASA. The existing Water Supply and Sanitation Act grants RUWASA the mandate to register, invest, monitor, regulate and evaluate the performance of CBWSOs. RUWASA also has the mandate of planning, implementing and supervising projects while providing financial and technical support to CBWSOs. Such an arrangement gives RUWASA both regulatory and supervisory mandates over CBWSOs, which contradicts the prescribed governance principle of separating oversight, regulatory and implementation roles.

The Government desires to establish sewerage networks in urban and rural areas where all households would be connected to such networks. The Public Health Act of 2019 requires that any house located within 30 meters of a sewer network be connected to that network. To complement

the Public Health Act of 2019, the Water Supply and Sanitation Act of 2019 must be revised to strengthen sanitation infrastructure's development, its optimal use, and sustainability.

Other national legislations related to and directly complementing the implementation of NAWAPO 2002 and which may need to be reviewed 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; the Land Acquisition Act, No. 47 of 1967; The Land Use Planning Act, 2007 and The Urban Planning Act No. 08 of 2007.

The revised regulatory frameworks will form a basis for implementing the reviewed NAWAPO 2002, Version 2025. Other legislations may be reviewed/amended to effectively implement the reviewed policy.

Chapter

5

Institutional Framework, Monitoring and Evaluation

INSTITUTIONAL FRAMEWORK, MONITORING AND EVALUATION

5.1 Institutional Framework

NAWAPO 2002, Version 2025 will use the existing institutional framework for management, coordination, and collaboration between ministries, the private sector, development partners and other stakeholders to ensure the sustainable development of the water sector. Under circumstances that will necessitate the review of the existing institutional framework, the instruments for implementing this policy i.e water laws, strategies, programs and implementation plans will be used to make the necessary improvements. The following are the existing institutional responsibilities for implementing the policy.

5.1.1 Ministry Responsible for Water

The ministry will coordinate the implementation and evaluation of NAWAPO 2002, Version 2025.

5.1.2 Ministry Responsible for Health

This will prepare guidelines and strategies for sanitation and hygiene matters.

5.1.3 Ministry Responsible for Regional Administration and Local Government Authorities

This ministry will collaborate with the ministry responsible for water in preparing and implementing water resources management plans and construction of water supply and sanitation projects.

5.1.4 Ministry Responsible for Finance

This ministry will allocate and provide financial resources to implement the Policy's strategies.

5.1.5 Ministry Responsible for Works

This ministry will collaborate with the Ministry of Water in planning and implementing infrastructure projects.

5.1.6 Ministry Responsible for Home Affairs

This ministry will collaborate with the Ministry responsible for Water to protect and conserve water sources and infrastructure.

5.1.7 Ministry Responsible for Investment and Planning
This ministry will scrutinise and approve various water project proposals to obtain financial resources for implementation.

5.1.8 Ministry Responsible for Education
This ministry will prepare programs to educate students in schools on the importance of water resource conservation, sanitation and personal hygiene.

5.1.9 Ministry Responsible for Agriculture
This ministry will promote agricultural activities that prioritise water source conservation, environmental management, and efficient irrigation infrastructure.

5.1.10 Ministry Responsible for Livestock and Fisheries
This ministry will construct water infrastructure for livestock to prevent destruction of domestic water infrastructure and pollution of water sources, manage and conserve aquatic ecosystems to support sustainable fisheries and protect biodiversity.

5.1.11 Ministry Responsible for Energy
This ministry will ensure availability of energy, such as electricity, for water treatment facilities and water pumping systems and participate in conserving watersheds in hydropower project areas.

5.1.12 Ministry Responsible for Natural Resources and Tourism
This ministry will conserve forests and ecosystems to protect water catchment areas.

5.1.13 Ministry Responsible for Lands
This ministry will allocate land for water sources and designate areas for water and sanitation projects.

5.1.14 Ministry Responsible for Environment
This ministry will prepare various environmental management guidelines for protecting and conserving water resources.

5.1.15 Ministry Responsible for Disaster Management
This will coordinate the management of social emergencies, especially drought, floods, and other disasters affecting water infrastructure and sources.

5.1.16 Ministry Responsible for Public Service and Good Governance

This will ensure the availability of skilled human resources to implement the policy.

5.1.17 Ministry Responsible for Industries and Trade

This will ensure a regulatory environment that balances industrial growth with the preservation of water resources, supporting initiatives to improve water access, quality, and conservation.

5.1.18 Ministry Responsible for Foreign Affairs

This ministry will collaborate with the Ministry responsible for Water in preparing and implementing regional and international agreements and protocols on transboundary water resources.

5.1.19 Local Government Authorities

These will sensitise communities to the importance of protecting and conserving water sources, safeguarding water infrastructure, and preparing and managing the implementation of by-laws for water resource management.

5.1.20 Energy and Water Utilities Regulatory Authority (EWURA)

This will regulate the pricing and quality of water services provided by WSSAs.

5.1.21 Development Partners

They will provide financial resources and technical support for implementing water projects.

5.1.22 The Private Sector

This will participate in the development and management of water projects.

5.1.23 Non-Governmental and Civil Society Organisations

They will prepare and implement community awareness programs to promote sustainable water resources, water use efficiency, and water system management, as well as finance and implement water supply and sanitation projects.

5.1.24 Academic and Research Institutions

They will conduct research, produce water and sanitation experts, and provide consultation services on water sector issues.

5.1.25 Basin Water Boards
They will manage and develop water resources.

5.1.26 Water Entities (WSSAs & RUWASA)
These will construct water projects, provide clean and safe water and sanitation services in rural and urban areas, and participate in the conservation of water sources.

5.1.27 National Water Fund
The fund will mobilise financial resources to manage and develop water resources and water supply and sanitation projects.

5.1.28 The Water Institute
The institute will produce experts in the construction, management, and development of water projects, conduct research, and provide technical consultation to support the water sector.

5.1.29 Community-Based Water Supply Organisations (CBWSOs) and Other Water Service Providers
These will manage and operate water supply and sanitation services at the community level and maintain water schemes to ensure reliable access to clean and safe water.

5.1.30 Water User Associations (WUAs)
These will be responsible for conserving and protecting water sources against encroachment and non-permitted water abstractions.

5.1.31 The Community
They will be responsible for conserving and protecting water sources and water distribution infrastructure and contributing to the costs of water service operations to ensure sustainability.

5.1.32 Media
They will be responsible for educating and providing accurate and timely information about the water sector to citizens and various stakeholders.

5.2 Monitoring and Evaluation
Monitoring and Evaluation (M&E) of this policy is the responsibility of the ministry responsible for water in collaboration with stakeholders. M&E will be conducted from national to lower levels using the existing Integrated

Water Sector Monitoring and Evaluation System. The mid-term evaluation will be conducted every five years of policy implementation. During the policy's lifespan, the ministry will play a key role in its coordination, implementation, monitoring and evaluation. The stakeholders and water sector implementing agencies will be responsible for providing appropriate information to the ministry for the M&E process. The ministry will also be responsible for analysing, integrating and disseminating the received and analysed information for the benefit of the public.

5.3 Conclusion

The overall objective of NAWAPO 2002 was to develop a comprehensive framework for sustainable development and management of the nation's water resources. Important areas considered in the policy include water resources management; improved health and poverty alleviation of rural populations through improved access to adequate and safe water; and sustainable, effective and efficient development and management of urban water supply and sewerage services. The policy aimed at ensuring beneficiaries participate fully in the planning, construction, operation, maintenance and management of community-based domestic water supply schemes.

Achievements of NAWAPO 2002 include establishing the most extensive Water Sector Development Program in Sub-Saharan Africa, enacting water laws, and preparing and implementing the National Water Sector Development Strategy. Various institutions for managing water resources were established, including the National Water Board, Basin Water Boards, Water Supply and Sanitation Authorities, Community Based Water Supply Organisations, Rural Water Supply and Sanitation Agency and the National Water Fund. The establishment of these institutions has brought improvement in the management and development of water resources, including transboundary waters, improved water and wastewater quality management and the improved provision of water supply and sanitation services nationally.

Despite these achievements, some challenges have been observed during policy implementation. These include impacts of climate change causing floods and drought; inadequate investment in strategic water storage facilities for ensuring water security; water demand management challenges; degradation of water sources and catchments due to poor land use practices; encroachment of land near water sources for agriculture

and urbanisation which impacted wetlands, important watershed areas and recharge areas. Furthermore, water harvesting technology and a self-sustaining national water grid for efficient use of available water resources for all benefits were not emphasised in NAWAPO 2002. In water quality and wastewater management, improper treatment and discharge of wastewater into the environment pollutes water sources, and in rural areas, water quality issues were not considered in the previous policy. Urbanisation, industrial development, and other economic activities in water supply and sanitation do not match the available water infrastructure. High non-revenue water has resulted in revenue loss and inefficient service delivery. In rural areas, sanitation was not considered when planning and designing water projects. Other issues that were not given high consideration in NAWAPO 2002 include R&D and the involvement of the private sector in the development and operation of water schemes.

These challenges and policy gaps in the implementation of NAWAPO 2002 drove the Government and stakeholders to see the need for a review of the policy. NAWAPO 2002, Version 2025 will, therefore, provide policy guidance for important issues related to the water sector while also considering challenges observed during the implementation of NAWAPO 2002. This policy, among other things, emphasises aspects of climate change that are of worldwide concern. It addresses the development of water resources whose implementation was limited due to lack of policy directives; encourages more private sector participation in delivering water services; considers inclusivity in policy issues of rural water and wastewater quality management and sanitation; and encourages research and development to enhance new technologies and innovations in the water sector. Therefore, the Government invites all stakeholders to participate in implementing this Policy to achieve optimal, reliable, sustainable and equitable development and use of water resources for the benefit of all in the most cost-effective manner possible.

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