



June, 2020



## Report Authorship

| N                                     | Team Member            | Title/Role                                           |
|---------------------------------------|------------------------|------------------------------------------------------|
| <b>A Editorial Team Members</b>       |                        |                                                      |
| 1                                     | Prof. Kitila Mkumbo    | Permanent Secretary –Ministry of Water               |
| 2                                     | Eng. Anthony Sanga     | Deputy Permanent Secretary- Ministry of Water        |
| 3                                     | Eng. Dorisia Mulashani | Director of Programme Coordination & Delivery- MoW   |
| 4                                     | Prof. Tolly Mbvette    | Professor from UDSM-COET                             |
| 5                                     | Eng. Clement Kivegalo  | Director General- RUWASA                             |
| 6                                     | Dr. George Lugomela    | Director of Water Resources- Ministry of Water       |
| 7                                     | Mr. Sylvester Matemu   | Assistant Director, Transboundary Water Resources    |
| 8                                     | Mr. Lukas Kwezi        | Water Advisor- DFID                                  |
| 9                                     | Eng. Ngwisa Mpenbe     | Managing Director-Lahmyer Consulting Engineers       |
| <b>B Technical Team Members</b>       |                        |                                                      |
| 1                                     | Mr. Onesmo Sigalla     | Programme Manager, MoW-WSDP II                       |
| 2                                     | Mr. Edward Kazimoto    | Project Manager – MoW-WSSP II                        |
| 3                                     | Mr. Winstone Bohela    | Technical Advisor, MoW-RUWASA                        |
| 4                                     | Dr. Subira Munishi     | Lecturer at UDSM - COET                              |
| 5                                     | Dr. Tulinave Mwamila   | Principal Tutor - Water Institute                    |
| 6                                     | Mr. Nsaa-Iya Amanieli  | Coordinator - DPG Water Secretariat                  |
| <b>C Data Collection Team Members</b> |                        |                                                      |
| 1                                     | Mr. Obadia K. Kibona   | Head of Safeguard Section, PCDU, MoW                 |
| 2                                     | Ms. Mwanaidi Mnyimandi | Head of Programme Coordination Section, PCDU         |
| 3                                     | Mr. Robert K.M. Sunday | Senior Hydrologist                                   |
| 4                                     | Mr. Renatus Machumi    | Economist specialist in Water Resources Management   |
| 5                                     | Mr. Ramadhani Othman   | Statistician in water supply and sanitation services |
| 6                                     | Ms. Diana Kimario      | Statistician, specialized in policy and planning     |
| 7                                     | Mr. Heri M. Chisute    | Head of Lake Victoria Laboratory                     |
| 8                                     | Mr. Bahati Joram       | Head of ICT & Statistics at RUWASA                   |
| 9                                     | Mr. Aziz J. Mutabuzi   | Technical Support Manager RUWASA                     |
| 10                                    | Mr. Najibu A. Nsojo    | Sanitation and Hygiene Engineer                      |

## Statement by Minister

I am glad to report that since 2015, the sector has recorded much success as many key objectives and plans have been realized. As the sector Ministry, we have improved on efficiency by resolving major implementation challenges and cumulatively improved in water governance in the country. The legislative aspects of the provision of water supply and sanitation services have been made clearer following the enactment of Act No 5 for Water Supply and Sanitation in 2019. The new Act provides for the establishment of the Rural Water Supply and Sanitation Agency (RUWASA) and repeals the Water Supply and Sanitation Act (Act No 12 of 2009).

Sector reforms which now dates two decades cumulatively have continued to improve effectiveness. The 2002 National Water Policy, while still relevant is being reviewed to align and optimize its direction in achieving the country's development initiatives and enable the sector respond to current and future global demands. The 2002 Policy continues to provide the general direction to attain the aspirations of the National Development Vision by 2025; through implementation of the Water Sector Development Programme (WSDP). The policy review process is on track so far and has made tremendous progress.

Investments in the water sector specifically the Water Sector Development Programme are hefty and the main thrust during the period has been directed at increasing access to water supply services to meet the growing demand. As Tanzania's population grows, it becomes essential to carefully plan allocations for the competing sectoral demands by balancing the allocations and priorities in an equitable manner.

Our state of water resources is still intact standing at 2.3 Mil liters per year for each person counted in Tanzania. During the period, we have increased supervision of projects to ensure their completion is within agreed timelines, budget and quality. As a result, an additional 1,143 projects have been implemented in rural areas since the onset of the current government led by H.E. John Pombe Joseph Magufuli. This translates to coverage increase of 70% by end of 2019 from 48% in 2015 in rural areas and a coverage in urban centers from 70% (June 2015) to 85% in December 2019. It is rewarding to note that many people have gained access to water from improved sources in rural and urban sub-sectors. The Government's commitment in caring and improving people's lives remains very high and un-wavered. Sector plans to positively contribute in the country's development aspirations and delivering on citizens' expectations remains very high.

I express my profound appreciation to the participation of all stakeholders specifically Development Partners, Private sector, Civil Society Organizations and the community. I extend this appreciation to my staff at the Ministry of water, Line Ministries and the Government as a whole for their commitment, diligence and overall collaboration that has led to the sector's success. I render my gratitude for the moral support and financial contribution of all Partners and hereby call for continued support of every stakeholder in fulfilment of a joint common goal and target.

**Hon. Prof. Makame Mbarawa (MP)**  
**Minister of Water**



### Statement by Permanent Secretary

I am both pleased and privileged to send a message to the people of Tanzania and international community that access to water supply and sanitation is a prerequisite for achieving the desired economic success of Tanzania. On the way to achieving the goal of an emerging economy status, a rapid growth and expansion of economic activities both in urban and rural areas are expected. Availability of sustainable and efficient water supply and sanitation services at all levels is vital to keep up the pace of development in a strategically driven economic environment in the country. As Tanzania grows into the middle economic development so are the demands for improved water supply services and resources in terms of quantity, quality and reliability.

Although Tanzania is not considered as water resources scarce country, the utilization of water as a sustainably managed resource is a priority for national development. Thus the approaches to address the challenges of water resources management and water supply in providing sustainable solutions must be comprehensive and integrated. It is in this context that the WSDP has to inform and address the challenges and mitigations of water resources management, water supply, health and sanitation, institutional and environmental management.

It is my conviction that the Government of Tanzania and our esteemed development partners through the water sector development programme will provide valuable insights into water investments required to develop this valuable and priority area. The challenging issues outlined in the report will also attract the right attention of water users, policy makers and development partners to provide the comprehensive and sustainable solutions.

It is thus my sincere appreciation to the President of United Republic of Tanzania, Minister of Water and all authoritative ranks in Tanzania for their continued support in nurturing social, economic and industrial achievements through sustainable and environmental utilization of this valuable water resource.

I once again wish to congratulate the ministry of water, Development partners and individual members who have together contributed in bringing out this valuable report.

I acknowledge and welcome all stakeholders into reading, capturing and using the report for sustainable development of Tanzania.

**Prof. Kitila Mkumbo**  
**Permanent secretary**  
**Ministry of Water**

## Executive Summary

This Water Sector Status Report covers a period of five years from 2015 to 2020. It consolidates the progress and issues on the components constituting the water sector. The report addresses the challenges and sustainable solutions of water resources management, water supply and sanitation, institutional strengthening and performance monitoring in comprehensive and integrated manners. It encompasses the historical context and reforms on the sector from pre-independence building on a horst of knowledge up to the current status. The core appraisal of the sector is mainly covering the period of 2014/15 to 2019/20. It is in this context that the WSDP has to inform and address the challenges and mitigations of water resources management, water supply, hygiene and sanitation, institutional and environmental management

In the reporting time the ministry has continued to transform itself and advanced legislations that would fit the current sector challenges. Key transformations include the establishment of the National Water Fund that mobilizes resources for mainly rural water supply. In addition, the government has initiated review of NAWAPO which steered the sector since 2002 and passed the new water supply and sanitation act no 5 of 2019. Amongst many, the act has introduced RUWASA, merging of underperforming utilities to major ones like DAWASA, merging of DDCA and MCS to RUWASA and many other reforms. At operational level, several units/departments have been merged to have a lean and effective structure. Furthermore, the ministry now fully operates from the capital city of Dodoma which means ease of doing business for peripheral regions that are now commanded from the central part of Tanzania as was envisaged right after independence.

Status of national water resources is one of the areas studied at a great length during the reporting time. Reports indicates that, based on the aggregation of data from IWRMD Planning process, the current annual renewable water resources amount to 126,262 Million Cubic Meters (MCM) per year - equivalent to an average of 2,330 m<sup>3</sup> per capita per year. This is above the globally agreed Water Stress Indicator of 1700 m<sup>3</sup> per capita per year. However, it is recognized that, this value is a physical water sufficiency not economic one i.e. may not mean all waters are readily accessed based on our economic status. In this realization, the Government and stakeholder are implementing several projects<sup>1</sup> to actualize this sufficiency to the needy. MoW is conisant of the reported data by others which indicates a discrepancy on water availability. At the time of this report, efforts were still underway to reconcile the discrepancy.

On service delivery for rural areas – water coverage has been improved from 48% in June 2015 to 70% by December 2019. In the same category for urban centers, coverage increased from 72% in June 2015 to 85% December 2019. In terms of water points generally, the target was to increase water points from 77,584 in June 2015 to 153,918 water points by June 2019; these would serve for 38,475,697 beneficiaries. Cummulately, there are 138,987 WPs of which

---

<sup>1</sup> One of exemplary projects is to transfer Lake Victoria waters to central regions of Tanzania.

42,035 WPs representing 30% are none functioning. This entails the need for a strategy to make sure O&M and social issues are budgeted appropriately.

On the same category, urban water supply data indicates that DAWASA targets from WSDP II was to rise from 70% (1,750,000 beneficiaries) in December 2013 to 95% (6,100,000 beneficiaries) by 2019 and reduce Non-Revenue Water from 55% to 25%. EWURA data shows that, the utility efforts on water access has been growing steadily each year at 5% which means it will achieve 90% target by June 2020 if things continue the same. NRW for DAWASA has dropped from 56.7 in 2014/15 to 48.37 December 2019.

Other Regional Centers utilities' target was to reach to 98% coverage (2,000,000 new HH connections) in 2019 from 80% coverage by December 2013. The same were required to reduce NRW from 37% to 25% by the same time. EWURA data shows coverage growth to 84.7% by December 2019 which is somewhat wavering growth. National Projects, District HQs and Small Towns were set to raise service coverage from 53% in 2013 to 65% by June 2019 and lower NRW from 53% to xx%. Attributed to overwhelming population growth in District HQ and Small Towns, the December 2019 EWURA data shows a staggering growth on these entities which stands at 71% and 62% for National Projects and District HQ projects respectively. NRW has also worsened from 20.1% in 2014 to 30.2% by December 2019. The NRW reduction is seems is not improving, what are innovative solutions to solve this. (i.e. use of private sector, and application of result-based contracts, use of appropriate pipe materials, allocation of budget, water demand management strategies etc.

On sanitation front, the broad objectives of WSSA are to have sewerage systems as part of overall sanitation strategy for each town by increasing sewerage systems service coverage from 17% by June 2007 to 30% by June 2010. Currently, only 10 towns/cities have sewerage which is equivalent to coverage of 20% of total urban population. It is the view of the Ministry that sanitation services need special attention especially after improving water services. Very little improvement is recorded, such that as of 30th June 2015, it is estimated that only 526,895 people used about 43,295 sewerage connections.

In the five years of reporting the ministry has conducted screening of ghost workers which was the initiative of the whole government. This laid off a number of individuals and meant the ministry had to fill this gap totalling to 798 excluding the screened individuals (existing staff as per HR Audit report are 6,476 Individuals). In the reporting period 1769 staff have been employed (from 4,707 individuals in 2016), progressive shift to e-government has been instituted and capacity building of staff has been key undertaking. On the later a total of 610 sat for certificates, 302 diploma and 128 degrees (remarkably 53 individuals are taking masters and 2 PhDs are at different stages).

To achieve all these, the ministry has mobilized resources from internal coffers - commitment of US\$ 343,124,890 (about 11% of total commitments) and donors US\$ 2,866,132,001 (which is some 89%) which doesn't include others who implement numerous projects directly across

different parts of the country that are impactful to the sector but not<sup>2</sup> recorded through ministry books. Looking at CAG audit books, it shows that generally the ministry has instituted stronger systems that have seen better improvements on audited accounts since 2015. This agrees well with monitoring of physical progress which has shown that performance of most projects is satisfactory although a unified monitoring framework seems to be missing and recorded here to be paramount for the whole picture to be seen.

It is encouraging that programme monitoring data have been used to inform planning and decision making at national level. The discussion has been through the established sector dialogue mechanism which includes annual Joint Sector Reviews and Ministerial Missions and reports. The water sector has started performance monitoring using M&E frameworks but still suffer some deficiencies in using most of performance monitoring tools. It is emphasized with this report that the use of unified monitoring framework for WSDP based on a SMART set of key indicators will remain operational and a priority. Key WSDP context, functional, governance indicators are monitored and evaluated in linkage with the key indicators of National 5 Year Plan (2015 – 2020) which carries the theme of “Nurturing Industrialization for Economic Transformation and Human Development”. In this context, the Key Performance Indicators (KPIs) of the water sector have been prepared covering aspects which enable the national and regional institutions to review the performance of the sector in wide perceptive and identify where support or improved management is required. The 5-year Plan acknowledges that meeting these targets calls for huge investments in water supply infrastructure in both rural and urban areas. Therefore, aspirations of increasing water supply services for domestic, industrial, irrigation and other socio-economic needs have to be accompanied by increased management and investments in order to ensure that water resources are available and utilized in an environmentally sustainable manner.

---

<sup>2</sup> Private sector, NGOs and CBOs are implementing numerous projects that the MoW is planning to document them as part of acknowledging their much needed support

## List of Acronyms

| No. | Acronym   | Long Form                                                   |
|-----|-----------|-------------------------------------------------------------|
| 1   | AfDB      | African Development Bank                                    |
| 2   | AFD       | Agence Française de Développement (French development Bank) |
| 3   | AMCOW     | African Ministers' Council on Water                         |
| 4   | BADEA     | Arab Bank for Economic Development                          |
|     | BWB       | Basin Water Board                                           |
| 5   | BWO's     | Basin Water Office                                          |
| 6   | CAG       | Controller & Auditor General                                |
| 7   | CBWSO     | Community Based Water Supply Organizations                  |
| 8   | CCTV      | Closed Circuit Television                                   |
| 9   | CDMT      | Central Data Management Team                                |
| 10  | COWSO     | Community Owned Water Supply Organization                   |
| 11  | CRS       | Catholic Relief Services                                    |
| 12  | CSO       | Civil Society Organization                                  |
| 13  | DAWASA    | Dar es Salaam Water Supply and Sanitation Authority         |
| 14  | DAWASCO   | Dar es Salaam Water Supply and Sewerage Company             |
| 15  | DDCA      | Drilling and Dam Construction Agency                        |
| 16  | DFID      | Department for International Development (UK government)    |
| 17  | DP's      | Development Partner                                         |
| 18  | DPG       | Development Partners Group                                  |
| 19  | DSS       | Decision Support System                                     |
| 20  | EIA       | Environmental Impact Assessment                             |
| 21  | EIB       | European Investment Bank                                    |
| 22  | ESIA      | Environmental and Social Impact Assessment                  |
| 23  | ESMF      | Environmental and Social Management Framework               |
| 24  | EWURA     | Energy and Water Regulatory Authority                       |
| 25  | EWURA CCC | EWURA Consumers Consultative Council                        |
| 26  | FAO       | Food and Agricultural Organization                          |
| 27  | GGESP     | Guidelines of Good Environmental and Social Practices       |
| 28  | GGM       | Geita Gold Mine                                             |
|     | GIZ       | Deutsche Gesellschaft für Internationale Zusammenarbeit     |
| 29  | GMI       | Groundwater Management Institute                            |
| 30  | GSPP      | Government Salary Payment Platform                          |
| 31  | ICT       | Information Communication and Technology                    |
| 32  | IYDP's    | Second Year Development Plans                               |
| 33  | IRWR      | Internally Renewable Water Resources                        |
| 34  | IWRMDP    | Integrated Water Resources Management and Development Plans |
| 35  | JICA      | Japan International Cooperation Agency                      |
| 36  | KfW       | Kreditanstalt für Wiederaufbau (German Development Bank)    |
| 37  | KOICA     | Korea International Cooperation Agency                      |
| 38  | KPI's     | Key Performance Indicator                                   |
| 39  | LGA       | Local Government Authority                                  |
| 40  | LIMS      | Laboratory Information Management System                    |
| 41  | LVB       | Lake Victoria Basin                                         |
| 42  | MCC       | Millennium Challenge Cooperation                            |



|    |           |                                                                    |
|----|-----------|--------------------------------------------------------------------|
| 43 | MDG's     | Millennium Development Goals                                       |
| 44 | MoEST     | Ministry of Education Science and Technology                       |
| 45 | NACTE     | National Council for Technical Education                           |
| 46 | NAWAPO    | National Water Policy                                              |
| 47 | NBI       | Nile Basin Initiative                                              |
| 48 | NBS       | National Bureau of Statistics                                      |
| 49 | NEMC      | National Environmental Management Council                          |
| 50 | NRW       | Non-Revenue Water                                                  |
| 51 | NSGRP     | National Strategy for Growth and Reduction of Poverty              |
| 52 | NUWA      | National Urban Water Supply Agency                                 |
| 53 | NWF       | National Water Fund                                                |
| 54 | NWSDS     | National Water Sector Development Strategy                         |
| 55 | NWSSP     | National Water Supply and Sanitation Project                       |
| 56 | PAF       | Performance Assessment Framework                                   |
| 57 | PBWB      | Pangani Basin Water Board                                          |
| 58 | PCDU      | Project Coordination and Delivery Unit                             |
| 59 | PER       | Public Expenditure Reviews                                         |
| 60 | PDO       | Project Development Objective                                      |
| 61 | PMO-RALG  | Prime Minister Office Regional Administrative and Local Government |
| 62 | PO-RALG   | President's Office- RALG                                           |
| 63 | RMF       | Resettlement Management Framework                                  |
| 64 | RUWASA    | Rural Water Supply and Sanitation Authority                        |
| 65 | RWE       | Regional Water Engineer                                            |
| 66 | RWRI      | Rwagarulila Water Resources Institute                              |
| 67 | RWSS      | Rural Water Supply and Sanitation                                  |
| 68 | SADCAS    | Southern African Development Accreditation Service                 |
| 69 | SDG's     | Sustainable Development Goals                                      |
| 70 | SIDA      | Swedish International Development Cooperation Agency               |
| 71 | SMART     | Specific, Measurable, Attainable, Realistic and Timely             |
| 72 | SWAP      | Sector Wide Approach to Planning                                   |
| 73 | TAWASANET | Tanzania Water and Sanitation Network                              |
| 74 | TSF       | Tailings Storage Facility                                          |
| 75 | TTCL      | Tanzania Telecommunication Company Limited                         |
| 76 | TWG       | Thematic Working Group                                             |
| 77 | UNICEF    | The United Nations Children's Fund                                 |
| 78 | USAID     | United States Agency for International Development                 |
| 79 | WASH      | Water Sanitation and Hygiene                                       |
| 80 | WI        | Water Institute                                                    |
| 81 | WPMS      | Water Point Mapping System                                         |
| 82 | WRMA      | Water Resources Management Act                                     |
| 83 | WSDP      | Water Sector Development Programme                                 |
| 84 | WSSA's    | Water Supply and Sanitation Authority                              |
| 85 | WSSCC     | Water Supply and Sanitation Collaborative Council                  |
| 86 | WUA's     | Water Users Associations                                           |
| 87 | WWF       | World Wildlife Fund for Nature                                     |
| 88 | ZAMCOM    | Zambezi Watercourse Commission                                     |

## Snapshot

| Area             | Item                                | 2010 status                                                  | 2015 status                                                  | 2019 status                                                  |
|------------------|-------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| Essential Facts  | Mainland Area                       | 881,289 Km <sup>2</sup> (plus lakes 59,100 Km <sup>2</sup> ) | 881,289 Km <sup>2</sup> (plus lakes 59,100 Km <sup>2</sup> ) | 881,289 Km <sup>2</sup> (plus lakes 59,100 Km <sup>2</sup> ) |
|                  | Total Population                    | 41.9 Million (estimated July 2010)                           | 47.4 Million (estimated from 2012 census)                    | 54.2 Million (estimated 2018)                                |
|                  | Urban Population                    | 25% (estimated 2008)                                         | 31% (estimated 2015)                                         | 33% (estimated. Dec. 2019)                                   |
|                  | Life Expectancy(years)              | 52.5                                                         | 64.9                                                         | 66.7                                                         |
|                  | Living in Extremely Poverty         | 31.3%                                                        | 17.7%                                                        | Not available                                                |
| The Economy      | GDP Growth                          | 6% (2009)                                                    | 7.0%                                                         | 7.0% (2018)                                                  |
|                  | GDP Per Capita (PPP)                | USD 1,400 (2009)                                             | USD 967                                                      | USD 1097 (2018)                                              |
|                  | Headline Inflation                  | 9.4% (2009)                                                  | 4.8%                                                         | 3.6% (October 2019 NBS)                                      |
|                  | National Development Budget         | TZS 3,819 Billion (FY 2010/2011)                             | TZS 5,919 Billion (FY 2015/2016)                             | TZS 12,240 Billion (FY 2019/2020)                            |
|                  | Water Sector Development            | 9% of National Development Budget (FY 2010/2011)             | 8% of National Development Budget (FY 2015/2016)             | 5% of National Development Budget (FY 2019/2020)             |
|                  | MOWI Development Budget             | TZS 216,201,709,000 (excludes irrigation)                    | TZS 488,878,252,000                                          | TZS 610,469,888,530                                          |
|                  | Foreign Contribution                | 86% (FY 2010/2011) of the MOWI Development Budget            | 36% (FY 2014/2015) of the MOW Development Budget             | 43% (FY 2019/2020) of the MOW Development Budget             |
| Vital Statistics | Urban Coverage Rate (source: EWURA) | 84% (MoWI, 2009)                                             | DAWASA 68% (Dec 2013);<br>RWSS 72% (20014/15)                | DAWASA 85 (Dec, 2019)<br>RWSS 84% (2018/19)                  |

|     |                                                 |                                                                                                                                                                                                           |                                                                                                                                                                                                                              |                                                                                                                                                                                                    |
|-----|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DPG | Rural Coverage Rates                            | Unavailable                                                                                                                                                                                               | 48% June 2015 (MoWI)                                                                                                                                                                                                         | 70% Dec 2019 (RUWASA)                                                                                                                                                                              |
|     | Irrigated Land                                  | 1,840 Km <sup>2</sup>                                                                                                                                                                                     | 3,810 km <sup>2</sup> (By 2014)                                                                                                                                                                                              | Not available                                                                                                                                                                                      |
|     | Sewerage Connections                            | 17,843 (for Regional WSSAs) plus 17,682 (for Dar es Salaam)                                                                                                                                               | 43,295 connections (June 2015)                                                                                                                                                                                               | 49, 864 connections (June 2019)                                                                                                                                                                    |
|     | School Sanitation (access to improved latrines) | 38% (MOHSW, 2009)                                                                                                                                                                                         | Unavailable                                                                                                                                                                                                                  | 90% (MESVT, 2018)                                                                                                                                                                                  |
|     | Water Basket                                    | AFD (France), KfW (Germany), Netherlands Embassy and World Bank                                                                                                                                           | AFD (France), DfID (UK)                                                                                                                                                                                                      | AFD (France), DfID (UK)                                                                                                                                                                            |
|     | Earmarked Projects                              | African Development Bank, AFD, BADEA, Belgium TC, DED, EDCF, EIB, Embassy of Norway, European Union, Gov of China, GTZ, Italian Aid, IUCN, JICA, KOICA, MCC, SNV, SECO, UNICEF, USAid, WaterAid, WSP, WWF | African Development Bank, AFD, BADEA, Belgium TC, CRS, EDCF Korea, EIB, Embassy of Switzerland, European Union, Germany (KfW & GIZ), India, KOICA, US Gov (MCC & USAid), SNV, OFID, UNICEF, WaterAid, World Bank, WSSCC, WWF | African Development Bank, AFD, BADEA, Belgium ENABEL, CRS, EDCF Korea, EIB, European Union, Germany (KfW & GIZ), India, KOICA, US Gov (USAid), SNV, OFID, UNICEF, WaterAid, World Bank, WSSCC, WWF |

## TABLE CONTENTS

|                                                                             |             |
|-----------------------------------------------------------------------------|-------------|
| <b>Report Authorship.....</b>                                               | <b>i</b>    |
| Editorial Team Members .....                                                | ii          |
| Technical Team Members .....                                                | ii          |
| Data Collection Team Members .....                                          | ii          |
| <b>Statement by Minister .....</b>                                          | <b>iii</b>  |
| <b>Statement by Permanent Secretary .....</b>                               | <b>iv</b>   |
| <b>Executive Summary.....</b>                                               | <b>v</b>    |
| <b>List of Acronyms.....</b>                                                | <b>viii</b> |
| <b>List of Figures.....</b>                                                 | <b>iv</b>   |
| <b>List of Tables.....</b>                                                  | <b>vi</b>   |
| <b>1 CHAPTER ONE   HISTORICAL CONTEXT ON WATER SECTOR .....</b>             | <b>7</b>    |
| 1.1 Pre independence environment .....                                      | 7           |
| 1.2 Post-Independence Environment .....                                     | 8           |
| 1.2.1 Water Supply Development Programme 1971 .....                         | 9           |
| 1.2.2 1976 Review of Water Supply Development Programme 1971.....           | 10          |
| 1.2.3 1979 Review of Water Supply Development Programme 1971.....           | 10          |
| 1.3 The Introduction of formal water policies.....                          | 11          |
| 1.3.1 National Water Policy 1991 .....                                      | 11          |
| 1.3.2 National Water Policy 2002 .....                                      | 12          |
| 1.4 Legal Reforms Pre- and Post-Independence .....                          | 12          |
| 1.5 Strategies Influencing the Status of the Water Sector.....              | 13          |
| 1.5.1 National strategy for growth and reduction of poverty (MKUKUTA) ..... | 13          |
| 1.5.2 The National Water Sector Development Strategy (NWSDS, 2006) .....    | 13          |
| 1.5.3 Water Sector Development Program (WSDP).....                          | 14          |
| 1.5.4 Related Sector Strategies and Programmes .....                        | 15          |
| 1.5.5 Sustainable Development Goals.....                                    | 16          |
| <b>2 CHAPTER TWO   DEVELOPMENT FRAMEWORK .....</b>                          | <b>19</b>   |
| 2.1 National Development Vision 2025 .....                                  | 19          |
| 2.2 Government 5 years development plans II (2016/17 – 2020/21) .....       | 19          |
| 2.3 Policy, Legal, Institutional Framework .....                            | 19          |
| 2.3.1 Policy framework: NAWAPO 2002 .....                                   | 20          |
| 2.3.2 Legal framework .....                                                 | 21          |
| 2.3.3 Water Sector Institutional Framework 2015 - 2020 .....                | 22          |
| 2.4 Non-State Actors in the Water Sector.....                               | 27          |
| 2.4.1 Civil Society Organisations .....                                     | 27          |
| 2.4.2 Other key players in the water sector .....                           | 28          |
| 2.5 Development Partners Group Water.....                                   | 29          |
| <b>3 CHAPTER THREE: WATER RESOURCES MANAGEMENT .....</b>                    | <b>31</b>   |
| 3.1 The state of Water Resources in Tanzania.....                           | 31          |
| 3.1.1 Surface Water Resources .....                                         | 33          |
| 3.1.2 Groundwater Resources .....                                           | 41          |



|          |                                                                     |            |
|----------|---------------------------------------------------------------------|------------|
| 3.2      | Water Resources Utilization and Allocation in Tanzania .....        | 45         |
| 3.3      | Implementation Status of IWRMD Plans .....                          | 46         |
| 3.3.1    | Status of operationalization and Implementation of IWRM.....        | 46         |
| 3.3.2    | Achievements in Stakeholder Participation in the Water Sector ..... | 47         |
| 3.3.3    | Achievement in Establishing WR Monitoring and Assessment.....       | 48         |
| 3.3.4    | Progress Sources Conservation and Protection .....                  | 51         |
| 3.3.5    | Achievements in Monitoring and Enforcement of Dam safety .....      | 53         |
| 3.3.6    | Achievements in Water Quality Monitoring .....                      | 54         |
| 3.3.7    | Improvements Made in Water safety compliance .....                  | 56         |
| 3.4      | Management of Transboundary Waters Resources .....                  | 59         |
| 3.5      | Water Related Disasters in Tanzania.....                            | 63         |
| 3.6      | Key Issues .....                                                    | 64         |
| <b>4</b> | <b>CHAPTER FOUR   WATER SUPPLY AND SANITATION .....</b>             | <b>66</b>  |
| 4.1      | Water Supply Services .....                                         | 67         |
| 4.1.1    | Institutional Service Delivery Framework .....                      | 67         |
| 4.1.2    | Status of Rural Water Supply Service Delivery.....                  | 68         |
| 4.1.3    | Non-Functional Water Points.....                                    | 72         |
| 4.1.4    | Community Service Management and Sustainability .....               | 73         |
| 4.1.5    | Status of Urban Water Supply .....                                  | 74         |
| 4.1.6    | Regional WSSA .....                                                 | 76         |
| 4.1.7    | National Projects, District/Small Towns WSSAs .....                 | 77         |
| 4.1.8    | Non-Revenue Water.....                                              | 78         |
| 4.1.9    | Infrastructure Development and Functionality Status .....           | 79         |
| 4.2      | Sanitation.....                                                     | 83         |
| 4.2.2    | Hygiene.....                                                        | 85         |
| 4.3      | Key Issues .....                                                    | 87         |
| <b>5</b> | <b>CHAPTER FIVE   PLANNING &amp; FINANCING .....</b>                | <b>90</b>  |
| 5.1      | Water Sector Planning.....                                          | 91         |
| 5.1.1    | Budget execution.....                                               | 100        |
| 5.2      | Financing .....                                                     | 102        |
| 5.2.1    | Resource mobilization .....                                         | 102        |
| 5.2.2    | Sector Releases and spending .....                                  | 109        |
| 5.2.3    | Water Sector (Vote 49) audits .....                                 | 112        |
| 5.3      | Issues in Planning and Financing and proposed next steps .....      | 113        |
| <b>6</b> | <b>CHAPTER SIX   PERFORMANCE MONITORING AND REGULATION ...</b>      | <b>114</b> |
| 6.1      | Performance Monitoring.....                                         | 116        |
| 6.1.1    | Monitoring levels.....                                              | 117        |
| 6.2      | Regulations .....                                                   | 120        |
| 6.2.1    | Water Supply and Sanitation Institutions .....                      | 120        |
| 6.2.2    | Water Resources Institutions.....                                   | 120        |
| 6.3      | Environmental and Social Safeguards.....                            | 121        |
| 6.3.1    | Compliance and Requirements .....                                   | 121        |

|        |                                                                                      |            |
|--------|--------------------------------------------------------------------------------------|------------|
| 6.3.2  | Achievements and Results.....                                                        | 122        |
| 6.4    | Next steps.....                                                                      | 123        |
| 7.     | <b>CHAPTER SEVEN   ORGANIZATIONAL CAPACITY DEVELOPMENT ...</b>                       | <b>125</b> |
| 7.1.   | Human Resources Capacity Development .....                                           | 125        |
| 7.2.   | Working Tools and Systems.....                                                       | 127        |
| 7.2.1. | Working Tools.....                                                                   | 127        |
| 7.2.2. | Information and Communication Technology (ICT).....                                  | 127        |
| 7.2.3. | Future ICT Plans.....                                                                | 130        |
| 7.3.   | Working Environment .....                                                            | 131        |
| 7.4.   | Cross Cutting issues.....                                                            | 131        |
| 7.4.1. | Stakeholder Participation .....                                                      | 131        |
| 7.4.2. | Gender Mainstreaming .....                                                           | 132        |
| 7.4.3. | HIV/AIDS .....                                                                       | 134        |
| 7.5.   | Key Issues.....                                                                      | 134        |
| 8.     | <b>References .....</b>                                                              | <b>136</b> |
|        | <b>Appendices .....</b>                                                              | <b>138</b> |
|        | Appendix 1-1: List of Ministers and Permanent secretaries .....                      | 139        |
|        | Appendix 1-2: Policy issues addressed by National Water Policy 2002 .....            | 141        |
|        | Appendix 1-3: Water sector development program II achievements to date .....         | 142        |
|        | Appendix 1-4: Domesticated sustainable development goal number 6.....                | 142        |
|        | Appendix 2-1: Summarizes water supply and sanitation plans vs achievements.....      | 144        |
|        | Appendix 2-2a: The Water Supply and Sanitation Regulations.....                      | 144        |
|        | Appendix 2-2b: The WRM Act No. 11, 2009 Regulations.....                             | 147        |
|        | Appendix 2-3: Organization structure for the Ministry of Water .....                 | 149        |
|        | Appendix 2-4: Institutional structure of WRM .....                                   | 150        |
|        | Appendix 2-5: Status of Regional Water Utilities as of November 2019 .....           | 151        |
|        | Appendix 2-6: National Projects Water Utilities as of November 2019.....             | 151        |
|        | Appendix 2-7: District Headquarters and Townships Water Utilities.....               | 152        |
|        | Appendix 2-8: Cancelled Water Utilities .....                                        | 153        |
|        | Appendix 2-9: List of Water Utilities tasked to supervise and capacitate other ..... | 153        |
|        | Appendix 2-10: Organisation structure for the RUWASA .....                           | 154        |
|        | Appendix 2-11: Towns under RUWASA as of November 2019.....                           | 155        |
|        | Appendix 2-12: Organisation structure for the Water Institute .....                  | 156        |
|        | Appendix 2-13: Organisation structure for the EWURA.....                             | 157        |
|        | Appendix 2-14: List of selected local Non-State Actors in the water sector.....      | 158        |
|        | Appendix 3-1: Water Resources in lakes of Tanzania .....                             | 158        |
|        | Appendix 3- 2:Water Use Permits for River Basins Indicated.....                      | 159        |
|        | Appendix 3-3: Status of Water Resources in Lake Nyasa and WamiRuvu Basin .....       | 160        |
|        | Appendix 3-3: Status of Water resources in Pangani and Lake Rukwa Basins.....        | 162        |
|        | Appendix 3-4: Status of Water Resources in Rufiji and Ruvuma Basins .....            | 163        |
|        | Appendix 3-5: Discharge Permits of River Basin .....                                 | 164        |
|        | Appendix 3: List of Water Users Association as of 2020 .....                         | 164        |

|                                                                                          |     |
|------------------------------------------------------------------------------------------|-----|
| Appendix 3-6: Water Resources Monitoring Network Status for 2020 .....                   | 165 |
| Appendix 3-7: Achievements in Regional Cooperation.....                                  | 166 |
| Appendix 4-1: Access to Rural Water Supply Services as of 31 <sup>st</sup> Dec 2019..... | 168 |
| Appendix 4-2: Access to Urban Water Supply Services at at 31 <sup>st</sup> Dec 2019..... | 174 |
| Appendix 4-3: NRW in Urban Water Supply Utilities .....                                  | 178 |
| Appendix 5-1: Funding Portfolio.....                                                     | 181 |
| Appendix 6-1: Performance of Environmental and social safeguard .....                    | 184 |
| Appendix 6-2: Paid compensation for land acquisition and resettlement.....               | 187 |
| Appendix 6-3: Pending compensation by December 2019 .....                                | 187 |
| Appendix 7-2: Data for capacity building conducted between 2015 and 2019.....            | 188 |
| Appendix 7-3: Data showing staff needs for MoW and IAs .....                             | 188 |
| Appendix 7-4: Data indication of women empowerment 2015 – 2019 .....                     | 189 |

## List of Figures

|                                                                               |    |
|-------------------------------------------------------------------------------|----|
| Figure 2-1: Flow measurements by WI students .....                            | 26 |
| Figure 3-1: Per Capita Annual Renewable Water Resources.....                  | 32 |
| Figure 3-2: Tanzania per capital annual renewable water resources trend ..... | 33 |
| Figure 3-3: Spatial distribution of the river and lake basins.....            | 34 |
| Figure 3-4: Water Volumes of the largest freshwater lakes of the World.....   | 36 |
| Figure 3-5: Water Levels of Lake Victoria .....                               | 37 |
| Figure 3-6: Water levers for Major Dams in Tanzania.....                      | 40 |
| Figure 3-7: Spatial distribution of major aquifers .....                      | 41 |
| Figure 3-8: Annual precipitation and groundwater recharge .....               | 43 |
| Figure 3-9: Volumes of groundwater consumed by different sectors.....         | 43 |
| Figure 3-10: Percentage share of consumption by different sectors.....        | 44 |
| Figure 3-11: Role of Groundwater in different cities in Tanzania .....        | 44 |
| Figure 3-12: Water demand by sector .....                                     | 46 |
| Figure 3-13: Coverage of the Hydromet Monitoring Stations in Tanzania .....   | 49 |
| Figure 3-14: Number of Hydrometric Stations in the Country .....              | 50 |
| Figure 3-15: Number of Weather Stations in the Country .....                  | 50 |
| Figure 3-16: Number of Groundwater Monitoring Stations .....                  | 50 |
| Figure 3-17: Percentage contribution to pollution.....                        | 56 |
| Figure 3-18: WSSAs Percentage Compliance of water Samples .....               | 57 |
| Figure 3-19: Rural water project Percentage Compliance of water samples.....  | 57 |
| Figure 3-20: Mwendo Community Defluoridation Plant.....                       | 58 |
| Figure 3-21: Water sources compliance and non-compliance .....                | 59 |
| Figure 3-22: Transboundary Map of Tanzania .....                              | 60 |
| Figure 4-1: Total Number of Constructed Water Points .....                    | 69 |
| Figure 4-2: Trend of Cumulative Number of Total Water Points .....            | 70 |
| Figure 4-3: Access to Rural Water Supply Services .....                       | 70 |
| Figure 4-4: Trend of Non-functional Water Points .....                        | 72 |
| Figure 4-5: Total Number of Water Points.....                                 | 72 |
| Figure 4-6: Number of Registered COWSOs .....                                 | 73 |
| Figure 4-7: Access to Urban Water Supply Services .....                       | 75 |
| Figure 4-8: Access to Water Supply Services in Regional Water Utilities ..... | 76 |

|                                                                                      |     |
|--------------------------------------------------------------------------------------|-----|
| Figure 4-9: Access to Water Supply in District/Small Towns & National Projects ..... | 77  |
| Figure 4-10: Trend of NRW in Water Utilities .....                                   | 78  |
| Figure 4-11: Trend of Number of Constructed Water Points.....                        | 79  |
| Figure 4-12: Cumulative umber of water connections since 2014 .....                  | 81  |
| Figure 4-13: Cumulative Number of Water Connections in Regional WSSAs.....           | 81  |
| Figure 4-14: Cumulative Number of Connections in District/Small Towns WSSAs .....    | 82  |
| Figure 4-15: Status of Sewerage Services Coverage for Regional WSSAs.....            | 84  |
| Figure 4-16: Waste Water Generated vs Treated .....                                  | 84  |
| Figure 4-17: Achievement of National Sanitation Campaign .....                       | 86  |
| Figure 5-1: Sector planning and implementation overview .....                        | 93  |
| Figure 5-2: Water sector plans vs actual (FY16/17 – 20/21).....                      | 94  |
| Figure 5-3: Comparison between Budgeted funds vs Releases .....                      | 95  |
| Figure 5-4: Share of Component allocations against total annual budget. ....         | 96  |
| Figure 5-5: Development Budget allocations, releases and payments. ....              | 101 |
| Figure 5-6: Figure 5 6: Recurrent Allocations Trend since FY 2014/15.....            | 102 |
| Figure 5-7: WSDP II requirement plans vs actual commitments.....                     | 106 |
| Figure 5-8: Figure 5 8: Funding releases by source (local vs foreign) .....          | 107 |
| Figure 5-9: Trend of contributions in WSDP II.....                                   | 110 |
| Figure 5-10: Sector spending trend since FY 2014/5.....                              | 110 |
| Figure 5-11: Releases to WSDP Component Implementing Agencies.....                   | 112 |
| Figure 7-1: Trend of staff capacity building .....                                   | 126 |
| Figure 7-2: No of staff vs needs for MoW and IAs.....                                | 126 |
| Figure 7-3: No of staff vs needs for different cadre .....                           | 127 |
| Figure 7-4: Trend of positions entrusted on women.....                               | 134 |



## List of Tables

|                                                                                                 |     |
|-------------------------------------------------------------------------------------------------|-----|
| Table 1-1: Key dates in the reform of the water sector in Tanzania.....                         | 17  |
| Table 3-1: Mean Annual Flows of Major Rivers .....                                              | 35  |
| Table 3-2: Annual Average Flows .....                                                           | 35  |
| Table 3-3: Water Levels (masl) of Major Lakes of Tanzania.....                                  | 37  |
| Table 3-4: Major Dams Water Levels (masl) .....                                                 | 38  |
| Table 3-5: A summary of Major dams and their respective Storage Capacities .....                | 38  |
| Table 3-6: Groundwater recharge calculation for each basin .....                                | 42  |
| Table 3-7: Proportion of Surface vs Groundwater Allocation .....                                | 45  |
| Table 3-8: <i>Some of the implemented/planned priority water resources infrastructure</i> ..... | 47  |
| Table 3-9: Total Number of Monitoring Stations in Tanzania.....                                 | 51  |
| Table 3-10: Water Sources Gazetted for Protection.....                                          | 52  |
| Table 3-11: The Physico-chemical parameters.....                                                | 54  |
| Table 3-12: List of riparian countries with their respective shared water resources.....        | 61  |
| Table 3-13: Land mass in the hydrologic basins for the shared water bodies .....                | 61  |
| Table 3-14: Transboundary institutions for which Tanzania is a member.....                      | 62  |
| Table 4-1: WSDP II Targets 2014/2015 to 2018/2019 .....                                         | 69  |
| Table 4-2: Target of WSDP II for Urban Water Supply Services .....                              | 75  |
| Table 4-3: WSDP II Targets for Regional WSSAs .....                                             | 76  |
| Table 4-4: WSDP II Targets for National Projects & District/Small Towns WSSAs.....              | 77  |
| Table 4-5: No.of Completed Rural Water Supply Projects .....                                    | 79  |
| Table 4-6: Potentiality of Ongoing Rural Water Projects during 2019/2020 .....                  | 80  |
| Table 4-7: Status of Sanitation Services .....                                                  | 86  |
| Table 5-1: WSDP II summarized requirements plan .....                                           | 92  |
| Table 5-2: Sector planning and implementation overview .....                                    | 93  |
| Table 5-3: Approved budgets during Additional financing and WSDP II. ....                       | 94  |
| Table 5-4: Annual approved budgets against WSDP II requirements. ....                           | 94  |
| Table 5-5: Development budget (DEV) Releases against approved plans.....                        | 95  |
| Table 5-6: Share of Component allocation against total annual budget.....                       | 96  |
| Table 5-7: WSDP II detailed activity plan with priority investments .....                       | 96  |
| Table 5-8: DEV budget allocations, releases and payments.....                                   | 101 |
| Table 5-9: Recurrent Allocations. ....                                                          | 102 |
| Table 5-10: Current portfolio size .....                                                        | 104 |
| Table 5-11: WSDP II requirements vs actual commitments.....                                     | 106 |
| Table 5-12: Funding releases by source (local vs foreign).....                                  | 107 |
| Table 5-13: WSDP Commitments Vs Disbursements .....                                             | 108 |
| Table 5-14: Trend of contributions in WSDP II .....                                             | 110 |
| Table 5-15: Sector spending since FY 2014/15 .....                                              | 110 |
| Table 5-16: WSDP II Components allocations against spending .....                               | 111 |
| Table 5-17: Releases to WSDP Component Implementing Agencies.....                               | 112 |

## 1 CHAPTER ONE | HISTORICAL CONTEXT ON WATER SECTOR

Since 1961 when Tanzania gained its independence, the Water Sector has been under various Ministries. To date, a total of 20 Ministries that were formed at different times have managed the sector. Inherently, this has had implications on various sectoral transformations and resolutions. Originally after Independence, water sector mandates fell under the Department of Water and Irrigation in the Ministry of Lands, Survey and Water, and later in 1961 was transferred to the Ministry of Agriculture. In 1970, the water sector made history by being given the status of a Ministry and ceasing to be a Department. Thus, in November 5, 1970, a new Ministry of Water and Electricity was created. Various changes made to the structure of the ministry coincided with the change of leadership - especially Ministers and Permanent Secretaries (Appendix 1-1). The sectoral transformation is further summarised below with the time of independence as a reference.

### CHAPTER SYNOPSIS

- The chapter summarizes water sector reforms during pre and post-independence (the pre independence period is captured from 1930s)
- Ministry of Water was established in 5<sup>th</sup> November 1970 as Ministry of Water Development and Power. A total of 20 Ministries to date have managed water sector
- First Minister and Principle Secretary are Dr. W. Chagula and Mr. Fredrick Rwegarulila respectively,
- Water Resource Institute was established in 1974 and started with 30 students,
- 1<sup>st</sup> long term (20 years) program was launched in 1971 concentrating on water supply for all
- 1<sup>st</sup> National Water Policy launched in 1991 and current one which is under review was launched in 2002
- Tanzania launched and is implementing a wide sector development program WSDP 2006 – 2025.

### 1.1 Pre independence environment

During colonial period (pre 1930), water development for domestic and agricultural purposes was not a priority. The priority was on in-land water navigational studies whereas public investments in water supply improvement started after 1930. During the first 15 years, some water supply systems were constructed in townships, trading centres, minor settlements, mission and large estates. The Public Works Department was responsible for all water developments up to 1946 when the Water Development Department was created. After 1946 the Public Works Department was responsible for the water supply in townships and major settlements, while the new Water Development Department took over all responsibilities for construction of new water supply schemes in minor settlement, trading and administrative

centres, water resources development for multipurpose use including provision of water to the rural areas for human and livestock. Construction of water supply in rural areas started at the end of 1950s financed partly by Government funds and beneficiaries or local authorities. The Government policy for development of rural water supply was that; 70% capital cost was shouldered by the Government. The remaining investments of 30% capital cost was to be contributed by the beneficiaries or local authority or owners of the project.

From 1959 to 1960 there was a shift in the Department to the Ministry of Natural Resources and then under the new Ministry of Lands, Surveys and Water; where it managed to accomplish some water development projects among which was the construction of a Provincial Water Division office in Bukoba. In the same year, the Department was again shifted to the Ministry of Agriculture, where it became a Division, with five (5) main responsibilities including; provision of rural domestic water for Humans and Animal, Conservation of water to improve river flows and prevention of floods, execution of irrigation schemes, hydrological investigations and long term planning of major water development works. Throughout the territory, there was an increasing pressure for general development and as the demand grew following attainment of higher living standards.

Following gaining of independence in 1961, there was a massive exodus of foreign experts and this hampered severely the work of the Division at a time when the magnitude of these works was increasing. However, the Division launched strenuous efforts to accelerate the technical training programmes that were already established for local people and also regarding recruitment of some more technical experts from within and outside the country to fill the vacant posts.

## **1.2 Post-Independence Environment**

In 1963 the country was divided into 17 regions instead of the 9 which existed before Independence. At this time there were 12 regional water offices. This necessitated some of the Regional Water Engineers (RWE) to be responsible for more than one region.

In 1964, the Water Development and Irrigation Division was once again shifted to the Ministry of Lands, Settlement and Water Development. The number of staff at the professional level was not enough despite the Division's effort to bridge the staff gap. However, Mr. F.K Rwegarulila, a Tanzanian who held the post of senior Executive Engineer, was promoted to the post of Assistant Director and in January 1965 he was appointed Director of the Division and thus became the first Tanzanian to hold that post.

In 1966, the Department showed some improvement in the overall staff position with additional recruitments at professional level. This was done through training of water sector personnel at the Dar es Salaam Technical College. In 1967 the Division opened up two more regional offices in Singida and Shinyanga and this increased operational offices to 14.

In 1969 the Division was once again shifted Ministries from the Ministry of Lands, Settlement and Water Development to the Ministry of Agriculture, Food and Cooperatives. After this, deliberate decision was made to raise awareness of various Government bodies on the importance of developing the country's water resources. An emphasis of water resources development was in Rural Water Supplies and the formation of Ujamaa villages as well as the formulation of the 2<sup>nd</sup> Five-Year Development Plan which brought about an unprecedented load of work to the field staff. It was in the light of this awareness that, a new regional office was established in Mara region which had previously been administered from Mwanza. The opening of the Mara Regional Water Office brought the total number of regional water offices to 15. Inherently, since 1965, all investment costs were financed by Government funds. From 1<sup>st</sup> January 1970 the cost of operation and maintenance were taken by the Government as well up to early 1980s, when beneficiary's contribution started.

The year 1970 was historic for the Water Development and Irrigation Division. In November 5 that year, the Ministry of Water Development and Power was created under Minister Dr. W. Chagula while Mr. Rwegarulila was appointed as the Principal Secretary. The four Divisions of Water and Drainage, Water Supply, National Water Resources Council and Water Development and Irrigation were brought together to form this new Ministry. The Ministry became responsible for all aspects of water resources management and development in rural and urban areas and also for the development of hydropower for the whole country.

After announcement of Arusha Declaration<sup>3</sup>, a long-term sub programme for water supply development in mainland Tanzania was established by the Parliament in 1971, under a major rural development programme. Establishment of the 20 years water development programme was in line with the Nation's primary development objective of rising rural living standard as per directives of the Arusha Declaration. The target formulated under the sub programme stated that; ***"a piped water supply will be provided to the rural areas so that by 1991 all Tanzanians will have ease of access to domestic water point."*** The term "ease of access" implied within a distance of 400 meters. Thus, with this target in mind, heavy responsibility laid within the Ministry and this could only be achieved with great determination and hard work (WM 2011).

### 1.2.1 Water Supply Development Programme 1971

The objective as stated by the TANU Party in 1971 was to provide water in all areas so that everyone would be within easy reach of a domestic water point by 1991. To ensure this achievement, new actions were introduced to impart on developmental processes. The

---

<sup>3</sup> The **Arusha Declaration**, which was passed on January 29, 1967, summarized Tanzania's commitment to socialism and the significant role that it was to play in the country's development. The document was originally written by Julius K. Nyerere, who served as the first president of Tanzania between 1964 and 1985.

actions were addressing Planning and Project Selection, Project design, Construction, Operation and maintenance, Performance control, Manpower, Financing, and Institutional arrangement. The Programme implementation saw a number of ambitious plans maturing including establishment of regional water master plans, the Water Resources Institute started in 1974 for human resource capacity building (The Institute started with 30 students which increased to 60 in 1975), water engineering training in Roorkee University India for 129 students under Swedish Government sponsorship in collaboration with Government of India and Tanzania (WM 2011). However, challenges in the programme progress led to undertaking two program review initiatives in 1976 and 1979.

### 1.2.2 1976 Review of Water Supply Development Programme 1971

A study of the rural water supply sector was undertaken during the period 1<sup>st</sup> to 26<sup>th</sup> August 1976. The mission composed of participant from the Government, the WHO/IBRD Cooperative Programme, WHO country staff and UNICEF. The study findings laid bare a number of shortfalls for which recommendations were provided. These included: inadequate database for planning; lack of effective coordination of regional water master plan studies; inappropriate planning and project selection procedures at regional level; disorganized procurement and supply procedures; imbalance between targets and actual financial allocation; inefficiency in use of plants and equipment; inadequate attention to operation and maintenance; no generation of revenue within the sector; imbalance between development and recurrent allocation; and inadequate financial control.

In 1977, the Government increased the funds for operation and maintenance for running the schemes, but the new fund was not efficiently utilized. In 1981, the National Urban Water Authority (NUWA) was established, aiming at being responsible for development, operation and maintenance of all urban water supplies in mainland Tanzania starting with Dar es Salaam. NUWA faced various challenges and failed to meet requirements for urban water service delivery countrywide. Henceforth, it was terminated and left to manage only Dar es Salaam, while Regional Water Engineers continued to manage water supply services in their respective cities and regional and district headquarters (WM 2011).

### 1.2.3 1979 Review of Water Supply Development Programme 1971

The prevalence of a negative trend of the programme outputs, made the Government to consider reviewing the water sector organizational set up, especially at the Ministry level. In March 1979 the Ministry approached the Swedish International Development Authority (SIDA) with a request of reviewing the Water Sector Organizational set-up and operations particularly in the rural water supply sector. SIDA contracted a Swedish consulting firm, Allmänna Ingenjörbyrå AB (AIB) to carry out the review. From July 1979 to April 1980 the appointed firm conducted a number of studies aiming at obtaining the actual situation of programme implementation process and it observed the following among several other things;



- Lack of data on number of people accessing acceptable water within given reach,
- Incomplete information on design capacities for existing schemes,
- Extension of construction period of RWE's schemes by up to 5 or 6 years instead of 6 months, and
- After decentralization, limited funds were distributed amongst several schemes in all Districts.

From the observations; there were distinct problems in project implementation in the following areas: Planning and project selection; Materials supply; Transportation; Operation and maintenance of water supply projects; Plant and equipment; Imbalance of resource components; and absence of performance controls.

### **1.3 The Introduction of formal water policies**

#### **1.3.1 National Water Policy 1991**

Following the trend of the unsatisfactory implementation of the 1971 water sector programme which was observed by then ruling party 'CCM' Leaders, in 1987 the party decided to prepare another political programme for the Party which was meant to direct the Government on what to do regarding the development of the water sector in the country in order to rescue the sector from unsatisfactory implementation of its projects.

Beside a rise of the rural water supply coverage from 8% in 1970 to 44% by December 1988, the party, in her 1987-2002 programme directed the Government to provide clean and safe water to all people nearby their residential areas. In addition, the party directed the Government to prepare a comprehensive policy for water sector development for rural and urban areas so that all people would have clean and safe water supply services by 2002. The ruling party directed the Government that, the policy should also emphasize on enough supply of clean and safe water for livestock and industries while taking care of protection and development of water sources for effective production.

The 1991 National Water Policy set a goal of providing clean and safe water to the population within 400 meters from their households. The policy aimed at addressing challenges in water sources protection, various water use demands, implementation of water projects, wastewater and sanitation, operation and maintenance, water quality and source pollution, flood control, staff development and coordination of development partners participation in the water sector. Overall, the Government was responsible for designing, construction and managing water projects in the country as well as the management of water resources.

However, during implementation of the 1991 policy, despite the achievements recorded, the following shortfalls were identified:

- (i) Limited participation of the private sector, citizens, and various community groups in planning, implementation, ownership, and management of water supply projects in urban and rural areas,
- (ii) Greater emphasis was placed in water supply than in conservation, development and management of water resources,
- (iii) The use of water resources underestimated the importance of preserving the environment,
- (iv) Existing institutional systems and laws didn't meet requirements for water service management and development,
- (v) Lack of specific strategy for policy implementation.
- (vi) Increase in water use conflicts among sectors/users

### 1.3.2 National Water Policy 2002

By the year 2002, only about 50% of the rural population had access to reliable water supply service. This was due to poor operational and maintenance arrangements; over 30% of the rural water schemes were not functioning properly. The coverage for urban areas was on average 73%, but most urban water supplies were inadequately treated due to malfunctioning treatment plants and others had no such facilities.

Henceforth, a new national water policy was drafted to lay foundation for sustainable development and management of water resources under the changing roles of the Government from service provider to that of coordination, policy and guidelines formulation and regulation. The policy was divided into sections, namely water resources management, urban water supply and sewerage; and rural water supply; to address identified policy issues as illustrated in Appendix 1-2. The policy has been operational for nearly 18 years now and the Government has launched its review considering the significant changes that have taken place in the water and sanitation sector nationally and globally (ref also to section 2.3.1 below).

## 1.4 Legal Reforms Pre- and Post-Independence

From 1961 to 1974 colonial Water Ordinances of 1959 continue being used for water resources management, and Water Works Ordinances of 1949 were in use even after independence for water supply service provision (WM 2011). In 1981 National Urban Water Authority Act was established which later in 2001 was revised to Dar es Salaam Water Supply and Sewerage Authority Act serving Dar es Salaam city and parts of Coast region. Simultaneously Water Works ordinance continue to serve for other regions. In 1974 Water Resources Utilization (Control and Regulation) Act was established, and this was amended by Act No. 10 of 1981, No. 17 of 1989, No.8 of 1997, No. 1 of 1999 and No. 20 of 2001. Act No. 10 of 1981 amended Act No. 42 of 1974 by introducing River and Lake Basins for water resources management (WM 2011, WRD 2019). This was later repealed by Water Resources Management Act No.11 of 2009. Contrarily, Water works ordinance Cap. 272 was amended

by Act No. 5 of 1966, No. 7 of 1981, No. 8 of 1997, this Act was used in all regions except Dar es Salaam. The Act was repealed by introduction of Water Supply and Sanitation Act No. 12 of 2009 (WM 2011), which has been recently repealed the Water Supply and Sanitation Act No. 5 of 2019. Benefits of recent Acts are further elaborated in chapter 2. Subsequent regulations include that of, groundwater of 2013, dam safety of 2013, and national water fund of 2019.

## **1.5 Strategies Influencing the Status of the Water Sector**

### **1.5.1 National strategy for growth and reduction of poverty (MKUKUTA)**

Tanzania's National Development Vision 2025, the Poverty Reduction Strategy Paper (2000), and the National Strategy for Growth and Reduction of Poverty (NSGRP/MKUKUTA) aimed at achieving an absence of abject poverty and attaining a high quality of life for all Tanzanians. These documents outlined the objectives and strategies for political, social and economic reforms to assist in combating poverty and promoting economic growth in Tanzania.

Cognizance of the important role that water plays in both maintaining local livelihoods and fueling economic growth and development, MKUKUTA committed Tanzania to achieving the Millennium Development Goals (MDGs) for access to safe water, sanitation and a healthy environment. In order to meet its MDG targets, the Ministry of Water embarked on the wide-ranging water sector reform processes, including: policy review, sector-wide approach, decentralization of service provision, full cost recovery, enhancement of the private sector participation and wise use and equitable allocation of resources in all the nine basins in Tanzania.

### **1.5.2 The National Water Sector Development Strategy (NWSDS, 2006)**

This was conceived as a blueprint for prioritized, timely and appropriate interventions to address the water sector challenges in the process of achieving all the targets narrated in MKUKUTA by 2010, the Millennium Development Goals by 2015 and contribute towards achieving the Tanzania Development Vision 2025. With NWSDS (2006) the following specific actions were identified for ensuring that water and sanitation investments contribute effectively to poverty alleviation:

- (i) Ensure that consideration of disparities of access to water supply and poverty levels is embedded in the criteria that determine capital investment priorities;
- (ii) Promote hygiene education and good sanitary practices to reduce health risks and losses of productive time;
- (iii) Promote awareness of various opportunities for using water resources as a means of reducing poverty; and

- (iv) Ensure water resources are conserved, protected and made available for alternative uses.

Practically, the actions required the Ministry to collaborate with other Ministries, especially the Prime Minister's Office for Regional Administration and Local Government (PMO-RALG, the Ministry of Health and Social Welfare, and the Ministry of Agriculture and Food Security). Furthermore, the strategy aimed at reshaping and increasing sector financing through a smooth and manageable institutional arrangement. National water sector implementation plan was established for implementing objectives of NWSDS within five-year timeframe. The concept of the National Water Sector Strategic Implementation Plan had in practice been eclipsed by the Water Sector Development Program (which was essentially a framework to implement multiple stand-alone water supply projects).

### 1.5.3 Water Sector Development Program (WSDP)

The Government of Tanzania, through the MoW is implementing the Water Sector Development Programme (WSDP), for the period 2006–2025. The development objective of the WSDP was to strengthen sector institutions for integrated water resources management and improve access to water supply and sanitation services. It is expected that by the end of the Programme, the Government would have met the National Development Vision of 2025, and according to the Five Year Development Plan phase II (2016/17-20/21), access to safe water is targeted to increase up to 85% in rural areas and 95% in urban areas by 2021. Status of current coverage of water supply services for rural and urban areas is covered in chapter 4.

The first phase of WSDP began in July 2007 and it had four components: water resources management; rural water supply and sanitation; urban water supply and sanitation; and institutional strengthening and capacity development. It was planned to end in June 2012, but progress proved to be slower than was anticipated at the formulation stage and as a result the programme was extended twice, first to June 2014 then again to the end of June 2016. It was expected that WSDP would support Government to meet its 2010 MKUKUTA sector targets and be well on the way to meeting the MDGs for improved water supply and sanitation coverage across all segments of the population, as well as having in place a sustainable regulatory framework for comprehensive water resources management and development.

The scope of WSDP II framework focused to complement the targets of WSDP in the fact that it is the second phase of WSDP 2006-2025 implementation. It was not a new Programme due to this fact, the Programme Development Objective (PDO), to strengthen sector institutions for integrated water resources management and improve access to water supply and sanitation services did not change. Both the evaluation of WSDP phase I and the scan report on experiences and lessons from WSDP I found that the PDO and its Programme design in general were still relevant in the next immediate future. However, for the purposes of sharpening its implementation drive and results; the layout of WSDP II components,

component objectives, specific objectives, key performance indicators (KPIs) and targets were reviewed.

Building on the experience gained under WSDP I, the programme was re-configured for phase two, the principal changes being that sanitation and hygiene was made a component in its own right; water quality management was relocated to become part of water resources management; and capacity building was mainstreamed into each of the four technical components, though the organisation and reporting of it remained the responsibility of component five, renamed as Programme Delivery Support. WSDP II began in July 2016 with the intention to run for five years (up to June 2021) in all Local Government Authorities (LGAs), Basin Water Offices (BWOs) and Water Supply and Sanitation Authorities (WSSAs) in the country. Achievements to date are summarised in Appendix 1-3.

Moreover, midterm review of WSDP II in 2018 led to a number of restructuring to the programme, and main ones being change of sector dialogue to adoption of thematic approach among others, and programme implementation aiming at strengthening the MoW's programme management capacity through engagement of technical assistant. On the other hand, a special audit report on implementation of rural water supply projects identified major bottlenecks including insufficient supervision funds provision, inadequate contract management and infrastructural design skills, evidence of availability of poor-quality pipes in the local market, lack of correlation between increase in investment and rural water service coverage (SAR 2018).

#### 1.5.4 Related Sector Strategies and Programmes

Available cross cutting policies include: National Health Policy, Environment Policy, National Agriculture and Livestock Policy and Agriculture Sector Development Strategy, Energy Policy and Strategy, Rural Development Policy and Strategy, National Land Policy and National Human Settlement Development Policy, Forestry Policy, Industrial Policy, SADC Regional Water Policy, National HIV/AIDS Policy, National Policy on Non-Governmental Organisations. For the five years, the MoW has observed and been involved in operations of a number of related sector strategies, campaigns and programmes.

##### *Rainwater harvesting technology promotion*

The GoT has been putting more emphasis on Rainwater Harvesting (RWH) promotion as an alternative water supply technology. A goal of the current national water policy of 2002 for rural water supply is to increase water availability through RWH technologies (MWLD 2002). Emphasis is on the promotion of RWH through raising awareness and training and research enhancement. Moreover, the national strategy for growth and reduction of poverty for 2006 – 2015 in its strategies on water resources management, acknowledged RWH as one among the suitable alternative resources and a viable option to meet increasing water demands



(MoWI 2008). It stated that RWH needs development and promotion at household level, and for rural development.

Under WSDPI RWH demonstration projects were a pre-requisite in social service centers such as schools, dispensaries, and hospitals. Contractors were directed to build three storage tanks (5000 L, 3000 L, and 1000 L) as a way of promoting RWH to local citizens with respect to their economic potential. The types of tanks being promoted included ferro-cement, mortar jars, and plastic tanks. By March 2014, 675 tanks had been constructed. By April 2015, 1,862 RWH tanks had been built in 931 villages.

Prior that, in 2011 LGAs had been mandated to pass by-laws that ensure incorporation of RWH infrastructures in new houses, and by May 2015, only 29 out of 168 LGAs had implemented it. The pace is still slow. With all these constraints, a guideline for RWH technology is underway for which the department of Water Resources is the custodian, to ensure consistency and safety in RWH management and utilization.

### *Sanitation Campaigns*

National sanitation campaign with a slogan of 'Nyumba ni Choo' is responding to the challenges such as poor sanitation practices. In this campaign, the Ministry of Water is working alongside the Ministry of Health and Social Welfare.

## **1.5.5 Sustainable Development Goals**

In the mid of WSDP implementation, the water sector targets were domesticated to Sustainable Development Goals' (SDGs) targets of SDG 6 on ensuring availability and sustainable management of water and sanitation for all in Tanzania by 2030. This is meant to provide a tremendous opportunity of leap frogging progress towards attainment of the 2030 Agenda, given the water sector's central role in human rights, poverty reduction, inequality elimination, peace and justice, and the environment. This is in line with the national development vision of universal access to water. As a roadmap, the indicators are domesticated as displayed in Appendix 1-4. For successful implementation, the sector calls for effective collaboration with all interested parties.

Table 1-1: Key dates in the reform of the water sector in Tanzania (After WSP, 2011; WM 2011)

| Years         | Events                                                                                                                                                                                            |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1930 - 1946   | Public Works Department was responsible for all water developments                                                                                                                                |
| 1946 - 1950   | In addition, Water Development Department was established                                                                                                                                         |
| 1963 – 1970's | Regional Water Offices reached 12 for serving 17 regions                                                                                                                                          |
| 1970s         | Ministry of Water Development and Power was created                                                                                                                                               |
| 1971– 1991    | Establishment of the 20 years Water Supply Development Programme                                                                                                                                  |
| 1974          | Water Utilization Act established<br>Water Resources Institute established                                                                                                                        |
| 1987          | A Ministry solely for Water was established                                                                                                                                                       |
| 1988          | Introduction of Annual Water Week celebrations                                                                                                                                                    |
| 1991          | First National Water Policy, introducing user charges                                                                                                                                             |
| 1998          | Urban Water Supply and Sanitation Authorities were established<br>Rural water supply pilot projects were undertaken in Mpwapwa, Rufiji and Kilosa councils                                        |
| 2001          | Legislation for an independent utility regulator passed                                                                                                                                           |
| 2002          | National Water Policy adopted, and Basin level management of water resources introduced                                                                                                           |
| 2003          | Leasing of Dar es Salaam water supply to private sector company                                                                                                                                   |
| 2005          | Renationalization of Dar es Salaam water supply<br>National Water Sector Development Strategy (NWSDS) developed                                                                                   |
| 2007          | Launch of the Water Sector Development Program for the period 2006 - 2025                                                                                                                         |
| 2009          | Water Resources Management Act No. 11, and Water Supply and Sanitation Act No.12 established                                                                                                      |
| 2015          | National Water Fund became operational                                                                                                                                                            |
| 2016          | Water Sector Development Program phase I ended lasting for the period 2007 – 2016; Phase II was initiated                                                                                         |
| 2019          | Water Supply and Sanitation Act No.5 established repealing act No.12 of 2009<br>Rural Water Supply and Sanitation Agency established<br>Community Based Water Supply Organization was established |





## **2 CHAPTER TWO | DEVELOPMENT FRAMEWORK**

This section summarizes the development context of the water supply and sanitation sector and the supporting plans, visions, legal and institutional framework.

### **2.1 National Development Vision 2025**

The National Development Vision 2025 aims at: - achieving high quality livelihoods for its people (characterized by sustainable and shared growth and freedom from abject poverty in a democratic environment); attain good governance (through the rule of law); and develop a strong and competitive economy (with sustainable growth and shared benefits). The more specific target of universal access to safe water is implementable through the involvement of the private sector, by empowering local government and communities, and the promotion of broad-based grass root participation in the mobilisation of resources, knowledge and experiences, with a view to stimulating initiatives at all levels of the society. The National Water Policy (2002), the National Water Sector Development Strategy (2006), the Water Resources Management Act No. 11 (2009), the Water Supply and Sanitation Act No. 12 (2009), the Water Supply and Sanitation Act No. 5 (2019), the subsequent preparation of regulations and the strengthening of the institutional framework and structures were all aimed at attainment of the Vision 2025 target of universal access to safe water, as well as to provide a platform for national social and economic development.

### **2.2 Government 5 years development plans II (2016/17 – 2020/21)**

For the first five years i.e. 2015 to 2019, the sector has attained commendable gains; much is needed to ensure majority of Tanzania have access to clean and safe water in close distance and for the shortest time possible. In 2015, a total 21.8 million people equivalent to 68.9 percent had access to clean water sources in rural areas; 86 percentage of people living in urban Centre's with access to safe and clean water services and, in Dar es Salaam about 72 percent of the Dar es Salaam residents had access to clean water by 2015. It is important to note that, the delivery of the planned targets requires a significant increase in financial and human resources. A summary of the plans, targets and achievements by 2019/20 is shown in Appendix 2-1.

### **2.3 Policy, Legal, Institutional Framework**

From 2015 -2020 the water sector has undergone several sector reforms with the main objective of improving institutional management, facilitating the enhanced efficiency of water supply and sanitation. The reforms have been either triggered or led to the following significant changes: -

- i. Change of the water sector organisational structure in 2018;



- ii. Change of most Development Partners (DPs) financing modality from basket to 'earmarked' funding for specific projects;
- iii. Absorption of the current changes of the Ministry which has initiated a process of re-centralisation whereby District and Regional Water Engineers, who were operating within the Local Government structure to start reporting directly to MoW through RUWASA;
- iv. Enactment of the Water Supply and Sanitation Act No.5 (2019) with the envisaged new regulations;
- v. Clustering of District and Townships Urban utilities to Regional Water and Sanitation Utilities.
- vi. Formulation of new DAWASA after the merging of DAWASA & DAWASCO
- vii. Establishment of RUWASA where DDCA and Maji Central Stores have been diffused to the agency;
- viii. Change of MoW structure where PCDU has the main objective of facilitating better programme performance and linkages between the Ministry, DP's and the implementing agencies of WSDP II.

### 2.3.1 Policy framework: NAWAPO 2002

For nearly 18 years, the policy has been operational, it is undeniably clear that many strategic and objective changes have occurred nationally and internationally, including the implementation of the new development plans and the development of the Sustainable Development Goals (SDGs 2015-2030). In addition, several changes have occurred within the Water Sector which are not in line with current water policy. These changes include the enactment of the new Water Supply and Sanitation Act. 5 of 2019. Some of the changes in this law are not in line with the content of the policy. For example, the policy recognizes Local Government Authorities as the lead institution for rural water services delivery while the existing law establishes RUWASA as the responsible agency. As a result of these changes, it was agreed that the National Water Policy has to be reviewed in accordance with relevant legislation and the review exercise of the policy is expected to be completed by the end of March 2020.

Furthermore, the need for 2002 policy review was culminated by the following issues among others:

- i. Most of the contents of NAWAPO need updating e.g. statistics, information, references, etc. For instance, the policy references its objectives to meet the goals of Tanzania's Poverty Reduction Strategy Paper (PRSP) as a planning framework and Millennium Development Goals instead of FYDPs and SDGs.
- ii. The current water policy does not reflect the contemporary national policy directives, for example the shifting of water service provision responsibilities from PORALG to the Ministry of Water.



- iii. The sanitation component is not comprehensively addressed in the current water policy.
- iv. Climate change issues are not really covered in the policy.
- v. Community involvement in rural water supply projects is still a policy issue. Should it be community owned or community based?
- vi. The National Water Sector Development Strategy (2006 – 2015); a tool for implementing the National Water Policy expired since 2015.

Nevertheless, despite of the identified gaps and challenges of implementing NAWAPO 2002, a number of achievements have come through from its implementation, and these include the following:

- i. Priority on water use: The Government has implemented the policy statement with respect to the priority of clean and safe water for basic human use.
- ii. Sustainable use and Water Resources Conservation: Water Resources Management Act No. 11 of 2009 section 23 sets out the various responsibilities of Basin Water Boards including the management of water quality and conservation, as well as improving and protecting ecosystems and wetlands.
- iii. Sustainable Development of Groundwater Resources: Water Resources Management Act No. 11 of 2009 section 38 provides for the management and conservation of underground water resources as well as relevant regulations prepared.
- iv. Transboundary Water Resources: The implementation of this issue has been guided by the Water Resources Management Act no. 11 of 2009 sections 98 to 100 that take into account National interests in international water management
- v. Encroachment and degradation of water sources: This has been implemented and the sources of water resources have been allocated and protected, also the declaration was enforced by the enactment of the Water Supply and Sanitation Act No. 12 of 2009 as repealed and replaced by the Water Supply and Sanitation Act No. 5 of 2019.

### 2.3.2 Legal framework

Collectively, the Water Resources Management Act N<sup>o</sup>. 11 (2009) and the Water Supply and Sanitation Act N<sup>o</sup>. 5 (2019) form the core of the legal frameworks for the water and sanitation sector. Within the five years (2015 – 2020) there are major transformations in legal data, with enactment of Water Supply and Sanitation Act No.5 of 2019 repealing Act No.12 of 2009, and introduction of several regulations for facilitating implementation of both Acts. For the period 2015 – 2020, with regard to the Water Resources Management Act N<sup>o</sup>. 11 (2009) a total of **5** regulations have been gazetted whereas **8** regulations have been gazetted pursuant to the Water Supply and Sanitation Act N<sup>o</sup>. 5 (2019) as summarized in Appendix 2-2 a&b. Moreover, MoW is leading the process to harmonize water sector related laws, policies and strategies. This is with regard to the overlaps and gaps that exist within the mandated roles and

responsibilities of the various ministries and agencies active in the water sector. Legislations related to the water sector, include the following:

- i. The Energy and Water Utilities Regulatory Authority Act Cap. 414;
- ii. The Environmental Management Act No. 20 (2004); and
- iii. The Land Act Laws.

*The Water Resources Management Act no. 11 (2009)*

This Act was enacted to provide for institutional and legal framework for sustainable management and development of water resources; to outline principles for water resources management; to provide for the prevention and control of water pollution; to provide for participation of stakeholders and the general public in implementation of the National water policy, repeal of the Water Utilization (Control and Regulation) Act, 1974 and to provide for related matters. The repealed Water Utilization (Control and Regulation) Act, 1974 as amended by Act No. 10 of 1981 vested the Minister with powers to declare an area to be a water basin water hence nine (9) water basins were declared accordingly. The preceded Water Ordinance, 1923 (as revised in 1948, 1957 and 1959) and as repealed in 1974, vested all waters within the territory in the ownership of the Governor with a requirement to register and obtain a water licence, permit or right from the water authority. Such principles have been enunciated in the *Water Resources Management Act no. 11 (2009)*

*The Water Supply and Sanitation Act no.5 (2019)*

This Act has been enacted to provide for sustainable management and adequate operation and transparent regulation of water supply and sanitation services; to provide for the establishment of Water Supply and Sanitation Authorities, Rural Water Supply and Sanitation Agency, National Water Fund and Community Based Water Supply Organisations; to provide for appointment of service providers, repeal of the Water Supply and Sanitation Act, 2009 and Dar es Salaam Water and Sewerage Authority Act, 2001 and to provide for related matters. Water Authorities including DAWASA established by the repealed laws have been saved and deemed to have been established under the new Act.

### 2.3.3 Water Sector Institutional Framework 2015 - 2020

*Ministry of Water*

Full-fledged Ministry. The Ministry of Water is the national government authority responsible for national water policy and strategy formulation (and ensuring these are implemented), the formulation of guidelines and regulations, the coordination of integrated water resources management and the provision of water supply and sanitation services and for determining a mechanism for appeals from all levels of the institutional framework. As the structure illustrates (Appendix 2-3) the Ministry has a number of implementing agencies. However, the recent

sectoral reforms have seen some losing their autonomy/title and getting diffused to other existing agencies, this include Drilling and Dam Construction Agency (DDCA) and Maji Central Stores (MCS). Others includes unifying rural and urban water supply into one division and several more units under directorates.

In addition to these changes within the period 2015 to 2020, the Government shift to Dodoma (a more central location) as was announced in 1973 by the first President Julius Nyerere, was actualized by President Dr. John Joseph Pombe Magufuli as he had pledged during the 2015 campaigns. MoW successfully achieved the move of its staff and its operations to Dodoma region. Ministerial activities are now in full swing despite the temporary disturbance of the staff and facilities mobilization.

### *Water Resources Management*

Tanzania is divided into nine river and lake basins that follows hydrologic boundaries as illustrated in *Figure 3-3*. Pursuant to NAWAPO 2002 and Water Resources Management Act No. 11 of 2009, the management of water resources has five main levels; National level, Basin level, Catchment level, District level, and Community level which is the lowest level and integrates users of the same source. The Act outlines the powers and functions of the boards, catchment committees and water users' associations responsible for these water resources management levels.

The National Water Board is serving as an advisory board to the Minister of Water on matters related to multi-sectoral coordination in integrated water resources planning, management and multi-sector investment as well as resolution of national and trans-boundary water conflicts. Basin Water Boards are responsible for managing water resource in respective nine basins. Catchment water committees are working hand in hand with basin water boards, with roles including preparation and implementation of catchment plans, and resolution of conflicts within the catchments. At district level, district councils are responsible for planning and development of water resources in accordance with Basin plans. This runs down to protection and conservation of natural resources in respective villages and wards, establishment of by-laws and conflict resolution. Water User Associations is the lowest appropriate level of water resources management, with responsibilities for local level management of allocated water resources, mediation of disputes among users and between groups within their areas of jurisdiction, collection of various data and information, participate in the preparation of water utilization plans, conservation and protecting water sources, and catchment areas, efficient and effective water use and ensuring return flows, enforcement of the law and implementation of conditions of water use permits, and control of pollution. All these levels participate in water boards on representative basis, and illustratively their structured as displayed in Appendix no. 2-4 (WRD 2019).

## *Water Supply and Sanitation Service Provision*

Water Supply and Sanitation Authorities (WSSAs): The Urban Water Supply and Sanitation Authorities are autonomous government institutions which were established in 1998 under the Water Works Act No. 8 of 1997 (Waterworks Ordinance Cap 281) before being repealed by the Water Supply and Sanitation Act No. 12 of 2009 and subsequently the Water Supply and Sanitation Act No. 5 of 2019. The establishment of these authorities is based on a survey conducted by the Ministry of Water in 1992 which was meant to establish the best way to provide water services to urban areas. The study suggested the establishment of autonomous entities that could be self-reliant and would be close to the public. This is with the supervision of its advisory Boards of Directors in the provision of quality and sustainable water services.

By June 2019, a total of 98 WSSAs at district and townships headquarters, were formed and managed by PMO-RALG. However, in November 2019 sectoral reforms with regard to WSSAs operations occurred, whereby the regional WSSAs are 25 each with additional new service areas under utility clustering modalities. In addition, 8 WSSAs for National Water Projects and 36 WSSAs at district headquarters and townships level have been formed, whereby 10 district WSSAs out of 36 will be managed by regional WSSA in respective regions. This also included shifting of 50 towns to be under RUWASA management in respective districts. Details on WSSAs reforms as per PS – MoW announcement on November 11, 2019 are available in Appendix 2-5, 2-6 and 2-7. Additionally, these changes include cancellation of 41 WSSAs, whose service area will be managed by regional WSSAs (Appendix 2-8). As well, seven (7) authorities have been tasked to supervise and capacitate smaller authorities as elaborated in Appendix 2-9.

Rural Water Supply and Sanitation Agency (RUWASA): The agency is established by the Water Supply and Sanitation Act, No. 5 part X section 42 of 2019 responsible for implementation of rural water supply and sanitation projects. The corporate structure for RUWASA management is illustrated in Appendix 2-10.

Despite existence of institutional frameworks for the water sector, the provision of water supply and sanitation services have been encountering a number of challenges. In essence, execution of rural water supply and sanitation projects involves a number of implementing agencies, which at various stages are responsible for resource mobilization, execution of projects, coordination, operations, as well as monitoring and evaluation. The key challenges in this chain include lack of implementation capacity, poor financing (delayed payments), poor planning (designs) and low capacity of Community Based Water Organizations (CBWSOs) to manage rural water supply facilities. This leads into lack of sustainability; high capital investment; high operation and maintenance costs as well as depleting water sources. The challenges above led to review the institutional framework for implementation of water supply and sanitation projects which will enable transfer of water sector functions and responsibilities



including accountability of officers responsible for water service provisions from President's Office- Regional Administration and Local Government Authorities (PO-RALG) to the Ministry of Water (MoW).

In addition, RUWASA has also taken over the responsibilities of the then DDCA<sup>4</sup> and MCS. Act No. 5 part X section 43, 2b highlights functions DDCA will partake under RUWASA, these include conducting groundwater survey including prospecting and explorations, and to undertake drilling operations including water well flushing and conduct of pumping tests, and rehabilitation of water wells. Furthermore, RUWASA has taken over responsibility to manage water service provision in 24 WSSAs, and 55 towns in district headquarters and LGAs which didn't have WSSAs. The 24 WSSAs are in 13 regions, with Morogoro region having the highest number that is 4 (Appendix 2-11 provides information on towns under RUWASA management).

Community based water supply organizations (CBWSO): This is a legal entity established under Water Supply and Sanitation Act No.5, part VII section 32 of 2019 with powers well defined under section 33 of the same. The Act has transformed the Community Owned Water Supply Organization (COWSO) to Community Based Water Supply Organization (CBWSO) for enhancing sustainability of rural water supply and sanitation services through public involvement and private sector participation in rural water services. Initially, most of the rural water supply and sanitation schemes which were operated through COWSO faced a number of challenges in operation, maintenance and supervision as well as limited community and public involvement. Major aspects considered in CBWSO for sustainability are; -

- i. Management composition of all CBWSO are owned by the Government, institutions and communities;
- ii. Daily management of CBWSO are under professionals especially the Team leader should be a water technician and an accountant should be with technician level three accountant;
- iii. The new act has encouraged CBWSO to increase the efficiency by clustering and involving private sector in O&M under the supervision of RUWASA.

#### *Ministerial Institutions*

Water Institute (WI): The Institute established by Government Notice (GN) No.138 of 2008 under the Executive Agencies Act (Cap. 245). The WI was an offshoot of former Rwegarulila Water Resources Institute (RWRI), which also came from the name Water Resources Institute (WRI) that was established in 1974 in order to supply the middle level technical workforce needed to implement the Rural Water Supply Programme. WI is fully accredited by the National Council for Technical Education (NACTE) to run and grant awards (Technician and Engineering programmes) to successful candidates. Awards offered are NTA level 4, 5 and 6 (Ordinary Diploma), and 7 and 8 (Bachelor of Water Resources and Irrigation Engineering).

---

<sup>4</sup> Plans are underway to reinstate DDCA as a parastatal company

The five ordinary diplomas offered by the Institute are in the area of Water Supply and Sanitation Engineering, Hydrology and Meteorology, Hydrogeology and Water Well Drilling, Water Laboratory Technology and Irrigation Engineering. Currently there are about **52** short courses offered to experts in the water sector, this includes ready and tailor made. Moreover, this March 2020 the institute is launching a March entry for diploma courses. Appendix 2-12 illustrates the structure for WI operations, and Table 2-1 summarises WI performance and status in its core responsibilities for the period 2015 - 2020.



Water Institute students taking part in field work activities. Increased field work exposure is among targets of the Institute for quality graduates.

Figure 2-1: Flow measurements by WI students

Direct beneficiaries of WI services offered are students, clients, WI employees and service providers. Indirectly WI serves the general public who are the ultimate consumers of water and irrigation services that can improve the national economy in terms of goods and services they provide for a better performing economy. The institute is equipped with laboratories (water quality analysis, soil analysis, hydraulic analysis, survey, and plumbing).

To catch up with the demand for technicians in the water sector which was estimated at 6208 as of 2015/16, the Institute's targets includes enrolling 3500 and 1700 diploma and degree students, respectively by June 2022 (WI 2018). Efforts to improve enrolments by supporting underprivileged candidates have included the establishment of Water Technician Funds in 2013, which by 2017/18 had supported 865 students. However, under WSDP there have been plans for capacity building of the Institute, which have led to procurement of laboratory equipment (For Water Quality and Hydraulics laboratory) within the recent five-year period.

Table 2-1: Water Institute enrolments and other performances for the period 2015 - 2020

| N | Year    | Diploma | Degree | Technicians | Engineers | Short courses | Water quality samples | Publications |
|---|---------|---------|--------|-------------|-----------|---------------|-----------------------|--------------|
| 1 | 2015/16 | 1093    | 373    | 313         | -         | 77            | 353                   | 0            |
| 2 | 2016/17 | 1322    | 543    | 248         | 54        | 96            | 211                   | 5            |
| 3 | 2017/18 | 1470    | 596    | 198         | 98        | 52            | 269                   | 9            |
| 4 | 2018/19 | 1534    | 643    | 440         | 146       | 277           | 173                   | 7            |
| 5 | 2019/20 | 1237    | 658    |             |           | 52            | 189                   | 9            |

National Water Fund (NWF): It was established by the Water Supply and Sanitation Act of 2009 and came into operation in 2015 before being repealed and being re-established by the Water Supply and Sanitation Act No. 5 part XII section 55 of 2019. The NWF was established as a means of addressing the long-standing challenge of inadequate funding for water projects. The Fund aims at providing investment support for water supply infrastructure; management of water resources; and related activities as well as interventions that are necessary for delivery of planned targets in the water sector.

Energy and Water Utilities Regulatory Authority (EWURA): This is an autonomous multi-sectoral regulatory authority established by the EWURA Act Cap 414 of the Laws of Tanzania in 2001. It is responsible for technical and economic regulation of the electricity, petroleum, natural gas and water sectors in Tanzania pursuant to Cap 414 and sector legislation. EWURA regulates energy and water utilities in a transparent, effective and efficient manner that ensures their quality, availability and affordability. In urban areas, EWURA regulates the provision of water supply and sanitation services which is the responsibility of the Water Supply and Sanitation Authorities. Among other functions of EWURA it includes issuing license, tariffs review, monitoring performance and standards with regards to quality, safety, health and environment. EWURA is also responsible for promoting effective competition and economic efficiency, protecting the interests of consumers and promoting the availability of regulated services to all consumers including low income, rural and disadvantaged consumers in the regulated sectors. Annually, EWURA publishes performance review report of WSSAs showing achievements and constraints by considering key performance data and indicators for provision of water and sanitation services.

The Water Supply and Sanitation Act no. 5, part IV section 14 gives mandate to EWURA of issuing license to water authorities. As of now, EWURA regulates 69 WSSAs, which provide water supply and sanitation services at Regional and District headquarters, Township and National Projects Water Authorities. Appendix 2-13 provides an illustration of the EWURA organizational structure.

## **2.4 Non-State Actors in the Water Sector**

For water sector development various stakeholders are involved, these includes the public and private sector, non-governmental organizations and development partners. For the period 2015 – 2020 the Ministry has worked with various Development Partners (DPs) and Civil Society Organisations (CSO) who are further elaborated below. These have supported projects under basket funding or earmarked modalities.

### **2.4.1 Civil Society Organisations**

Civil society can be defined as “the public realm of organized social activities located between the state and the private households.” The water sector includes many groups of CSOs, and

they comprise of both the voluntary groups and some well-established organizations that have tens of paid employees. In addition to Tanzanian NGOs, there is a relatively small but influential group of international NGOs working in the country in the water and sanitation sector.

TAWASANET is a national network of Civil Society Organizations (CSOs) working in the water, sanitation and hygiene (WASH) sector. Its establishment was in August 2008. It addresses the need for a coordinating body for strengthening voices of multiple sector CSOs across the country, currently it has 35 members. The objectives of TAWASANET include:

- Providing a forum for collaboration and the interchange of ideas and knowledge among members in the provision of services in the water and sanitation sector;
- Promoting partnerships between civil society and other sector stakeholders;
- Encouraging public, government and industry understanding of water and sanitation and its contribution to socio-economic development, quality of life and the environment;
- Contributing to the development and implementation of sector policies, strategies, standards and guidelines in the water and sanitation sector;

TAWASANET has been very active in ensuring that the implementation of the WSDP is carried out in an accountable and transparent manner. It has contributed in preparing equity reports that were discussed during the Annual Joint Water Sector Review meetings. As an umbrella organization for water sector CSOs, it has been active in participating in water sector dialogue groups such as Thematic Working Groups and the Water Sector Working Group and its members have also been active in field monitoring through joint supervision missions as well as in dissemination events. CSOs also exercise roles in policy, advocacy, community capacity development and facilitation, public sensitization, research and consultancy services and in project implementation by some NGOs.

#### 2.4.2 Other key players in the water sector

Over the years, the sector has observed a flow of contributors to sector growth, in the shape of suppliers, manufacturers, contractors, consultants, private sectors from varying backgrounds including religious related. Working in urban and even in very remote interior rural areas hence supporting the Ministry in ensuring no one is left behind towards sustainable development, with a drop of water for all. The players are professionals recognizable by regulatory bodies such as Engineers Registration Board, Contractors Registration Board, Tanzania Private Sector Foundation. Also, their visible in support of various sectoral initiatives for capacity building and awareness raising including extending support to facilitate Maji Week Conference, SADC Water Week. To name a few we have TWP, GIZ, and Appendix 2-14, summarizes some potential local non-state actors working in the sector. A comprehensive list



of the actors in rural water supply projects is well elaborated in the special audit report (SAR 2018).

## **2.5 Development Partners Group Water**

The Development Partners Group Water (DPG) comprises 19 bilateral and multilateral agencies that support the Government of Tanzania to improve access to drinking water and sanitation, and to promote coordination among Development Partners (DPs) for the most efficient use of human and financial resources made available by the DPG members. The DPG is organized around the MoU and a Code of Conduct agreed with the Government and is set up through a dual chairing structure (an incoming and outgoing chair arrangement). DPG is supported by a secretariat housed at the German Development Cooperation Offices in Dar es Salaam and the secretariat is funded by GIZ (Then GTZ). The DPG establishes an annual work plan taking into account key water sector events and aligns its activities to the fiscal year. DPs provide financial assistance (through general budget support, the water basket and in earmarked projects) and technical assistance support.

Contributions to the water basket are calculated on an annual basis (and these are set out in the approved WSDP annual work plan and budget), currently, DPs contributing to the basket include AfDB and DFID.



### 3 CHAPTER THREE: WATER RESOURCES MANAGEMENT

The content of this chapter reports the status of National water resources in Tanzania - giving national accounts of the available surface and groundwater resources, the sectoral water allocation, transboundary water management and water resources management issues (floods, drought and other management aspects). Additionally, this section narrates the progress and challenges of water resources planning, development and monitoring.

#### CHAPTER SYNOPSIS

##### The Water Resources

- As of 2018, every person in Tanzania had a share of 2.3 Mil Liters per year
- Projections to 2030 (based on NBS population growth) shows a drop of this share down to 1.4 Mill Liters per person per year
- Falkenmark Global water stress indicator is 1.7 Mil Liters per person per year
- Water Demand by sectors: Domestic (1,686 MCM), Irrigation (10,500 MCM), Hydropower (13,062 MCM), Livestock & Aquaculture (395 MCM), Industries & Mining (445 MCM) and Ecosystem & Wildlife (50,627 MCM).
- Five out of nine water basins in Tanzania are below this global indicator. Compared to share of water for each person, this means the issue is to transport water to the needy (i.e. economic water stress not physical water stress).

##### Achievements & Issues

- Six out of nine IWRMD Plans have been completed and proposed measures for sustainable water resources management,
- By end of 2019, Basin Water Boards have doubled their revenue collection from TZS 2 Bn in 2015
- Within WSDP II, Water Resources Management Planned US\$ 804 Mil worthy of activities but commitments are in tune of US\$ 129 Mil. This is out of US\$ 3.3. Bn total WSDP II commitments (with 70% already signed agreements)

#### 3.1 The state of Water Resources in Tanzania

Following completion of most of the IWRMD Plans, the Ministry has compiled the status of water availability in Tanzania. This exercise considered all the Internally produced Renewable Water Resources (IRWR<sup>5</sup>) and not the Globally produced Renewable Water Resources

---

<sup>5</sup> IRWR is the average annual flow of rivers and recharge of groundwater generated from rain falling within the borders of the country.



(GRWR<sup>6</sup>). Previous reports has shown a decreasing trend in the total surface and groundwater renewable freshwater resources from 2000 to 1950 m<sup>3</sup>/cap/yr between the year 2012 and 2014 (Water Sector Status Report of 2015). However, the recent comprehensive assessments<sup>7</sup> of the water resources in the 9 basins, revealed more water resources that were not considered initially due to limited information. In this regard, the current total national annual renewable water resources amounts to 126,262 MCM per year which combines groundwater (21,195 MCM) and surface water (105,067 MCM) . This estimate is equivalent to an average of 2,330 m<sup>3</sup>/cap/yr which is above the globally agreed Falkenmark Water Stress Indicator of 1700 m<sup>3</sup>/cap/yr. In addition, this comprehensive assessment of river basins renewable water resources has also revealed a high spatial variation across the country (Figure 3-1). While four of the basins are endowed with abundant water resources, others already face stress (Figure 3-1). However, because other basins have water quantities way beyond their current demand, it can safely be concluded that Tanzania faces economic<sup>8</sup> water scarcity but endowed abundantly on physical one.

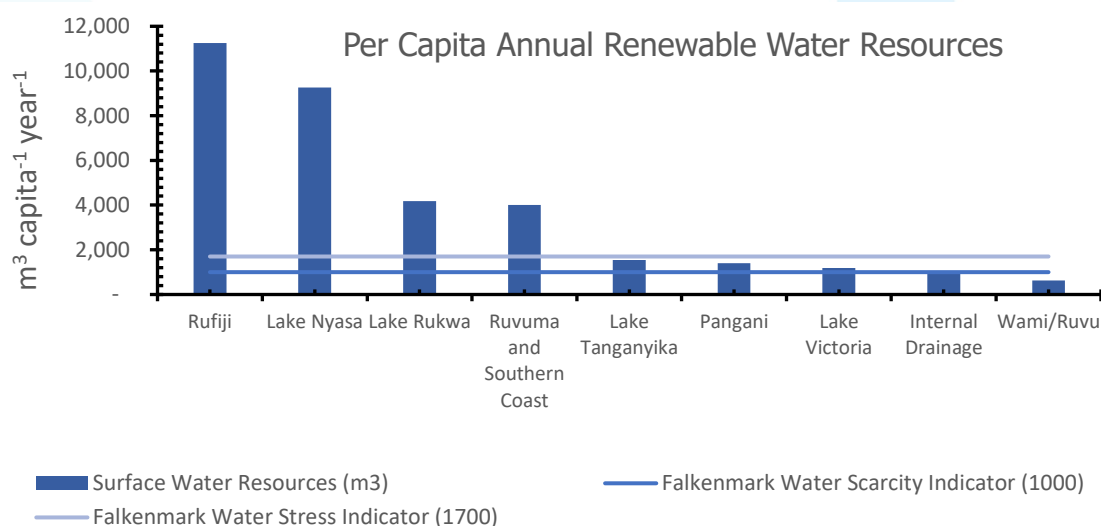


Figure 3-1: Per Capita Annual Renewable Water Resources for Basins in Tanzania 2018

<sup>6</sup> GRWR is the long-term average precipitation minus long-term average evapotranspiration plus long-term average incoming flow originating outside the country/region/basin. External RWR (ERWR) is the part of the renewable water resources coming from outside the country or shared with neighboring countries.

<sup>7</sup> Ministry of Water (2019): Consultancy Services for Consolidation of Data, Information and Models from the Integrated Water Resources Management and Development Plans and Preparation of Requirements Specific for WRIS and Web Portal. Interim Report, Dodoma

<sup>8</sup> Economic water scarcity is considered to occur when renewable water resources are adequate but where there is a lack of significant investments in water infrastructure in order to make these resources available (Rijsberman, 2006)



Total annual renewable water resources per capita as presented here describes the amount of water available to sustain the ever growing population. Historical assessment of per capita total annual renewable water resource in Tanzania is carried retrospectively using the current total annual RWR of 126,262 MCM and rationing it across to 1967 population to 2018 population (NBS data). This implies that, assumptions are made that the past RWR were the same as the current water resources ( $126 \text{ km}^3$ ). In reality, this is an underestimation of the actual amount of annual RWR, since the country had much more pristine watersheds than we currently have, and is therefore expected to have had much more than  $126 \text{ km}^3$  RWR by 1967. Furthermore, 2035 projections shows that tanzania will be under water scarcity category (Figure 3-2).

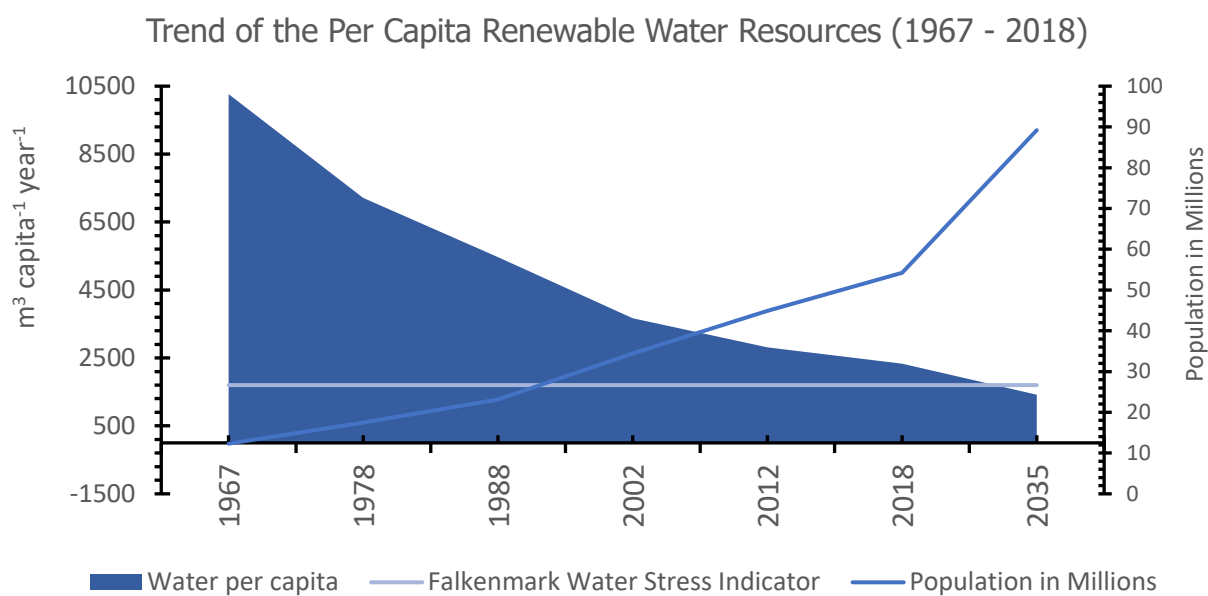


Figure 3-2: Tanzania per capital annual renewable water resources trend as population increases from 1967 to 2018 (MoW)

### 3.1.1 Surface Water Resources

Water resources management in Tanzania are managed through hydrologic basins which are considered to be the lowest appropriate level of water resources accounting. These river and lake basins are: Pangani, Wami-Ruvu, Rufiji, Ruvuma and the Southern Coast, Lake Nyasa, the Internal Drainage basins of Lake Eyasi, Manyara and Bubu depression, Lake Rukwa, Lake Tanganyika and Lake Victoria (Figure 3-3 illustrates).



## Status of Major Rivers

Generally most of the rivers in Tanzania are perennial in nature, while others are intermittent or ephemeral rivers. Presented in this section are the annual mean flows (as of end of 2019) and length of major rivers in Tanzania. Data shows that the longest river in Tanzania is the Ruvuma, while the river with the largest drainage basin and flow is the Rufiji River (Table 3-1). Table 3-2 presents selected sub-basins and catchment contributions to the outflows. Data shows that some of the catchments like the Upper Ruvu catchment, Kilombero (Rufiji) and upper Ruvuma, have substantial contributions to the total flows of their respective basins. These requires additional efforts to sustain their flows.

**Table 3-1: Mean Annual Flows of Major Rivers**

| SN | River                      | Basin         | Length in Km | Flows (MCM/yr) |
|----|----------------------------|---------------|--------------|----------------|
| 1  | Ruvuma                     | Ruvuma        | 800          | 9,240          |
| 2  | Rufiji at Steiglers Gorge  | Rufiji        | 600          | 22,250         |
| 3  | Kilombero at Swero         | Rufiji        |              | 14,470         |
| 4  | Pangani at Hale            | Pangani       | 500          | 627            |
| 5  | Wami (at Manderu)          | Wami-Ruvu     | 490          | 3,280          |
| 6  | Ruvu (Moro Bridge)         | Wami-Ruvu     |              | 1,370          |
| 7  | Malagarasi at Taragi Ferry | L. Tanganyika | 475          | 5,060          |
| 8  | Ruhuhu at Kikonge          | Lake Nyasa    |              | 5,600          |
| 9  | Kiwira (at Kyela)          | Lake Nyasa    |              | 1,900          |
| 10 | Kagera at Kyaka            | Lake Victoria | 370          | 7,064          |
| 11 | Mara ta Mara Mine          | Lake Victoria |              | 1,971          |

Source: MoW

**Table 3-2: Annual Average Flows (million m3/year; MCM or billion m3/year; BCM) of sub-catchments of Selected River Basins of Tanzania**

| <b>Lake Tanganyika Basin</b> |                  |               | <b>Wami-Ruvu Basin</b> |                 |               |
|------------------------------|------------------|---------------|------------------------|-----------------|---------------|
| SN                           | River Catchment  | Flow (MCM/yr) | SN                     | River Catchment | Flow (MCM/yr) |
| 1                            | Malagarasi       | 2,798         | 1                      | Upper Ruvu      | 1,223 (31%)   |
| 2                            | Ugalla           | 1,055         | 2                      | Wami            | 1,120 (28%)   |
| 3                            | Lugufu           | 798           | 3                      | Mkondoa         | 788           |
| 4                            | Luiche           | 742           | 4                      | Kinyasungwe     | 312           |
| 5                            | Ruchugi          | 551           | 5                      | Lower Ruvu      | 220           |
| 6                            | Luegele          | 389           | 6                      | Coast           | 210           |
| 7                            | Other Catchments | 4,185(40%)    | 7                      | Ngerengere      | 115           |

| <b>Rufiji Basin</b> |                 |               | <b>Ruvuma Basin</b> |                    |              |
|---------------------|-----------------|---------------|---------------------|--------------------|--------------|
| SN                  | River Catchment | Flow (BCM/yr) | SN                  | River Catchment    | Flow MCM/yr) |
| 1                   | Great Ruaha     | 3,300         | 1                   | Upper Ruvuma       | 2,672 (62%)  |
| 2                   | Kilombero       | 13,800 (62%)  | 2                   | Likonde            | 2,704 (62%)  |
| 3                   | Luwegu          | 4,000         | 3                   | UpperMiddle Ruvuma | 1,584        |
| 4                   | Lower Rufiji    | 1,100         | 4                   | LowerMiddle Ruvuma | 1,638        |
|                     |                 |               | 5                   | Lower Ruvuma       | 644          |

Status of Major Lakes

The freshwater reserve of Tanzania in the form of major Lakes stores approximately 29,425 km<sup>3</sup> of all the world’s freshwater resources. This is about 25% of the world’s (fresh) surface water (*Figure 3-4*). Basing on water level from mean seal level, these water bodies are believed to have maintained their capacities (*Table 3-3* gives a summary). *Figure 3-5* gives an example of water levels stability for Lake Victoria whose water levels (amsl) indicate an increasing trend. Data trends for other major lakes were not readily available.

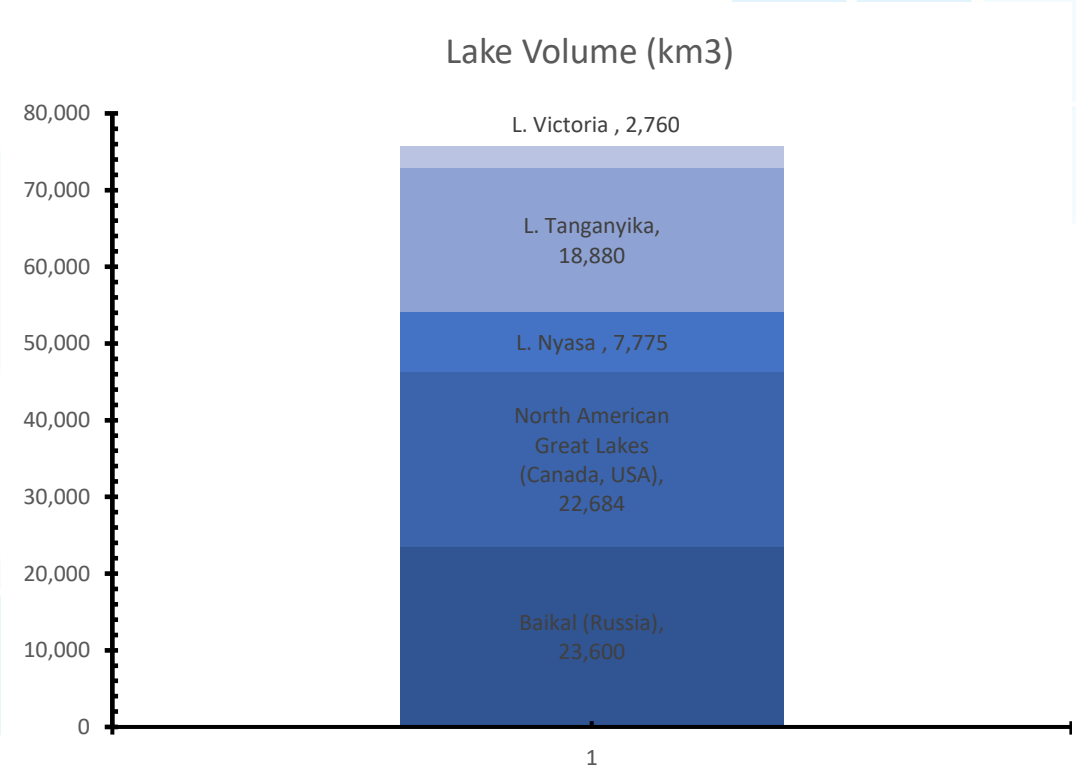


Figure 3-4: Water Volumes of the largest freshwater lakes of the World



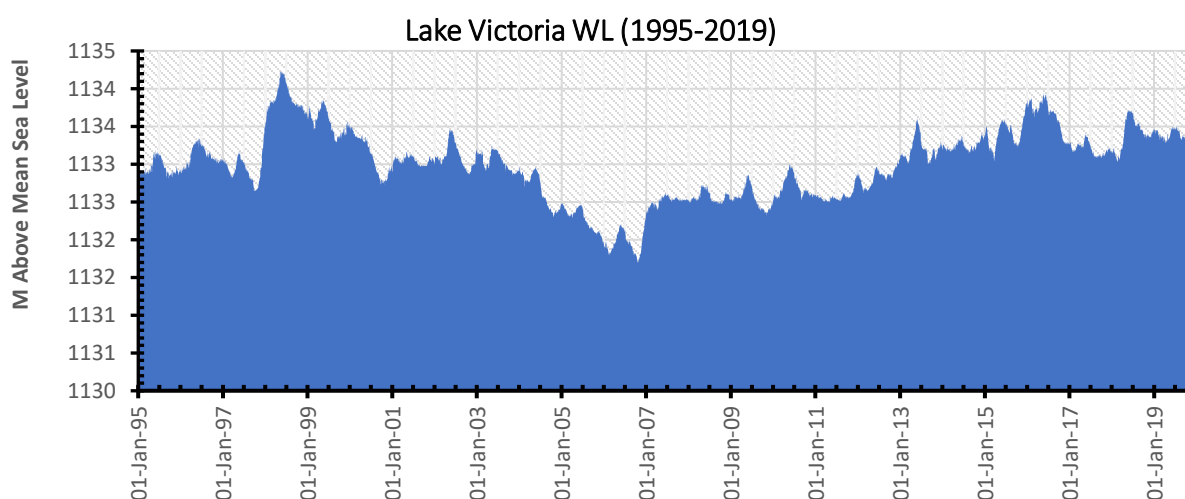


Figure 3-5: Water Levels of Lake Victoria showing an increasing trend between 2006 and 2019

Table 3-3: Water Levels (masl) of Major Lakes of Tanzania

| Name of the Lake | 2015/2016 | 2016/2017 | 2017/2018 | Long Term Average |
|------------------|-----------|-----------|-----------|-------------------|
| Lake Victoria    | 1133.9    | 1133.2    | 1133.4    | 1133.1            |
| Lake Tanganyika  | 774.8     | 775       | 774.6     | 774.1             |
| Lake Rukwa       | 810       | 801.2     | 801.1     | 800.1             |
| Lake Nyasa       | 476.6     | 476.3     | 476.6     | 477.7             |

### Status of Major Dams

Tanzania has ample storage of water in dams, most of which are man-made. The Ministry has successfully monitored the dams and their capacities over the years. Of the 600 dams that are in Tanzania, 20 have the capacity that exceeds 1,000,000 m<sup>3</sup>, as detailed in the *Table 3-4*. Six of these dams are currently used for Hydroelectric Power Generation in the country, generating a total of about 561MW (*Table 3-4*). Periodic monitoring of the status of water levels in major dams in the recent past is presented in the *Table 3-4*, while the water level time series for selected dams is presented in *Figure 3-6*. Electricity generation is highly dependent on the reservoir water levels. Generally, the water levels in the selected dams have been above the minimum operational level for most of the time, except for Nyumba ya Mungu and Mtera dam whose water levels were below operational levels for few years, most likely due to extensive water abstractions in the previous equally dry seasons.

Table 3-4: Major Dams Water Levels (masl)

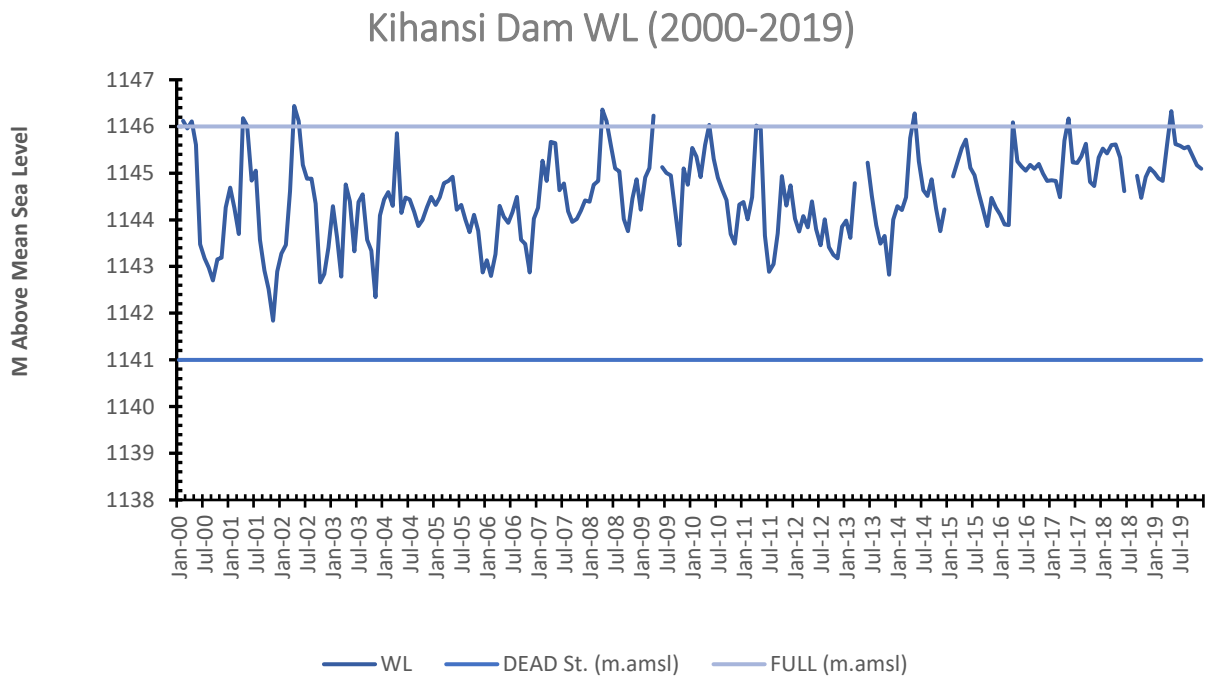
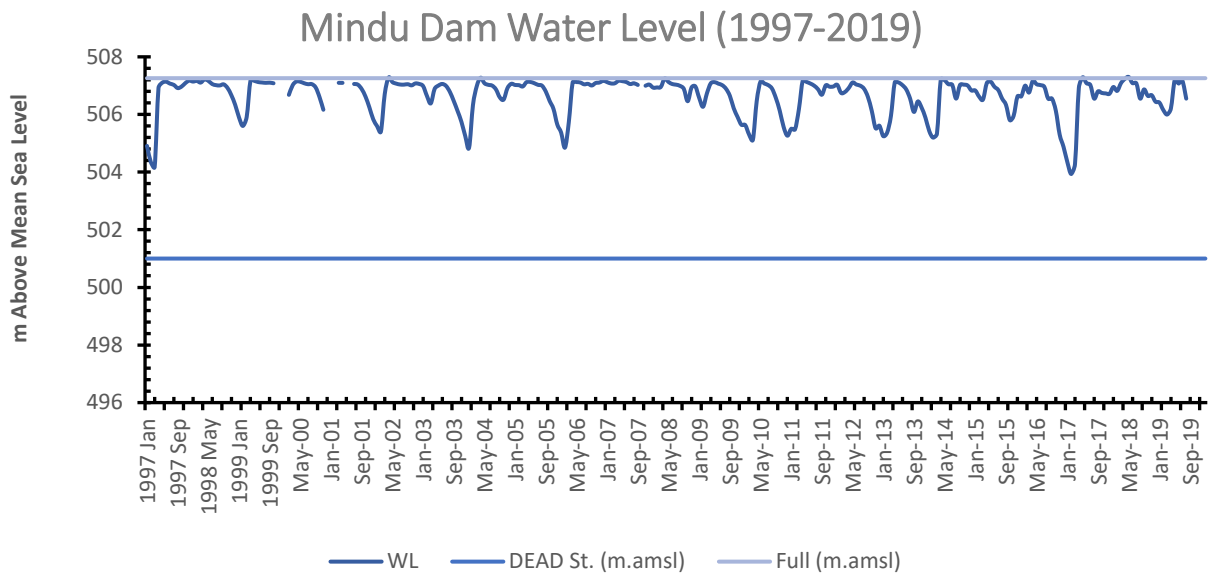
| Name of the Dam                  | 2015/<br>2016 | 2016/ 2017 | 2017/ 2018 | Long Term<br>Average |
|----------------------------------|---------------|------------|------------|----------------------|
| <b>Nyumba ya Mungu (Pangani)</b> | 684.2         | 683.6      | 687.3      | 685                  |
| <b>Mabayani (Pangani)</b>        | 88.5          | 82         | 84         | 83.3                 |
| <b>Mtera (Rufiji)</b>            | 694.7         | 693.1      | 693.6      | 693.5                |
| <b>Kidatu (Rufiji)</b>           | 447.4         | 448.8      | 443.3      | 447.4                |
| <b>Kihansi (Rufiji)</b>          | 1144.9        | 1145.2     | 1142.3     | 1145.8               |
| <b>Mindu (Wami-Ruvu)</b>         | 507           | 505.9      | 506.9      | 506.6                |

Source: MoW

Table 3-5: A summary of Major dams and their respective Storage Capacities

| S/N | Dam                       | Design Storage<br>Capacity (m <sup>3</sup> ) | Region          | HEP Installed<br>Capacity (MW) |
|-----|---------------------------|----------------------------------------------|-----------------|--------------------------------|
| 1   | Mtera                     | 3,800,000,000                                | Iringa & Dodoma | 80                             |
| 2   | Nyumba ya Mungu           | 1,135,000,000                                | Kilimanjaro     | 8                              |
| 3   | Kidatu                    | 125,000,000                                  | Morogoro        | 204                            |
| 4   | Igombe                    | 40,722,000                                   | Tabora          |                                |
| 5   | Mwamapuli                 | 28,170,000                                   | Tabora          |                                |
| 6   | Ulyanyama                 | 21,000,000                                   | Tabora          |                                |
| 7   | Manchira                  | 14,000,000                                   | Mara            |                                |
| 8   | Mindu                     | 13,000,000                                   | Morogoro        |                                |
| 9   | Myanji                    | 12,211,700                                   | Mara            |                                |
| 10  | Ning'wa                   | 10,600,000                                   | Shinyanga       |                                |
| 11  | Mabayani                  | 7,700,000                                    | Tanga           |                                |
| 12  | New Dodoma                | 4,200,000                                    | Dodoma          |                                |
| 13  | Kilimi                    | 3,500,000                                    | Tabora          |                                |
| 14  | Mindukeni                 | 3,120,000                                    | Morogoro        |                                |
| 15  | Irienyi-1                 | 2,750,000                                    | Mara            |                                |
| 16  | Kihansi                   | 1,660,000                                    | Iringa          | 180                            |
| 17  | Mandela                   | 1,000,000                                    | Tanga           |                                |
| 18  | Kyarano                   | 1,000,000                                    | Mara            |                                |
| 19  | Nang'olola                | 1,000,000                                    | Shinyanga       |                                |
| 20  | Mwanyahina                | 1,000,001                                    | Shinyanga       |                                |
| 21  | New Pangani Falls         | 800,000                                      | Tanga           | 68                             |
| 22  | Hale                      | 200,000                                      | Tanga           | 21                             |
|     | Total Storage<br>Capacity | 5,227,633,701                                |                 |                                |

Source (MoW)



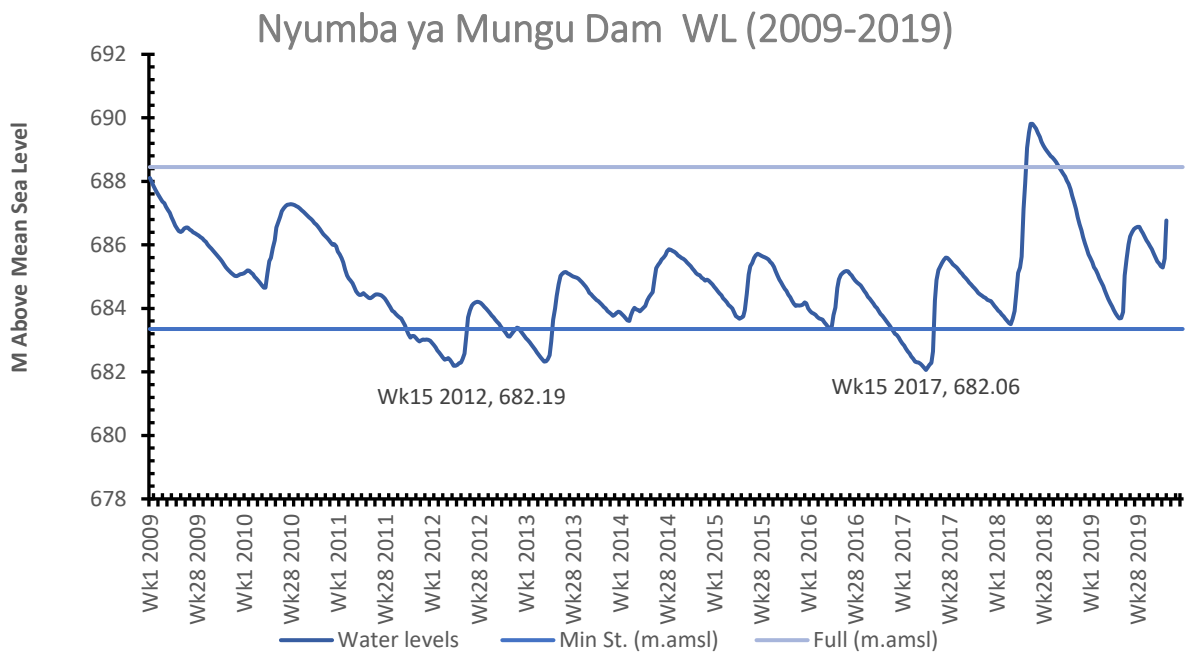
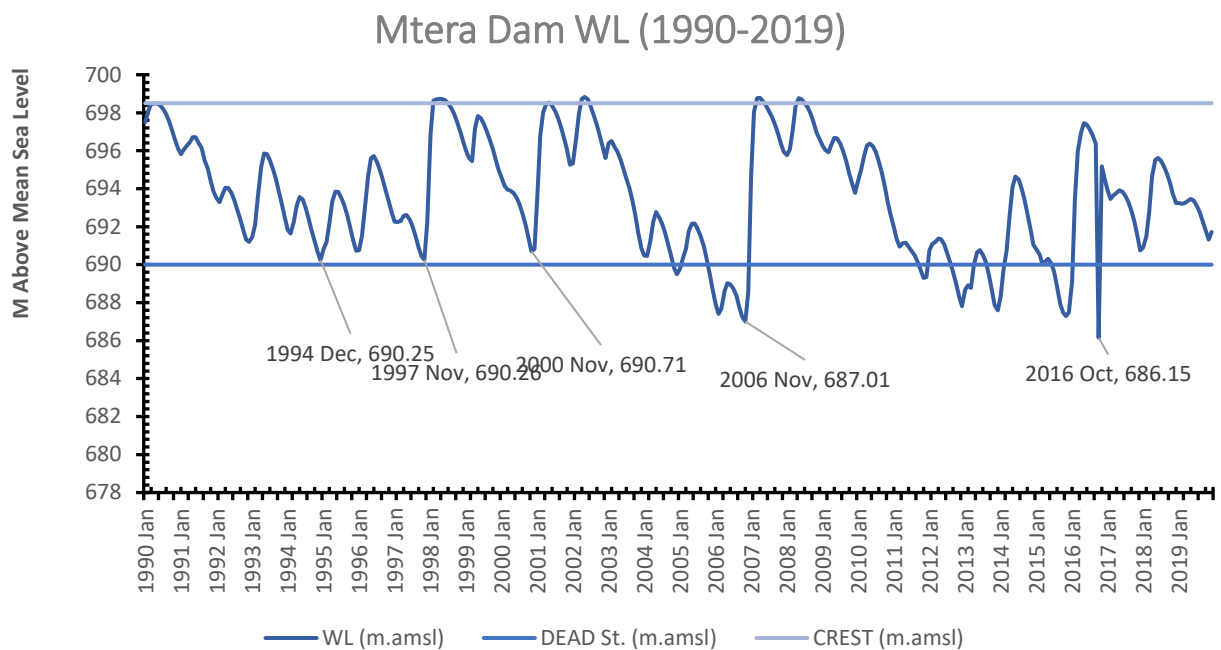


Figure 3-6: Water levels for Major Dams in Tanzania showing a negligible fluctuation



### 3.1.2 Groundwater Resources

The status of the groundwater resources of Tanzania has not been fully assessed – only patchy studies has been done or is ongoing. In this regard, the national wide potential is believed to be highly variable due to high variability of geological formations. High potential is expected in the weathered and fractured bedrocks, unconsolidated sediments and volcanic rocks which forms only 25%. However, 75% of the country is overlain by Pre-Cambrian crystalline basement complex that are generally barren in nature (Kashaigili, 2010)<sup>9</sup>. Owing to this, the larger part of Tanzania has aquifers with low productivity (*Figure 3-7*).

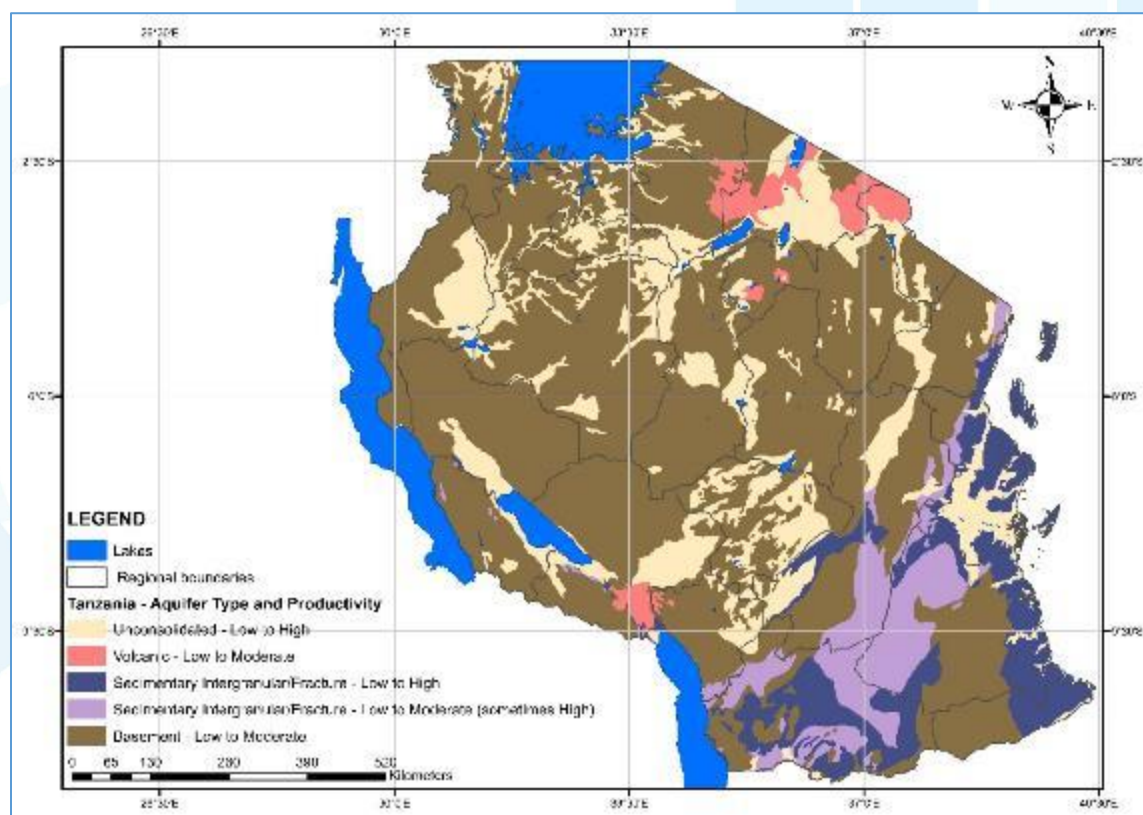


Figure 3-7: Map of Tanzania illustrating spatial distribution of major aquifers and their Productivity

<sup>9</sup> Kashaigili, J. J. (2010). *Assessment of groundwater availability and its current and potential use and impacts in Tanzania*. IWMI.

## Groundwater Recharge Status

Compilation of data to establish recharge also suffers the availability of data and lacking studies. The available data was carried out by Jica in 2002 (*Table 3-6*) and shows that average annual recharge is 4 mm (about 0.4% of annual average rainfall) and translates to about 3,725 MCM. An old study on Makutupora basin by (Shizuo Shindo, 1989) (S Shindo, 1991); (J. Kashaigili, Mashauri, & Abdo, 2003) estimates recharge flux at 5 to 10 mm/year (about 1.3% of average precipitation). Similar study in quaternary sediment aquifers of Dar es Salaam was carried out by Mjema & Walraevens, 2015 and indicates high recharge flux between 0 and 570 mm/year with average recharge estimates for the period of 1971 to 2006 being 121.7 mm/year. Meyboom, 1961 estimates 10 percent groundwater recharge in many areas to be the maximum that can be expected, but that in other localities the percentage recharge may well fall to 4 percent or even below.

**Table 3-6: Groundwater recharge calculation for each basin [Source: Jica 2002]**

| No      | Drainage Basin | Catchment Area (km <sup>2</sup> ) | Inflow<br>Annual Mean Rainfall* (mm) | Outflow<br>Annual Mean Runoff* (mm) | Evapotranspiration from the basin ** (mm) | Groundwater Recharge *** (mm) |
|---------|----------------|-----------------------------------|--------------------------------------|-------------------------------------|-------------------------------------------|-------------------------------|
| I       | Pangani        | 56,300                            | 1,001.90                             | 31.5                                | 966                                       | 4                             |
| II      | Wami/Ruvu      | 72,930                            | 765.1                                | 51.7                                | 710                                       | 3                             |
| III     | Rufiji         | 177,420                           | 988.3                                | 185.9                               | 799                                       | 3                             |
| IV      | Ruvuma         | 103,720                           | 1,050.00                             | 20.5                                | 1,028                                     | 2                             |
| V       | L. Nyasa       | 39,520                            | 1,672.50                             | 344.6                               | 1,324                                     | 4                             |
| VI      | IDB            | 153,800                           | 619                                  | 36.6                                | 577                                       | 5                             |
| VII     | L. Rukwa       | 88,180                            | 1,095.00                             | 104.5                               | 985                                       | 6                             |
| VIII    | L. ...         | 151,900                           | 1,173.60                             | 124.7                               | 1,045                                     | 4                             |
| IX      | L. Victoria    | 79.57                             | 1,111.10                             | 18.6                                | 1,087                                     | 6                             |
| Average |                |                                   | <b>1,053</b>                         | <b>102</b>                          | <b>947</b>                                | <b>4</b>                      |

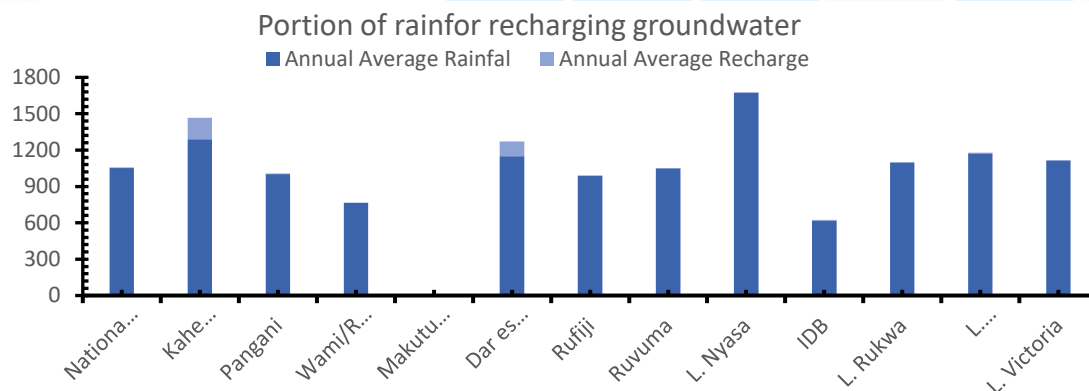


Figure 3-8: Graphical comparison of annual precipitation and groundwater recharge [Drawn from using data from Jica, 2002, Mjema and and Walraevens, 2015]

### Groundwater Demand Status

The demand for groundwater resources use is on the increase especially for domestic water supply followed by other uses such as irrigation. The implementation of NWSSP for domestic supply in urban and rural settings (which are the largest users of groundwater) was estimated to consume 755,000 m³/day (60% of total use) against demand of 0.8 to 3.4 MCM/day (Kongola, 2008; DWR, 2010). These infrastructures are operated using submersible electric pumps (diesel, electricity and a growing use of solar panels), hand pumps and wind mill. However, these systems suffer functionality issues for a number of reasons including oversight capacity, expenses borne from water extraction method and tariff arrangements. Irrigation for sugarcane, flowers, vegetables and fruits such as grapes consumes 130,000 m³/day (10%) while mining and industrial use consume about 30,000 m³/day (2%). Livestock and others such as dry land fishing use about 350,000 m³/day (28%). The total groundwater use is about 1.265 MCM/day which is about 12% of available groundwater resources (11 MCM/day) (DWR, 2010 – working reports).

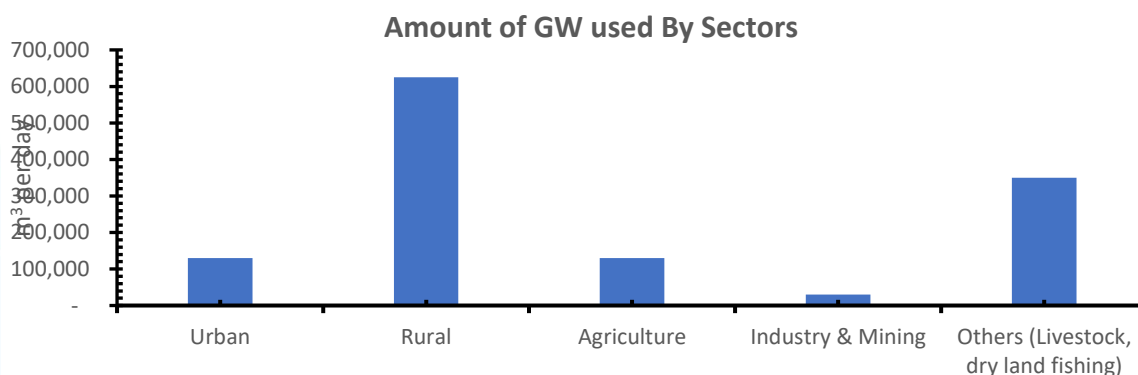
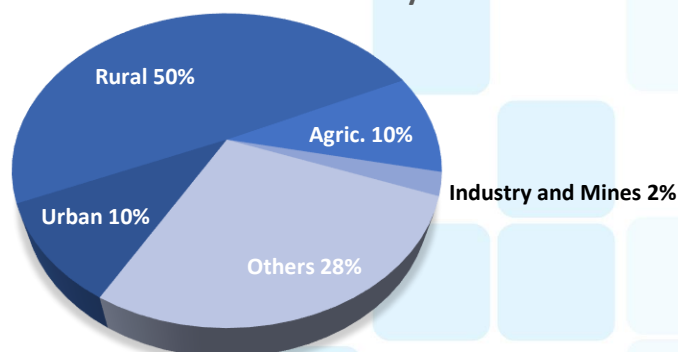


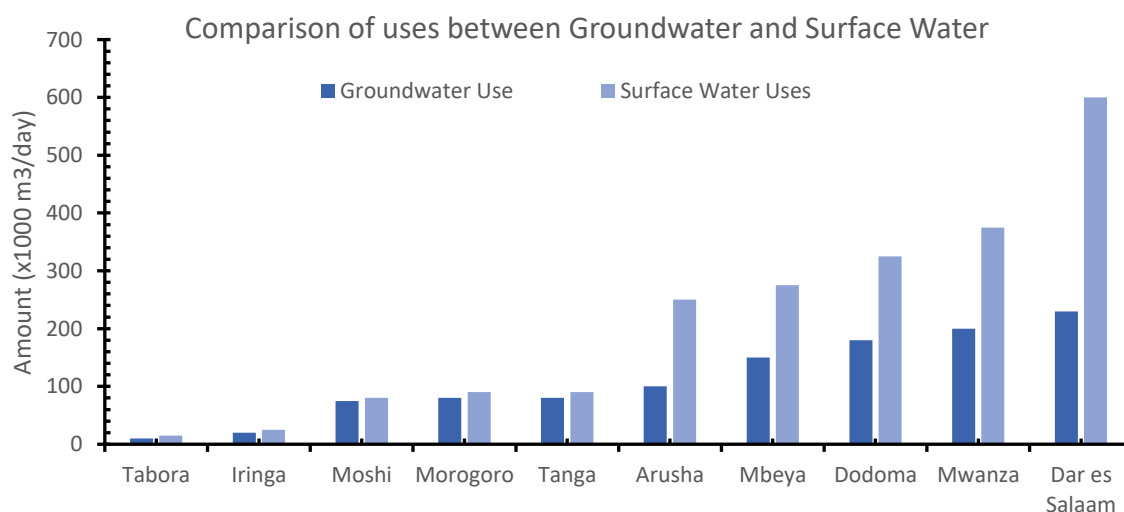
Figure 3-9: Volumes of groundwater consumed by sectors (Modified after DWR, 2010)

**% Share of Groundwater use by Sectors**



*Figure 3-10: Percentage share of consumption by different sectors (Modified after DWR, 2010)*

Groundwater utilization for industrial use is more concentrated in urban areas, especially Dar es Salaam where about 80% of the industries are located. Due to inadequate water supplies many industries have opted for constructing private wells to augment surface water supply. Industries in Dar es Salaam, like Tanzania Breweries Ltd. (TBL), Tanzania Cigarette Company (TCC), Friendship Textile (Urafiki), Ubungo Farm Implements (UFI), Kibuku, Mpishi, and Tanzania Portland Cement factory (TPC - Wazo Hill) etc, have private wells (DDCA, 2001). The list is rapidly increasing, and similar trends are observed in Arusha, Mwanza and Mbeya City municipality (DDCA, 2001).



*Figure 3-11: Role of Groundwater in different major cities in Tanzania (Modified after Mato, 2002)*



### 3.2 Water Resources Utilization and Allocation in Tanzania

Most socio-economic activities in the River basins are supported by surface water resources. Analysis of the permits is summarized hereafter in Table 3-7: Proportion of Surface Versus Groundwater Allocation for each River Basin. No information on the source (groundwater or surface) of the issued water use permits is provided in Rufiji and Rukwa. Therefore, except for these two, most of the socio-economic activities in the various River basins, are supported by the surface water resources. IDB has the greatest percentage of groundwater use.

In addition, the ministry has compiled water demand by sector basing on the IWRMD preparation processes and noted the following share of water resources: Domestic (1,686 MCM), Irrigation (10,500 MCM), Hydropower (13,062 MCM), Livestock & Aquaculture (395 MCM), Industries & Mining (445 MCM) and Ecosystem & Wildlife (50,627 MCM).

**Table 3-7: Proportion of Surface Versus Groundwater Allocation for each River Basin**

| IDB                                            |                                                |
|------------------------------------------------|------------------------------------------------|
| Groundwater                                    | Surface Water                                  |
| Total Allocated Quantity (m <sup>3</sup> /day) | Total Allocated Quantity (m <sup>3</sup> /day) |
| 143,089                                        | 829,156                                        |
| 15%                                            | 85%                                            |

| Wami/Ruvu                                      |                                                |
|------------------------------------------------|------------------------------------------------|
| Groundwater                                    | Surface Water                                  |
| Total Allocated Quantity (m <sup>3</sup> /day) | Total Allocated Quantity (m <sup>3</sup> /day) |
| 185,567                                        | 5,103,814                                      |
| 4%                                             | 96%                                            |

| Pangani                                        |                                                |
|------------------------------------------------|------------------------------------------------|
| Groundwater                                    | Surface Water                                  |
| Total Allocated Quantity (m <sup>3</sup> /day) | Total Allocated Quantity (m <sup>3</sup> /day) |
| 814,379                                        | 14,252,095                                     |
| 5%                                             | 95%                                            |

| Lake Victoria                                  |                                                |
|------------------------------------------------|------------------------------------------------|
| Groundwater                                    | Surface Water                                  |
| Total Allocated Quantity (m <sup>3</sup> /day) | Total Allocated Quantity (m <sup>3</sup> /day) |
| 49,434                                         | 46,913,785                                     |
| 0%                                             | 100%                                           |

| Lake Nyasa                                     |                                                |
|------------------------------------------------|------------------------------------------------|
| Groundwater                                    | Surface Water                                  |
| Total Allocated Quantity (m <sup>3</sup> /day) | Total Allocated Quantity (m <sup>3</sup> /day) |
| 22,293                                         | 307,732,085                                    |
| 0%                                             | 100%                                           |

| Lake Rukwa                                     |  |
|------------------------------------------------|--|
| Ground & Surface Water                         |  |
| Total Allocated Quantity (m <sup>3</sup> /day) |  |
| 3,148,809                                      |  |

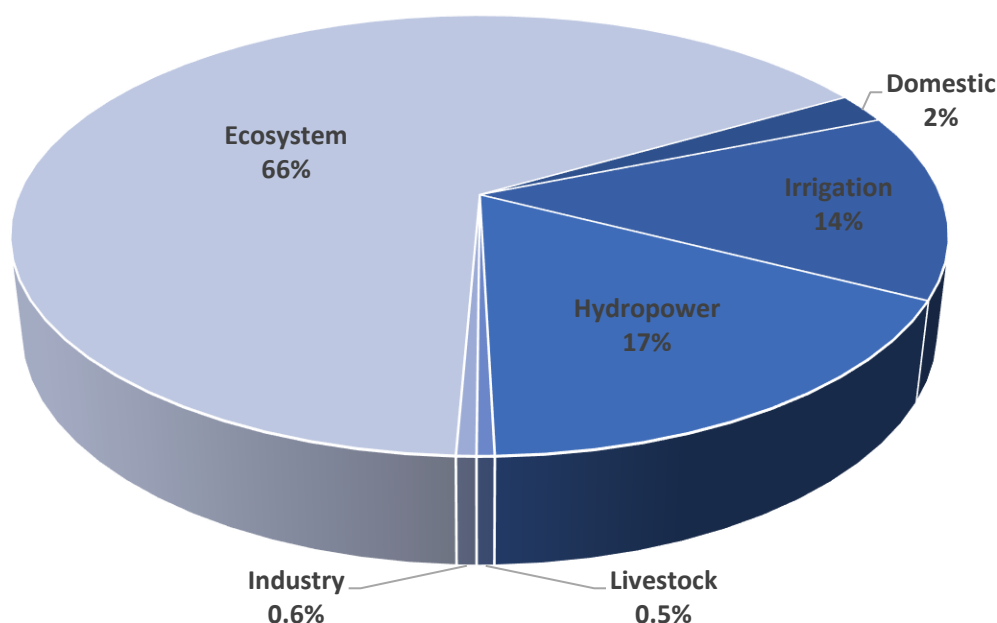


Figure 3-12: Water demand by sector [MoW,2019]

### 3.3 Implementation Status of IWRMD Plans

#### 3.3.1 Status of operationalization and Implementation of IWRM: December 2019

IWRM Implementation differs across the basins in Tanzania. Whereas six of the basins have completed planning process including ESIA for the same, Pangani, Lake Victoria and Wami-Ruvu basin are at preparation stage with the latter at almost complete stage. Implementation of these plans are being carried out through the legal and institutional framework as described in section 2.3.3 detailing the hierarchy from national to water user level. While IWRM elements have already been institutionalized at National level, implementation progress differs among basins. As of December, 2019, all nine Basin Water Boards were operational as per WRMA of 2009. Furthermore, implementation of strategic projects proposed in IWRMD plans are at different stages from initial studies (e.g. Ndembera dam) through compensation (e.g. Farkwa dama) and some at construction stage (e.g. Nyerere HEP project in Rufiji Basin). Table 3-8 give a summary of some of the big strategic proposals extracted from IWRMD Plans.

*Table 3-8: Some of the implemented/planned priority water resources infrastructure between 2015-2020*

| Basin  | Project Description                                                                                                                                                                                                                                                                                                                                                                                                                               | Value (Tshs)       |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Rufiji | Stiegler's Gorge Hydroelectric Power Plant<br>SESA done<br>Feasibility done<br>Procurement Process                                                                                                                                                                                                                                                                                                                                                | USD 3.9 billion    |
| Rufiji | Lugoda dam and Maluluma Hydro-electric power station on Ndembera River<br><br>The Storage capacity of the Lugoda dam reservoir is approximately 347 million m <sup>3</sup>                                                                                                                                                                                                                                                                        | USD 120,000,000    |
| IDB    | Farkwa dam construction in Dodoma                                                                                                                                                                                                                                                                                                                                                                                                                 | USD 98,525,000     |
| IDB    | Farkwa Conveyance System to Dodoma municipality, Chemba, Bahi and Chamwino district councils in Dodoma region.                                                                                                                                                                                                                                                                                                                                    | USD 321,475,000    |
| IDB    | Rehabilitation of 4 Dams i.e.<br><br>1. Engukment II Earth-fill Dam is located in Meserani Juu Village, Monduli District; Arusha Region<br>2. Makuyuni-Lemioni Earth-fill Dam is located in Makuyuni Village Moduli District; Arusha Region<br>3. Nkiniziwa Earth-fill dam is located in Nkiniziwa village, Nzega District; Tabora Region.<br>4. Nkiniziwa Earth-fill dam project is located at the Itobo village, Nzega District; Tabora Region. | TZS 3,000,000,000. |

### 3.3.2 Achievements in Stakeholder Participation in the Water Sector

Significant progress has been made towards establishing institutions and engaging stakeholders, as Tanzania forges ahead in achieving inclusive decision-making processes for IWRM implementation. The Ministry has facilitated formation of Catchment Water Committees, Water Users Associations (WUA) and Multi Sectoral Forums to create mechanism for stakeholders to support institutions for IWRM implementation. A total of 28 WUAs were formed during the reporting period making a total of 123 WUAs Appendix 3- 2 elaborates further. A national and nine basin level MSFs have also been formed.

### 3.3.3 Achievement in Establishing Water Resources Monitoring and Assessment

National monitoring of water availability is key for planning and making any informed decision. WSDP II targets for water resources monitoring include strengthening monitoring networks by increasing strategic hydro met station and observations wells. Currently, there are 794 monitoring stations in the country, as categorically elaborated in Table 3-9. The status of hydrometric stations in the country has remained more or less the same for the past 10 years, with the exception of Wami-Ruvu and Ruvuma Basin that show some improvement (*Figure 3-14*). Similarly, there have been limited efforts to increase the number of weather stations in the country. Only in Rufiji and Lake Victoria basin where slight increase in number is noted (*Figure 3-15*).

More attention needs to be focused on monitoring aquifer response to abstraction and contaminants releases onto the environment. For the past five years there has been hardly any attention given to establishment or rehabilitation of existing groundwater monitoring networks, with exception of one observation well installed in the Internal Drainage Basin (*Figure 3-16*). To this date, there are few basins that do not have any groundwater monitoring station. This makes accurate accounting of available groundwater resources and exploitation even more challenging. Some of the basins like Rukwa, Tanganyika and Nyasa, would benefit from rehabilitation of previously operational monitoring stations.

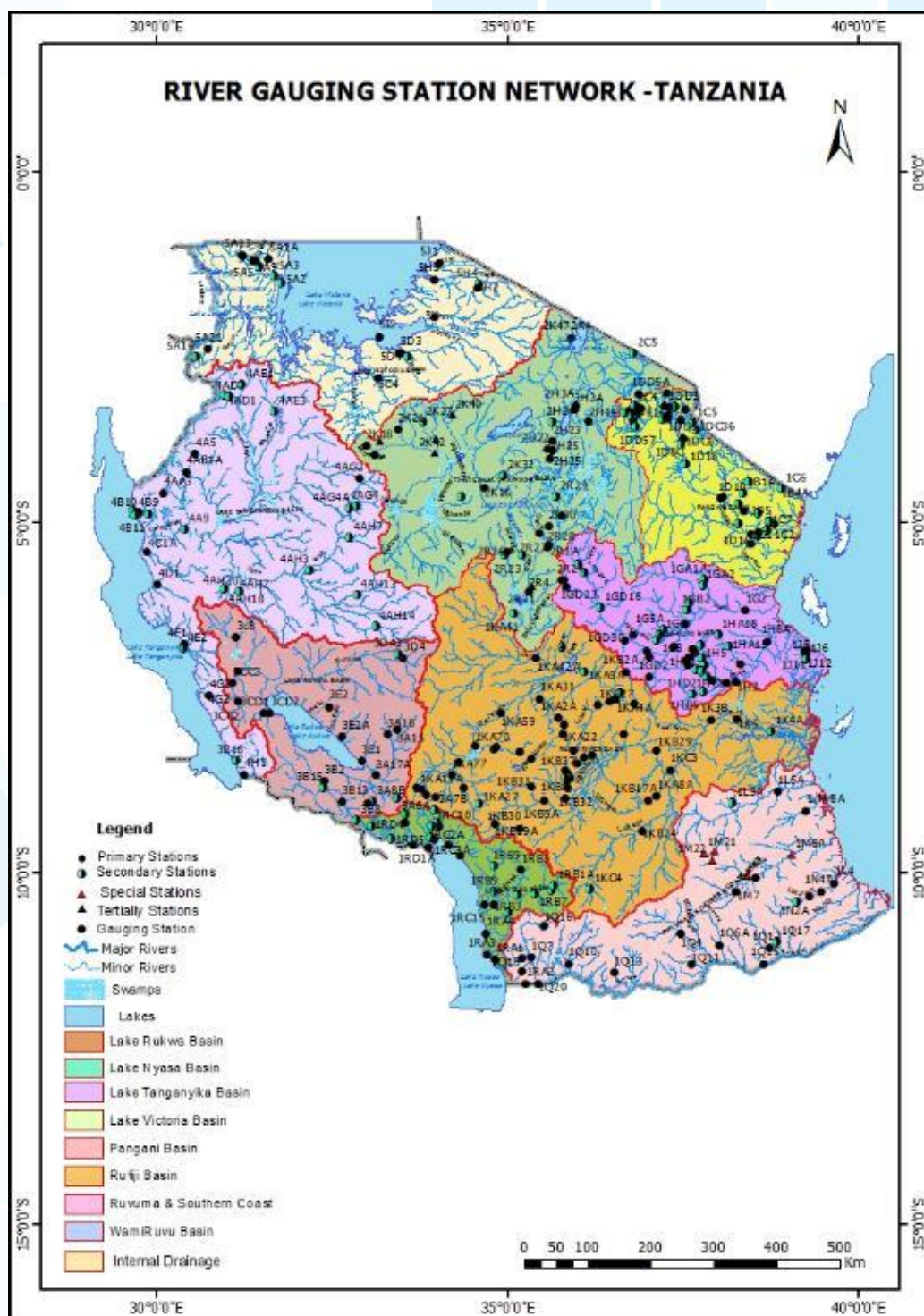


Figure 3-13: Coverage of the Hydromet Monitoring Stations in Tanzania



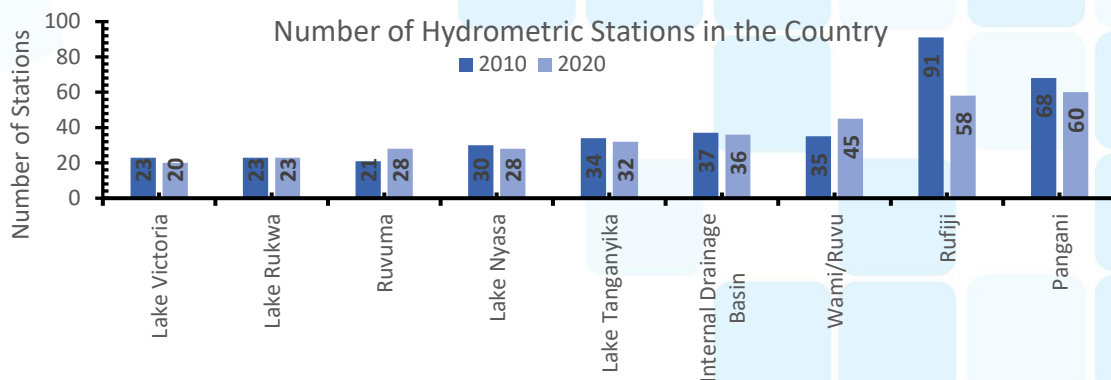


Figure 3-14: Number of Hydrometric Stations in the Country

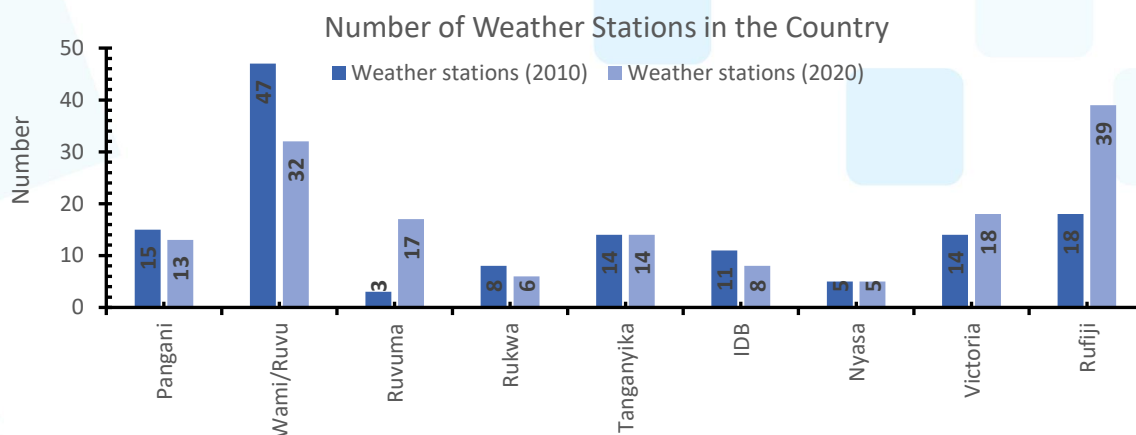


Figure 3-15: Number of Weather Stations in the Country

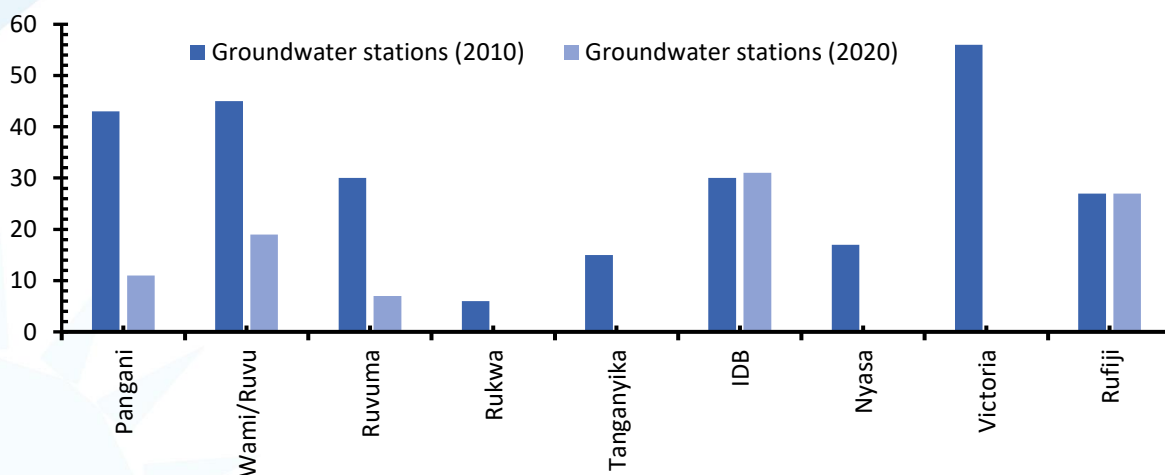


Figure 3-16: Number of Groundwater Monitoring Stations in the Country

Table 3-9: Total Number of Monitoring Stations in Tanzania

| Stations Category | River Gauging Stations | Rainfall Stations | Weather Stations | Groundwater Stations | Lakes | Dams | Total |
|-------------------|------------------------|-------------------|------------------|----------------------|-------|------|-------|
| Numbers in 2010   | 362                    | 289               | 135              | 269                  | N/A   | N/A  | 1055  |
| Numbers in 2015   | 321                    | 188               | 82               | 75                   | N/A   | N/A  | 666   |
| Number in 2020    | 330                    | 189               | 152              | 95                   | 17    | 11   | 794   |

Summary of achievements in maintaining/establishing monitoring station between 2015-2020 are summarized below:

- Construction of seven (11) water resources monitoring stations was done in Nyasa (5), Ruvuma (4) and Rufiji (2).
- Rehabilitation of nineteen (19) gauging station was done in Pangani (10), Wami/Ruvu(5), IDB (1) and Lake Victoria (3) while eight (8) weather stations were rehabilitated in Pangani (5), Lake Victoria (1) and Wami/Ruvu (2), also civil works were done for installation of data logger system in 10 river gauging station in Rufiji Basin.
- Installation of six (6) satellite dish was done to Mini Weather stations in order to obtain real time data from those EWAS stations constructed to capture weather data for observing climate change in Liwale Districts (Ruvuma Basin).

### 3.3.4 Progress Sources Conservation and Protection

Catchment degradation and water pollution have continued to be major challenges in water resources management. The goal of the policy direction “to prevent negative environmental impacts from human activity by ensuring water is used beneficially and efficiently and water related activities enhance or cause least detrimental effect to the natural environment” is to “adopt environmental protection and conservation measures that contribute to the sustainability of all aspects of water development, management and use”. The strategy adopted to achieve this goal in WSDP II is through the Basin Water Boards implementation of the following activities;

- (i) Continue with identification and demarcation of catchments, groundwater recharge areas, wetlands and water sources for protection
- (ii) Mapping and gazette potential water sources as water protected areas Table 3-10: Water Sources Gazzetted for Protection
- (iii) Compensation for demarcated water sources and resettlement of communities

- (iv) Strengthen cross-sectoral collaboration and promote stakeholders awareness and participation
- (v) Promote and encourage livelihood projects that reduce pollution and enhance conservation of water sources
- (vi) Engage politicians and influential groups to spearhead the agenda for protection and conservation of water sources at all levels
- (vii) Review and implement water quality and pollution control monitoring programs in all basins characterize (identify, determine levels and types of pollution and mapping) point and non-point sources of pollution
- (viii) BWBs in collaboration with key stakeholders to conduct research and studies to restore water sources (Rivers and groundwater potential zones).
- (ix) BWBs to conduct Environmental flow assessment (EFA)
- (x) Assessment of Rivers Health is carried out in major rivers during IWRMD plans preparation and implement the recommendations
- (xi) Water bodies' classifications and development of their associated protection rules. Development of standards in each classification that will be used to determine if the designated uses will be protected

**Table 3-10: Water Sources Gazzetted for Protection**

| Basin       | Name of Source              | Use/ Area | Area Demarcated                                             | Demarcated Area (m <sup>2</sup> ) |
|-------------|-----------------------------|-----------|-------------------------------------------------------------|-----------------------------------|
| Lake Rukwa  | Kawa dam in Katandala River | Domestic  | Nkasi                                                       | 2,200,000                         |
|             | Milala dam in Kausi River   | Domestic  | Mpanda                                                      | 2,300,000                         |
|             | Chokaa well                 | Domestic  | Mjiwa Chunya                                                | 95,928                            |
|             | Kidole well                 |           | Mjiwa Chunya                                                | 13,084                            |
|             | Kiswaga well                |           | Mjiwa Chunya                                                | 29,831                            |
|             | Matundasi A well            |           | Matundasi Village                                           | 7,794                             |
|             | Matundasi B well            |           | Matundasi Village                                           | 12,047                            |
|             | Mkola well                  |           | Makongolosi Village                                         | 200,000                           |
|             | Halewa/Swaya River          | Domestic  | Mwasanga Mbeya Town                                         | 16,226                            |
|             | Mfwizimo/Iziwa River        |           | Iziwa, Mbeya peak, Mbeya Town and Mpomu Village Mbeya Rural | 11,572                            |
|             | Nzowwe River                |           | Mwakibete Ward, Mbeya Town                                  | 260,000                           |
|             | Ivumwe River                |           | Mwakibete ward in Ivumwe street Mbeya                       | 118,000                           |
|             | Imeta River                 |           | Mwansekwa Ward Mbeya Town                                   | 178,000                           |
|             | Hanzya River                |           | Nsoho ward Mbeya Town                                       | 279,000                           |
|             | Mfwizimo/Lunji River        |           | Iziwa Mbeya Town                                            | 82,653                            |
|             | Sisimba River               |           | Iganzo village Mbeya                                        | 104,000                           |
| Wami - Ruvu | Mindu dam                   | Domestic  | Morogoro Municipal                                          | 4,000,000                         |
|             | Makutopora well-fiel        | Domestic  | Mzakwe, Mamba, Mchemwa and Gawaye                           | 85,000,000                        |

### 3.3.5 Achievements in Monitoring and Enforcement of Dam safety

Dam safety and flood management is also an important undertaking in Water Resources. To avoid future risks associated with dam failures, WSDP II emphasizes on monitoring the enforcement of dam safety regulations and guidelines; Monitoring of ongoing dams constructions and review dam designs and carrying out the inventory of dams in all basin water boards and updating the dam database, among many other things.

Of the activities carried out in this regard include site inspection for compliance. This is guided by regulations for Dam safety GN. 237 of 2013. The activity was carried out at North Mara Gold Mine for the purpose of verifying compliance after the stop order was issued by NEMC<sup>10</sup>. The inspection discovered improvements on the control of seepage and supervision of the facility which guided NEMC to withdraw the stop order. Other such inspections were conducted at the following sites:

- Tailing Storage Facility (TSF) owned by MMC limited (Mvomelo District and Musoma district) – a stop order was issued
- Stamigold company limited at Bukombe district in Geita region – a stop order was issued
- Geita Gold Mine – a stop order was issued on use of old TFS,

Other activities include; review of documents or Design reports and Site inspection for granting Dam Construction Permit: Three (3) permits were granted for construction of Tailing Storage Facility for Nholi Gold Mine Project in Bahi district, Lindi Jumbo Graphite Project in Ruangwa district, and Bulyanhulu Gold mine in Msalala district. Moreover, one (1) permit was granted for construction of Fine Residue Slime (FRS) Facility for Williams Diamond Ltd. Further the Ministry has made initiatives towards Registration of Approved Professional Personnel (APPs). Up to January, 2020; 11 Approved Professional Personnels (APP's) were registered after being complied and approved by the Engineer Registration Board (ERB.). Most importantly also, the MoW has spearheaded Awareness Creations on Dam Safety trainings (i.e. Farmers Field School refresher training). These were conducted to enhance stakeholder's awareness on dam safety. The training was held at Sokoine University of Agriculture in Morogoro. Also, presentation on Dam safety to high level management of the Ministry of Water was done at the Ministry of Water Conference room (Mtumba) and on workshop of mining sector financed by Mining Commission held in Dodoma.

The MoW periodically collect necessary data for dam management and registration. In this 2015-2020, data for 673 dams were collected from seven (7) Basin Water Board and classification were done based on capacity whereby 567 are classified as small dams, 79 medium dams and 27 big dams. All these dams they have a total capacity for water storage of

---

<sup>10</sup> Order issued on 20<sup>th</sup> July 2019 on uses of the Tailings Storage Facility (TSF) following non-compliance issues

5.45 Billion cubic meter. Apart from that, Rufuji River Basin Water Board leads by having 3.93 Billion cubic meter equal to 72% followed by Pangani River Basin Water Board which have 1.19 Billion cubic meter equal to 21% of the total capacity of all dams. Classification was based on the International Commission of Large Dams (ICOLD) and US Army Corps of Engineers' National Inventory of Dams (USACE 2000) where by small dams are less than 500,000 m<sup>3</sup>, medium dams 500,000-3,000,000 m<sup>3</sup> and large dams more than 3,000,000 m<sup>3</sup>.

### 3.3.6 Achievements in Water Quality Monitoring

In the last five years (2015 – 2020), the Ministry continued with implementation of Water Quality Management and Pollution Control Strategy. Assessment across the country indicates variations of water quality from one place to the other. These variations emanate from a number of factors including the state of natural rocks, human activities, geographical factors and climate changes. Through the assessment of 1,540 water samples of 2,250 planned across Tanzania mainland it was noted that, surface water is more prone to contamination with high levels of nitrogen, phosphorous and turbidity which introduced naturally or through human activities. In groundwater, high levels of salinity, acidity, nitrate, minerals such as Fluoride, Iron, Manganese and chloride were rife in most of the Regions and Districts.

However, generally, monitoring results show that, the quality of these water sources is still suitable for ecosystems and can also be developed and used after being treated according to the intended uses. Table 3-11 shows physico-chemical parameters and locations with waters of poor quality across the country. Moreover, the monitoring has indicated some of the parameters that are predominant in most water assessment. The contribution of these parameters to the challenges that the Ministry is facing with regard to pollution control is depicted in Figure 3-17.

**Table 3-11: The Physico-chemical parameters and locations with waters of poor quality across the country**

| Parameter | Affected Regions/Districts Areas                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low pH    | Dar es salaam (Ilala, Kinondoni, Temeke), Pwani (Kisarawe), Kigoma (Buhigwe, Kasulu, Kigoma MC, Kakonko, Kibondo), Katavi (Mpanda), Rukwa (Sumbawanga), Ruvuma (Songea), Kagera na Geita                                                                                                                                                                                                                                        |
| Hardness  | Dar es Salaam (Temeke, Kinondoni, Ilala) Dodoma (Mpwapa, Kongwa, Chamwino, Chemba), Singida (Singida Manispaa, Manyoni), Morogoro (Gairo, Morogoro, Morogoro MC, Mvomero), Pwani (Kibaha, Bagamoyo) Iringa (Iringa, Kilolo), Mbeya (Mbarali), Mara (Rorya, Musoma, Butiama, Serengeti, Bunda), Lindi (Lindi MC, Ruangwa, Nachingwea), Mtwara (Mtwara MC), Tanga (Korogwe, Mkinga), Rukwa (Sumbawanga), Songea, Kagera and Geita |



|                                                                            |                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fluoride (5-55 mg/L)                                                       | Arusha (Arumeru, Meru, Monduli, Ngorongoro, Arusha city), Manyara (Babati TC, Babati DC, Hanang, Simanjiro), Kilimanjaro (Siha, Hai, Moshi, Katavi (Mlele), Mwanza (Magu, Busega, Sengerema, Misungwi, Mwanza City, Kwimba), Singida (Singida, Iramba, Mkalama), Shinyanga (Shinyanga MC &DC), Mbeya (Busokelo) and Iringa (Kilolo) |
| Chloride<br>(998-1626 mg/L)                                                | Lindi (Lindi MC, Kilwa), Mtwara (Mtwara MC) Dar es Salaam (Temeke, Kinondoni, Ilala), Morogoro (Morogoro MC, Gairo), Pwani (Kisarawe, Bagamoyo), Tabora (Uyui), Kigoma (Kigoma), Geita (Nyan'hwale), Tanga (Korogwe, Mkinga, Tanga), Dodoma (Dodoma MC) and Pwani                                                                   |
| Nitrate<br>(168-347 mg/L)                                                  | Mwanza (Magu, Sengerema, ), Geita (Nyang'hwale), Singida (Ikungi, Iramba, Manyoni, Singida, Singida MC), Tanga, Iringa, Dodoma (Bahi, Chamwino, Chemba, Kondoa), and Dar es Salaam (Temeke, Kinondoni)                                                                                                                              |
| Sulphate                                                                   | Mtwara, Dodoma and Morogoro                                                                                                                                                                                                                                                                                                         |
| Iron (2-26 mg/L)                                                           | Mtwara (Mtwara MC, Tandahimba) Shinyanga, Mara (Serengeti), Kigoma (Buhigwe), Lindi (Liwale, Kilwa, Coast (Kisarawe), Dar es Salaam (Kinondoni, Ilala, Temeke), Tanga (Handeni, Muheza, Mkinga) and Singida (Manyoni)                                                                                                               |
| Manganese                                                                  | Dar es Salaam (Kinondoni), Lindi (Ruangwa, Nachingwea, Kilwa, Masasi, Liwale, Mtwara (Nanyumbu, Makondeko, Nanyamba), Simiyu (Maswa, Bariadi) na Manyara (Kiteto), Kigoma (Kigoma MC, Kasulu, Buhigwe, Kibondo, Kakonko) and Tabora                                                                                                 |
| Eutrophication                                                             | Lakes and Dams                                                                                                                                                                                                                                                                                                                      |
| Heavy Metal (Arsenic, Selenium, Copper, Cyanide, Nickel, Mercury and Lead) | Near mining sites (Mara, Geita, Mwanza and Shinyanga)                                                                                                                                                                                                                                                                               |

Ambient water quality for some of the water bodies is presented below. Specifically, Lake Victoria water quality has been monitored for a long period of time. The results show pollution levels are on the decrease. Total suspended Solids and Total phosphorous were decreased in 2016 when compared with the exercise conducted in 2014. This might be caused by activities taking place in the lake catchment. Although the Ministry has managed to process the stated number of samples, more efforts are underway to further clarify the sampling locations and pollutions levels in the efforts to further inform the public on the surface and groundwater quality, eutrophic conditions and sediment loading rates into our major lakes and reservoirs.

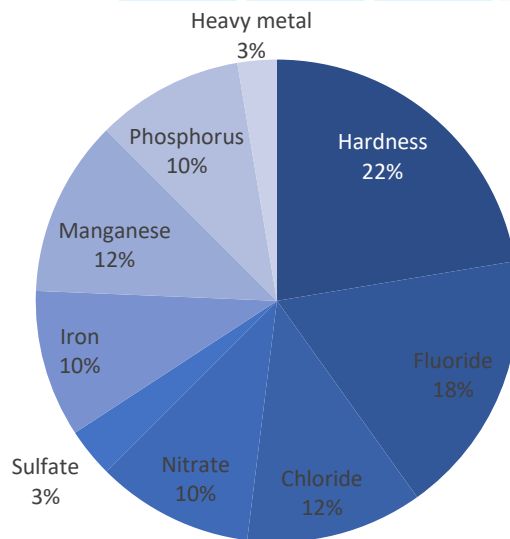


Figure 3-17: Percentage contribution to pollution of the assessed waters in the country

### 3.3.7 Improvements Made in Water safety compliance in Urban and Rural Areas

Regularly the Ministry assesses water safety compliance to the set physio-chemical and microbiological standards. As of reporting period 2015-2020, a total of 19,339 samples were collected and tested to reveal their compliance to Potable Water Specification: TZS 789:2016 – EAS 12:2014.

The Water Quality directorates reports that waters from the Urban Water Supply and Sanitation Authorities complied by 93.5% with the required standards for domestic purposes, while 6.5% were not complied with the standards for drinking water. Non-compliance was noted to mainly originate from the high levels of chemical and bacteriological parameters. The characteristic chemicals found in most of these waters include; Fluoride, Iron and manganese, while physical parameters of concern in most waters was Turbidity. However, the results revealed that WSSAs maintain high level of compliance for the five years as shown in Figure 3-18.

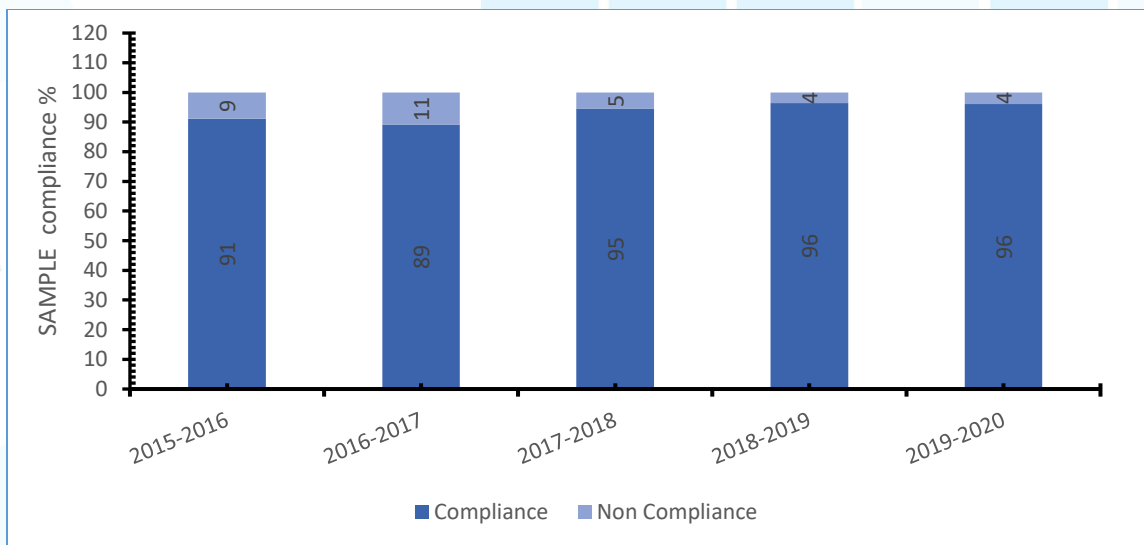


Figure 3-18: WSSAs Percentage Compliance of water Samples

The assessment of the compliance of Rural Water Supply (Local Government Authorities) to the Potable Water Specification: TZS 789:2016 – EAS 12:2014, 83.8%. It was noted that high levels of Hardness, Salinity, Chloride, acidity, Nitrate, Manganese, Fluoride, and Salinity are of main concern in Rural Water Supply. The analysis shows that the level of compliance for rural water projects was almost stable for the last two financial year (2018/2019 and 2019/2020) as shown in Figure 3-19. The situation signified that there are extra effort being applied to ensure that the communities are provided with safe drinking water.

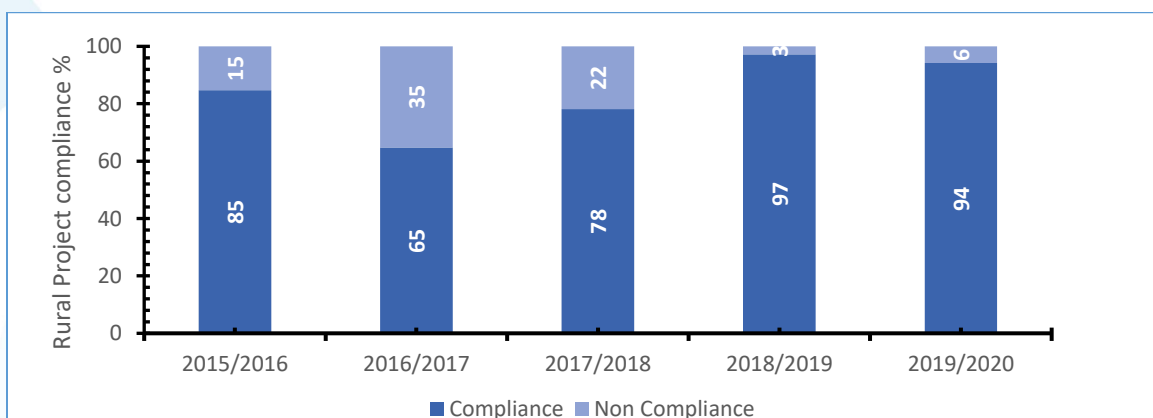


Figure 3-19: Rural water project Percentage Compliance of water samples

Other achievements made in the reporting period include the development and dissemination of a generic National Guideline for Monitoring Drinking Water Quality and Reporting to be used by all water supply entities in the country. Moreover, the Ministry has implemented a defluoridation strategy. This mainly targeted highly affected regions (fluoride belt). Main activities undertaken in this regard include; dissemination of successful findings on bone char technology defluoridation technology and awareness creation on the use of technology as shown. During the reporting period, a total of 1,628 Household Defluoridation Units (HDU) have been distributed in Arusha and Manyara regions in the fluoride highly affected areas. Such a technology has benefited 13,024 citizens by providing them with clean and safe water. Currently, the research station continues with periodic monitoring of the performance of defluoridation units whereby 822 Household Defluoridation Units (HDU) in different areas and 10 Community Defluoridation Plants were inspected. This includes at times, periodic replacement of the media. On the other hand the research station constructed one Community Defluoridation Plant (CDP) at Mwendo Girls' Secondary School in Arusha Region (Figure 3-20) with the capacity of saving 600 students including school staff.



Figure 3-20: Mwendo Community Defluoridation Plant

Another initiative towards the same is the fluoride reconnaissance survey that was carried out in Arusha, Kilimanjaro, Singida, Shinyanga, Mwanza, Manyara and Geita regions. The survey involved a total of 2,594 water sources. The survey revealed high fluoride concentration in 1,067 water sources while 1,527 water source complied with stipulated Tanzania standards for Natural potable water (1.5mg/L). Figure 3-21 shows water sources compliance and non-compliance in each region.

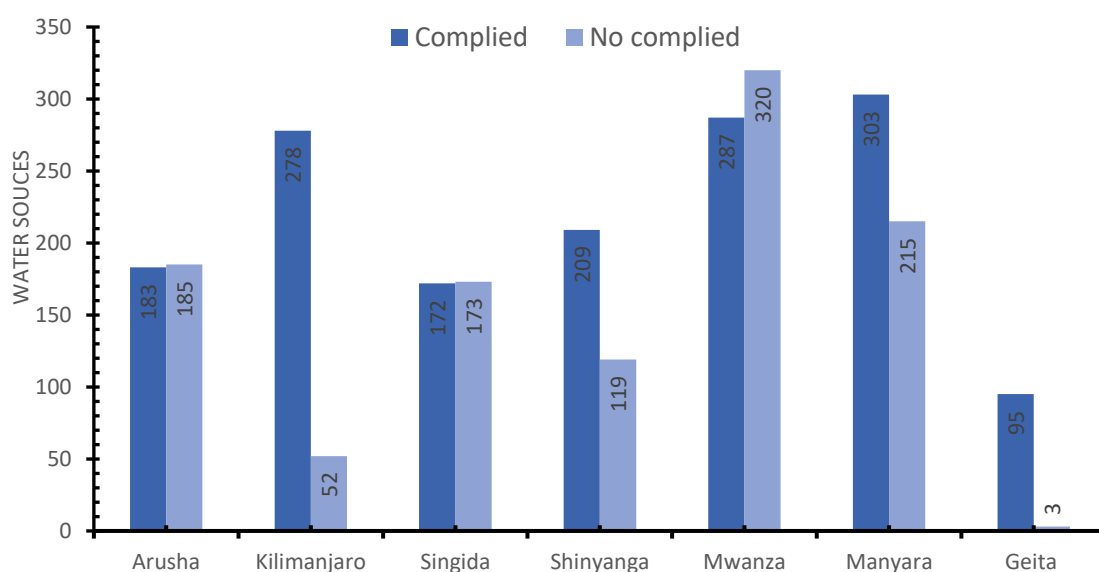


Figure 3-21: water sources compliance and non-compliance

#### i. Implementation of Climate Resilient Water Safety Plans

Another approach used by the Ministry in attempt to ensure the safety of drinking water supply is the implementation of Water Safety Plans (WSPs), which is a comprehensive risk assessment and management across the entire water supply chain, from the catchment to consumer. The MoW therefore coordinates the implementation of Climate Resilient Water Safety Plans (CR-WSPs) to ensure provision of clean and safe water by Water Supply and Sanitation Authorities and COWSOs. The implementation of CR-WSPs approach has already been piloted at Kigoma Water Supply Authority, Mbande COWSO in Kongwa District and Mkambarani COWSO in Morogoro District. Together with this, the MoW has developed guidelines for the preparation of CR-WSPs for both rural and urban water schemes. Capacity building for development of CR-WSPs for the selected schemes was undertaken and Mbande COWSO is in advanced stage of implementation whereby improvement of water source by drilling of boreholes is ongoing.

### 3.4 Management of Transboundary Waters Resources

Tanzania is riparian to several transboundary water bodies with neighboring countries (Table 3-12). Sustainable development and management of such transboundary water resources require cooperation, understanding and agreement among the riparian states, so that the waters can be equally beneficial to the riparian states. This is an international requirement for all states with shared water resources, guided by two major instruments i.e. the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses



and the 1992 UN Convention on the Protection and Use of Transboundary Watercourses and International Lakes. These have already been domesticated in the region through the Treaty of East African Community and SADC Revised Protocol on Shared Watercourse Systems, 2000 (Tanzania ratified in 2003)., though, it is yet to be ratified in Tanzania.

A total of 14 transboundary water bodies exist in Tanzania (Table 3-13), including rivers and lakes. Each of these transboundary water sources are part of the nine available lakes/river basins in the country where seven out of the nine water basins are transboundary as indicated in Figure 3-22. The Ministry of Water has produced a detailed report on the *Benefits and Challenges of Transboundary Water Cooperation for Tanzania (2008/09 – 2018/19)*, which contains a more comprehensive assessments of these water resources. The achievements of Regional Cooperation in transboundary water resources management for Tanzania are as listed in Appendix 3.7. These include establishment of treaties, conventions or agreements and transboundary organizational frameworks such as joint bodies, joint mechanisms and commissions.

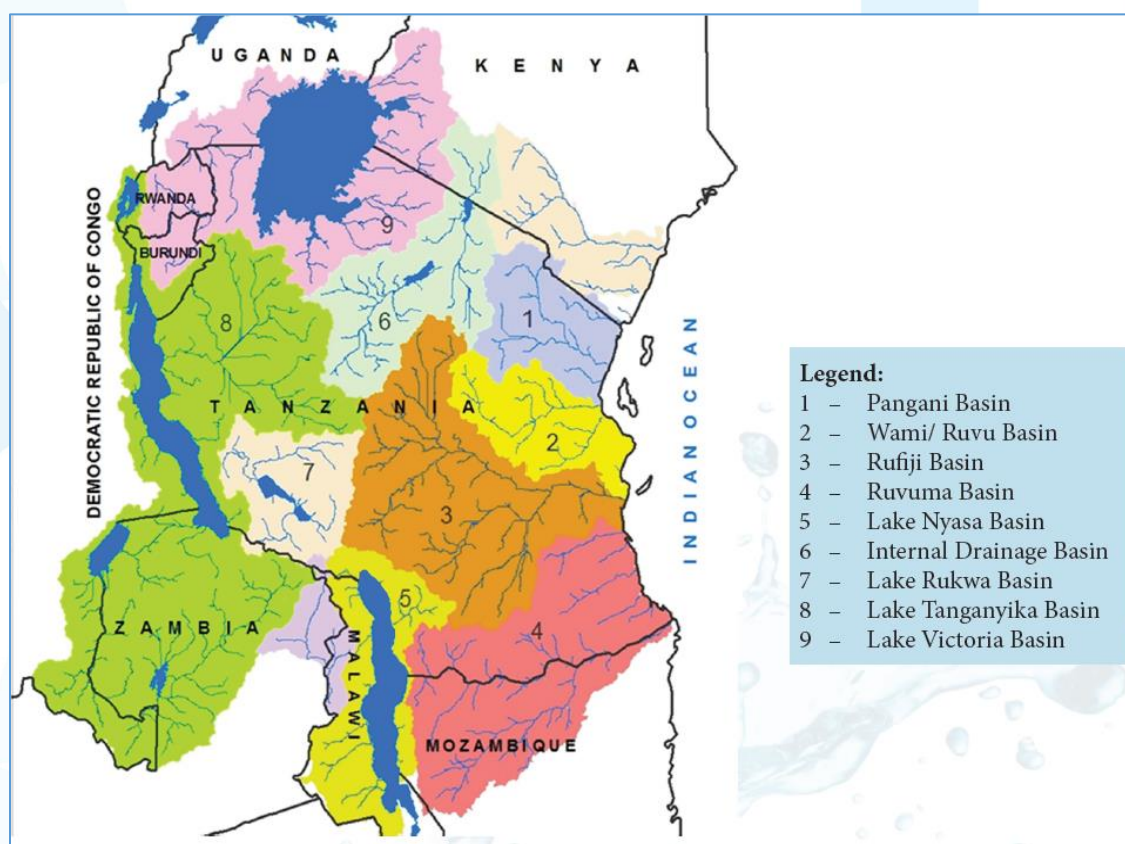


Figure 3-22: Transboundary Map of Tanzania

Table 3-12: List of riparian countries with their respective shared water resources

| S/N | Country    | Basin                       | Shared Water Source                               |
|-----|------------|-----------------------------|---------------------------------------------------|
| 1   | Kenya      | Lake Victoria               | Lake Victoria and Mara River                      |
|     |            | Pangani                     | Lake Chala, Lake Jipe, River Lumi, and River Uмба |
|     |            | Internal Drainage           | Lake Natron                                       |
| 2   | Uganda     | Lake Victoria               | River Kagera, and Lake Victoria                   |
| 3   | Rwanda     | Lake Victoria               | River Kagera                                      |
| 4   | Burundi    | Lake Victoria               | River Mwiruzi                                     |
| 5   | Malawi     | Lake Nyasa and Songwe Basin | Lake Nyasa, and Songwe river                      |
| 6   | Mozambique | Ruvuma                      | River Ruvuma                                      |
| 7   | Zambia     | Lake Rukwa                  | River Momba                                       |
| 8   | DRC        | Lake Tanganyika             | Lake Tanganyika                                   |

Table 3-13: Land mass in the hydrologic basins for the shared water bodies and the percentage share of Tanzania

| SN | Source           | Riparian Countries                                                 | Area (km <sup>2</sup> ) | % of water body Area in Tanzania |
|----|------------------|--------------------------------------------------------------------|-------------------------|----------------------------------|
| 1  | Lake Nyasa       | Tanzania, Mozambique and Malawi                                    | 33,457                  | 24                               |
| 2  | Lake Natron      | Tanzania and Kenya                                                 |                         | 100                              |
| 3  | Lake Tanganyika  | Tanzania, Burundi, Democratic Republic of Congo, Rwanda and Zambia | 32,600                  | 41                               |
| 4  | Lake Victoria    | Tanzania, Kenya and Uganda                                         | 68,800                  | 51                               |
| 5  | Lake Chala       | Tanzania and Kenya                                                 | 4.2                     | 50                               |
| 6  | Lake Jipe        | Tanzania and Kenya                                                 | 30                      | 50                               |
| 7  | Kagera River     | Tanzania, Burundi and Rwanda                                       |                         |                                  |
| 8  | Mara River       | Tanzania and Kenya                                                 | 13,504                  | 35                               |
| 9  | Malagarasi River | Tanzania and Burundi                                               |                         |                                  |
| 10 | Momba River      | Tanzania and Zambia                                                |                         |                                  |
| 11 | Mwiruzi River    | Tanzania and Burundi                                               |                         |                                  |
| 12 | Umba River       | Tanzania and Kenya                                                 |                         |                                  |
| 13 | Ruvuma River     | Tanzania and Msumbiji                                              | 155,000                 | 37.3                             |
| 14 | Songwe River     | Tanzania and Malawi                                                | 4,243                   | 55                               |

Table 3-14: Transboundary institutions for which Tanzania is a member to.

| S/N | Institution                                | Member States                                                                                                                                            | Quantity | Percentage of Area in Tanzania | Remarks                                                                                                                               |
|-----|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Zambezi Watercourse Commission (ZAMCOM)    | Tanzania, Angola, Botswana, Malawi, Mozambique, Namibia, Zambia and Zimbabwe                                                                             | 8        | 2                              | Despite small are of Tanzania yet its water contribution to the Zambezi flows is 60%. ZAMCOM is based in Harare-Zimbabwe              |
| 2   | Nile Basin Initiative (NBI)                | Tanzania, Burundi, Rwanda, Jamhuri ya Kidemokrasia ya Kongo, Kenya, Uganda, Ethiopia, Misri, Sudan, Sudan Kusini, na nchi ya Eritrea ambaye ni mtazamaji | 11       | 3.7                            | Tanzania contributes 28% of Transboundary Waters in Lake Victoria which is the source of Nile flows. NBI is based in Entebbe, Uganda. |
| 3   | Lake Tanganyika Authority (LTA)            | Tanzania, Burundi, Jamhuri ya Kidemokrasia ya Kongo na Zambia                                                                                            | 4        | 41                             | Hosted by the office of Vice President Division of Environment. Located in Bujumbura.                                                 |
| 4   | Lake Victoria Basin Commission (LVBC)      | Tanzania, Burundi, Kenya na Rwanda, Uganda                                                                                                               | 5        | 51                             | The organization is anchored in the Treaty of East African Community                                                                  |
| 5   | Africa Ministers' Council of Water (AMCOW) |                                                                                                                                                          | 55       |                                | This is AU specialized Technical Committee based in Abuja, Nigeria.                                                                   |
| 6   | Songwe River Basin Commission              | Tanzania na Malawi                                                                                                                                       | 2        | 55                             | Located in Kyela-Tanzania                                                                                                             |
| 7   | Ruvuma River Basin Commission              | Tanzania na Msumbiji                                                                                                                                     | 2        | 34                             | The commission is oin rotation basis, has no permanent secretariat.                                                                   |

### 3.5 Water Related Disasters in Tanzania

Tanzania's main water related disasters are drought and floods, that are principally caused by occurrence of extreme weather events aggravated by the ever-increasing anthropogenic pressure on landuses. A number of extreme weather events have been recorded in Tanzania. Major floods reported in Tanzania in the recent past include the 1997/98 El Nino floods, 2006, 2010/11, 2014 and 2016 floods. On the other hand, of the grievous droughts reported is the prolonged drought of 1998-2005 (Kijazi & Reason, 2009). In almost all instances, the most vulnerable regions in Tanzania are Morogoro, Dodoma, Dar Es Salaam and Katavi while other flood-prone regions are Mtwara, Arusha, Iringa, Tanga, Pwani, Mbeya, Kigoma and Lindi.

Of the Basins in Tanzania, Wami/Ruvu has faced frequent and severe floods that affect many lives negatively. This is mainly due to high population residing in the basin floodplains, including the urban and peri-urban areas of Dar es Salaam and Morogoro. Kilosa district in Morogoro region, for-instance, has a history of frequent flash floods, dating back to 1930's, notably emanating from Mkondoa River floodS (Tanzania Red Cross Society, 2014). The 2016 flood within Wami-Ruvu basin is suspected to have claimed the lives of 5 people, destroyed 315 houses, and damaged central railway that runs through the floodplains of Kilosa and rendered it unusable. In Dar es salaam region, notable flood events include those experienced in 1997/1998 El- Nino, 2011, the March 2014 and 2016 floods that inundated the coastal and the floodplains of the city. Recurrently, these floods claim the lives of the residents. The December 2011 flood, for example, claimed 40 lives in Dar es salaam while 4,909 people were displaced, while the 2014 flood claimed the lives of 25 people in DSM alone ( (Salukele & Chale, 2017).

Other reported cases of flood-associated damage to people, properties and other socio-economic activities include;

- Destruction of 70 houses and displacement of at least 400 people from Dodoma municipality following 17 and 18 January 2016 floods.
- Tremendous crop damage and the associated crop failures due to 2016 El-Nino, as reported in the FAO, Feb 2016 report ( (Mokonnon, 2018).
- Displacement of thousands of residents due to 2009-2011 floods in the areas of Muleba, Kilosa, Same and Dar es Salaam
- 2009/2010 floods in Kilosa (Morogoro), Mpwapwa and Kondoa (Dodoma) where more than 50000 people were affected, 5100 hectares of crops were destroyed

Tanzania has also faced few drought events. In 2006, a severe and prolonged drought was reported to affect various areas of the country, caused by short-rains failure. Similarly, in 2008, the rains were reportedly to be shorter than normally experienced followed by another anomalous lack of rains in 2009 which triggered drought across the country. The recorded drought between 1998 and 2005 affected more than 75,000 people (Kijazi & Reason, 2009).

The global EM-DAT database shows that Tanzania record drought events between 1960's and 2013 occurred in 1967, 1977, 1984, 1988, 1990, 1996, 2003, 2004, 2006 and 2011, all of which affected at least 12,737,483 people.

Generally, the water related natural disasters in the country have both socio and economic repercussions. The UN country brief, reports that, just between 1989 and 2011, over 5.4 million lives were affected while there were 300,000 USD worth economic damages in 1990 and 400,000 USD in 2006 (Water, U. N. , 2013). This calls for coordinated interventions between the MoW and disaster preparedness units in the Vice President's office.

### 3.6 Key Issues

#### Data and information System management

Notwithstanding country's vulnerability to water-related disasters outlined earlier, most basins have limited instruments in place for minimizing such risks. There is a need for prioritization of resilience to water-related disasters, investment in disaster risk management needs, especially flood warning systems need to be prioritized. This must be mandated under the Ministry of Water for effective implementation within all Lake and river basins. Since colonial era, there have been several efforts to build flood controlling structures like levees and reservoirs in Kilosa, some of which have already failed (Ringo, 2018). More efforts to support ongoing initiatives to reduce flood vulnerability needs to be carried out.

Despite the progress made as outlined earlier with regard to monitoring the state's water quality, the Ministry recognizes the importance of more comprehensive water quality assessment campaigns to ascertain the status and trends of water quality in all waters, pollution loading to water sources and the extent to which the water quality has deteriorated with respect to its usability. Moreover, more numerous and continuous water quality monitoring stations need be established in lakes and dams. This however, is a resources intensive exercise and needs to properly planned. The Ministry understands that the audience would have benefited from a more elaborate data showing specific parameters that are prevalent the ambient waters of the country, the total length of rivers affected and total volumes of lakes and reservoirs for which parameters are prevalent. This assessment is currently being planned and would be reported in upcoming reports. In future the Ministry also intends to report on their routine sampling schedules, sampling strategy and frequency.

The Ministry has made numerous efforts towards groundwater resources monitoring. However, there is a need to have a more comprehensive plan to install more piezometric observation stations, in almost all the basins with clear plans for sustainability of these monitoring networks.





#### 4 CHAPTER FOUR | WATER SUPPLY AND SANITATION

While the Ministry responsible for Water is legally mandated and politically accountable to oversee, lead, direct and coordinate the entire water sector, the management and supervision of different sector components are assigned to different Ministries, management structures, administrative bodies and quasi-independent institutions within and without the Ministry.

Management-wise, the Water Supply and Sanitation Services are grouped into two; provision of services in urban areas and rural areas. The Urban Water Utilities are responsible for the management of water supply and sanitation services in all Regional centers, District headquarters and Township centers. RUWASA on the other hand, is responsible for the management of water supply and sanitation services in all areas outside the boundaries of Regional centers, District centers and Township centers. However, there are cases where urban centers (Traditionally under respective Urban Authorities) are placed under the supervision of RUWASA for enhanced efficiency and effectiveness.

Although the entire sector budget is controlled and accounted by the Ministry of Water, the health and hygiene part of sanitation is practically implemented by the Ministries responsible for Health and Education with specific focus on households, open public areas, health facilities, schools' environment and other sanitation-sensitive public facilities and service areas.

In the recent past, the rural water supply and sanitation services were technically and financially managed by the Ministry of water while disciplinary and supervisory powers were entrusted to the Local Government Authorities under the armpits of the Ministry responsible for Regional Administration and Local Government Authorities (PO-RALG). RUWASA is a creation of Water Supply and Sanitation Act No. 5 of 2019 that was enacted to enforce the latest water sector reforms undertaken by the Government to address, among other issues, recessing service sustainability in the Rural Water sub sector. It takes over service management, supervision and implementation powers previous exercised by the Ministry of Water, President Office-Regional Administration and Local Governments and Local Government Authorities respectively.



## CHAPTER SYNOPSIS

### Water Supply

- Completed Projects: 3,057 (June 2015) and 4,200 (Dec. 2019)
- Total Water Points: 110,000 (June 2015) and 139,000 (Dec. 2019)
- Rural Water Service Coverage: 48% (June 2015) to 70% Dec. 2019
- Urban Service Coverage: 72% (June 2015) to 85% (Dec. 2019)
- Urban Water Connections: 989,548 (June 2015) to 651,901 (Dec. 2019)
- Urban access to clean/safe water: 7,047,049 (2015) to 11,858,246 (2019)
- WSSAs Production/Demand (mill.m<sup>3</sup>/year): 285/554 (2015) to 369/625 (2019)

### Sustainability Issues – Water Supply

- Rural Functional Water Points: 88,000 (June 2015) to 97,000 (Dec. 2019)
- Rural Non-functional Water Points: 20% (June 2015) to 30% (Dec. 2019)
- Urban Non-Revenue Water: 20.1% (June 2015) to 30.2% (Dec. 2019)
- Registered CBWSOs: 1,236 (June 2015) to 3,236 (Dec. 2019)

### Sanitation Status

- Sewerage Services Coverage: 10% (June 2015) to 13.4% (Dec. 2019)
- Households (H/H) with improved toilets: 36% (June 2015) to 57% Dec. 2019
- H/H with hand washing facilities/Soap: 13% (June 2015) to 21% (Dec 2019)
- Villages/Mitaa without any toilet = 7.5% (June 2015) to 2.5% (Dec. 2019)

## 4.1 Water Supply Services

### 4.1.1 Institutional Service Delivery Framework

The Water Supply Services main focus is water resources for domestic use including drinking and household chores. It specifically refers to water accessed from developed or improved water sources within the definition of National Water Service Standards, National Five Years Development Plan and Sustainable Development Goals. The Ministry of Water is responsible for ensuring that the policy, legal and sector service standards are conveniently placed to fan a conducive and supporting environment for sector growth and prosperity. The Ministries responsible for Health, Education and the President's Office-Regional Administration and Local Government provide specific policy, legal and oversight support in areas that cannot be done better by other institutions given the current Government set up.

At delivery level, Water Services at Regional headquarters, Districts headquarters and Township centers are managed by semi-independent Urban Water Supply and Sanitation Authorities. Led by Boards and Management teams, each Authority plans, budgets and implements annual pro-service delivery interventions to achieve set and agreed targets

towards set and agreed Objectives in respective service jurisdiction. The Ministry follows up, monitors, supports and regulates the operations of these authorities both directly and through EWURA, an official Government Regulatory Authority for all Energy and Water Utilities.

Authorities are categorized into classes on the basis of abilities levels to provide service and maintain the costs of running the institution from the proceeds of the charged services. To promote growth and improvement in service delivery, authorities are constantly evaluated and gauged against service efficiency, effectiveness and sustainability. Evaluation resultant measures may be changes in ranks up or down and, in rare cases, putting a Utility under the supervision of another Authority within the sector.

On the other hand, the Rural Water Service delivery is managed by Rural Water Supply and Sanitation Agency (RUWASA). Unlike in urban water service delivery setting where each service area has its own authority, there is only one national wide authority in rural water service delivery. RUWASA service provision and operation set up is composed of supervisory and delivery structures at different levels. The Board and the National Management team are based in Dodoma with supervision offices in Regions and implementation offices in Districts. The service outlets are managed by the community-based institutions (CBWSOs) formed by respective villages under the supervision of RUWASA and Local Government Authority in the subject area. RUWASA Districts Offices are legally mandated to register, support and regulate all CBWSOs within their service boundaries.

The sector management reforms as effected by Water Supply and Sanitation Act Na.5 of 2019 has opened an opportunity for a transformation in governance and operation modalities in Community Water Service management. The law requires formation of a nine members Water Committee composed of individuals from the government offices, service institutions and private sector. The law also requires the Water Committee to recruit a Management Team with a professional team leader and professional treasurer to run the service delivery related day to day activities. Learning from the operational challenges before reforms, the law encourages different CBWSOs to merge and operate services of several villages through one organization to enhance service effectiveness and nail economies of scale in operation costs. The idea is that a merged CBWSO stands a higher chance of attracting a private operator whose added advantage should be reflected in service efficiency and assured continuity. RUWASA is tapping on this opportunity and optimizing on the envisaged reforms' expectations.

#### 4.1.2 Status of Rural Water Supply Service Delivery

The overall objective of Rural Water Supply and Sanitation (RWSS) is to improve the provision of clean and safe water supply service and promotion of improved hygiene and sanitation services in rural areas through Rural Water Supply and Sanitation Agency (RUWASA).

Specific objectives include; Water supply services in rural areas improved; Rural water supply projects are cost effective and sustainable; Rural Water Supply projects are owned and managed by beneficiaries and backstopped (technically and financially) by RUWASA

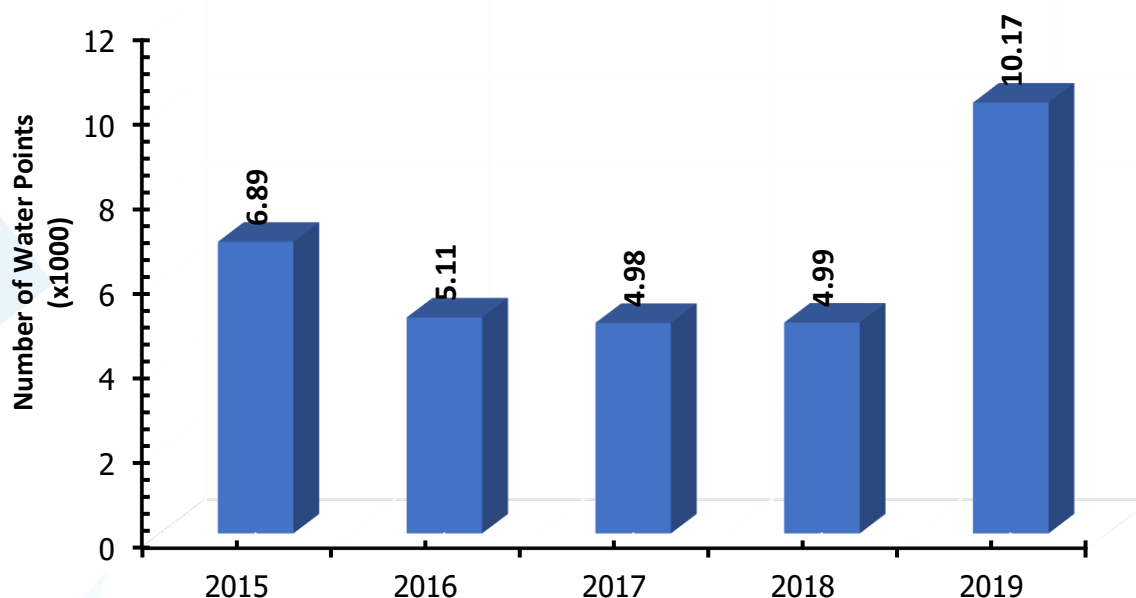
initiatives for sustainable services and Sanitation, operation and maintenance are integrated in the design of rural water projects.

The WSDP II set target by June 2019 was to install a total of 76,334 water points serving a total of 19,080,000 people in rural areas, thereby increasing the access percentage from 51% in June 2014 (77,584 water points, serving 19,395,697 beneficiaries) to 80% (153,918 water points, serving 38,475,697 beneficiaries) by June 2019. The target breakdown is as follows;

**Table 4-1: WSDP II Targets 2014/2015 to 2018/2019**

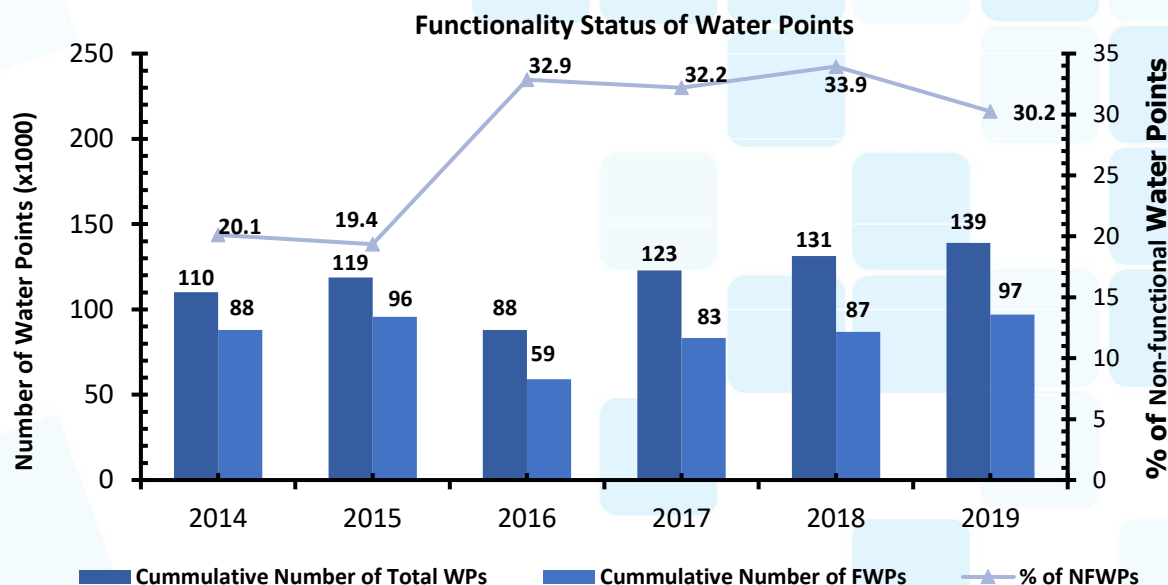
| s/n | Intervention Area                            | Target              | Number of People  |
|-----|----------------------------------------------|---------------------|-------------------|
| 1   | Construction of New Water Points             | 38,759 Water Points | 9,644,750         |
| 2   | Rehabilitation of Nonfunctional Water Points | 19,889 Water Points | 4,972,250         |
| 3   | Service extension of existing infrastructure | 17,686 Water Points | 4,463,000         |
| 4   | <b>Total June 2014 to June 2019</b>          | <b>76,334</b>       | <b>19,080,000</b> |

**Water Points Constructed From Year 2015 To 2019**



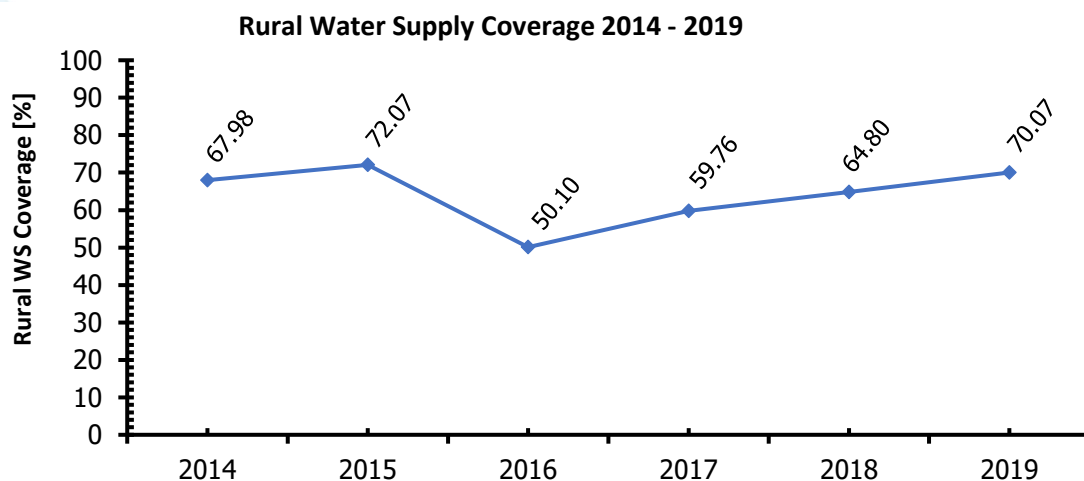
*Figure 4-1: Total Number of Water Points Constructed per each Year from 2015 to 2019  
(Source: RUWASA-CDMT Monthly Reports 2015 - 2019)*





*Figure 4-2: Trend of Cumulative Number of Total Water Points, Functional Water Points and Percentage of Non-functional Water Points From year 2014 to 2019 (Source: RUWASA-CDMT Monthly Reports 2015 - 2019)*

While the WSDP II target for Rural Water services was to increase a total 76,334 water points by June 2019, official Rural Water Supply and Sanitation Agency (RUWASA) reports indicate that the total number of Water Points from construction, extension and rehabilitation interventions reached only 32,133 by December 2019, even six months later after the cut off target line. This means that, the achievement is slightly above one third of the set target.



*Figure 4-3: Access to Rural Water Supply Services from year 2014 to 2019 (Source: RUWASA-CDMT Monthly Reports 2015 - 2019)*

Looking at WSDP II target, water supply coverage was expected to increase by an average of 6% per year from 51% to 80% between June 2014 to June 2019 respectively. This ambitious target is also reflected in the set target for number of water points in the same period. Unfortunately, the service coverage that was recorded six months past the target end line (December 2019) indicated to be around 70% against a set target of 80% coverage by June 2019.

Although these numbers invite an interpretation of poor performance, in reality the period between July 2015 and December 2019 marks a fundamental shift in Water Points data protocol and information processing management. It is within this time when a Central Data Management Team (CDMT), an exclusive rural data collection and management team was formed in the Ministry of Water.

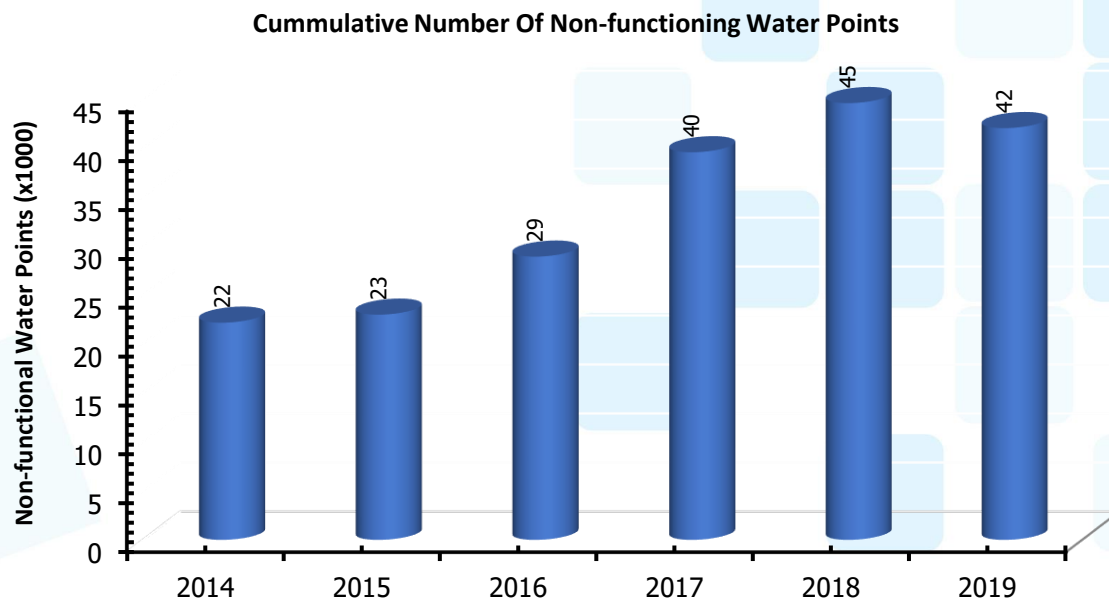
The CDMT was mandated to manage the Water Point Mapping System (WPMS) which is the official rural water service data management system. In order to fill some identified performance and flexibility gaps within the WPMS, the team introduced a CDMT Data Manager, a supplementary tool with flexibility to conveniently capture data and information for indicators beyond but related to Water point functionality.

To establish the authenticity of the data in the system, the team embarked in a data cleaning exercise that resulted into removing a big number of water point that were being counted wrongly because of inappropriate data interpretation methods which included obsolete water points and double counting some data. The removal of wrongly counted water points and separation between investment water points and functional water points caused a serious drop in the number of water points (*Figure 4-3*) from an assumed coverage of 72% in 2015/16 to real coverage of 50.10% in 2016/17.

Therefore, the service coverage data from 2016/17 to December 2019 reflects actual functioning water points within the definition of National water sector service standards. Logically, the coverage in actual progression is beyond the set target of 85% by 2020 which has already been achieved given the fact that it is already 70% by December 2019. This is so because without the data cleaning exercise in 2016/17 that removed 22% of the assumed coverage, then the coverage by December 2019 is already 92%; six months before June 2020, the target line of 85%. In this case, therefore, the functional coverage in June 2015 was supposed to read 48% and the actual implementation progress in terms of coverage has increased from 48% in June 2015 to 70% as of December 2019.

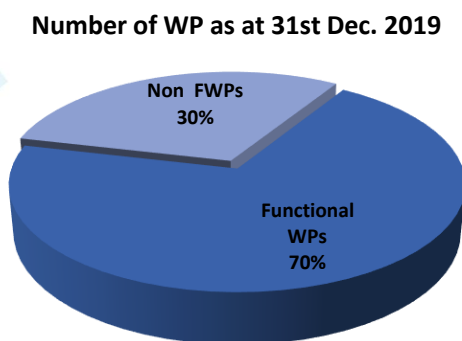
Even with the cleaned data which mirrors the service situation on the ground, the 70% coverage is a big leap. With rehabilitation and extension interventions currently going on in the Districts under RUWASA management, it is likely to hit the 85% coverage target in the rural water service sub sector.

#### 4.1.3 Non-Functional Water Points



*Figure 4-4: Trend of Non-functional Water Points from year 2014 to 2019 (Source: RUWASA-CDMT Monthly Reports 2015 - 2019)*

The graph above is a simple description how operation and maintenance is a challenge to reckon with. It adds up to the compromised rural water service sustainability.



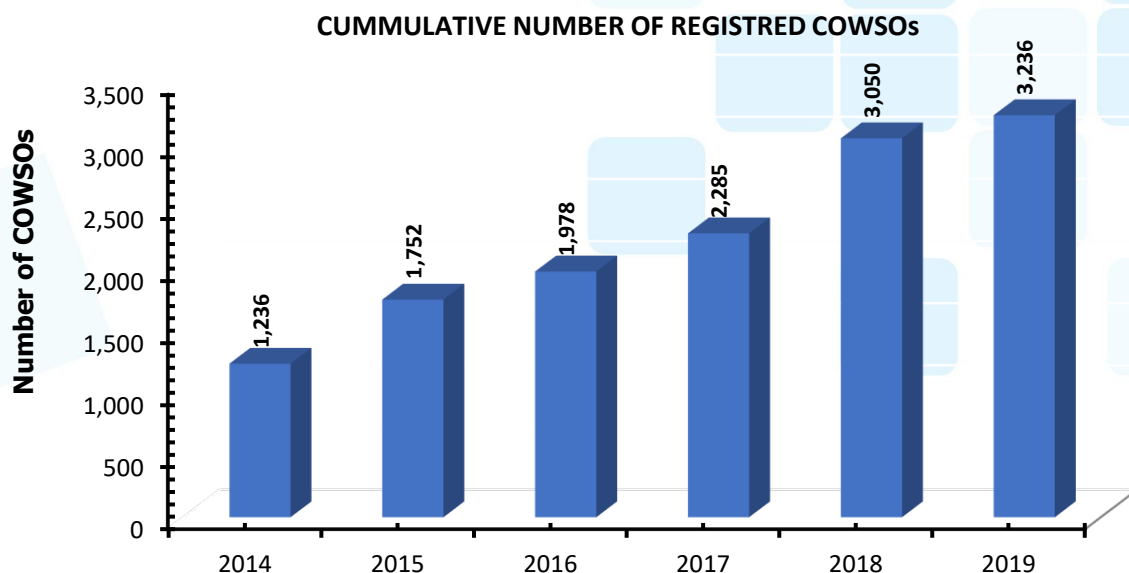
While appreciative of the Government efforts to invest in the water supply service as records in the previous graphs indicate, it is worth noting that out of the cumulative total 138,987 water points as of December 2019, a total 42,035 water points, which is one third of all water points, are not functioning.

*Figure 4-5: Total Number of Water Points (Source: RUWASA-CDMT Monthly Reports 2015 - 2019)*

It is obvious that the number of non-functional water points increases with the increase in the number of constructed, rehabilitated and extended water points. It is tempting to allege that the designing, budgeting and implementation approach have not changed which means the

expectations in achievement over the last four years should not be less of what is being seen. Certainly, this is one of the main reasons that motivated the current sector changes in rural water service management and this is an area deserving due attention from RUWASA strategies and plans.

#### 4.1.4 Community Service Management and Sustainability



*Figure 4-6: Trend of Number of Registered CBWSOs (then COWSOs) from year 2014 to 2019  
(Source: RUWASA-CDMT Monthly Reports 2015 - 2019)*

One of the biggest challenges in rural sub sector progression is undeserved attention accorded to community service management. Despite the fact that this is the last point in the service outlet chain, there has been very little investment in time, human and financial capital. As a translation of Water Policy and relevant guidelines on the importance of ensuring community ownership in service provision, WSDP I implementation guidance documents insisted and facilitated immediate hand over of all constructed projects to CBWSOs (the then COWSOs). While the intention to involve and solicit community participation was good, the packaging of implementation fell short. The Projects were handed over to COWSOs that were formed and led by individuals with little or no skills and exposure to run services and or organization, hence the organizational stagnation and worsening of services.

In appreciation of this implementation performance gap in WSDP I, the design and implementation of WSDP II committed to facilitate the strengthening of CSOs capacity to sustainably manage community water services. Improvement measures included finalizing the National Rural Water Supply and Sanitation Sustainability Strategy and its implementation plan, COWSOs Leaders Training Manual, thematic COWSOs Management Guidelines,

Standard Operating Procedures and corresponding series of COWSOs leadership trainings that were carried out by the Ministry of Water in collaboration with PO-RALG. This move triggered motivations to formalize organizations, register and improve community service delivery supervision and management. The increased number of formed and registered CBWSOs in the (Figure 4-6) influenced the moderately steady growth of Water Points and slight decrease in number of non-function water points.

With revolutionization of community water service management as backed up by the Water Supply and Sanitation Act No. 5 of 2019; especially the professionalization and commercialization of management and services respectively, it is expected that the functional water points will sharply increase and non-functional water point numbers will dive drop.

It is also worth mentioning and appreciating the role played by different development partners who supported generic and specific interventions focused at enhancing sustainability of rural projects and services. Specific pro-sustainability programs and schemes on the ground includes but not limited to DFID funded Payment by Result Scheme (PbR) and the World Bank funded Program for Results (PforR). As part of implementation of the sector reforms, RUWASA is currently facilitating and supporting, re-registration of CBWSOs to conform to the latest legal requirements and encourages CBWSOs to operate in clusters and involve private sector in operation and maintenance of services. Directives and guidance to that effect have been issued and will continue to be issued as and when necessary.

#### 4.1.5 Status of Urban Water Supply and Sanitation

The overall objective of the Urban Water Supply and Sanitation component is improved and sustained quality and quantity of water supply and sanitation services for urban populations managed by financially autonomous and commercially viable Urban Water and Sanitation Authorities (UWSAs) while providing efficient and cost-effective services

Specific objectives include; Households, businesses and institutions connected with 24 hours water supply services; WSSAs are able to finance operation and maintenance costs for sustainability of infrastructure, assets and services; and operating costs minimized; WSSAs are able to finance a significant part of their new investments from loans; and have improved sewerage systems as part of an overall sanitation strategy for each town; Appropriate lifeline tariffs as per National Water Policy directions are set, and free water using agreed criteria is provided to the most poor; Good customer relations are established and operational; Non-Revenue Water (NRW) is significantly reduced and Modern billing systems as a prudent measure to improve billed revenue collections are used in all WSSAs;



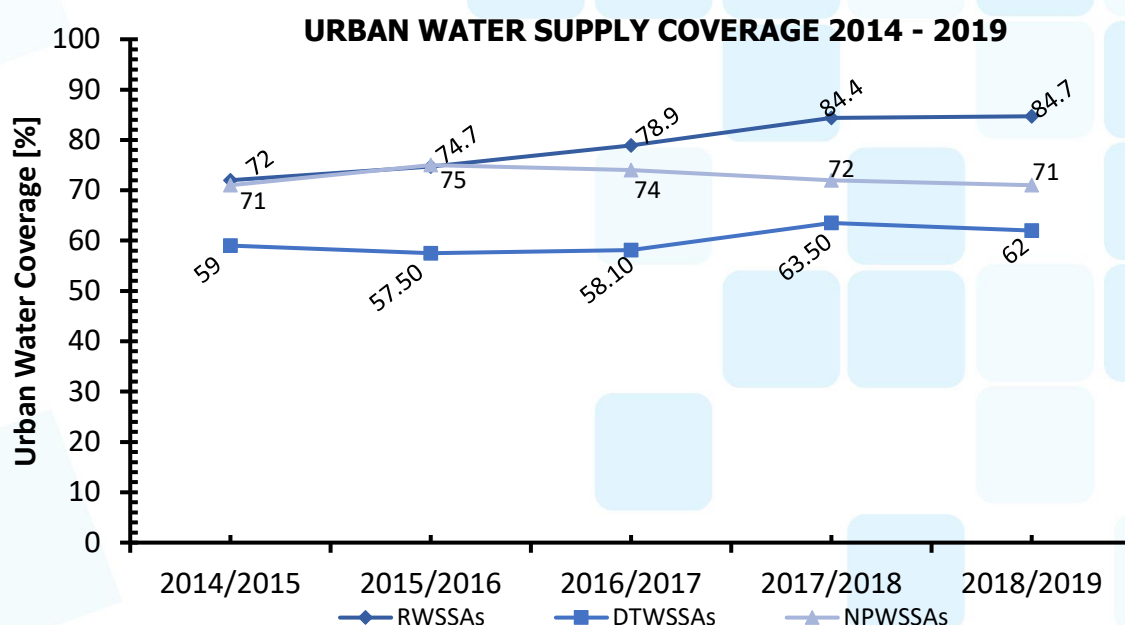


Figure 4-7: Access to Urban Water Supply Services from year 2014 to 2019 (Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)

Although not to the targeted and expected pace, the urban water service appears to have been growing in terms of number of constructed projects, number of connection and water production. It seems the speed of construction and connection is overwhelmed by the higher speed of population growth in urban centres.

The sharp increase in percentage of access in Regional Water Supply and Sanitation Authorities from 2016/17 to 2017/18 (refer figure 4-7) may be attributed to increased production in Dar es Salaam and the Authorities benefitting from Lake Victoria sourced water. Rehabilitation of service network and investment to the clustered areas and cleaning of data on the number of connections may be the main reasons for sudden stagnation and drop in access percentage between 2017/18 and 2018/19.

Table 4-2: Target of WSDP II for Urban Water Supply Services

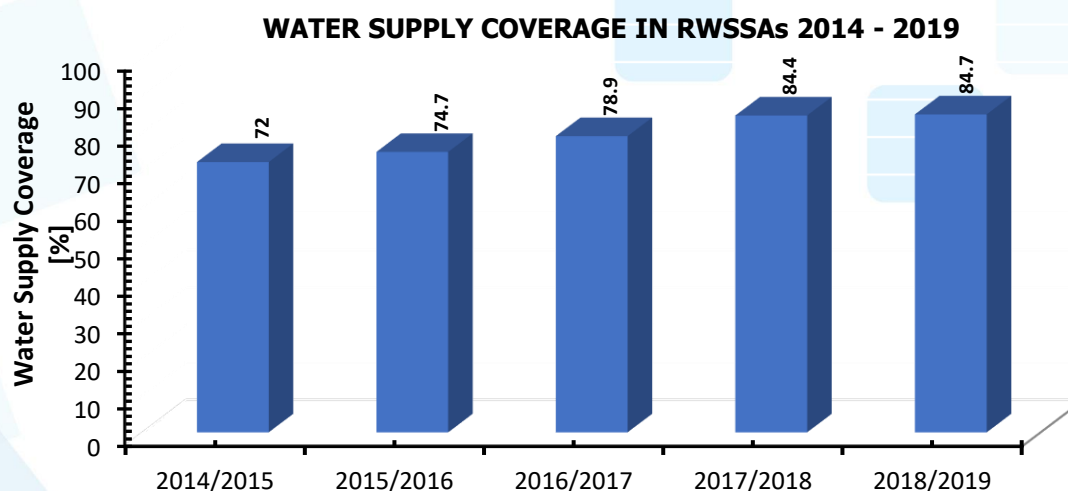
| N | Intervention Area              | Base 2014/2015    | Target 2018/2019  |
|---|--------------------------------|-------------------|-------------------|
| 1 | Increase Water Access          | 68 %              | 95%               |
| 2 | Increase Water Production      | 300 Mil. Ltrs/day | 756 Mil. Ltrs/day |
| 4 | Increase service beneficiaries | 1,750,000         | 6,100,000         |
| 5 | Decrease Non-Revenue Water     | 55 %              | 25%               |

#### 4.1.6 Regional WSSA

WSDP II set target for Urban Regional Centres was to provide water supply services to 2,000,000 new beneficiaries in the 23 Urban Regional Centres through 200,000 Household water connections; thereby increasing access from 80 percent in December 2013 to 98 percent by 2019; and reduce Non-Revenue Water from 37 percent to 25 percent.

**Table 4-3: WSDP II Targets for Regional WSSAs**

| N | Intervention Area          | Base 2014/2015 | Target 2018/2019 |
|---|----------------------------|----------------|------------------|
| 1 | Increase Water Access      | 80 %           | 98%              |
| 2 | Decrease Non-Revenue Water | 37 %           | 25%              |



*Figure 4-8: Access to Water Supply Services in Regional Water Supply and Sanitation Authorities (Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)*

From EWURA data on service progress, Dar es Salaam seems to have been enjoying a steady growth in service access levels with a sharp increase between 2015/16 and 2016/17 and a stable steady increase of 5% per year from 2016/17 to 2018/19. With this pace, it is predictable for Dar es Salaam to hit the 95% target by June 2020. It may prove to be a good idea to encourage other Authorities, especially Regional centres authorities with advantage of wider customer base, to learn from DAWASA.

Dar es Salaam aside, other Regional Authorities are averagely struggling to keep up with both increase in urban population and maintaining their dilapidated distribution network infrastructures that have been put to test after increase in water volume from completed Regional and National projects. The stagnant growth in access is well supported by the

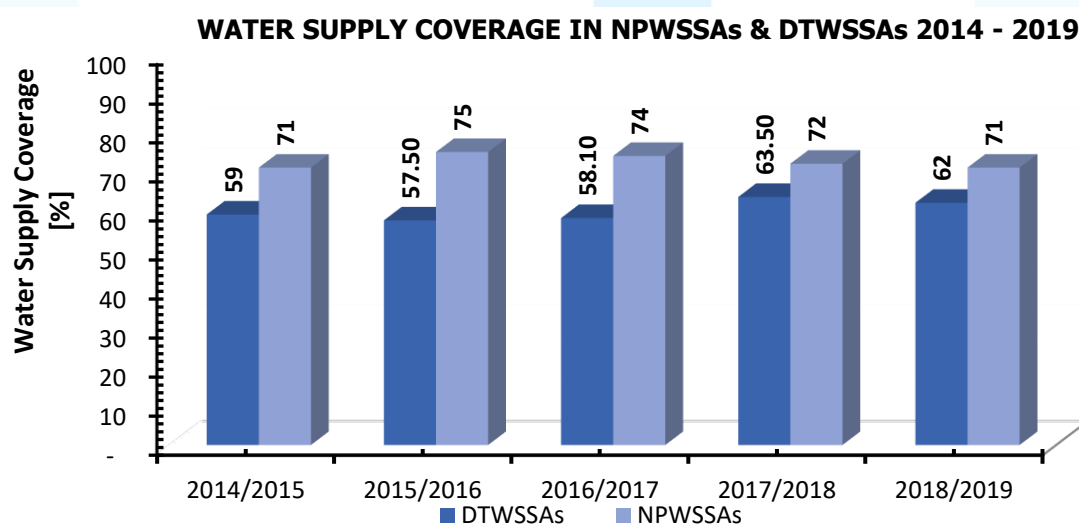
adamant and unpredictable changes in average levels of non-revenue water in Regional Centre Authorities.

#### 4.1.7 National Projects, District/Small Towns WSSAs

WSDP II set target for National Projects, District Headquarters is to provide water supply services to 1,100,000 new beneficiaries in District Headquarters, Townships and areas served by National Projects through 110,000 Household water connections; thereby increasing the access percentage from 53 percent in 2013 to 65 percent by 2019.

**Table 4-4: WSDP II Targets for National Projects & District/Small Towns WSSAs**

| N | Intervention Area     | Base 2014/2015 | Target 2018/2019 |
|---|-----------------------|----------------|------------------|
| 1 | Increase Water Access | 53 %           | 65%              |



*Figure 4-9: Access to Water Supply Services in District/Small Towns and National Projects Water Supply and Sanitation Authorities (Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)*

Looking at the trend of decrease and or stagnation of service accessibility data as indicated in the graph above (*Figure 4-9*), it becomes easy to understand and explain the logic in some of the steps taken by the Government through the Ministry of Water. Recently, a number of Urban Authorities in Districts and Townships have been clustered and placed under the supervision of either strong Regional Authorities or the newly formed RUWASA because of their inability to run the service and the institution. It appears most of the wailing authorities were formed prematurely or out of social political pressure which did not allow ample time for objective analysis of continuity and stability of organization and service operations.

Learning from this shortcoming, the Government have taken a bold decision to put all economically weak but potential Authorities under the supervision of Stronger Urban

Authorities or RUWASA. These Authorities will operate under incubation until such time when supervising authorities are convinced that the same have graduated to operate independently.

#### 4.1.8 Non-Revenue Water

Table below gives a summary on the trend of average NRW combined for all water utilities below

| 2014  | 2015  | 2016  | 2017  | 2018  | 2019  |
|-------|-------|-------|-------|-------|-------|
| 20.1% | 19.4% | 32.9% | 32.2% | 33.9% | 30.2% |

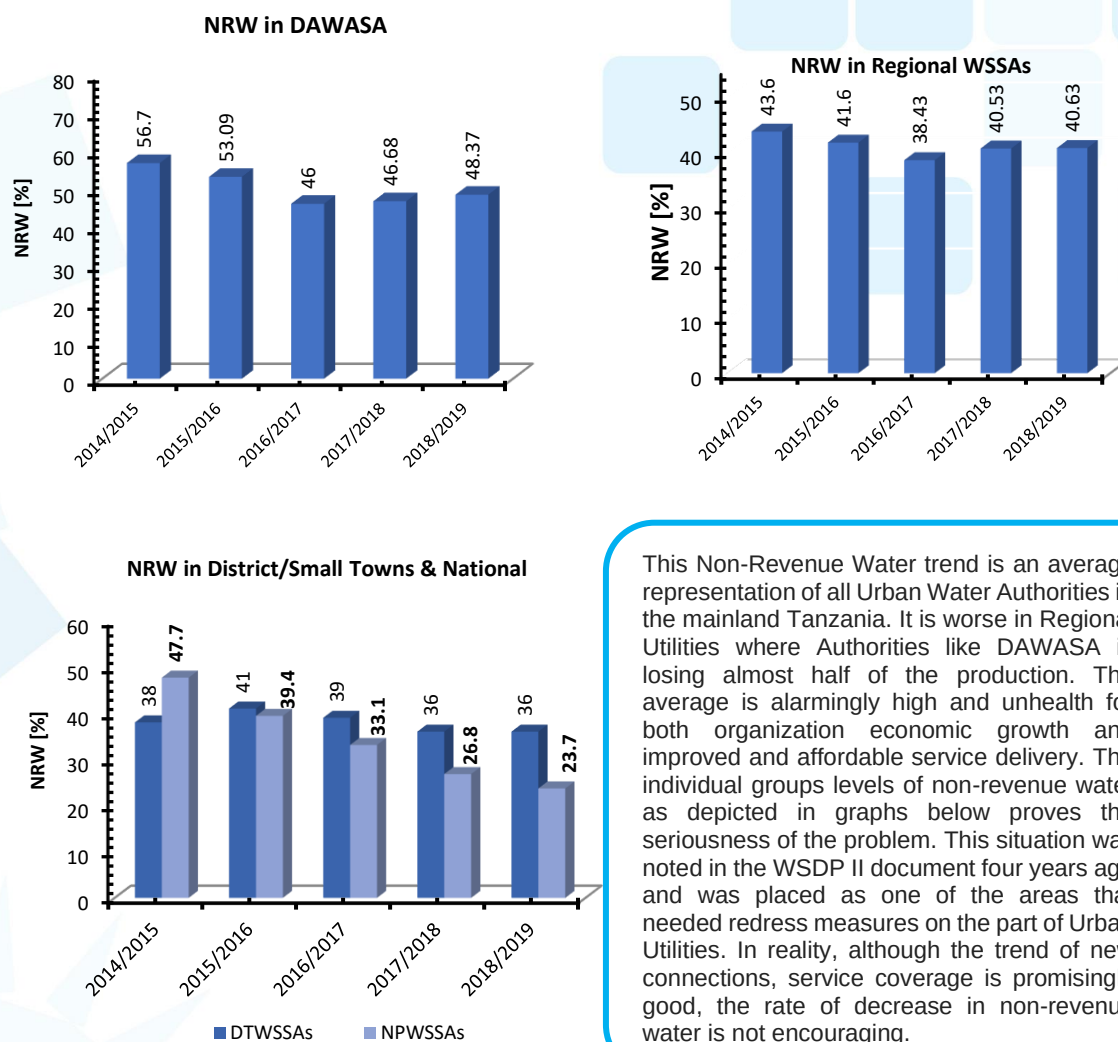


Figure 4-10: Trend of NRW in Water Supply and Sanitation Authorities (Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)

#### 4.1.9 Infrastructure Development and Functionality Status

##### i) Rural service infrastructures

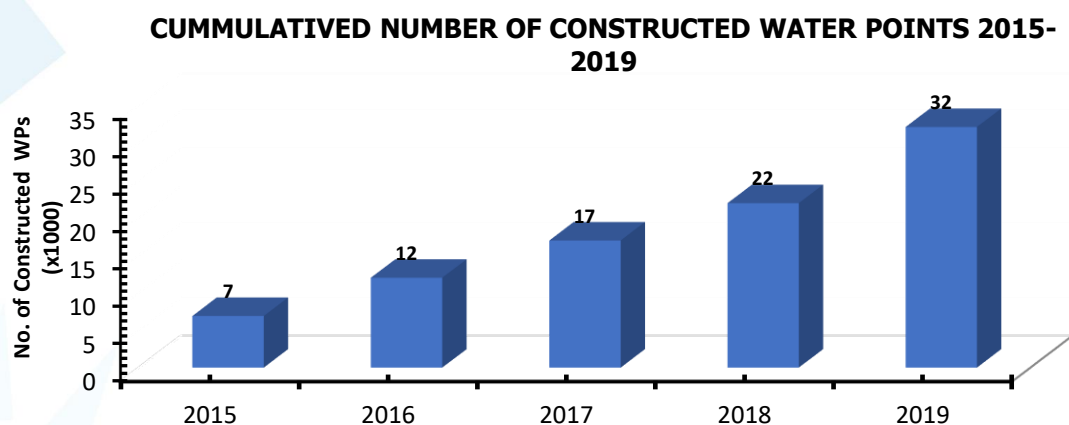
This sub component has three intervention areas, which include new project development, rehabilitation of non-functional projects and extension of projects to install water points in areas previously not covered by the scheme services (in coordination with Basin Water Boards)

**Table 4-5: Number of Completed Rural Water Supply Projects from 2015/2016 to December 2019**

|                              | 2014/15<br>Baseline | 2015/16 | 2016/17 | 2017/18 | 2018/19 | July-<br>Dec<br>2019 | 2015/16<br>to Dec. '19 |
|------------------------------|---------------------|---------|---------|---------|---------|----------------------|------------------------|
| Number of Completed Projects | 3,057               | 338     | 265     | 344     | 166     | 30                   | 1,143                  |

(Source: RUWASA)

Table 4-5 indicates total numbers projects completed per year and cumulative five years number of projects constructed so far. There is a drop in the number of completed projects in 2018/19 after completing a sizeable number of projects in three years. It is possible that a big number of projects were finished between 2015 and 2018 because they were a backlog of WSDP I and facilitation by National Water Fund. It is also possible that the sudden shift of focus to service sustainability, attracted more funds for operation and maintenance. The graph below indicates the trend of increase in the number of water points constructed as a result of the completed projects in table 4-5 above.



**Figure 4-11: Trend of Number of Constructed Water Points from year 2015 to 2019** (Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)



In recent years, the Government of Tanzania has demonstrated a high commitment in investing in water service infrastructure. Table 4-6 below presents a very interesting case for strategic decision making. Closely, it shows that the number of projects constructed and number of projects rehabilitated and extended have spent almost the same amount of funds. On the other hand, with the same amount of funds the percentage of increased coverage for rehabilitation and extension is more than double the percentage increase out of constructing new projects. With the present amount of non-functional water points especially those that are repairable, it is wise to spend more on rehabilitation for quicker and comparatively cheaper result.

**Table 4-6: Number and Potentiality of Ongoing Rural Water Projects during 2019/2020**

| S/N | Description of Ongoing Interventions                                                                | Total Number of Projects | Total Costs [TZS]      | Projects 2019/20 Budget [TZS] | Projected Increase in Water Supply Coverage |
|-----|-----------------------------------------------------------------------------------------------------|--------------------------|------------------------|-------------------------------|---------------------------------------------|
| 1.  | Construction of rural water supply projects funded by NWIF                                          | 422                      | 247,490,379,842        | 93,537,953,773                | 5.0%                                        |
| 2.  | Construction of rural water supply projects funded by CDG                                           | 200                      | 162,419,301,204        | 30,459,609,771                |                                             |
| 3.  | Rehabilitation and extension of rural water supply projects funded by PbR programme                 | 1,217                    | 25,920,000,000         | 25,920,000,000                | 6.7%                                        |
| 4.  | Construction, rehabilitation and extension of rural water supply projects funded by PforR Programme | 518                      | 119,999,386,307        | 119,999,386,307               | 6.2%                                        |
|     | <b>Total</b>                                                                                        | <b>2,357</b>             | <b>555,829,067,353</b> | <b>269,916,949,851</b>        | <b>17.9%</b>                                |

(Source: RWSSP Progress Report for Second Quarter 2019-2020)

In the reporting period, DAWASA has almost doubled the number of new connections that was existing in June 2015 although compared to the ambitious WSDP II set target of 500,000 new connection by June 2019, the achievement is slightly above 50% of the target. If further gauged against demand in the service jurisdiction including some parts of Coast Region, DAWASA need to strategize on how best to increase more numbers in connection hence raised percentage of coverage.

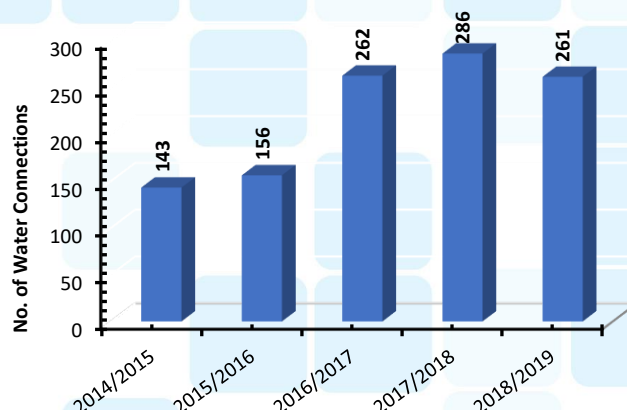


Figure 4-12: Cumulative number of water connections since 2014

## ii) Urban Service infrastructures

In 23 Urban Regional Centers, the WSDP II infrastructures targets include; 22 treatment plants constructed; 330 Km new transmission main constructed; 2,111 Km of pipes to expand the water supply distribution network laid; 44 storage tanks constructed; 200,000 new house connections installed; 60 wastewater treatment ponds constructed and 887 Km of sewer lines constructed.

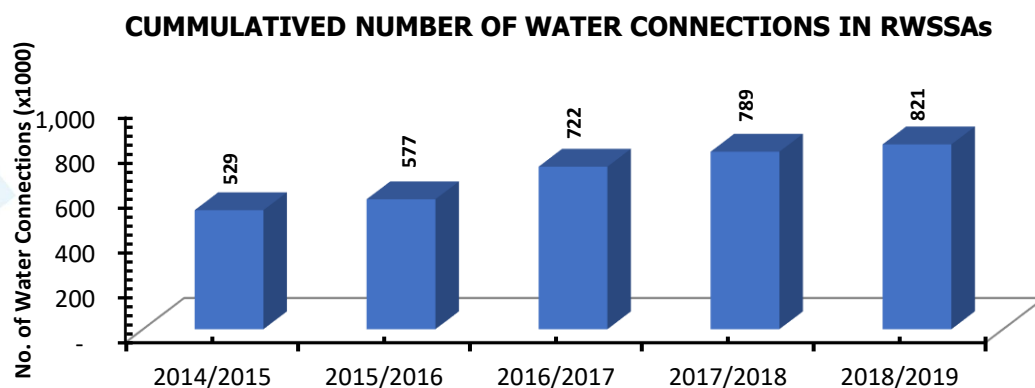
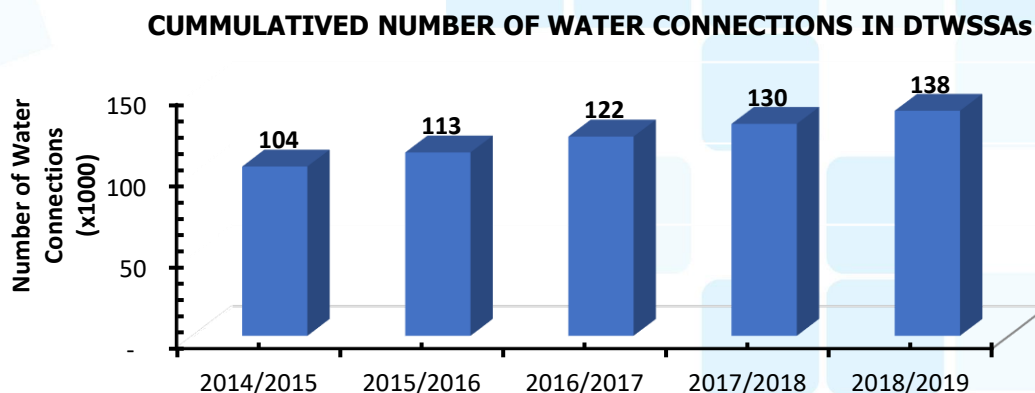


Figure 4-13: Cumulative Number of Water Connections in Regional WSSAs (Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)

The overall connections in Regional Utilities outside Dar es Salaam have registered a steady increase on average during the reporting period. The target set is to trigger a coverage of 90% by June 2020 and the Regional Utilities recorded slightly over 84% coverage by June 2019. This is a promising achievement for the June 2020 target. The picture over all indicates Utilities commitment in investing on customer related infrastructures.



*Figure 4-14: Cumulative Number of Water Connections in District/Small Towns WSSAs  
(Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)*

Despite the comparatively smaller customer base and therefore financial resources, the District and Township Authorities on average did well in terms of investment on customer demands and needs. On average, this group of Utilities exceeded the WSDP II target set on coverage of 65% by June 2019 by hitting an average of 71%. Although the group need a long leap to the 90% national coverage target by June 2020, the effort so far is worth recognition.

On the other hand, there are different projects that are ongoing at different stages under supervision of different Authorities and the Ministry all over the Country. There is Lake Victoria water supply project for Tabora, Nzega and Igunga comprising of construction of transmission and distribution mains construction of storage tanks and offices. The overall progress is estimated at 73.2% by June 2019. Another one is Water Supply Project for supply of water to 28 Towns which has design and construction phases and started implementation in June 2019. The Consultant submitted the Draft Design Review Report in August 2019.

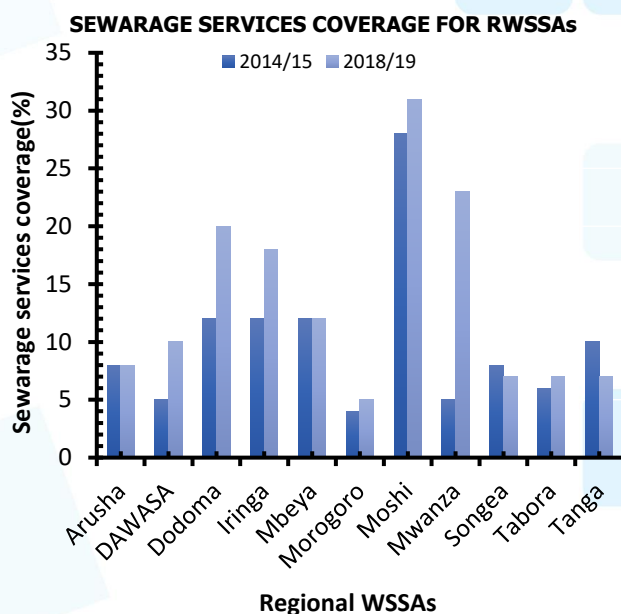
Lindi and Kigoma are also beneficiaries of a Water Supply Project of which progress was recorded to be 92% and 87% respectively at the end of June 2019. Another Lake Victoria Water Supply and Sanitation Initiatives Project ongoing for Geita, Nansio, Sengerema and Mwanza City with progress at Mwanza City recorded reach 75% by June 2019. Morogoro will also benefit from a Morogoro Water Supply and Sanitation Project which was at preparatory stage by the end of financial year 2018/19. Other water Supply and Sanitation projects are also progressing in Musoma and Bukoba with progress ranging from preparatory to 10% implementation by June 2019. Chalinze and suburbs is a beneficiary of a Rehabilitation and Expansion of Chalinze water Treatment Plant and Extension of Chalinze water Distribution Network and Reservoir with a plan to construct 1022km of pipelines, 19 storage tanks, 351 kiosks, Construction of 400m<sup>3</sup>/hr treatment plant, 9 Booster Station and 1 office. The overall works progress was at 80% by June 2109.

Orkesumet Project was also in record to have been progressing at 12% for lot I and 73% for lot II BY June 2019, so was Misungwi, Lamadi and Magu towns Project which was progressing at 85% in June 2019. The Contract for Mugango Kiabakari Project was signed in August 2019 while the Dar es Salaam destined Kimbiji/Mpera drilling boreholes Project was at 87.5% progress by June 2019. Another Dar es Salaam project is expansion of upper Ruvu and expansion of Distribution system to include Kiluvya and Bagamoyo. In Simiyu Region, a climate resilient bulk water supply project from Lake Victoria to the townships of Nyashimo, Bariadi and Lagangabilili including villages along the pipeline is planned. The detailed design was completed in June 2019 and the process of procuring supervision consultant is on progress. Arusha is also a beneficiary to a big rehabilitation and extension of water supply and sewerage systems in Arusha City with intention to have boreholes, waste water treatment plant, supply network expansion and Office buildings. Different pieces of works were reported to have progressed between 5% and 91% by June 2019. As noted, the implementation progress in different projects is promisingly good. Combined with calculated interventions to reduce non-revenue water, these projects in different parts of Urban Tanzania combined together are the source of added confidence to the Government targeted coverage of 90% in Urban areas by June 2020.

## **4.2 Sanitation**

### **4.2.1. Sewerage**

The broad objectives of WSDP II in UWSS are to have sewerage systems as part of overall sanitation strategy for each town by increasing sewerage systems service coverage from 17% by June 2007 to 30% by June 2010. As of June 2015, only 10 towns/cities had sewerage services which is equivalent to coverage of 20% of total urban population. It is the view of the Ministry that Sewerage services need special attention especially after improving water services. Very little improvement is recorded, such that as of 30th June 2015, it is estimated that only 526,895 people used about 43,295 sewerage connections.



Taking the Regional Utilities as a case for depicting the sewerage situation in urban areas it seems there have not been much of a progress and improvement in comparison to the situation in 2015. The coverage then was estimated to be 20%. Looking at the graph it does not register any significant change on average because while Utilities like Moshi and Mwanza and Dodoma have soared, Utilities like Tanga and Songea have gone down and Utilities like Morogoro have done very little to increase sanitation service coverage to at list above 5% of the population in her service jurisdiction.

Figure 4-15: Status of Sanitation Services Coverage for Regional WSSAs (Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)

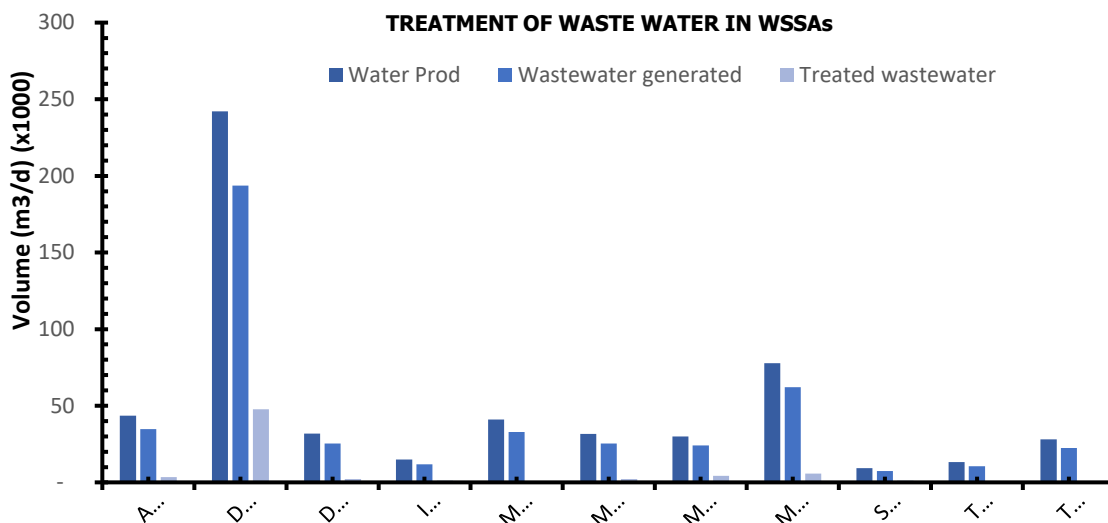


Figure 4-16: Waste Water Generated vs Treated in FY 2015/2016 (Source: Water Utilities Performance Review Reports 2014/2015 – 2018/2019)

The ratio between produced waste water and treated waste water is uncomfortably slanted. It probably tells a true picture of availability and capacity of the waste water collection and treatment facilities. Linked to state of urban hygiene, it says all about our vulnerability to continuous outbreak of water and air borne diseases. Again, going back to coverage



percentages in water supply service delivery as indicated in *Figure 4-7* to *Figure 4-9* displayed in the previous section, this is a question of conflicting priorities. The Utilities are forced to choose, prioritize, rank and allocate the already limited resources wisely. While faced with the ever-ambitious water supply service coverage target to reach, the obvious is opted.

Currently the sanitation services in Urban utilities with sewage connection is only 13%. For the rest of the áreas waste wáter management is done using special cars to the disposal áreas usually slightly outside the town. The known Authorities with waste wáter disposal network are 11 including Dar es Salaam, Arusha, Tanga, Dodoma, Mbeya, Morogoro, Mwanza, Tabora, Moshi, Songea na Iringa. As of June 2019, a 844 kms of sewerage system were constructed with 49,864 connections. There are still a number of Authorities without sewerage systems; these use exhauster vacuum trucks for emptying and trasportation of faecal studges for pretreatment at sludge treatment plants. The Authorities include Sumbawanga, Bukoba, Kigoma, Musoma, Geita, Nansio and Sengerema. In other towns, the sanitation service is done by Urban Water Authorities and private sector.

Knowing the not very satisfactory situation, all Utilities were supposed to increase sanitation service coverage from 13% to 30% by June 2020. Working towards this target, different Authorities have been taking measures to redress the deficiency. DAWASA is planning to construct modern disposal and treatment facilities at Jangwani, Kurasini and Mbezi Beach. Arusha plans to expand its waste water network and construct new 18 disposal dams while Geita, Misungwi, Lamadi, Magu, Lindi, Bukoba, Musoma and Kahama are building modern collection and disposal facilities. On the other hand, several Authorities have identified and designated sewerage disposal and treatment dam sites. The Authorities include Njombe, Mtwara, Babati, Pangani, Muheza and Korogwe.

#### 4.2.2. Hygiene

Hygiene target is to increase the proportion of the population that uses improved sanitation facilities from 2.2 million Households (25%) in 2013 to 7.8 Million Households (75%) by 2019, while instituting measures to eradicate open defecation. Specific targets includes; Latrines in 3,500 primary schools rehabilitated including hand-washing facilities, menstrual facilities and formation of sanitation clubs by 2019; Latrines in 700 secondary schools rehabilitated including provision of hand-washing facilities and formation of sanitation clubs by 2019; WASH in 1,000 health facilities rehabilitated and management of healthcare waste strengthened in 600 health facilities by 2019; 25% of households with water treatment and safe storage facilities by 2019 and 8 WASH facilities constructed in highway congested bus stops by 2019.

Table 4-7: Status of Sanitation Services

| Description of Indicators                                  | Performance of KPIs |           |
|------------------------------------------------------------|---------------------|-----------|
|                                                            | 2015/2016           | 2018/2019 |
| Households with improved toilets [%]                       | 35.8%               | 57.2%     |
| Households with hand washing facilities +soap [%]          | 13.4%               | 20.8%     |
| Households with drinking water safe storage facilities [%] | 11%                 | 21.9%     |
| Number of Health facilities with improved toilets          | 1000                | 826       |
| Number of Schools with improved toilets                    | 4200                | 4136      |
| Villages/Mitaa without any toilet [%]                      | 7.5%                | 2.5%      |

(Source: Ministry of Health )

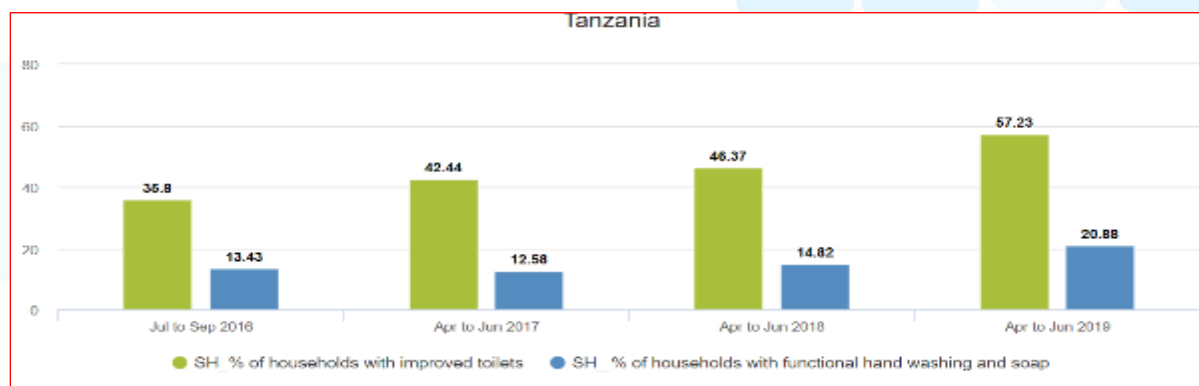


Figure 4-17: Achievement of National Sanitation Campaign from July 2016 to June 2019  
(Source: National Sanitation Campaign-Annual Progress Report 2018/2019-  
Ministry of Health)

Looking at the figures displayed in the Table 4-7, one of the biggest success of the campaign is increasing coverage of improved sanitation from 35.8% in June 2016 to 57.2% in June, 2019. Similarly, the number of households without any type of toilet has decreased from 7.5% to 2.5% during the same period.

Over the reporting period, like the previous one, the funding for facilitating improved sanitation and hygiene budgeted under the Ministry of Water was being passed over to the Ministry of Health and Ministry of Education for implementation. That being the case, until financial year 2017/18 when the Ministry of Water formed a Sanitation and Hygiene Section, the reporting and tracking responsibility especially on rural sanitation and hygiene rested on the Ministries of Health and Education.

The Ministries of Health and Education have been implementing Sanitation interventions through a very famous and successful campaign known as 'Nyumba ni Choo'. Looking at the figures displayed in the Table 4-7, one of the biggest success of the campaign is reducing the number of Villages/Mitaa without any toilet from 7.5% in June 2016 to 2.5% in June 2019. Achievements in other indicators' targets around households have also doubled including the

percentage of households with improved toilets which have increased from 35.8% in June 2016 to 57.2% in June 2019. Improvement expectations are even higher towards June 2020 as there are several Government and Development Partners' supported interventions going on the ground.

## 4.3 Key Issues

### 4.3.1. Sustainability of Rural Projects and Services

Official reports (annual, midterm, joint mission, independent and routine monthly reports) indicate that more than a third of investment in rural water service delivery is a lost investment either before or immediately after a short-lived service delivery.

This challenge is attributed to poor planning, subjective decision making, poor design and at most poor project and service management. That the mass failures in community projects happened under the management of COWSOs can not be over-emphasized, but that concept of Community involvement and ownership of the projects is a failure is open to discussion.

Owing to community service history, most of CBWSOs (the former COWSOs) are treated as hindrance to the service prosperity at Community level instead of being treated as a blessing and a convenient service improvement puller. With careful organization, capacity strengthening and guidance, the Community Service Management is a reliable route to enhanced service sustainability. RUWASA is currently implementing a number of preparatory interventions to optimize the changes in the sector. The move is to use changes in laws and sector focus to revolutionize community water service management through professionalization, convenience clustering and fostering private sector engagement in operation and maintenance.

### 4.3.2. Non-Revenue Water

This may prove to be one of the main causes of urban service quality 'stunting'. According to EWURA annual reports (Water Utilities Performance Review Reports), the rate of Non-Revenue Water (NRW) is alarming. The national tolerable NRW rate is 25% (agreed rate for SADC Countries is 20%). The records indicate an average of 30.2% for all Authorities put together. Out of 120 Authorities and National Projects only 29 Authorities have NRW at or below 25%, hardly a quarter of all Authorities. It is worse in bigger Authorities hosting Regional Headquarter services like Arusha and Dar es Salaam. Dar es Salaam, for instance, is losing a half of the water produced in NRW. NRW hinders organization and economic growth and kills possibilities to improve service quality and affordability.

The Government through EWURA encourages and recognizes performance of individual Authorities as a gauge of capacity to manage organization running costs and ability to finance production and maintenance of service. Utilities are supported to deliberately strategize and

plan to address the main causes of non-revenue water. The plans are supposed to address all critical angles; Management, financial and Operational.

#### 4.3.3. Inadequate Rural Water Service Data.

Data collection and management especially in rural water sub sector is still a challenge in methodology, storage and use. This is because the content of data being collected and stored to date do not cover all regular and intermittent indicators that need to be reported on. To date, internal Ministry reports cannot be completed using Central Data Management Team data alone without cross referencing with other sources. The team is currently part of RUWASA and plans are underway to list, harmonize and agree on all critical indicators that are being reported on monthly, quarterly and annual. Once finalized and agreed, all data and information on the indicators will be collected by CDMT as one exclusive source of data and information for all reports and analysis on the rural water subsector.

#### 4.3.4. Blurred Accountability in Sanitation Services

As it stands now Sanitation services are seemingly a responsibility of four Ministries; The Ministry of Water prepares budgets and passes the health and hygiene part of the sanitation budget to Ministries responsible for Health and Education and the two Ministries implement health and hygiene interventions through Local Government Authorities under the President's Office-Regional Administration and Local Government. On the ground, the Ministry of Water oversees the implementation of sewerage interventions through Urban Authorities and RUWASA and ensures health and hygiene interventions in households, public areas, health facilities and schools are supported.

Reports are written in pieces; Water prepares reports on Sewerage, Health on Households, public and Health facilities and Education does on Schools related sanitation. There may be one budget but reporting, analysis and learning for better planning and prioritized resources utilization is not part of the implementation design.

It is important that this implementation anomaly is addressed jointly so that a much more realistic implementation and accountability mechanism is agreed for the betterment of Sanitation subsector.







## 5 CHAPTER FIVE | PLANNING & FINANCING

The purpose of this Chapter is to communicate to stakeholders sector's intended plans for the period FY16/17 to FY 20/21. Sector planning and financing has been a subject of discussion in all previous sector reviews. The discussions have enabled a complete and fair sector performance assessment. Prior to WSDP I implementation, water sector activities were implemented through discrete projects and sub-programmes in selected areas in Tanzania. Challenges with this fragmented approach resulted to the development of the National Water Sector Development Strategy (NWSDS) and programme (WSDP). Both documents provide guidance on implementation of water supply and sanitation service delivery and water resources management interventions.

WSDP (programme) was introduced in 2006 with a 20-year horizon planned to have four implementation phases of five years. WSDP I started on July 1<sup>st</sup> 2007 and had its Mid-Term Review (MTR) in 2010. MTR findings revealed implementation progress was substantially behind schedule and recommended for programme re-structuring and revision of targets. The completion date was pushed-forward to June 2014. As of June 2014, most activities of WSDP I were not completed thus an additional financing period was agreed by stakeholders to further the implementation period of WSDP I to December 2015. In July 2014, the program document for the second phase of WSDP covering the period 2015 to 2019 was completed. In September 2015, the additional financing period was extended to June 30<sup>th</sup> 2016 and WSDP I concluded as planned. As of June 2016, WSDP I had spent \$ 1.42 billion and commitments totaled \$1.63 billion. Share of Basket financier's in WSDP I was 42%, Government of Tanzania (GoT) 22.3% and Earmarked Financiers was 35%. Basket and GoT had released 100% of their commitments and earmarked financiers had a balance of \$ 0.21 billion due to some projects still being in progress. (*1<sup>st</sup> Aide Memoire - June 2016*)

WSDP II started on July 1<sup>st</sup> 2016 with Ministry of Water (MoW) having the overall responsibility particularly on water resources, supply and sanitation while Ministry of Health leading the national sanitation and hygiene campaign. This chapter therefore assesses the two-year additional financing period and three years of WSDP II implementation. Bulk of the information provided in this Chapter is from the WSDP Phase II framework document, WSDP strategy, annual budget books, vote 49 audit reports, WSDP evaluations and Aide Memoirs.

## CHAPTER SYNOPSIS

### Planning & Financing

- Development budgets increased in both nominal and real terms to TZS 616 billion in 2019/20 from TZS 490 Billion in 2014/15.
- WSDP II commitments increased to \$ 3.2 Bn from \$ 0.8 Million in 2015.
- Sector releases show an increasing trend (both local and foreign). Share of local releases has increased to 40% from 20% in 2011- a positive direction towards sector's self-financing. The NWIF provides reliable funding.
- Fee collections for basins have doubled to over TZS 4Bn in 2019 from TZS 2Bn in 2015 enabling basins meet costs of their recurring expenditure.
- WSDP II budget execution reveal improvements in planning since the disparity between plans vs receipts has decreased from 59% in FY 16/17 to 29% in FY 18/19. Spending has also improved due to close supervision of projects.
- Sector's Fiduciary management has improved specifically in the areas of procurement, accounting and audits. Overall, the level of effectiveness and efficiency has improved compared to situation in FY 14/15.

### Issues and next steps

- Shift prioritization in planning to water resources to defer the looming water security risk. Review and adjust realized commitments.
- Instituting a simple mechanism to track and account for all sector interventions to determine a true picture of sector performance and close the gap on the accounted support that passes out of the formal system.

## 5.1 Water Sector Planning

The Water Sector Development Programme (WSDP) provides an overarching framework on sector planning, investment priorities and a mechanism for resources mobilization in Tanzania. WSDP's Programme Development Objective (PDO) aims at strengthening sector institutions for integrated water resources management and improving access to water supply and sanitation services. The WSDP programme was designed to be implemented by various Implementing Agencies (IA) including Local Government Authorities (LGAs), Basin Water Boards (BWBs), and Water Supply and Sanitation Authorities (UWSAs/DUWSSs) throughout the country.

Expectations at the end of the second phase are the Government of Tanzania (GoT) would have met its FYDP II sector targets and be well on the way to achieve the global indicators (SDGs). Expectations in WSDP II are to have in place a sustainable regulatory framework for comprehensive water resources management and development to enable the country attain

middle income status. Planning in the sector is done in a way that Government, development partner (DP) and other stakeholders including private sector closely align resources in a coordinated manner in support of national goals via a broadened dialogue arrangement. Although Ministry of Health leads the sanitation & hygiene campaign, Ministry of water is assigned vote 49 to account for all water resources management and supply activities. WSDP II implementation group intervention plans into five components. The President's Office, Regional Administration and Local Government (PORALG) is engaged in all WSDP interventions while Ministries of health and education are engaged in sanitation and hygiene.

**Table 5-1: WSDP II summarized requirements plan**

| WSDP II requirements                           | Year 1       | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|------------------------------------------------|--------------|--------|--------|--------|--------|-------|
| Amounts                                        | TZS Billions |        |        |        |        |       |
| Exchange rate (0.001 \$ to TZS)                | 2.27         | 2.27   | 2.27   | 2.27   | 2.27   |       |
| Water Resources Management                     | 87.5         | 336    | 728    | 424    | 248    | 1823  |
| Water Supply and sanitation in rural and urban | 722.9        | 1425.6 | 1272.2 | 900.6  | 696.6  | 5018  |
| Sanitation and Hygiene (S&H)                   | 9.2          | 89.9   | 114.0  | 75.4   | 51.9   | 341   |
| Program Delivery support (PDS)                 | 57.1         | 87.3   | 61.1   | 37.4   | 9.7    | 253   |
| Total                                          | 876.7        | 1938.6 | 2175.6 | 1437.0 | 1006.6 | 7434  |

At the planning stage WSDP II had an estimated total programme cost of \$3.3 billion (TZS 7.4 Trillion), making it one of the largest water sector programmes ever launched in the region. While the form of the above envisaged annual budgets is a bell-curve, it is worth mentioning that WSDP II maintained the same planning structures of WSDP phase I. Sector priorities for Water Resources Management; Water Supply and Sanitation Services; as well as Institutional Strengthening and Capacity Building are provided in the (*WSDP II document July 2014*) and the (*Strategic Plan November 2015*) using a Sector Wide Approach to Planning (SWAP) and implementation of IWRMD plans. The plans are aligned with the aspirations of the Tanzania Development Vision (TDV-2025), Five Year Development Plan (FYDP 2016/17 -2020/21), Long Term Perspective Plan (LTPP 2011/12-2025/26), Water Sector Development Programme (WSDP 2006-2025) and Election Manifesto of the Chama Cha Mapinduzi (CCM 2015 -2020).

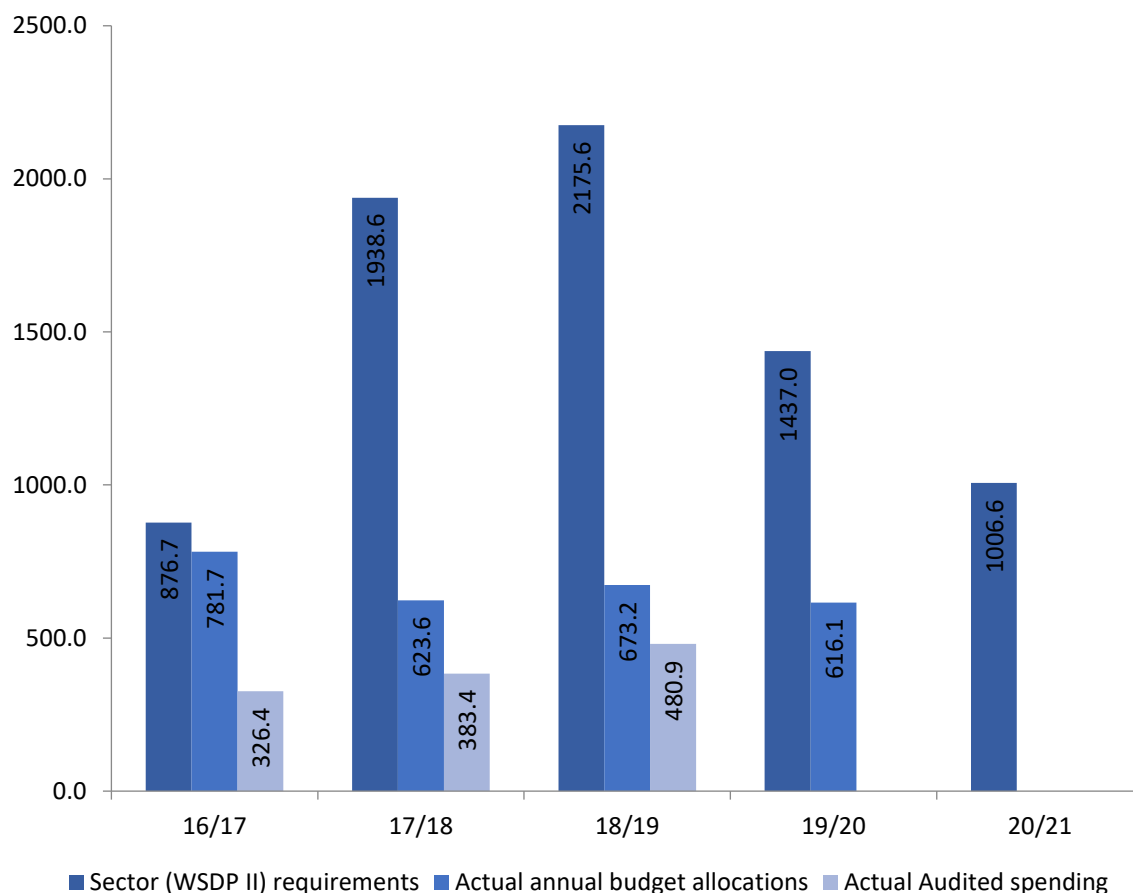
An IWRMD approach recognizes the economic value of water and sustainability whilst decentralizing decision-making through subsidiary principles for water resources. Both structures favor holistic bottom up planning in a participatory manner. SWAP aims at providing the required capital investment finance from Government, in collaboration with Development Partners, private sector and other partners to further ensure efficient allocation of public financial resources, thus reducing regional and district inequalities and attain a much balanced approach on planning needs.

Achieving sector aspirations is hindered by timely availability and adequacy of financial resources. Sector has a shortfall in financial resources to fulfil WSDP II needs. Ideally, to fully

implement WSDP II, annual budgets should amount to a minimum of TZS 1.5 trillion. As a workaround to limited financial resources, considering second phase activities are still relevant a preferential selection of activities has been done.

**Table 5-2: Sector planning and implementation overview (Figures in TZS Billions)**

|                                  | 16/17 | 17/18  | 18/19  | 19/20  | 20/21  | Total  |
|----------------------------------|-------|--------|--------|--------|--------|--------|
| Sector (WSDP II) requirements    | 876.7 | 1938.6 | 2175.6 | 1437.0 | 1006.6 | 7434.4 |
| Actual annual budget allocations | 781.7 | 623.6  | 673.2  | 616.1  |        | 2694.6 |
| Actual Audited spending          | 326.4 | 383.4  | 480.9  |        |        | 1190.7 |



**Figure 5-1: Sector planning and implementation overview (Figures in TZS Billions)**

Since the beginning of WSDP II in FY 16/17 high priority of allocations has been to water supply and sanitation projects. Share of allocations for both rural and urban Components totals TZS 2.45 trillion (91% of total allocations for the period).

Table 5-3: Approved budgets during Additional financing and WSDP II.

| FY                                            | 14/15                     | 15/16   | 16/17               | 17/18  | 18/19  | 19/20 | WSDP II total (Year 1-4) | % share. |
|-----------------------------------------------|---------------------------|---------|---------------------|--------|--------|-------|--------------------------|----------|
|                                               | WSDP Additional financing | WSDP II |                     |        |        |       |                          |          |
|                                               |                           | Year 1  | Year 2              | Year 3 | Year 4 |       |                          |          |
| Amounts                                       | TZS Billions              |         |                     |        |        |       |                          |          |
| Water Resources Management (WRM)              | 56.6                      | 42.3    | 62.7                | 61.1   | 48.7   | 40.0  | 212.5                    | 7.9%     |
| Water Supply and sanitation (rural and urban) | 404.7                     | 415.3   | 813.0               | 536.4  | 549.3  | 547.9 | 2446.6                   | 90.8%    |
| Other WSDP II Components (4&5)                | 27.5                      | 27.7    | -94.0 <sup>11</sup> | 26.1   | 75.2   | 28.2  |                          |          |
| Final budget                                  | 488.9                     | 485.3   | 781.7               | 623.6  | 673.2  | 616.1 | 2694.6                   |          |

Table 5-4: Annual approved budgets against WSDP II requirements.

| WSDP II plans vs actuals                                                  | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 |
|---------------------------------------------------------------------------|-------|-------|-------|-------|-------|
| Annual approved budget against WSDP II requirements.                      | 89%   | 32%   | 31%   | 43%   |       |
| Approved Water resources management budget against WSDP II requirements.  | 72%   | 18%   | 7%    | 9%    |       |
| Approved Water supply and sanitation budget against WSDP II requirements. | 112%  | 38%   | 43%   | 61%   |       |

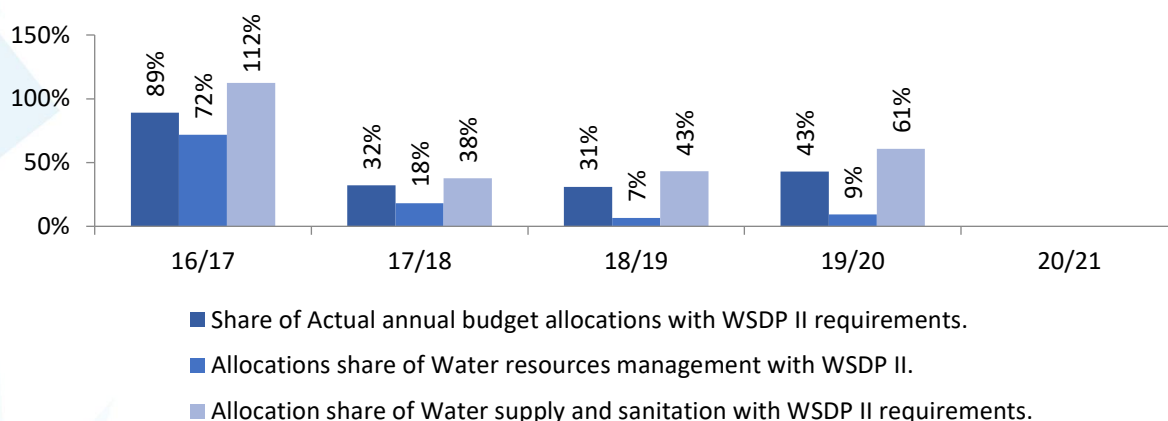


Figure 5-2: Water sector plans vs actual (FY16/17 – 20/21)

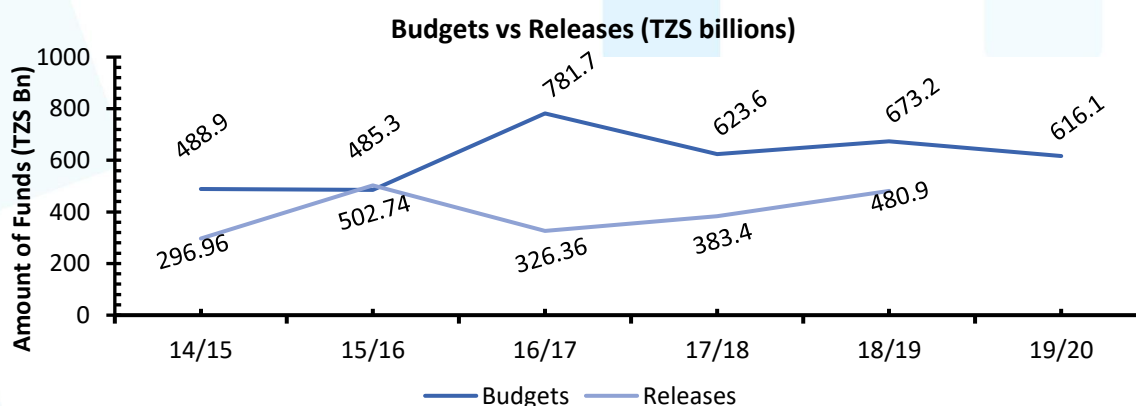
<sup>11</sup> The negative value is explained by the reallocation warrant of TZS 133 billion that reduced the total budget from TZS 915 billion to TZS 781 billion was done in FY 16/17.



Cumulatively, the approved sector budgets since FY 14/15 are a total of TZS 3.6 trillion (\$ 1.7 billion) Minimum. Portion of WSDP II (since FY 16/17 is TZS 2.7 trillion (36% of requirements)). Some interventions happen within the sector but outside the formal accounting system and therefore goes unrecorded. A perspective of sector plans against releases/receipts for the period is depicted in the below table.

**Table 5-5: Development budget (DEV) Releases against approved plans**

| FY                             | 14/15  | 15/16  | 16/17  | 17/18 | 18/19 | 19/20 | Total   |
|--------------------------------|--------|--------|--------|-------|-------|-------|---------|
| <b>DEV budget (Bn TZS)</b>     | 488.9  | 485.3  | 781.7  | 623.6 | 673.2 | 616.1 | 3668.8  |
| <b>Total Releases (Bn TZS)</b> | 296.96 | 502.74 | 326.36 | 383.4 | 480.9 |       | 1990.36 |



**Figure 5-3: Comparison between Budgeted funds vs Releases**

Among the lesson learned in WSDP I is mobilizing commitments from foreign sources is a slow process. The process has long lead times to attain the releases stage. In the first year of WSDP II implementation, MoW decided to defer (temporarily abandon) some activities pending the resources situation to improve while according highest priority to water supply and sanitation projects. Outcome of this prioritization is evidenced in the success in increased access and coverage reported in the preceding chapter. While the expected annual share of resources for water resources management in WSDP II was 25%, annual allocations have been declining reaching 6% in FY 19/20. Total allocations for WRM is TZS 212 billion cumulatively (7.9%) while allocations for water supply and sanitation stand at TZS 2.45 trillion (90.8%).

Table 5-6: Share of Component allocation against total annual budget

|                                                                  | 16/17 | 17/18 | 18/19 | 19/20 |
|------------------------------------------------------------------|-------|-------|-------|-------|
| Water Resources Management (WSDP II Component 1)                 | 8%    | 10%   | 7%    | 6%    |
| Water supply and sanitation (WSDP II Components 2&3)             | 104%  | 86%   | 82%   | 89%   |
| Water resources, supply and sanitation (WSDP II Component 1,2,3) | 112%  | 96%   | 89%   | 95%   |

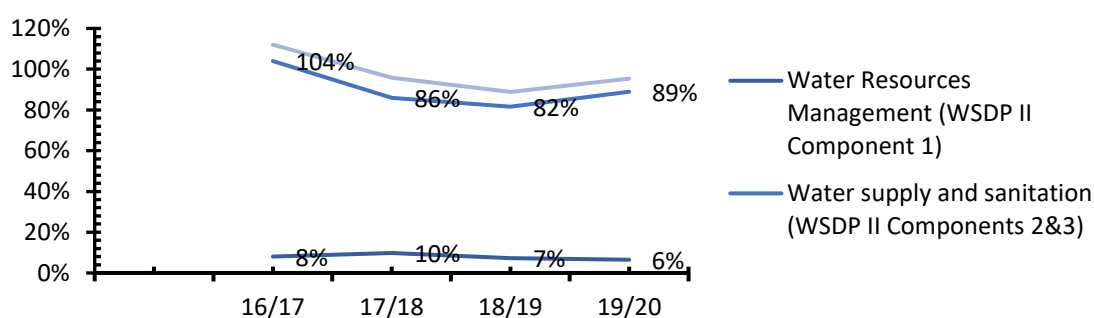


Figure 5-4: Share of Component allocations against total annual budget.

Planned interventions at Component and sub-component level at the planning stage of WSDP II in July 2014 are featured below

Table 5-7: WSDP II detailed activity plan with priority investments (Source WSDP II document July 2014)

| S<br>N | Component                        | Sub component                              | Priority areas for WSDP II intervention                                                    | Require<br>ments<br>(Million<br>\$) |
|--------|----------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------|
| 1      | Water Resources Management (WRM) | Water Resources Management and development | Basin level Institutional strengthening,                                                   | 104.7                               |
|        |                                  |                                            | Water Resources Assessment, Allocation, Regulation, Conflict Resolution Demand Management, | 57.3                                |
|        |                                  |                                            | water conservation and protection                                                          | 47.9                                |
|        |                                  |                                            | water security                                                                             | 385.8                               |
|        |                                  |                                            | transboundary water resources management                                                   | 0.335                               |
|        |                                  |                                            | Implementation of IWRMD plans                                                              | 169.3                               |

| S<br>N   | Component                                          | Sub component                                                                 | Priority areas for WSDP II intervention                                                                                                                                                                                             | Requirements<br>(Million \$) |
|----------|----------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|          |                                                    |                                                                               | National Water Resources Reforms and Investments                                                                                                                                                                                    | 23.9                         |
|          |                                                    | Water Quality Management and pollution control                                | Implementing Water Quality Management for Compliance                                                                                                                                                                                | 3.63                         |
|          |                                                    |                                                                               | Strengthening Management Support and Capacity Development to Support the Managerial Systems of Water Quality Management                                                                                                             | 10.88                        |
|          | <b>TOTAL for Water Resources Management</b>        |                                                                               |                                                                                                                                                                                                                                     | <b>804</b>                   |
| <b>2</b> | Rural Water Supply and sanitation (RWSS)           | Investments                                                                   | New constructions and extension                                                                                                                                                                                                     | 563                          |
|          |                                                    | Capacity strengthening including O&M                                          | Rehabilitation and O&M                                                                                                                                                                                                              | 299                          |
|          | <b>TOTAL for Rural Water Supply and Sanitation</b> |                                                                               |                                                                                                                                                                                                                                     | <b>862</b>                   |
| <b>3</b> | Urban Water Supply and sanitation (UWSS)           | Improvement of water supply and sanitation in Dar es Salaam                   | Drilling, water treatment, source development, construction, extension and rehabilitation of water supply and sewerage systems, waste water treatment in Dar Salaam, National projects, regional centres and district headquarters. | 455.8                        |
|          |                                                    | Improvement of water supply and sanitation in 23 Regional centres             | Management support to Utilities and MoW                                                                                                                                                                                             | 379                          |
|          |                                                    | National projects, district headquarters and small towns including sanitation |                                                                                                                                                                                                                                     | 481                          |
|          |                                                    | Capacity strengthening                                                        |                                                                                                                                                                                                                                     | 32.32                        |
|          | <b>TOTAL for Urban Water Supply and Sanitation</b> |                                                                               |                                                                                                                                                                                                                                     | <b>1348</b>                  |
| <b>4</b> | Sanitation and Hygiene (S&H)                       | Rural sanitation                                                              | Sanitation and hygiene advocacy, promotion and marketing, capacity building to implementing agencies,                                                                                                                               | 137.7                        |
|          |                                                    | urban sanitation                                                              |                                                                                                                                                                                                                                     | 12.3                         |

| S<br>N   | Component                                 | Sub component                                   | Priority areas for WSDP II intervention                                                                                                                                                                                                      | Requirements<br>(Million<br>\$) |
|----------|-------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
|          |                                           |                                                 | rehabilitation and construction of WASH facilities and research.                                                                                                                                                                             |                                 |
|          | <b>TOTAL for Sanitation and Hygiene</b>   |                                                 |                                                                                                                                                                                                                                              | <b>150</b>                      |
| <b>5</b> | Programme Delivery Support (PDS)          | Fiduciary Management                            | 1. Financing and Financial Management (Training, reporting and Audits). 2. Planning and budgeting (Training and preparation of annual plans and budgets), 3. Procurement Management (bid assessment and contract management and training)    | 16.5                            |
|          |                                           | Program Coordination and Performance Monitoring | 1. Dialogue, MoU and safeguards compliance<br>2. Program assessments (mid-term review and technical (value for money audit)<br>3. ICT enhancements and training<br>4. Monitoring (Field visits and surveys, annual and terminal evaluations) | 9.94                            |
|          |                                           | Capacity Development                            | Capacity development at MoW, Water Institute, DDCA, Maji Central Stores and Communication and publicity unit.                                                                                                                                | 84.85                           |
|          | <b>TOTAL for Program Delivery Support</b> |                                                 |                                                                                                                                                                                                                                              | <b>111</b>                      |
|          | <b>GRAND TOTAL FOR WSDP II</b>            |                                                 |                                                                                                                                                                                                                                              | <b>3275</b>                     |

MoW's Department of Policy and Planning (DPP) is responsible for policy formulation, coordination of preparation of sector plans, strategies and resources mobilization. The DPP prepares work plan and budgets annually for each subsequent fiscal year of WSDP implementation by receiving input from Components, departments and stakeholders. Using existing planning frameworks, DPP prepares long, medium and short term plans for the sector using a result-based SWAP. Both sets of plans are consistent with respective consolidated sector MTEF and budget guidelines issued by the Ministry of Finance & Planning for that particular year. Government's Financial Year (FY) starts on July 1st and ends on 30th June.

Prior to the initial budget preparation process, Development Partners confirm to the Government their proposed contributions for each year of WSDP implementation. Annual

budgets (Development (DEV) and Recurrent<sup>12</sup> budgets) are prepared to adhere to sector MTEF and budget guidelines issued by Ministry of Finance and Planning. The budgets recognize planned contributions from local and foreign source categories<sup>13</sup>. Confirmed commitments from Development partners<sup>14</sup> are reflected in the sector MTEF and annual budget estimates. Once completed, budgets (DEV and Recurrent) are submitted to the legislature for approval. Approval is granted before end of June.

Among the assumptions taken during planning of WSDP II were financial resources will be sufficient, available in a timely manner via same modalities as in WSDP I (large share of basket from both Government and foreign sources). The below broad priorities were planned to be tackled in the second phase:

1. Finalization and operationalization of the Integrated Water Resources Management and Development Plans to maintain assurance of sound water governance and coordinated cross-sectoral demand management;
2. Consideration of Climate Change mitigation and adaptation measures as part of effective protection and conservation of water sources;
3. Urgent capacity building on management and technical expertise to enable sustainable operations of rural water projects;
4. Urgent intervention to reduce to acceptable levels, the non-revenue-water problem;
5. Consideration of investment in renewable energy as a means to reduce the cost of O&M for water projects; and Strengthening and harmonization of information systems to cater for data/information flow to ensure efficient and effective performance monitoring of the Programme.

In 2018, a number of key reforms were planned and undertaken at ministerial and sector level aiming at optimizing sector's efficiency and effectiveness. At ministerial level the National Irrigation Commission (Vote 5) was transferred back to the Ministry of Agriculture, the Rural and Urban Water Departments were merged to form the new Department of Water Supply and Sanitation. Furthermore, the former WSDP Program Coordination Unit (PCU) was changed to Project Preparation, Coordination and Delivery Unit (PPCDU), to provide more focus on project preparation and delivery and enhance coordination of WSDP. DAWASCO has been merged with DAWASA. Moreover, the parliament of the United Republic of Tanzania enacted the new Water Supply and Sanitation Act which provide for the establishment of the Rural Water Supply and Sanitation Agency (RUWASA).

---

<sup>12</sup> Recurrent budgets contain Personnel Emolument (PE) and Other Charges (OC).

<sup>13</sup> Annual budgets that are normally submitted to legislature for approval do not include some contributions from Development Partners and Civil Service Organizations (CSOs).

<sup>14</sup> This is a requirement for those who have signed Financing agreement (loans or grants) with Ministry of Finance.



RUWASA took the role of Local Government Authorities in rural water supply and sanitation service delivery in July 2019. Stakeholders regard this decision as a positive step to strengthen delivery and management of rural water supply and sanitation services at local level. The Ministry of Water has also initiated a review of the National Water Policy of 2002 and the development of a new National Water Sector Development Strategy. The policy and strategy review have come timely and the review is grounded on evidence and experience of the implementation of WSDP in the past 13 years.

The sector did introduce a number of initiatives to further improve the planning process. The Funding compendium and the Equity Guidelines have been developed to facilitate identification and securing additional resources to ensure an equitable allocation. Good progress has been achieved towards adoption of spatial technology in planning using GIS. GIS will speed up the realization of a strategic and targeted investment plan which is lacking at the moment. A National Water and Sanitation Master Plan as an immediate cure to the strategic planning is needed so that investments into appropriate water and sanitation are considered more prominently and improves on equity and human rights-based investment criteria. (4<sup>th</sup> Aide Memoire)

#### 5.1.1 Budget execution

##### Analysis of development budget.

WSDP's development budget (DEV) outlines development priorities and resource allocations in the sector. Current water sector plans draw resources from three (3) principle sources of funding, namely: (i) Local (from Treasury), (ii) Foreign (external loans and grants) and (iii) Internal (revenue). During the review period, the DEV budget increased in both nominal and real terms from TZS 490 Billion in 2014/15 to TZS 616 billion in 2019/20.

During the period (FY 14/15 - FY 19/20), total accounted receipts from all sources (local, foreign and other) amounts to TZS 1.99 Trillion (692 Mn \$). This is 54%<sup>15</sup> of approved allocations for the period. Total DEV spending during the period (FY 14/15 to FY 18/19<sup>16</sup>) totals TZS 1.953 Trillion (US \$0.907 billion. The TZS 1.953 trillion is 98% of total receipts. WSDP II budget execution reveal improvements in sector planning since the disparities of plans against receipts has decreased from 59% in FY 16/17 to 29% in FY 18/19.

MoW through vote 49, being the lead Implementing Agency (IA) for WSDP receives and transfers-out funds to other IA. During the period, a cumulative total of TZS 1.054 Trillion was transferred-out to other IAs. Water supply and sanitation projects in rural and urban components received bulk of the transfers amounting to TZS 1.002 Trillion (95%). Remaining 5% was transferred to the remaining components (water resources, water quality, sanitation and hygiene and Institutions under program delivery support). The remaining balance was expensed for various WSDP activities at ministerial level.

---

<sup>15</sup> 36% is the minimum recorded amount. Actual resources injected to the sector are much more.

<sup>16</sup> all Exchequer receipts and basket payments including Direct payments to projects

Assessment of sector progress in WSDP II implementation (FY 16/17 to FY 18/19) should consider the fact that a minimum<sup>1</sup> of 36% of all sector allocations are confirmed received and 98% of the receipts have been spent.

Table 5-8: DEV budget allocations, releases and payments (FY 14/15 – FY 19/20)

| FY                           | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | Total  |
|------------------------------|-------|-------|-------|-------|-------|-------|--------|
| In Billions of TZS           |       |       |       |       |       |       |        |
| Approved (DEV Budgets)       | 488.9 | 485.3 | 781.7 | 623.6 | 673.2 | 616.1 | 3668.8 |
| Annual receipts (GoT & DPs). | 297.0 | 502.7 | 326.4 | 383.4 | 480.9 | 290.0 | 1990   |
| Annual Payments (spending).  | 304.2 | 510.8 | 317.5 | 372.5 | 448.3 |       | 1953.3 |
| Exchange rates (0.01\$:TZS)  | 2030  | 2168  | 2204  | 2270  | 2270  | 2270  |        |
| In Millions of US \$         |       |       |       |       |       |       |        |
| Approved (DEV Budgets)       | 240.8 | 223.8 | 354.7 | 274.7 | 296.6 | 271.4 | 1662   |
| Annual receipts (GoT & DPs). | 146.3 | 231.9 | 148.1 | 168.9 | 211.9 | 127.8 | 1035   |
| Annual Payments (spending).  | 149.9 | 235.6 | 144.1 | 164.1 | 197.5 |       | 891    |

FY 18/19 and FY 19/20 are provisional as are yet to be audited by the National Audit Office (NAO)

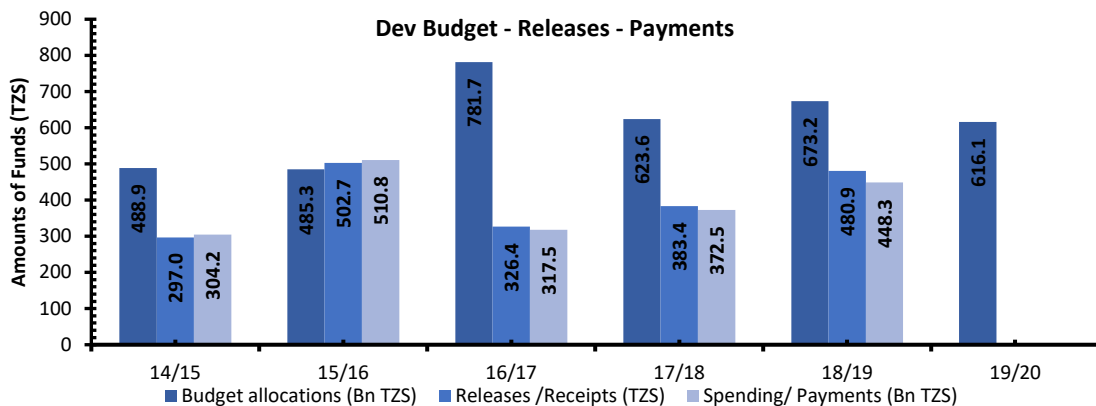


Figure 5-5: Development Budget allocations, releases and payments (2014 – 2019).

### Analysis of Recurrent Budget

Recurrent budget is composed of Personnel Emoluments (PE) and Other Charges (OC). Allocations of the sector's recurrent budget for FY 2014/2015 to FY 19/20 have averaged TZS 26.7 Bn TZS, comprising of TZS 8.5 Bn Other Charges (OC) and 17.2 Bn TZS as Personnel Emoluments (PE).

Table 5-9: Recurrent Allocations.

| Financial Year                 | 14/15                  | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 |
|--------------------------------|------------------------|-------|-------|-------|-------|-------|
|                                | Amounts in Billion TZS |       |       |       |       |       |
| Recurrent allocations          | 30.1                   | 26.96 | 24.41 | 24.44 | 24.4  | 23.8  |
| Other Charges allocations (OC) | 15.7                   | 9     | 7.01  | 6.64  | 6.3   | 6.3   |
| Personnel Emoluments (PE)      | 14.4                   | 17.96 | 17.4  | 17.8  | 18.1  | 17.5  |

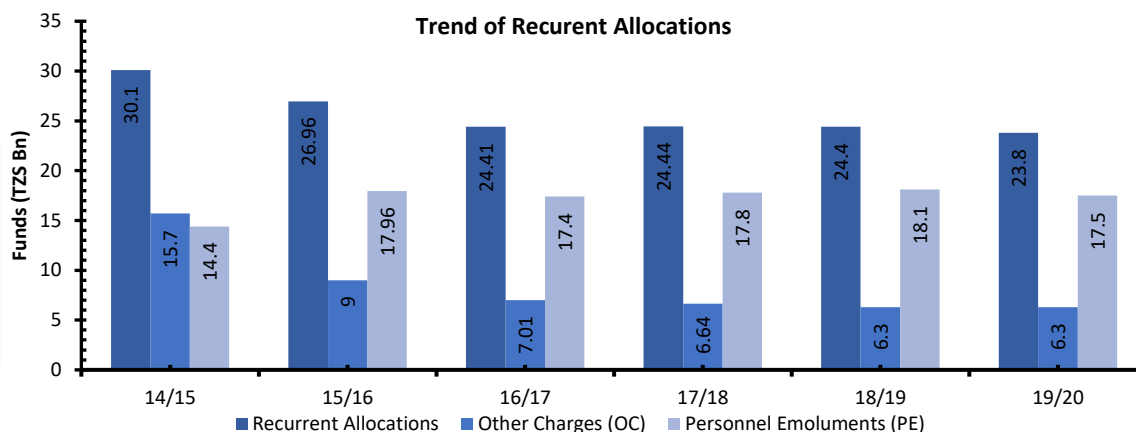


Figure 5-6: Figure 5 6: Recurrent Allocations Trend since FY 2014/15

Recurrent allocations (largest share being PE) indicate a downward trend. The trend is attributed to a reduction in allocations for Other Charges (OC) following Government wider initiatives to improve accuracy in planning and manage public expenditures. Recurrent budget is funded from local sources and for this whole period, a total of 103 Bn TZS has been allocated. Although actual recurrent spending was not determined in this report, the decreasing OC has been complimented by the DEV budget allocations or support by stakeholders.

## 5.2 Financing

### 5.2.1 Resource mobilization

Resource mobilization is a formidable process. WSDP I had raised an unprecedented \$ 951 million at midterm and ultimately during its conclusion commitments had increased to \$ 1.630 billion. Financing strategies considered during WSDP II planning in 2014 included traditional arrangements via mobilizing grants, concessional loans and in-kind contributions from foreign, local and private sector.

WSDP II indicative commitments from foreign sources In July 2014 amounted to \$ 0.8 billion. Commitments increased to \$ 1.93 billion in December 31 2018 (*4th JM aide memoire*). In June

2019, MoW did a thorough and rigorous assessment of all financing agreements and pledges to realize a total commitment of \$ 3.2 billion have been pledged (*Funding landscape*). This means realization of WSDP II financing requirements of \$ 3.3 billion is 97% on target. However, these commitments are skewed with a bias for water supply projects in urban areas. WSDP II requirements for urban water and sanitation projects total \$ 1.348 billion but current commitments have reached a staggering \$ 2.302 billion (surpassed needs by +71%).

Comparatively, Water resources management has the least commitments totaling \$ 129 million whereby a total of \$ 804 million is required. The justification on the huge investments in water resources management and development follows an increasing multi-sector demands for water, environmental and water degradation due to pollution, over abstraction of water, poor land use practices and encroachment of land for agriculture around water sources and catchments, urbanization and industrial development that increases pressure on water sources.

The bias in urban leans more towards implementing projects in major towns and cities as opposed to supporting water supply and sanitation projects in small towns. Of the \$ 3.2 billion commitments, 70% are signed financing agreements (confirmed secured support) while 30% are pledges (promises). The whole portfolio is comprehensive and composed of commitments from stakeholders including the Government of Tanzania, Development Partners, CSOs and others (Grants from foreign sources are 20% while concessional loans are 71% of all commitments. The sector lacks data on current commitments or releases from the Private sector. Sanitation and Hygiene's share of commitments is 40% of needs at \$ 60 million and Programme Delivery Support has a commitment of \$ 11 million which is 9% of needs.

**Table 5-10: Commitment share**

| Funding modality | Amount of support (\$ mill.) | Share |
|------------------|------------------------------|-------|
| Basket           | 184                          | 6%    |
| GoT              | 343                          | 11%   |
| Earmarked        | 2703                         | 84%   |
| Total            | 3230                         |       |

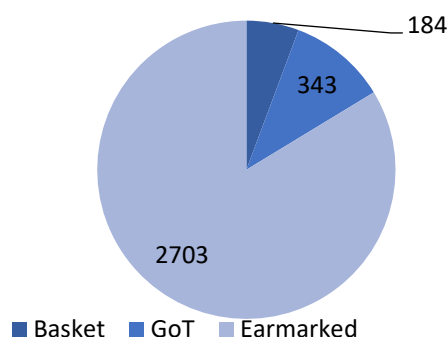


Table 5-11: Financing option shares

| Financing option         | Amount of support (\$ millions) | Share |
|--------------------------|---------------------------------|-------|
| Foreign Loans            | 2102                            | 65%   |
| Grants                   | 1128                            | 35%   |
| Total                    | 3230                            | 100%  |
| Sub-Categories of grants |                                 |       |
| Grants NGOs              | 248.90                          | 7.7%  |
| GoT Budget               | 2967.85                         | 91.9% |
| OBA grant                | 13.68                           | 0.4%  |
| Total                    | 3230                            | 100%  |

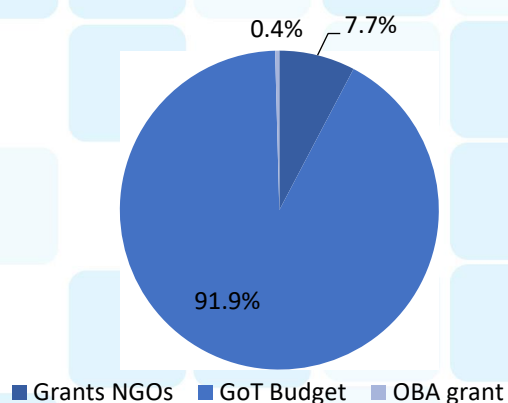


Table 5-10: Current portfolio size (as of June 2019)

| No. | Development Partner | FA Amount [DP currency] | Original currency. | Total FA Amount in [USD] equiv. | Period of financing |
|-----|---------------------|-------------------------|--------------------|---------------------------------|---------------------|
| 1   | Belgium             | 8,000,000               | EUR                | 9,120,000                       | 2016-20             |
| 2   | UNICEF              | 26,830,000              | USD                | 26,830,000                      | 2017-21             |
| 3   | Germany – KfW       | 140,752,500             | EUR                | 160,457,850                     | 2015 -23            |
| 4   | Germany –GIZ        | 15,500,000              | EUR                | 17,670,000                      | 2015 -21            |
| 5   | GCF                 | 102,700,000             | EUR                | 117,078,000                     | 2018-23             |
| 6   | EU (KfW)            | 51,260,000              | EUR                | 58,436,400                      | 2015-16             |
| 7   | DfID                | 144,300,000             | GBP                | 183,261,000                     | 2016 -22            |
| 8   | CRS                 | 3,000,000               | USD                | 3,000,000                       | 2015-19             |
| 9   | WSSCC               | 1,640,485               | GBP                | 2,083,416                       | 2018-21             |
|     |                     | 6,040,000               | USD                | 6,040,000                       |                     |
| 10  | WaterAid            | 2,883,941               | GBP                | 3,662,605                       | 2018-21             |
| 11  | World Bank          | 525,000,000             | USD                | 525,000,000                     | 2017-23             |
| 12  | AFD                 | 225,000,000             | EUR                | 256,500,000                     | 2015 -21            |
| 13  | EIB                 | 45,000,000              | EUR                | 51,300,000                      | 2016-21             |
| 14  | EDCH KOREA          | 90,100,000              | USD                | 90,100,000                      | 2018-22             |
| 15  | WWF – Tanzania      | 2,000,000               | USD                | 2,000,000                       | 2015-17             |
| 16  | SNV                 | 5,326,693               | EUR                | 6,072,730                       | 2017 -20            |
| 17  | BADEA               | 15,000,000              | USD                | 15,000,000                      | 2015 -17            |
| 18  | SAUDI               | 10,000,000              | USD                | 10,000,000                      |                     |
| 19  | AfDB                | 259,715,000             | USD                | 259,715,000                     | 2011-19             |
| 20  | INDIA               | 946,465,000             | USD                | 946,465,000                     | 2015-22             |
| 21  | BADEA               | 106,340,000             | USD                | 106,340,000                     | 2014-18             |
| 22  | OFID                | 8,000,000               | USD                | 8,000,000                       | 2014 -20            |
| 23  | UNDP/GEF            | 2,000,000               | USD                | 2,000,000                       | 2015 -20            |
| 24  | GoT                 | 783,011                 | Million TZS        | 343,124,890                     | 2018-21             |
| 25  | Total in US \$      |                         |                    | 3,209,256,891                   |                     |



To guarantee steady financing and availability of resources to optimize liquidity levels for WSDP II implementation specifically water supply investments; the Government of Tanzania (GoT) operationalized the National Water Investment Fund (NWIF) in FY 2016/17. The fund is a hypothecated tax imposed through a levy on the purchase of fuel for vehicles. Currently set at TZS 50 per litre of fuel. The sector is realizing the benefits of the fund since significant funds (43% of total programme financing sources in 2016-17) are provided by this levy. The role played by the fund, though quite significant are still not enough to meet the overall WSDP funding needs (*WSDP II Midterm Review and 2016 WSSR*).

Financing requirements for the initial three years of WSDP II implementation (July 2016 – July 2019) were \$ 2.2 billion (TZS 4.99 trillion). However, cumulative receipts for the initial three years have been dismal amounting to TZS 1.132 trillion (\$ 0.53 billion) which is 23% of requirements. (*WSDP II document and Vote 49 Audit reports*).

SWAP establishes a platform to engage wide range of stakeholders to dialogue on sector development including planning and financing. In FY 2006/07, GoT and Development Partners (DPs) had agreed on a non-exclusive stakeholder joint financing of WSDP implementation. During the design of WSDP II in July 2014, MoW provided space for the private sector's explicit engagement in financing sector's developments.

In July 2018, due to the overall slow speed in mobilizing resources in the sector, a forum to enhance Public Sector Participation was organized. The forum brought together Government and private sector participants to discuss and share challenges and opportunities associated with private sector participation in the water sector's development process specifically financing. Among the specific objectives of the forum were to promote Public-Private-Partnership (PPP) in investing and operation of water projects (2018 PPP concept) as a strategy to further diversify financing sources in the sector. WSSAs, via a circular issued by Ministry of Finance are allowed to source additional capital investments. Outcome of the forum was a declaration statement with a task of establishing a taskforce to draw an implementation action plan. The final PSP Action plan has been endorsed by the Ministry on October 2019 (MoW, 2019).

Strategies to finance basins and enable them meet recurrent costs are making good progress. Compared with 2015, Basins have more than doubled their fees collections from an average of 2 Bn TZS to 4.6 Bn TZS in 2018 (*MoW's annual budget books*). Although the collections are not uniform across basins, the fees provide a sizable contribution to the basins financing by enabling them meet portions of their recurrent costs. Details on current stakeholders' commitments are in the subsequent section.

The below table has details on resources required and progress attained in obtaining commitments to meet sector objectives. While details are in the annex, a significant leap in achieving commitments has been attained quite recently in FY 17/18.

Table 5-11: WSDP II requirements vs actual commitments (source MoW)

| Component Name                    | WSDP II requirements |             | Needs/<br>Planned share (%) | Current commitments |             | Comparison     |       |
|-----------------------------------|----------------------|-------------|-----------------------------|---------------------|-------------|----------------|-------|
|                                   | US\$ mill.           | TZS Bill.   |                             | US\$ mill.          | TZS Bill    | Commitment (%) | Diff. |
|                                   | A                    | B           |                             | D                   | E           | F              | F - C |
| Water Resources Management        | 804                  | 1825.1      | 25%                         | 128.95              | 292.7       | 4%             | -21%  |
| Rural Water Supply and Sanitation | 862                  | 1956.7      | 26%                         | 759.34              | 1723.7      | 23%            | -3%   |
| Urban Water Supply and Sanitation | 1348                 | 3060.0      | 41%                         | 2302.8              | 5227.4      | 71%            | 29%   |
| Sanitation and Hygiene (S&H)      | 150                  | 340.5       | 5%                          | 60.2                | 136.7       | 2%             | -3%   |
| Program Delivery Support (PDS)    | 111                  | 252.0       | 3%                          | 11.1                | 25.2        | 0%             | -3%   |
| <b>Total</b>                      | <b>3275</b>          | <b>7434</b> | <b>100%</b>                 | <b>3262</b>         | <b>7406</b> | <b>100%</b>    |       |

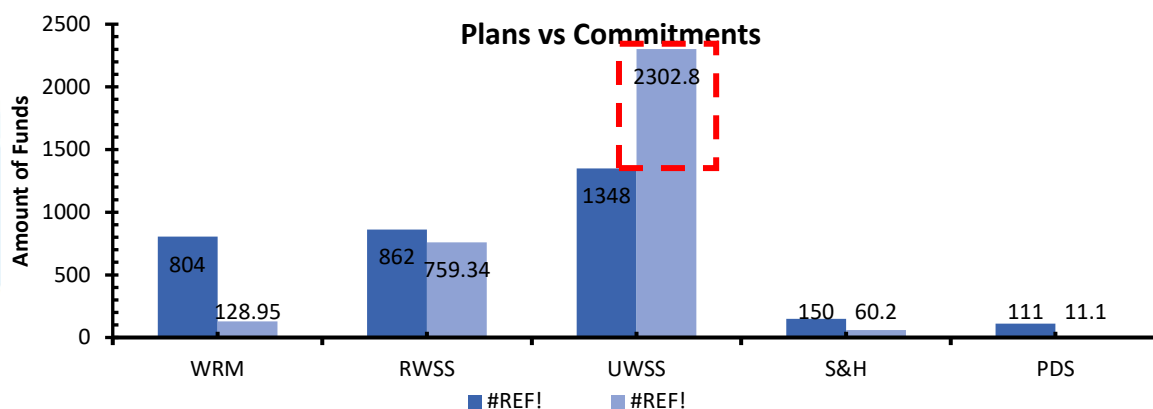


Figure 5-7: WSDP II requirement plans vs actual commitments

The table below provides information on releases (WSDP I and II) by sources of sector financing (basket, earmarked and government financing).

Table 5-12: Funding releases by source (local vs foreign)

| Funding source      | WSDP I releases<br>(Sept 2015) |             | WSDP II releases<br>June 2019 |             |
|---------------------|--------------------------------|-------------|-------------------------------|-------------|
|                     | (\$ Millions)                  | % share     | (\$ Millions)                 | % share     |
| Local share (GoT)   | 364                            | 26%         | 368                           | 43%         |
| Foreign (Basket)    | 684                            | 48%         | 157                           | 18%         |
| Foreign (Earmarked) | 367                            | 26%         | 338                           | 39%         |
| <b>Total</b>        | <b>1,415</b>                   | <b>100%</b> | <b>864</b>                    | <b>100%</b> |

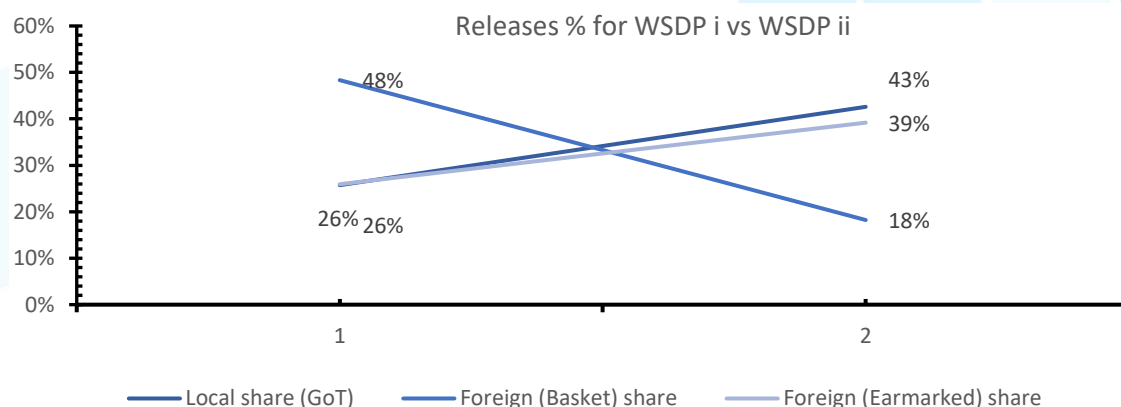


Figure 5-8: Figure 5 8: Funding releases by source (local vs foreign)

At the conclusion of WSDP I, Basket financiers had contributed 48% of US\$ 1.42 billion releases total. Earmarked financing (direct project financing and some CSOs) had released 26% of the total releases in WSDP I.

Bulk of the DEV budget support in WSDP II is now provided as earmarked funding for specific projects. Current Earmarked releases amounts to 768Bn TZS (39%) of releases. Government of Tanzania is leading in terms of releases. Cumulatively 834 Bn TZS (42%) has been released so far. This is an improvement compared with 2011/12 when foreign funding accounted for 80% of the water sector budget and 90% of the development budget (*Rapid budget analysis March 2013*). Although achievements have been made towards attaining self-sufficiency, as indicated in the preceding chapter, resources are untimely available and in-adequate to meet the sector objectives.

Table 5-13: WSDP Commitments Vs Disbursements as of Sept 2015 and June 2019 (in Millions of US \$)

| Source            | WSDP I<br>commit<br>ment<br>(Sept<br>2015) | WSDP I<br>Releases<br>(Sept<br>2015) | %<br>contribution | Commitm<br>ents<br>(Sept<br>2015 -<br>June<br>2019) | Relea<br>ses<br>as of<br>June<br>2018 | Rele<br>ases<br>share % | Commi<br>tments<br>WSDP<br>I & II<br>(June<br>2007 -<br>June<br>2019) | Total<br>releases<br>(June<br>2007-<br>June<br>2018) |
|-------------------|--------------------------------------------|--------------------------------------|-------------------|-----------------------------------------------------|---------------------------------------|-------------------------|-----------------------------------------------------------------------|------------------------------------------------------|
| GoT               | 363.7                                      | 363.7                                | 1.0               | 343.1                                               | 367.8                                 | 42                      | 706.8                                                                 | 731.5                                                |
| Basket            | 683.6                                      | 683.6                                | 1.0               | 223.2                                               | 157.4                                 | 18                      | 906.8                                                                 | 840.9                                                |
| Earmar<br>ked     | 577.6                                      | 367.1                                | 0.6               | 2690.1                                              | 338.4                                 | 39                      | 3267.7                                                                | 705.5                                                |
| Private<br>Sector | no data                                    | N/A                                  | N/A               | no data                                             | N/A                                   | N/A                     | no data                                                               | N/A                                                  |
| Others            | 5.5                                        | 5.5                                  | 1.0               |                                                     | 2.6                                   | 0                       | 5.5                                                                   | 8.1                                                  |
| <b>Total</b>      | <b>1630.4</b>                              | <b>1419.9</b>                        |                   | <b>3256.4</b>                                       | <b>866</b>                            | <b>100</b>              | <b>4887</b>                                                           | <b>2286</b>                                          |

SWAP enables the provision of capital investment finance from Government (local sources) and Development Partners (foreign sources). The strategy to leverage Capital Investment Finance is to:

- i. Increase the Government allocation for capital investment to the water sector
- ii. Implement a financial planning mechanism to facilitate the equitable distribution of resources on accepted expenditure principles for the smooth execution of WSDP
- iii. Develop appropriate sustainable financing mechanisms that provide for efficient and prioritized channeling of funds according to national plans
- iv. Use the National Water Fund as a source for financing Water Supply and Sewerage Authorities, as well as other commercialized water schemes
- v. Develop strong financial mechanisms to ensure full recovery of operational and maintenance costs and an increasing contribution to covering replacement costs

Within the context of the “current traditional” financing paradigm comprising the development budget and loans and grants provided by Development Partners, the SWAP established in July 2007 has provided a workable sector planning framework. However, to source investment finance” by increasing the government allocation and/or establishing a national water fund, rely too heavily on Government revenue and do not provide a solution to meet the investment demand. Indeed, even drastic increments of the current water sector local development budget

would, in practice, contribute only a small part of the capital required when compared to the latent demand in the sector.

It is now widely recognized in the water sector that there is an urgent need to further attract capital investment and that the necessary funds will not be forthcoming from either revenue or foreign loans or grants in either the short to medium term. Without finding new sources of capital investment for the sector, the current financing is perhaps too little even to keep pace with depreciation costs and population growth.

Raising capital by raising tariffs and fees is one option to raise funds for capital investments, but raising tariffs without simultaneously raising service levels is never popular. An alternative source of financing to fill the capital investment gap, but especially for Component 3 since WSSAs are run along solid business principles, would be to raise funds through treasury bonds and/or commercial loans.

Funds from Government and Development Partners allocated for Water Supply and Sanitation are not sufficient to achieve the set targets. In order to raise additional financing for the sector, MoW and implementing Agencies in the Water Sector are encouraged to enter into partnership with the private sector through PPP arrangements, leveraging the current strong political will and commitment from government to strengthen the partnership between public and private sector.

### 5.2.2 Sector Releases and spending

Contributions from both sources (local and foreign) show an upward trend. Cumulatively GoT exchequer issues for the period amount to TZS 0.84 trillion (averaging TZS 167 annually). Cumulative releases for the period up to FY 18/19 from foreign sources amount to TZS 1.13 Trillion (averaging TZS 225 billion annually). Exchequer receipts from Local sources are composed of GoT and NWIF disbursements. Cumulatively sector receipts during the period amounts to TZS 1.99 trillion (*Vote 49 Audit reports*)

It has been harder now to track total programme funding and expenditure, as substantial funds are being spent on earmarked terms. The above figures only provide the minimum confirmed value of tracked contributions thus not entirely reflective of the releases and spending situation in the sector. Releases categorized as (Grants NGOs) provided by a number of Earmarked partners and CSOs are not tracked hence not included in Vote 49 annual budgets and spending. The WSDP II funding landscape (Annexed) contains 8% of Grants NGOs. While contributions from the private sector and other stakeholders are highly valued, it has been difficult to track them and most of their interventions remains unrecorded. Details on sector financing and highlights of statutory annual audits are in the subsequent section.



Table 5-14: Trend of contributions in WSDP II

| FY                                                | 14/15               | 15/16               | 16/17 | 17/18 | 18/19 | Total |
|---------------------------------------------------|---------------------|---------------------|-------|-------|-------|-------|
| Exchequer Issues (Local Releases)                 | 84.3 <sup>17</sup>  | 122.7 <sup>18</sup> | 204   | 190.4 | 233.5 | 835.0 |
| Foreign sources releases (Basket & Earmarked DPs) | 206.6 <sup>19</sup> | 374.0               | 116.4 | 187.0 | 241.4 | 1,135 |
| Totals                                            | 291.0               | 496.7               | 320   | 377   | 475   | 1,960 |

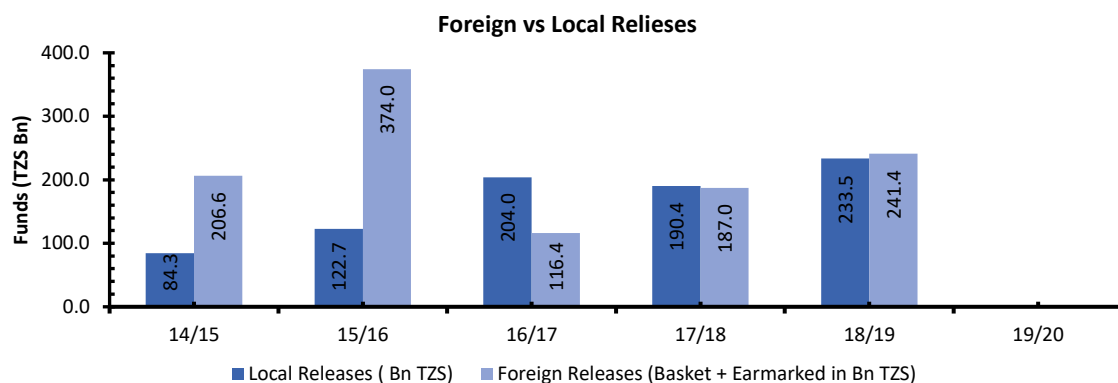


Figure 5-9: Trend of contributions in WSDP II.

Table 5-15: Sector spending since FY 2014/15

| FY                       | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | Total |
|--------------------------|-------|-------|-------|-------|-------|-------|
| Sector spending (Bn TZS) | 304.2 | 510.8 | 317.5 | 372.5 | 448.3 | 1953  |

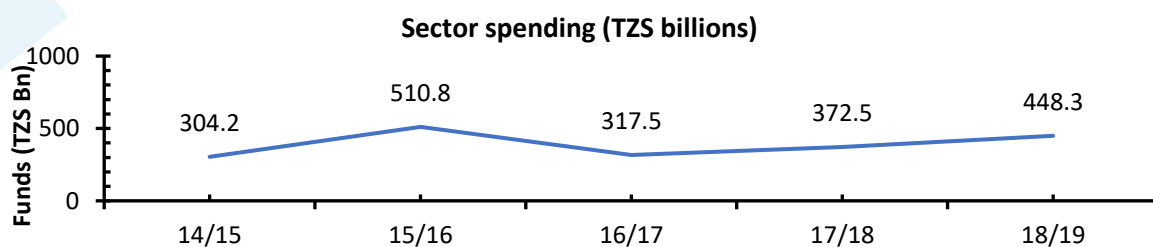


Figure 5-10: Sector spending trend since FY 2014/5

<sup>17</sup> Six Exchequer issues (in a non-uniform manner) were made during the year averaging TZS 14Bn per release.

<sup>18</sup> Eleven Exchequer issues (much consistent) were made averaging at TZS 11Bn each.

<sup>19</sup> Foreign sources and their respective shares: DfID (28.5%) World Bank (27.7%), KOICA (16.5%), AfDB (15.4%). Contribution from; Germany KfW, South Korea, NORAD (Norway), AFD, Geita Gold Mine and UNICEF amounts to a cumulative total of 11.9%.

Sector spending (DEV budget) has been increasing steadily since FY 16/17. A cumulative total of TZS 1.953 Trillion<sup>20</sup> is reported to be spent. Table below depicts the spending pattern in WSDP II. Due to decreasing allocations, spending for water resources has a decreasing trend but fully consumes the entire amount received. Spending by the Programme Delivery Support component has been erratic fluctuating from 4%, 1% and ended up at 3% in FY 18/19. (vote 49 Audit reports).

**Table 5-16: WSDP II Components allocations against spending**

| No | Financial Year --><br>Item description (below).               | 16/17<br>TZS Billions | 17/18 | 18/19 | 19/20 |
|----|---------------------------------------------------------------|-----------------------|-------|-------|-------|
| 1  | Allocations for Water Resources development and management    | 54.2                  | 52.2  | 41.0  | 35.0  |
| 2  | Spending for Water resources development and management       | 9.8                   | 2.4   | 5.7   |       |
| 3  | Allocations for Water Quality                                 | 8.5                   | 8.9   | 7.7   | 5.0   |
| 4  | Spending for Water Quality                                    | 2.1                   | 0.38  | 1.7   |       |
| 5  | Allocations for Water supply and sanitation (rural and urban) | 813.0                 | 536.4 | 549.3 | 547.9 |
| 6  | Spending for Water supply and sanitation (rural and urban)    | 201.3                 | 335.6 | 423.8 |       |
| 7  | Annual Vote 49 spending for Components 1,2,3 and 5            | 222.3                 | 342.3 | 448.3 |       |
| 8  | Annual Vote 49 spending for Components 4                      |                       | 25.27 | 28.97 |       |
| 9  | Spending share for water supply and sanitation                | 91%                   | 98%   | 95%   |       |
| 10 | spending share for water Resources management                 | 5%                    | 1%    | 2%    |       |

Transfers from MoW to Implementing Agencies for the period FY 14/15 up to FY 17/18 totals TZS 1.057 trillion. A minimum of TZS 38.6 billion was transferred to Implementing Agencies for Water resources. Transfers to Implementing Agencies for water supply and sanitation for both rural and urban projects amounted to TZS 1.002 trillion. Cumulative spending for the sanitation and hygiene campaign (usichukulie poa Nyumba ni choo) amounts to a total of TZS 57 Bn. The spending occurred in FY 15/16, FY 17/18 and 18/19 (Vote 49 Audit reports).

<sup>20</sup> This is a minimum amount due to the fact that not all sector interventions are accounted for by MoW.

Table 5-17: Releases to WSDP Component Implementing Agencies.

| Description<br>(below rows)                             | FY → | 14/15       | 15/16  | 16/17   | 17/18 | Total transfers to Components IA in billion TZS |
|---------------------------------------------------------|------|-------------|--------|---------|-------|-------------------------------------------------|
|                                                         |      | Billion TZS |        |         |       |                                                 |
| Transfers to WRM IA                                     |      | 15.5        | 8.32   | 11.947  | 2.8   | 38.6                                            |
| Transfers to RWSS IA                                    |      | 69.82       | 67.9   | 105.4   | 182.3 | 425.4                                           |
| Transfers to UWSS IA                                    |      | 71.74       | 256.1  | 96.04   | 153.4 | 577.3                                           |
| Transfers to S&H                                        |      |             | 3.5    |         | 28.9  | 32.4                                            |
| Spending for PDS                                        |      |             |        | 9       | 3.8   | 12.8                                            |
| Total Annual transfers out to Components IA             |      | 157.06      | 335.82 | 222.387 | 342.3 | 1086.5                                          |
| Annual receipts (from local, foreign and other sources) |      | 304.2       | 510.8  | 317.5   | 372.5 | 1505.0                                          |

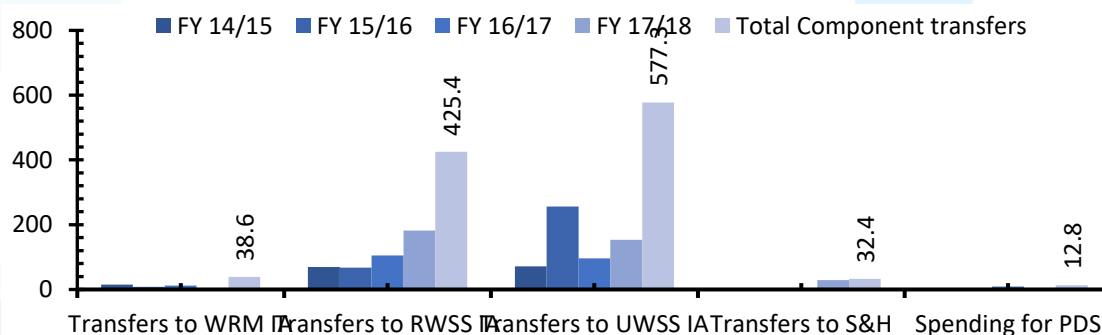


Figure 5-11: Releases to WSDP Component Implementing Agencies.

For the four-year period, share of transfers to Implementing Agencies for water supply and sanitation projects in urban and rural was 92% while transfers to Implementing Agencies of Water Resources Management (WRM) amounted to 4% and 3% for sanitation and hygiene.

### 5.2.3 Water Sector (Vote 49) audits

Annual audits for Ministry of Water (vote 49) are undertaken by the National Audit Office (NAO) as a statutory requirement. The audits aim at ensuring that implementing agencies in the sector have effective financial controls with strengthened financial management and reporting for complying with defined budgeting and financial management rules and regulations. NAO has the mandate to perform other types of audits such as special audits, value for money (performance audits), technical, procurement and others as deemed necessary.

During the period, clean (Unqualified opinions) have been obtained successively in the annual audits undertaken for vote 49. Issuance of Audit reports along with their Management Letters is done at the end of March (nine months) after the end of the respective FY. WSDP transactions are processed in the Integrated Financial Management System (IFMIS) where the financial statements are prepared. The financial statements are prepared in accordance to the Public Finance Act of 2001 (revised in 2004) and its regulations, International Public Sector Accounting Standards (IPSAS) Accruals basis and guidelines issued by Ministry of Finance. The Auditor's opinion gives assurance that financial statements are free from material errors or mis-statements and fairly represent compliance with the public procurement act No 7 of 2011. MoW submits vote 49 (WSDP II) draft Annual Financial Statements to the National Audit Office not later than three months after the end of every financial year for the audit process.

### **5.3 Issues in Planning and Financing and proposed next steps**

Chapter 4 of this report has showcased the clear achievements in realizing water supply and sanitation plans in WSDP II. The achievement is attributed to a steady prioritization accorded whereby TZS 2.4 trillion (94% share of allocations) and over TZS 0.96 Trillion (81% of spending) was on water supply and sanitation projects. Although interventions on the sanitation and hygiene area are yet to be fully realized, funding is adequate. The urban component has an excess of (+71%) of commitments. The above factors, when contrasted with concerns raised in Chapter 3 of decreasing water resources due to growing population, looming adverse impacts of climate change, a need for an adjustment to future sector plans becomes essential. WSDP II activity plans for water resources will be reviewed with an objective of increasing allocations and prioritization to improve on the country's water security. Considering the long lead times to realize benefits of WRM interventions, there is a need for a fast call to action based on assurance and continued stakeholders support. To obtain a complete quantified picture of all stakeholder support in the sector, a simple but accurate mechanism to track the support will be institutionalized.





## 6 CHAPTER SIX | PERFORMANCE MONITORING AND REGULATION

This chapter explains how sector progress is assessed and reported. The reporting period is from FY 14/15 during the additional financing period but the main focus is WSDP II FY 16/17 until December 2019. Reported data in this report comes from three main sources of the M&E framework i) infrastructure, ii) evaluation studies and surveys initiated by MoW and iii) external surveys such as the HBS<sup>21</sup>, JMP<sup>22</sup>, National census). Assumptions and plans of WSDP II in January 2015 was a smooth institutionalization of the M&E framework where updates to the results matrix will be automatic and routinely done.

Unfortunately, the assumptions have proved futile as the challenges and complexities involved to institute a unified, widely accepted, comprehensive performance monitoring system that tracks progress in a uniform manner were underestimated. Despite dialogue agreements on enhancing monitoring and improving the reliability of sector data and reports, population of WSDP II baseline information was delayed. Fulfilling of the global requirements has made good progress since the SDGs sector indicators are now domesticated. The Chapter further explains on the institutional framework for regulating IA as a mechanism to strengthen their capacities to deliver water services and managing water resources effectively. The Chapter further discusses on existing safeguards arrangements and progress attained on this front. The key issues are highlighted for resolution.

### CHAPTER SYNOPSIS

#### Planning & Financing

- Data disparities on rural access have been resolved. This is a milestone achievement for the results monitoring matrix.
- Field monitoring visits at all levels (compared to FY 14/15) have increased and proven to be effective. The outcome is seen on the accelerated deliveries in water supply.
- Earlier dialogue challenges have been resolved. Current structure fits the current context.
- Regulation of implementing Agencies for improved overall governance of water supply, sanitation and resources management institutions is proving to be effective.
- Compared to FY 14/15, safeguard has attained high levels of success. Cumulatively, TZS 41 billion of compensation has been paid and safeguard issues resolved and closed.

#### Issues:

- Obtain stakeholders approval of the Integrated M&E Framework:
- Revive and restate the dialogues Mechanism to its previous vibrant nature

<sup>21</sup> Household Budget surveys

<sup>22</sup> Joint Monitoring Platform

## 6.1 Performance Monitoring

The merits of a performance monitoring framework in guiding sector planning and implementation for complex programmes like WSDP II are known and appreciated. When the framework was introduced in FY 14/15 during the additional financing period of WSDP I, its main aim was to guide all sub-programs on effective planning; tracking implementation progress, improve processes, outputs, outcomes and impacts of services while promoting transparency and accountability. WSDP I ended with different access figures on rural performance. A disparity existed between BRN figures (which rebased the baseline) and those provided from consolidated routine monitoring data.

In July 2016, at the onset of WSDP II, the results monitoring matrix (a component of the sector M&E framework) was agreed to continue being the single tool for reference of sector progress. M&E, as an important intervention area in WSDP II was allocated a total of \$ 1.746 million. However, a change in context in WSDP II specifically the bias of foreign financiers towards earmarked financing reduced flexibility in planning and exacerbated the financial resources challenge in a manner that adversely impacted initial planning and implementation of monitoring activities.

During the first year of WSDP II implementation (FY 16/17) M&E interventions were being refined. Tools namely results monitoring matrix and the draft M&E action plan were in place to assist on operational guidance and performance assessment respectively. However, they were being reviewed with a view of increasing clarity of the indicators as well as alignment with key outcomes to national priorities and global agenda such as National Development Plan and SDGs. (*2nd Aide Memoire of June 28 – July 6, 2017*).

While there is evidence that the overall monitoring process undertaken by stakeholders during the review period has been effective, earmarked financiers have their own mechanisms to fund and account for their monitoring activities. The resulting costs incurred in monitoring visits are not always itemized and disclosed.

Faced with resources constraints, MoW adapted to the situation with a flexible, less coherent approach in monitoring implementation progress. During the 2<sup>nd</sup> Joint supervision in 2017, it was accepted to monitor progress at component level and this decision has proved to be effective. As explained in the preceding chapters notable achievements on water supply access have been realized. Principally, the sector monitors performance using two broad mechanisms: self-monitoring (Institutional Agency) - and external monitoring (third party).

The above monitoring mechanisms are further undertaken using the following levels: (*draft M&E framework*)

- i. Monitoring at community level (rural and urban)
- ii. Monitoring at national level (MoW/ Headquarter level) (routine data consolidated)
  - a. Dialogue mechanism (TWG, JSM, SC, JWSR)

- b. Field monitoring (MoW and other national leaders)
- c. Specific field surveys of multidisciplinary teams of experts
- d. Technical supervision and internal technical audits
- e. IT systems (IFMIS, MIS and others)
- iii. Monitoring at LGAs and Regional Levels
- iv. Monitoring at Basin level
- v. Monitoring at utility level

As far as progress of monitoring is concerned, as of December 2018 the results monitoring matrix was still incomplete and not yet aligned with the SDG indicators. This has led to inconsistent and fragmented reports across the sub-sectors which do not necessarily provide a realistic picture of sector performance.

Recent feedback from implementing agencies is that the frequent visitations by stakeholders (MoW, Earmarked financiers and others) could be more coordinated. Much as the visits are very beneficial to them, they end up taking a huge chunk of the IA time leaving them with limited time to focus on important admin issues and other implementation activities. In December 2019, cognizant to the importance of a coherent approach, MoW agreed to revive and revert back to the M&E framework approach.

#### 6.1.1 Monitoring levels.

During the period, effective and adequate monitoring at the community level (rural and urban) has been done. At the national level, consolidated routine data has been discussed at MoW meetings. At national level numerous internal reviews and assessments of field reports has been done at sections, departmental, management and ministerial meetings. A notable increase in field monitoring visits for supervision and launching ceremonies as reported in the media and evident in financial records is vivid. Unlike the situation in WSDP I, field visits by senior ministerial officials have proven to be effective at resolving implementation snags via escalations, resolving general issues and steering implementation in the right course.

Dialogue mechanism is a codified SWAP arrangement via a system of Technical Working Groups, Joint Supervision Missions and Joint Sector Reviews to ensure adequate coordination in the sector. Dialogue meetings in WSDP I were funded by basket financiers and the reduction of basket financing reduced the overall incentives for sector dialogue. At the onset of the second phase in FY 16/17, a sluggish dialogue was noted resulting to the dialogue mechanism falling to disuse. The relocation of MoWI to Dodoma has not helped, and with the shift to earmarked funding MoW has not managed to finance activities from its own resources. But the key reason, and one which affects both government and DPs, is that the dialogue was generally regarded as an integral part of the basket funding mechanism. (*WSDP II MTR*).

During the period in review, three joint supervision missions have been conducted in 2016, 2017 and 2019. Participation has been from Ministry of Water (MoW), Ministry of Health, Community Development, Gender Elderly and Children (MoHCDGEC), the President's Office Regional Administration and Local Government (PORALG), Ministry of Education Science and

Technology (MoEST), Development partners and other ministries, departments and agencies. As per the Aide Memoirs, performance rating of WSDP II implementation in these missions has been moderately satisfactory successively.

Overall dialogue meetings have not been very effective and vibrant as in WSDP I. To resolve the dialogue challenges, MoW representing the Government of Tanzania (GoT) and Development Partners Group supporting the Water Sector met in Dodoma in October 2018 to agree on the best structure and modalities to enhance WSDP implementation and revitalize the dialogue.

The GoT and DPs jointly agreed on reviewing the dialogue mechanism and structure it as below:

- (i) To refocus the sector dialogue on the sector strategy-in light of the vision to achieve the SDGs;
- (ii) To reduce MoW's reporting and compliance requirements burden to realistic levels based on minimum requirements;
- (iii) To adopt a thematic approach and further reduce the number of sector dialogue meetings by making changes to their structure;
- (iv) To ensure shared costs among stakeholders and agree on a protocol for cost sharing/contribution to the Dialogue between GoT, CSO, private sector DPs (Earmarked and Basket).
- (v) To change the timing of the annual Joint Water Sector Review (JWSR) from November to March during the Maji week. Steering Committee (SC) was renamed to be Programme Management Committee (PMC) as a platform to discuss Programme related matters.
- (vi) To support to PCDDU as normal and JSM but Program Management will depend on individual stakeholder interest and readiness.

The above agreements were succeeded with the first Maji week event in March 2019 that introduced the scientific aspects in the sector. A dialogue calendar for FY 2019/20 was shared but to date a few dialogue meetings under the new setup have been held. More efforts are needed from both sides (MoW and DPs) to meet as scheduled

In September 2019, the Development Partners Group supporting the Water Sector gave a proposal to discontinue the traditional joint supervision mission arrangement and instead have bilateral missions that will be done on need basis.

Field monitoring by MoW and other national leaders, visits by multidisciplinary teams of experts, technical supervision and internal and external technical audit visits have been done. External technical visits to verify reports for performance based programmes (such as PbR and in future P4R) have contributed to resolving the data disparities and convergence to reliable data on access. Overall, there are improvements on reliability of information shared in dialogue settings and this is proof of effective systems of information flows across the sector.

Specific field surveys (IPSOS survey) have been undertaken in the sector. Overall, Institutional internal (self) and external monitoring by MoW, PORALG and Ministry of Health and education at LGA and regional levels has been done. Monitoring at basins and utility level (WSSA) has been done by MoW and EWURA respectively. EWURA compiles data and information from WSSAs annually and releases the Annual Water and Sanitation performance report. These reports are discussed during the EWURA event held during Maji week celebrations that collectively discuss sector performance. Aggregated data and information from the LGAs is channeled to RUWASA.

Reports from field visits, surveys and other sector studies are shared and discussed in management meetings. The contracts documents, contractual payments, progress reports, quality of works, technical specifications and coordination meetings are used to determine sector performance. In addition to reports, other deployed tools such as the IFMIS, MIS (web based) are used to store and disseminate information and data on the sector plans, budgets, contracts, and expenditures for decision making and supporting financial management and reporting.

As of December 2019, due to the recent sector reforms (introduction of NWIF, RUWASA, move of Executive Agencies of the Drilling and Dams Construction Agency (DDCA) and Maji Central Stores (MCS) to RUWASA), a shift of Financiers from Basket to Earmarked modality of funding that requires different and increased report requirements necessitates a need to review the M&E framework. All of the above factors give the justifications to review and update the draft M&E framework to manage and improve the supervision interactions and harmonize reporting needs with all implementing agencies

Due to the effectiveness of the current monitoring arrangement, the only issue to be tackled in the coming months is to feed the outcome of these wider sector monitoring initiatives to the results monitoring matrix for a coherent and coordinated sector wide information sharing.

## Evaluation

Between May and October 2018, a midterm evaluation of WSDP II was undertaken. This evaluation was funded by external support and the key findings are as below:

- i. *Programme strategy*: During the first year of Phase 2, revising the programme results framework to improve indicators alignment with the SDGs was yet to be completed.
- ii. *Progress towards results*: The observed unrealistic budget framework for WSDP II and incomplete results framework made it difficult to measure programme performance against objective and targets, hence impacting overall efficiency in programme management. Clear budget and results framework for WSDP II was an immediate priority in the next missions.
- iii. *Programme implementation and adaptive management*: Mechanisms for learning from programme experience and applying that learning to improve operational effectiveness was lacking.



- iv. *Sustainability*: Due to largely unpredictability of funding, it was very difficult for implementing agencies to focus on longer term strategies for delivering sustainable outcomes. (WSDP II MTR report)

### Performance on key indicators.

The key target and indicators in the water sector by 2020 as access to safe water in rural areas, 85%; Regional centers and Dar es Salaam, 95%; Proportion of rural households with improved sanitation facilities, 75%; regional centers, 50% and Dar es Salaam, 40%; Non-revenue water (NRW) for regional centers, 25%; and NRW for Dar es Salaam, 30%

The mission reviewed the sector performance against planned targets in 2020/21. Data provided by the Ministry of Water shows that overall progress achieved was below target. As of December 2018, access to basic water supply in rural areas was reported to have reached 64% against a target of 85% by 2020. In urban areas, for the same period reported access was behind target by 10% in both DAWASA and Regional centers and was 26% behind target in small towns. Achievements on sanitation were much lower as compared to water supply provision. Population with safely managed sanitation was 21% against a target of 40% by 2020/21. This level of progress requested significant efforts to move the sector forward - (4th JSM Aide Memoire February 27 – March 22, 2019).

## 6.2 Regulations

MOW takes the functioning regulatory systems as a central feature of good sector governance. The MOW has set the regulatory framework to have a set of rules, processes, and monitoring and enforcement mechanisms that ensure service providers adhere to national service and quality standards.

### 6.2.1 Water Supply and Sanitation Institutions

Regulation is applied to urban water utilities and the service providers by EWURA. The focus is on tariffs, service quality and consumer protection. EWURA is responsible for technical and economic regulation of the water and sanitation utilities in Tanzania. As stipulated under the Water Supply and Sanitation Act, No. 5 of 2019, RUWASA has the responsibilities which include registering and regulating the performance of community organizations.

### 6.2.2 Water Resources Institutions

To strengthen the capacities of water institutions for sound water resources management and development to promote good governance of water resources including encouraging participatory and transparent decision making, MoW carries out regulations of the water resource management institutions to grant secure water rights, improving water quality management, pollution control and strengthening the regulatory capacities. The Ministry of Water is carrying out the regulatory responsibilities through the DWR, National Water Board, BWBs, BWOs, Catchment Committees and WUAs. All of the above bodies are mandated with

powers to regulate, mediate rules and by-laws in the areas of their jurisdiction including conservation, protecting water sources, and enforcement of the law.

### 6.3 Environmental and Social Safeguards

Environmental and Social Safeguards compliance is essential in water projects as it provides mechanisms of ensuring that environmental and social management issues are adhered in accordance with the Environmental Management Act. No 20 of 2004 (EMA 2004) and its Regulations. The Ministry continues to advice, coordinate, mainstreaming and enhancing the compliancy of safeguards issues to all WSDP Implementing Agencies (IAs). The safeguards instruments/frameworks for water projects include Environmental and Social Management Framework (ESMF), Resettlement Management Framework (RMF) and the Guidelines of Good Environmental and Social Practices (GGESP)

The Safeguards Section is placed under the Project Coordination and Delivery Unit (PCDU) under the Ministry of Water. This section enhances coordination of safeguards issues across the Ministry's departments and the implementing agencies. MOW has the capacity and professionals to carryout EIA for new projects, environmental audit for rehabilitation projects, hazard or risk assessment and environmental management plan (EMP). MOW interacts with procurement entities and provides funds, as required, to the concerned entities to consult NEMC and hire consultants to carry out an EIA.

#### 6.3.1 Compliance and Requirements

The Ministry has reviewed and updated the safeguard instruments/frameworks for water projects which include environmental and social management framework (ESMF), Resettlement Management Framework (RMF) and the Guidelines of Good Environmental and Social Practices (GGESP).

The MOW uses ESMF as performance monitoring of a number of strategies in undertaking the assignments. These include an outline of a comprehensive checklist for the potential environmental and social impacts and their sources; systematic procedures for participatory screening processes for project sites and project activities for environmental and social considerations; a step-by-step procedure for forecasting the main potential environmental and social impacts of the planned project activities; environmental management plan to address negative externalities in the course of project implementation and operations within environs; monitoring system for implementation of mitigation measures; and outline of recommended capacity building measures for environmental planning management and monitoring of the project activities. MOW involves as a pre-requisite the participation of local communities at all stages in the development process.

The monitoring of the Resettlement Policy Framework (RPF) for land acquisition starts with determination of land ownership including screening of the project sites and activities. This is followed by property and asset valuation which would require approval of resettlement plans and monitoring of the resettlement plans. MOW insists on effective redress of complaints and grievances. The Public consultation and participation is a prerequisite.

Environmental and Social Safeguard compliance is driven by the enactment of Environmental Management Act of 2004 with its regulations such as the EIA and Audit Regulation of 2005 (amended 2018). At the beginning of WSDP in 2006 a number of initiatives were taken into consideration to mainstream environmental and social safeguards in the sector plans, strategies and project implementation. It is through WSDP where Safeguard frameworks such as ESMF and RMF as well as water Sector EIA guidelines were developed to ensure the compliance of all water sector projects implemented under WSDP.

The monitoring of the Resettlement Policy Framework (RPF) for land acquisition starts with determination of land ownership including screening of the project sites and activities. This is followed by property and asset valuation which would require approval of resettlement plans and monitoring of the resettlement plans. MOW insists on effective GRM system to redress of complaints and grievances.

### 6.3.2 Achievements and Results

Despite of the existing safeguard frameworks, a low pace of safeguards compliance was experienced in the water projects as a number of projects started without ESIA studies. Non-compliance on land acquisition and resettlement notably existed. To solve the non-compliance, it was agreed during WSDP I Restructuring in 2014 to have additional financing (about USD 500,000) to spearhead safeguards compliance.

Additional financing on safeguards management after restructuring in 2014 facilitated the compliance of safeguards from 2015 onwards where ESIA, EA and land acquisition were efficiently implemented in all urban WSS and WRM strategic projects. From 2015 to December, 2019, a total sum of TZS 41.302 Billion has been compensated to 12,365-project affected people.

Out of 14 NPs pending issues in 2015, 13 NPs have been cleared for resettlements and land acquisition compensations. This makes the compensation success of 93% of the 19 non-compliance urban water supply projects in 2015, it is only 2 projects are still under processing and 17 projects are cleared and approved. This gives about 89% of urban water compliance with ESIA. In the WRM by 2019, the three strategic dams of Kidunda, Farkwa and Ndembera/Lugoda are now 100% complying with ESIA conditions. With regard to water resources, SESA were prepared and approved to six river basins for effective operationalization of IWRMD Plans. This presents about 67% of approved SESA by Basins

The land acquisition is now one of the safeguard compliance with water projects at regional and municipal councils to include into urban planning areas for water infrastructures. The small water infrastructure and projects have to adhere to voluntary land donation protocol with the local communities as guided by the revised RMF. Actually it has been very difficult in the beginning of the WSDP as there were no clear KPIs and targets on safeguard compliance.

It is recommended now that one of the critical areas on safeguard that needs to be taken into consideration is ensuring that Municipal and Regional Master Plans will take in board the safeguard compliance to areas for water infrastructure development. This will minimize the

compensation and complains from the communities. The Ministry will continue mainstreaming safeguards issues in all strategic plans and development as well as continue with institutionalization of Environmental and Social Management in the Ministry and implementation agencies. Timely compensations have to go in line with timely resettlements to avoid double payments

Trend of Non-compliance on Environmental and Social Safeguards to Strategic Projects is shown by Appendix 6-7, while the paid compensation for land acquisition is shown by Appendix 6-8. Non-Payments for Compensation for Land Acquisition and Resettlements is shown by Appendix 6-9.

## 6.4 Next steps

This Chapter has identified key issues for further enhancement, discussion and actions to improve the sustainability and performance monitoring systems and safeguards:

1. *Approval of the Integrated M&E Framework:* The Ministry of Water has the draft M&E Framework which contains the programme results matrix. MoW will improve indicators, revise and align them with the SDGs. MoW plans to update and share with stakeholders the M&E framework. During the Maji week of March 2019, it was recommended the M&E Framework requires to be upgraded to establish baseline data and improve the output and outcome indicators.
2. *Sector Dialogues Mechanism:* Dialogue calendar is in place but dialogue has not been as vibrant post roundtable. More efforts are needed from both sides (MoW and DPs) to meet and carry out joint monitoring and evaluation missions as scheduled and agreed.
3. *Mainstreaming Safeguard Issues:* The resettlement and land compensations are among the critical area on safeguard that needs more attention. As the Ministry continues mainstreaming safeguards issues and institutionalization of Environmental and Social Management screening, it is advised to introduce GRM to all sector projects so as to minimize the grievances from the communities. Timely compensations done by the government are recommended to be followed by immediate resettlements to avoid double payments.







## 7. CHAPTER SEVEN | ORGANIZATIONAL CAPACITY DEVELOPMENT

This chapter covers the status of capacity development for Ministry of Water and its Implementing Agencies for the period of 2015 to 2020. This means that, the chapter has not included other sector actors who have influence on the same. These includes for instance Ministry of Health, Education and PO RALG who have a stake on sanitation part of the sector. Neither has it included capacity issues on players such as NGOs, CSOs, CBOs, the private sector and others. Within this scope, the chapter is intended to report status around all aspects of institutional capacity namely: Human Resources (skills and head count), Working Tools, Operating Systems, Working Environment and other cross cutting issues. Appendix 7-1 give a summary of status of these categories for the Water Sector Status Report.

### CHAPTER SYNOPSIS

#### Human Resources

- As of 2018/19, Ministry had a total of 6,476 staff and still needs 798 individuals
- By end of 2019, Staff training have been conducted and some are ongoing i.e.: 610 certificates, 302 diploma and 128 degrees (53 Masters and 2 PhDs)
- Between 2015/16 and end of 2019, No. of women in strategic position has increased from 68 to 199 (Director position), 223 to 389 (Assistant Director and other Senior position) and 77 to 102 Board Members

#### Working Tools & Environment

- By end of 2019, a total of 121 cars (excluding RUWASA) are being maintained by MoW and IAs (most of them from 2015)
- Construction and rehabilitation of offices is at advanced stages to accommodate the Move to Dodoma Capital City,
- Infrastructure and tools for shifting to e-Government are at implementation stage with financial approvals already done on line,

### 7.1. Human Resources Capacity Development

The goal for human capacity development is centered around building knowledge, skills and attitudes of individuals, including empowering women, to deliver sustainable water resources management and development. In the ministry, this is guided by Public Sector Reform Program policy (GoT, 2000) from President's Office under the Public Service Management and Good Governance Ministry. In addition, the ministry has developed a unified Capacity Development Plan (MoW, 2017) that was informed by CD plans from respective units and was validated by mid July 2015 at Morogoro.

Although it was difficult to establish a strong adherence to the CD Plan, staff have undergone long term and short-term trainings (Figure 7-1). In 2019 for instance, the database held by MoW HQ indicated that, long term trainings included 610 certificates, 302 diploma and 128 degrees (53 Masters and 2 PhDs) as illustrated in Figure 7-1 and summarized in Appendix 7-2. In addition, HR Directorate had carried out an audit report (MoW, 2019) which was submitted in September 2019 covering period of FY 2017/18 and 2018/19. The report indicated that by FY 2018/19 MoW and IAs had a total of 6,476 staff and needed 798 more (Appendix 7-3). Further comparison between FY 2015/16 data<sup>23</sup> and the results of the audit report shows that, Regional Centers Utilities have the largest needs of staff and that overall needs per staff category is uniform across (Figure 7-3).

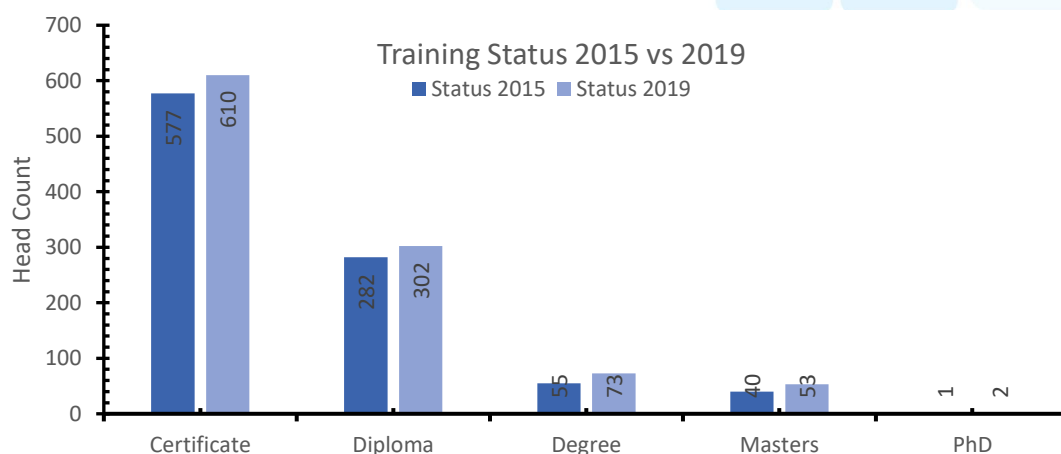


Figure 7-1: Trend of staff capacity building for long term courses [Source MoW HR Database]

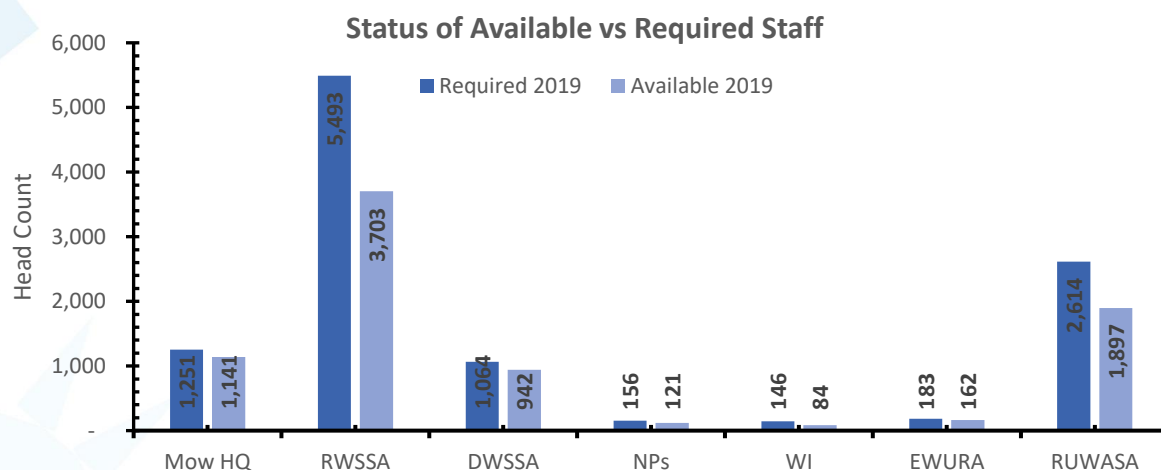


Figure 7-2: No of staff vs needs for MoW and IAs [Source MoW HR Audit]

<sup>23</sup> Held by MoW HR Department and updated every year

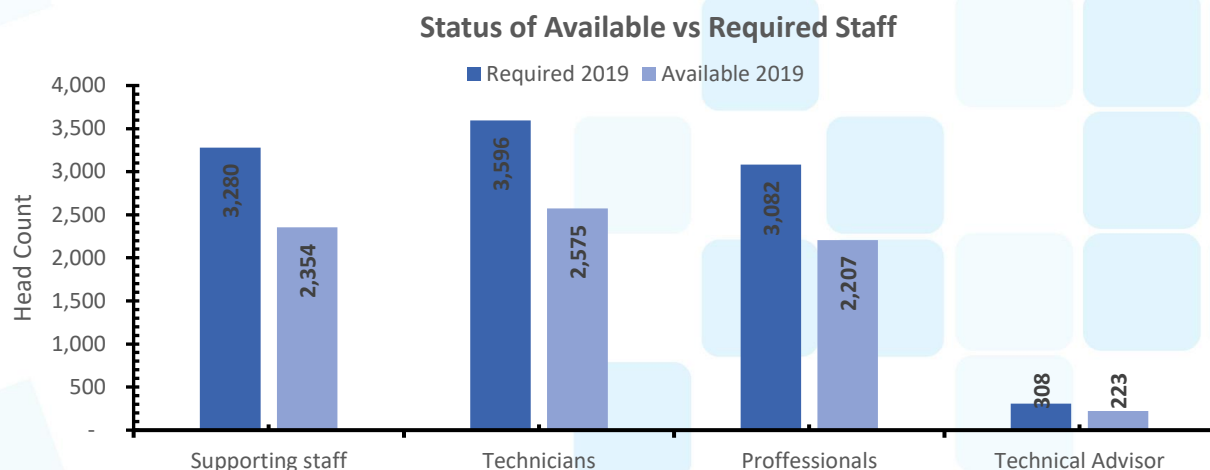


Figure 7-3: No of staff vs needs for different cadre [Source: MoW HR Database]

## 7.2. Working Tools and Systems

### 7.2.1. Working Tools

In the reporting period, the ministry and partners have continued to equip the sector with the necessary working tools. Appendix 7-1 give a summary of these tools that have been procured to capacitate sub sector implementers namely Water Resources Division, Water Quality Division and WI. More has been done in this area but supplied data included:

- Motor vehicles totaling 121 cars (excluding RUWASA who are carrying out verifications)
- Hydrologic flow measurements –ADCPs, boats, accessories for WamiRuvu and Rufiji Basins,
- Water Quality equipment – ACPs, AAS and others,

### 7.2.2. Information and Communication Technology (ICT)

As part of Institutional capacity development, the Ministry of Water and its institutions are using ICT to support improvement of internal operations and services delivery to the public (e-Government). Such initiatives are currently driven by the premise of e-Government Act, 2019 and related Regulations. According to the Government Standards and Guidelines, the use of ICT in public sector is evaluated in the following key areas: Internal ICT Policies and Guidelines; ICT Governance and Management; ICT Infrastructure; Cyber Security Management; and ICT Applications. The status in the water sector by December 2019 are as follows: -

*(i) Internal ICT Policies and Guidelines:*

ICT initiatives are implemented at the Ministry level based on Institutional ICT Policy approved in 2017 and its 3 years implementation plan 2017/18 – 2019/2020. Other ICT specific policies used include Acceptable ICT Use Policy and ICT Security Policy. All these Institutional policies and circulars were developed based on the National e-Government Standards and Guidelines. Other Ministry's Institutions/Agencies with ICT Policies include EWURA, Water Institute, and about 80% of the Regional Water Supply and Sanitation Authorities and few National Water Projects. However, all Districts and Township WSSAs do not have their institutional ICT Policies. All nine (9) Basin Water Boards adhere to MoW's ICT Policy and other National e-Government Standards and Guidelines.

*(ii) ICT Governance and Management*

The ICT activities at the Ministry HQ is coordinated by ICT Unit as per government guidelines. The ICT Unit is also responsible for supporting BWBs and Water Laboratory Offices in the absence of ICT Units and personnel at these institutions. Other Institutions with dedicated ICT Unit up to December 2019 include RUWASA, EWURA, Water Institute, and 50% of the Regional WSSAs. Districts and Township WSSAs do not have ICT units and personnel.

*(iii) ICT Infrastructure*

MoW and its Institutions/Agencies are optimizing ICT infrastructure in order to support ICT applications and business-relevant operations. The status is as follows: -

- a) All institutions/agencies use computers and related accessories for the daily office operations and data management.
- b) Institutions connected to the National Optic Fiber Cable for Internet services are Ministry HQ, NWF, RUWASA, EWURA, WI, and 80% of the Regional WSSAs. The remaining institutions especially some National Projects, Districts and Township WSSAs are not using OFC services.
- c) Institutions connected to Government Independent Network (GovNet) for shared ICT applications such as e-Office, IFMS, etc are MoW HQ, EWURA, NWF, Water Institute, and RUWASA (DDCA). However, RUWASA, all WSSAs and National Projects are still not connected to the GovNet as a result cannot use shared ICT applications developed for Government institutions.

*(iv) Cyber Security Management*

Ministry HQ, EWURA, Water Institute, NWF, RUWASA, BWBs, and 90% of the Regional WSSAs are using firewall systems and licensed antiviruses. Some institutions/agencies use pirate security software instead of Licensed one as a result, threat to organization's ICT Security issues. Government requires that all its institutions/agencies should ensure that Cyber security management is given a priority in order to avoid threats for the institutional data and information such as those related to revenues. In order to achieve that the capacity within

institutions to manage Cyber security issues is needed such as expertise within institutions, licensed firewalls, antiviruses, etc.

*(v) ICT Applications*

The current ICT Applications that support institutional operations and business processes in the Water Sector include:

- a) Water Sector Programme MIS (<http://mis.maji.go.tz>) used for supports reporting on WSDP financial management. This is used by all Institutions/Agencies in the Water Sector implementing WSDP.
- b) The Water point Mapping System (<https://wpm.maji.go.tz>)/Central Data Management Tool (<http://wpdm.maji.go.tz>) for reporting on rural water points and service coverages. This is used by MoW, RUWASA (Districts and Regions), Development Partners, and other stakeholders.
- c) Nile Basin Decision Support System (DSS) used as an analytical tool jointly developed by Nile Basin Initiative (NBI) and Member States to provide toolsets for the data processing, modeling, scenario management, optimization and multi-criteria decision making. As such its primary objective is to create a shared knowledge base, analytical capacity, and supporting stakeholder interaction, for cooperative planning and management decision making for the Nile River Basin. This is used by Ministry, Basin Water Boards and other Nile Basin Member States.
- d) Water Utilities Information System (MajIS) as a tool to monitor performance of Water Supply and Sanitation Authorities (WSSAs). Monthly data and information are submitted by the respective WSSA's through the system and then annual performance reports generated and published electronically by EWURA. The system is used by Ministry, EWURA and WSSAs.
- e) IFMS/EPICOR, e-Office, Budget Allocation System (SBAS), Human Capital Management System (LAWSON), Government Salary Payment Platform (GSPP), Government Mailing System (GMS), Government Bulk SMS (GovSMS), and Government Electronic Payment Gateway (GePG).
- f) VAISALA and DAVIS System used to gather high-quality, real-time data that used in various weather observation activities ranging from forecasting. Vaisala and DAVIS systems help measurement, monitoring, and management of weather data. The system is used by Ministry and BWBs.
- g) Water Utilities are using several systems including Billing Systems integrated with GePG; Customer Relationship Management; Call Centers; Accounting Packages; Human resources and payroll systems; Mobile meter reading applications; GIS applications; SCADA (Supervisory Control and Data Acquisition), and Electronic KPI dashboard. The use of electronic billing systems has improved billings and facilitates payment online without travelling to WSSA's offices for payment of bills.



### 7.2.3. Future ICT Plans

in order to address the existing challenges such as lack of connected institutions and existence of many electronic data management and reporting systems within the water sector that are not inter-linked, the Ministry of Water in collaboration with various development partners has initiated projects that are implemented based on e-Government Act, 2019 and its Regulations. The major projects under different stages of implementation include the following: -

- a) Develop Unified Maji Information System: The Unified System is developed with technical support of e-Government Agency in collaboration with Internal Software Developers within Ministry and its Institutions/Agencies. The priority deliverables under Phase 1 are unified systems for Billing System as well as Water Projects and Contracts Management (dashboard of water projects. Other deliverables under this phase will be unified systems for water sources management; water distribution and supply management; and water sector services KPIs management.
- b) Automation of existing 16 Water Laboratory Services in Tanzania.
- c) Develop Operational DSS that will be capable of integrating hydro- meteorological data visualization and analysis platform for weather forecasting, climate prediction, flood/drought and stream flow forecasting and warning systems; water use permitting/varying support tools and water storage infrastructure operations. The integrated data visualization and analysis platform would help visualize and analyse archived, real-time, and forecasted hydro-meteorological parameters and integrate information from gauging/radar, satellite knowledge products, modelling outputs from global, regional, community-based disaster surveillance systems. It is also expected to improve the availability of information in the public domain using open data platforms to encourage downstream use of the data for further specialized analysis, interpretation and dissemination.
- d) Connectivity of all institutions/agencies in the water sector to the Government Independent Network (GovNet) in order to use shared ICT Applications for the government institutions such as e-Office, Enterprise Resource Management Suite, etc. This will also facilitate cost effective use of Unified data management and reporting systems including internal communications between institutions within the Water sector and government at large.
- e) Review the Institutional ICT Policies and Strategies based on e-Government Act, 2019 and related Regulations and develop an ICT Strategy and Enterprise Architecture for the Water Sector.
- f) Promote the use of Geographic Information Systems for mapping of water resources, water distribution and supply infrastructure, and water service coverages; Prepaid Meters to avoid billing complaints from consumers; SCADA and other electronic systems to support controlling and management of Non – Revenue Water.
- g) Capacity building and training for ICT technical staff and users on e-Services and Cyber security management.

### 7.3. Working Environment

Government operations have been moved to Dodoma Capital city in response to actualization of the plan to move its businesses to the capital city. This meant a heavy construction operation in Dodoma to accommodate the move. New buildings have been erected and rehabilitation of many others is ongoing. Maji house in Ubungo Dar es Salaam has been transferred to DAWASA's finalization and ownership while Ministry HQ has been constructed in Mtumba, Dodoma. However, still many staff are congested in available spaces, office furniture are being shared. To partly respond to this, Ministry staff have been scattered in several offices in the city which also hampers some operations e.g. movement of documents and holding of meetings which are typical government businesses.

In addition, construction and/or rehabilitation of laboratories have been done to upgrade them to ISO 17025:2017. By December 2018, constructions have been completed in Mwanza, Musoma, Bukoba and Kigoma, Furthermore, extension and rehabilitation of Dar es Salaam Water Laboratory is 99% complete and Songea Lab is 65% complete. On the other hand, there is ongoing construction of new laboratory buildings for Shinyanga (progress is 98%), Singida (96%), Sumbawanga (87%), Mtwara (85%), and Mbeya (80%).

The already accredited Mwanza Water Laboratory has successfully gone through periodic technical audits by Southern African Development Accreditation Service Board (SADCAS). The six water laboratories, i.e. Central Water Laboratory, Kigoma Zonal Water Laboratory and Regional (Musoma, Bukoba, Shinyanga and Singida) Laboratories are in the final stages for submitting their application forms for initial assessment regarding ISO/IEC 17025: 2017. Additionally, all Water laboratories, under the Ministry, continue to undergo through a performance assessment for delivery of accurate and reliable data i.e. Proficiency Test undertaken by SADC MET. This is an indication that Laboratories continue to produce reliable and accurate data and information for decision making on the development of water projects and management of water resources

### 7.4. Cross Cutting issues

#### 7.4.1. Stakeholder Participation

The role played by stakeholders is paramount with regards to delivering sector commitments and forms a critical part of sector strength. In this area, the policy direction committed the ministry to institute mechanisms for effective and appropriate stakeholder participation in the wide range of the sector i.e. water resources management, provision of water and sanitation services and strengthening capacity of practitioners, policy makers and community institution.

The strategy adopted to achieve this goal for Stakeholder Participation included:

- a. Stakeholders analysis and identification of shared risks,

- b. Development of stakeholder's engagement strategy and communication strategy at all levels,
- c. Promoting the role of women and youth in sector priorities,
- d. Enhance collaborations with institutions from different sectors,
- e. Creation of forums around issues,
- f. Deliberate engagement of the private sector (both service providers as well as water using firms).

In terms of engaging the stakeholders, the ministry (directly or in collaborations with stakeholders) has established and/or facilitated a number of multi stakeholders' bodies/platforms. The following are some of them:

- Hosted the 6<sup>th</sup> Africa Water Week in Dar es Salaam between 18 – 22 July 2016,
- Conducted 1 Maji Week Events in 16<sup>th</sup> – 22<sup>nd</sup> March, 2019 at Dodoma,
- National Multi Sectoral Forum for Water Resources Management (towards each end of calendar year recent one in 3<sup>rd</sup> December 2019),
- Annual General Meetings (AGM) for Water Supply and Sanitation services conducted in December 2019,
- 2<sup>nd</sup> National Water Board Meeting was conducted as per WRM Act, 209
- Basin Water Boards (all 9 boards have been formed),
- Nine Basin Multi Sectoral Forums for Water Resources Management,
- Board for RUWASA and Water Institute launched on January 2020,
- Engaged with DPG and Bilateral donors at various occasions.

These forums were used to ensure that stakeholders understand and meet their obligations and are actively involved in the planning, design and development of sector priorities. This is with the aim of improve service delivery, increasing ownership and hence sustainability of programs. Achievements accrued from engagements of these sector stakeholders includes the increased financing and a growing awareness on water resources and water services delivery.

In addition, stakeholders continued to (among others), provide inputs for water tariffs through EWURA CCCs. Similarly, water allocations (discussed in chapter 3) continued to be approved by the multi-sectoral Water Boards. In this regard, the ministry intends to continue with these engagements that deliver mutual benefits to all parties.

#### 7.4.2. Gender Mainstreaming

The policy guidance for the sector was to empower and entrust women in different levels of decision making and be conscious of other special needs in the community. A threshold of at least a third of composition of any representative bodies should be women has been put in the legislation developed towards the closure of the previous decade and current ones. Women

have continued to be the central part in practice as witnessed in most Water Boards and Community Institutions (Figure 7-4). They have held positions of authority like chair or deputy and mostly treasures. The latter is inherent of the traditional trust bestowed up on women to take care of coffers in most parts of Tanzania. In addition, other demographic groups such as the youth, the disabled and the poor are being treated with special considerations enshrined well in the pieces of legislation developed. This includes special tariffs or infrastructural designs that doesn't deny them access to water services.

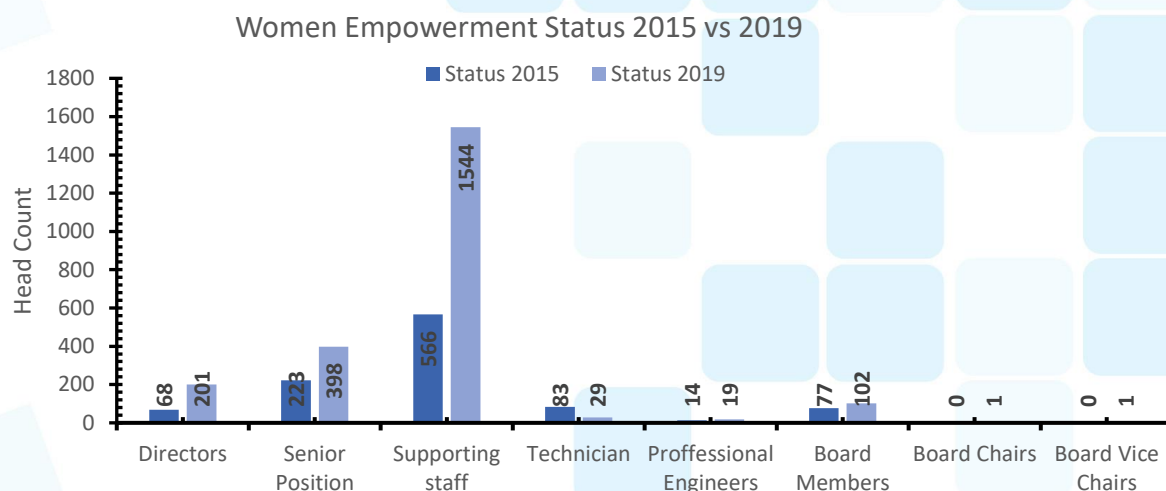
The main areas for gender inclusion continued to focus on:

- Fair representation of both women and men in representative based bodies in the sector,
- Guaranteed consideration of the special groups with special needs e.g. disabled, the youth and senior citizens,
- Consultation of all the appropriate demographic groups in the selection and management of water resources and rural water supply schemes,
- Empowerment of women to participate in decision-making, planning, supervision and in the operation and maintenance of water projects,
- Consultation of both men and women in critical discussions on lifeline tariff and other affordability issues, related to the provision of services in urban and town situations.

The strategy to increase gender sensitivity has been to:

- Monitor relative involvement of men and women in various aspects of the water sector
- Promote active participation of women in water affairs
- Involve women and men equally in the provision of water and sanitation services
- Cultivate and promote a culture of gender equality in communities

To broadly illustrate the status of gender mainstreaming in the water sector to date, gender aggregated information on: (i) Employment of Women and Men in Water and Sanitation Authorities and (ii) Participation of Women at different levels is summarized in appendix 7-4.



*Figure 7-4: Trend of positions entrusted on women between 2015 and 2020 [Source: MoW HR Database]*

### 7.4.3. HIV/AIDS

The sector policy direction was geared to reduce the spread of HIV and mitigate the impact of AIDS at all levels. Impacts includes loss of human capital, loss of leadership and reduced productivity. The strategy to reduce the spread of HIV and mitigate the impact of AIDS is to:

- Advocate behavior change among water sector stakeholders,
- Promote voluntary counselling and testing for water sector stakeholders,
- Provide care and support to staff living with HIV/AIDS.

Since 2015 MoW executed the following HIV/AIDS interventions:

- Mass sensitization and awareness creation to staff and the general public, during Maji week in March 2010
- Financial support to staff living with HIV/AIDS, to enable them to access supplements and other necessary needs for people living with HIV/AIDS

Furthermore, an initiative to integrate HIV/AIDS activities across the water sector has continued since 2011.

### 7.5. Key Issues

- Human resources in terms of head count and skills are paramount in delivering water sector targets. two things are critical to be considered in this category: (a) disaggregating the skills needed e.g. water supply vs sanitation engineer instead of categorizing on level of education only (e.g. technician vs engineer). The latter which is used by the ministry limits an understanding of actual skills needed. Furthermore,



capacity building of staff at MoW does not follow a developed CD Plan which even by itself doesn't consider other co implementers e.g. staff from PO RALG, Education and Health ministries – not to mention an understanding of skill set available to non-state actors as was carried out by Kimwaga et al, 2015.

- Within MoW and in the water sector generally, there is a tremendous amount of data, mainly in the form of reports that moves to and between departments and multiple IAs. This includes performance data that if reliable, will accurately measure internal compliance and performance along with applicable outcome, output and process indicators. Unfortunately, information delivery methods (mostly hard copy) are not reliable and are structured in a manner that is prone to duplications and hence lack integrity. However, the move to e-government platform may constitute part of the solution to this. It is worth noting that, mindset and attitude towards changes needs to be considered to spearhead this move.
- Working environment, tools and equipment are overwhelmed. However, recent support by sector stakeholders is bridging the gap by the day. These improvements should be seen to guide decisions e.g. improving forecasts, enforcing environmental sustainability and ease of doing business.

## 8. REFERENCES

- EWURA (2019). *Water Utilities Performance Review Reports 2014/2015 – 2018/2019*.
- GoT (2015 -19). *National Audit Office (NAO). Report of the Controller and Auditor General on the financial statements for the water sector development programme (WSDP) under the Ministry of Water.*
- GoT 2015 – 20). *Ministry of Water's budget memoranda for Vote 49 (Randama Ya Mpango Na Bajeti Ya Wizara Ya Maji Kwa Mwaka 2015/2016, Fungu 49).*
- MoW (2015 - 19) *Joint Supervision and Implementation Support Mission Water Sector Development Program – II (WSDP-II). Aide Memoires for the 16th, 1st, 2nd and 4th JSMS.*
- GoT (2014). *Tanzania Development Vision 2025 Big Results now. 2013/14 Annual Report.*
- GoT (2013). *Rapid Budget Analysis of the Water Sector in Tanzania. March 2013*
- GoT (2000). *Public Service Reform Programme 2000-2011. Government of the United Republic of Tanzania (President's Office, Civil Service Department), Tanzania: Mkuki na Nyota Publishers.*
- Kijazi, A. L., & Reason, C. J. (2009). *Analysis of the 1998 to 2005 drought over the northeastern highlands of Tanzania. Climate Research, 38(3), 209-223.*
- Kimwanga, R., Nobert, J., Kongo, V. & Ngwisa, M. (2013). *Meeting the water and sanitation MDGs: a study of human resource development requirements in Tanzania. Water Policy 15(Suppl.2), 61–78.*
- MoHCDGEC (2019). *National Sanitation Campaign-Annual Progress Report 2018/2019.*
- Mokonon, D. M. (2018). *Rapid Agriculture Needs Assessment in response to the “El-Niño” impacts in Benishangul Gumuz Region. . American Journal of Life Science Researches, 6(1), 6-29.*
- MoW (2019). *Action plan for enhancing private sector participation in the water sector 2018 – 2025. Ministry of Water - [www.maji.go.tz/psp](http://www.maji.go.tz/psp).*
- MoW (2019) *Water Resources Atlas of Tanzania – working document – unpublished*
- MoW (2019). *Compliance Human Resources Audit for Water Sector 2017/18 to 2018/19. Unpublished working Document by the Ministry of Water*
- MoW (2019). *Water Sector Status Reports 2014 – 2019.*
- MoW (2018). *Mid-Term Review of the Water Sector Development Programme Phase II (WSDP II) and Review of the Water Dialogue Framework Tanzania.*
- MoW, (2017). *Capacity Development Plan for Financial Year 2017/18 to 2019/20. Unpublished Working Document by the Ministry of Water*
- MoW (2015). *The Strategic Plan for the Year 2014/15- 2018/19 November 2015*
- MoW (2015). *Draft Integrated Water Sector Monitoring & Evaluation Framework, Ministry of Water Dar es Salaam January 2015*
- MoW (2014). *Water Sector Development Programme Phase II (2014/2015 – 2018/2019).*
- MoW (2014). *Water Sector Development Programme Phase II (2014/2015 – 2018/2019). WSDP Phase II document.*

- MoW (2014), 2015 and 2016. *WATER SECTOR STATUS REPORTS*.
- MoW (2013): *Water Sector Development Programme 2007-2014 Evaluation of Phase I*. 30th May 2013
- MoWI (2008). *National Water Sector Development Strategy – 2006 to 2015*, Ministry of Water and Irrigation, Tanzania.
- MWLD (2002). *National Water Policy*, Ministry of Water and Livestock Development, Tanzania.
- Ringo, J. (2018). *Influence of governance and institutional structures on flood management and control in Kilosa district, Tanzania*. . *International Journal of Scientific and Research Publications (IJSRP)*, 8(4).
- RUWASA (2019). *CDMT Monthly Reports 2015 – 2019*.
- RUWASA (2019). *RWSSP Progress Report for Second Quarter 2019/2020*.
- Salukele, F., & Chale, D. (2017). *Comparative analysis of non-infrastructural impacts of floods. Case study: 2011 and 2014 floods in Dar es Salaam*. . *Journal of Civil and Environmental Research*, 9, 30-37.
- SAR (2018). *Challenges of implementation of rural water supply projects and services in Tanzania: Findings of a special audit committee, Final Report, Volume III: Annexes*, Ministry of Water.
- Tanzania Red Cross Society. (2014, November). *Tanzania: Flash Floods. DREF bulletin*.
- UNICEF-Tanzania. (2013). *Baseline Survey Report Emergency Communication Strategy in Tanzania*. 78pp.
- Water, U. N. . (2013). *United Republic of Tanzania UN-Water Country Brief*.
- WI (2018). *Water Institute - Strategic plan 2017/18 – 2021/22*. Water Institute
- WM (2011). *Mafanikio ya miaka 50 ya uhuru katika sekta ya maji*. Wizara ya Maji
- WRD (2019). *Benefits and Challenges of Transboundary Water Cooperation for Tanzania (2008/2009 – 2018/2019)*, Water Resources division, Ministry of Water, TWP, WWF.
- WSP (2011). *An AMCOW country status overview, Water supply and sanitation in Tanzania: Turning Finance into Services for 2015 and Beyond*. Water and Sanitation Program



## APPENDICES

# Appendix 1-1: List of Ministers and Permanent secretaries who have worked in the ministry responsible for water sector

| NA. | JINA LA WIZARA                          | WAZIRI                       | MWAKA       | KATIBU MKUU               | MWAKA                   |
|-----|-----------------------------------------|------------------------------|-------------|---------------------------|-------------------------|
| 1.  | Kilimo                                  | Bw. Dereck Bryeson           | 1961 – 1964 | Bw. Ibrahim Sapi Mkwawa   | 01/12/1962 – 01/03/1964 |
| 2.  | Ardhi, Makazi na Maendeleo ya Maji      | Alhaji Tewa S. Tewa          | 1964 -1966  | Bw. Dickson A. Nkembo     | 19/10/64 – 30/6/65      |
| 3.  | Ardhi, Makazi na Maendeleo ya Maji      | Bw. Said A. Maswanya         | 1966 -1968  | Bw. Cleopa D. Msuya       | 1/7/65 – 6/12/67        |
|     |                                         |                              |             | Bw. Ernest A. Mulokozi    | 6/12/67 – 24/3/68       |
| 4.  | Ardhi, Makazi na Maendeleo ya Maji      | Bw. Adulrahman M. Babu       | 1968 -1970  | Bw. David A. Mwakosya     | 25/3/68/ - 30/9/68      |
|     |                                         |                              |             | Bw. Awinia Mushi          | 1/10/68 – 7/3/69        |
|     |                                         |                              |             | Bw. Timothy Apiyo         | 8/3/69 - 10/11/70       |
| 5.  | Maji na Nguvu za Umeme                  | Dkt. Wilbard K.Chagula       | 1971 –1974  | Bw. Frederick Rwegarulila | 5/11/70 – 8/11/75       |
| 6.  | Maji na Nguvu za Umeme                  | Bw. I. Elinewinga            | 1974 – 1975 |                           |                         |
| 7.  | Maji, Umeme na Madini                   | Dkt. Wilbard K. Chagula      | 1976 -1978  | Bw. Frederick Rwegarulila | 9/11/75 – 1978          |
| 8.  | Maji, Nishati na Madini                 | Bw. I. Elinewinga            | 1978 – 1982 | Bw. Harith B. Mwapachu    | 16/8/78 – 1981          |
| 9.  | Maji na Nishati                         | Bw. Al Noor Kassum           | 1982/83     | Bw. Athumani Janguo       | 24/2/81 – 23/4/84       |
| 10. | Maji, Nishati na Madini                 | Bw. Al Noor Kassum           | 1985/86     | Bw. Fulgence M. Kazaura   | 24/4/84 – 5/11/85       |
| 11. | Ardhi, Maji, Nyumba na Maendeleo Mijini | Dkt. Pius Ng"wandu           | 1985 -1987  | Bw. H. Z. Talawa          | 6/11/85 – 23/3/87       |
| 12. | Maji                                    | Dkt. Pius Ng"wandu           | 1987- 1990  | Inj. N. K. Msimbira       | 4/4/87 – 12/4/90        |
| 13. | Maji                                    | Bw. Christian Kisanji        | 1990        | Bw. Paul J. Mkanga        | 13/4/90 – 13/11/90      |
| 14. | Maji, Nishati na Madini                 | Lt. Kanali Jakaya M. Kikwete | 1990        | Prof. Mark J. Mwandosya   | 14/11/90 -13/12/92      |
|     |                                         |                              |             | Bw. Ben Moshi             | 14/12/92 – 25/8/94      |
|     |                                         |                              |             | Bw. Rafael O.S. Mollel    | 26/8/94 – 19/12/95      |
| 15. | Maji, Nishati na Madini                 | Bw. Jackson Makweta          | 1995        | Bw. J. Kipokola           | 20/12/95 – 10/5/97      |
| 16. | Maji                                    | Dkt. Pius Ng"wandu           | 1996        | Prof. Idrissa Mtulia      | 20/12/95 – 21/1/01      |
| 17. | Maji                                    | Bw. Mussa Nkhanga            | 1999        | Prof. Idrissa Mtulia      | 20/12/95 – 21/1/01      |
| 18. | Maji na Mifugo                          | Bw. Edward Lowassa           | 2001        | Bw. Bakari A. Mahiza      | 1/2/01 – 9/11/03        |
|     |                                         |                              |             | Bw. Vincent Mrisho        | 9/11/03 – 21/1/06       |

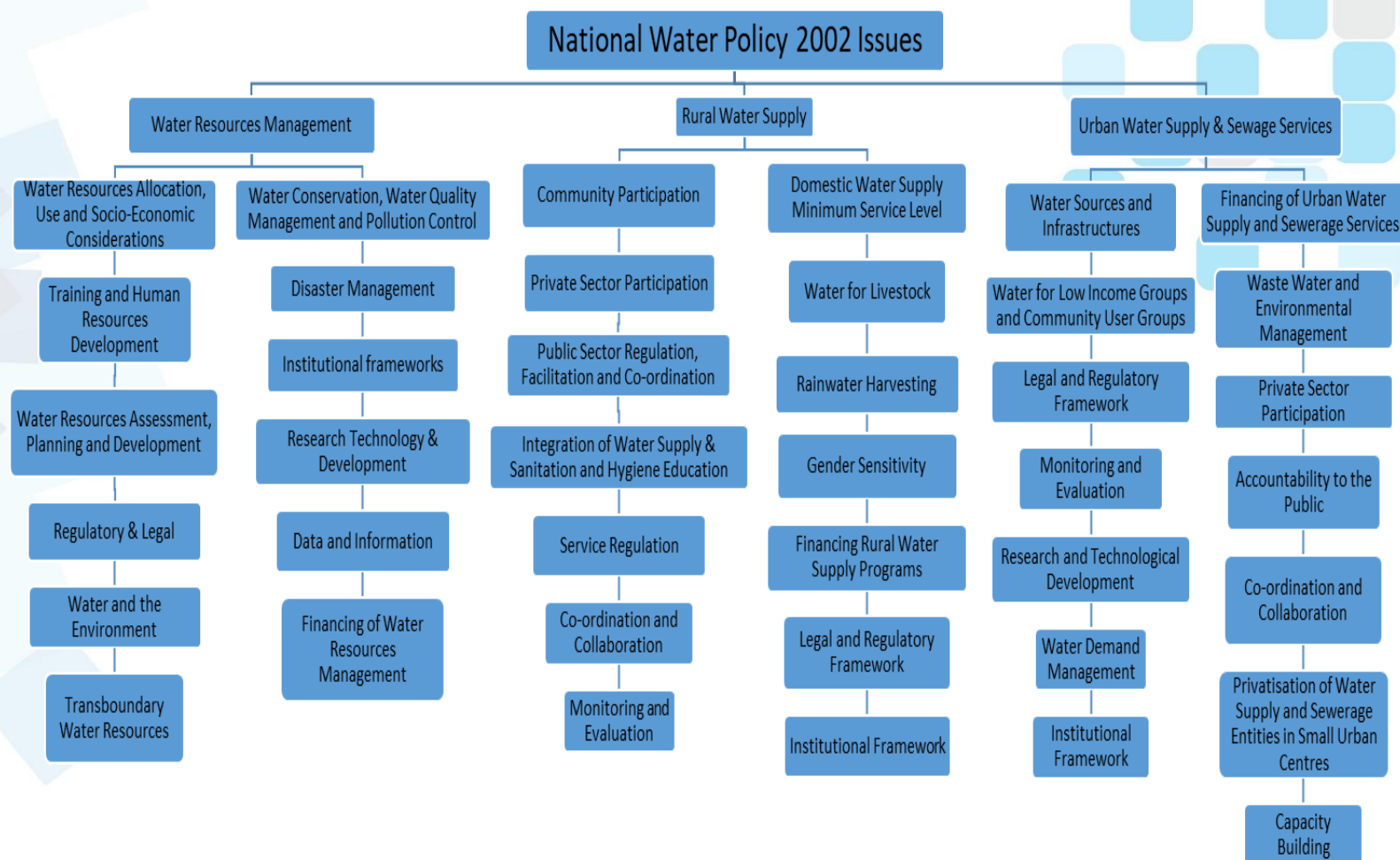
WSSR 2015 - 2020

WSSR 2015 - 2020



|    |                     |                         |                          |                             |                          |
|----|---------------------|-------------------------|--------------------------|-----------------------------|--------------------------|
| 19 | Maji                | Bw. Stephen Wassira     | 2005                     | Bw. Patrick Rutabanzibwa    | 21/1/06 – 1/12/08        |
| 20 | Maji                | Dkt. Shukuru Kawambwa   | 2007                     | Bw. Patrick Rutabanzibwa    |                          |
| 21 | Maji na Umwagiliaji | Prof. Mark J. Mwandosya | 2008 - 2010              | Bw. Patrick Rutabanzibwa    |                          |
|    |                     |                         |                          | Bw. Wilson Mukama           | 2 /12/ 2008 – 18/10/2009 |
|    |                     |                         |                          | Eng. Christopher N. Sayi    | 19/10/09- 24/11/10       |
| 22 | Maji                | Prof. Mark J. Mwandosya | 2011 – 2012              | Eng. Chrisotopher N. Sayi   | Nov 2010 – 15/10/2013    |
| 23 | Maji na Umwagiliaji | Prof Jumanne Maghembe   | 2012-2015                | Eng. Bashiri Mrindoko       | 16/10/2013 – 04/11/2014  |
| 24 | Maji na Umwagiliaji | Prof Makame Mbarawa     | 2015                     | Eng. Mbogo Futakamba        | 05/11/2014               |
| 25 | Maji na Umwagiliaji | Eng. Gerson Lwenge      | 2015- 2017               | Eng. Emmanuel N.M. Kalobelo | 2017                     |
| 26 | Maji na Umwagiliaji | Eng Isaack Kamwelwe     | Okt 2017-30 Juni 2018    | Eng Emmanuel N.M. Kalobelo  | 3/12/2017                |
| 27 | Maji na Umwagilaji  | Prof Makame Mbarawa     | 1 Julai, 2018 – hadi leo | Prof Kitila Mkumbo          | 04/12/2017 – hadi sasa   |

## Appendix 1-2: Policy issues addressed by National Water Policy 2002



### Appendix 1-3: Water sector development program II achievements to date

| WSDP II Target                                                                                                                                                                                                                                                                                  | Achievement by 2019                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Target for Dar es Salaam</b>                                                                                                                                                                                                                                                                 |                                                                                                 |
| To provide water supply services to 5,007,200 new beneficiaries in Dar es Salaam through 500,000 Household water connections, 26 boreholes and 10 kiosks; thereby increasing access from 68 percent in December 2013 to 95 percent by 2019; and reduce Non-Revenue Water from 55 percent to 25. | 4,152,429 new beneficiaries<br>254,018 Household water connection<br>85% coverage<br>48.37% NRW |
| <b>Target in Urban Centres</b>                                                                                                                                                                                                                                                                  |                                                                                                 |
| To provide water supply services to 2,000,000 new beneficiaries in the 23 Urban Regional Centres through 200,000 Household water connections; thereby increasing access from 80 percent in December 2013 to 98 percent by 2019; and reduce Non-Revenue Water from 37 percent to 25 percent.     | 1,635,735 new beneficiaries<br>520,982 Household water connection<br>84% coverage<br>31.7% NRW  |
| <b>National Projects, District Head Quarters and Small Towns:</b>                                                                                                                                                                                                                               |                                                                                                 |
| to provide water supply services to 1,100,000 new beneficiaries in District Headquarters, Townships and areas served by National Projects through 110,000 Household water Connections; thereby increasing the access percentage from 53 percent in 2013 to 65 percent by 2019.                  | 1,907,003 new beneficiaries<br>40,640 Household water connection<br>62% coverage<br>40.6% N RW  |

### Appendix 1-4: Domesticated sustainable development goal number 6

| SDG Indicator                                                                                                                                                                       | Tier   | Applicability | Domesticated Indicator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.a.1 - Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan                                              | Tier 1 | Yes           | OII - 1.91 Amount of water- and sanitation related official development assistance that is part of a government-coordinated spending Plan (S),                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6.b.1 - Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management | Tier 1 | Yes           | OII - 1.22 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management (P),                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6.1.1 - Proportion of population using safely managed drinking water services                                                                                                       | Tier 2 | Yes           | FYDP II 2016/17 - 2020/21 - 2.5.11 Access to safe water and sanitation in urban areas (% of total) (S), FYDP II 2016/17 - 2020/21 - 2.5.12 Access to safe water and sanitation in rural areas (% of total)(S), FYDP II 2016/17 - 2020/21 - 2.5.3 Population with access to piped or protected water as their main source in regional centres (%) (S), FYDP II 2016/17 - 2020/21<br>2.5.7 Dar es salaam population with access to piped or protected water as their main source (%) (S), FYDP II 2016/17 - 2020/21<br>- 2.5.5 Non Renewable Water (NRW) for regional centres (%) (S), FYDP II 2016/17 - 2020/21<br>2.5.6 Population with access to |

| SDG Indicator                                                                                                                    | Tier   | Applicability | Domesticated Indicator                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------|--------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                  |        |               | <p>piped or protected water as their main source in district capitals and small town areas (%) (S), FYDP II 2016/17 - 2020/21</p>                                                                                                                                                                                                                              |
| 6.2.1 - Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water | Tier 2 | Yes           | <p>FYDP II 2016/17 - 2020/21 - 2.3.4.7 Access to safe water and sanitation in urban areas (% of total) (S), FYDP II 2016/17 - 2020/21</p> <p>2.3.4.8 Access to safe water and sanitation in rural areas (% of total) (S), FYDP II 2016/17 - 2020/21</p> <p>2.3.5.2 Proportion of the households with improved sanitation facilities in rural areas (%) (S)</p> |
| 6.3.1 - Proportion of wastewater safely treated                                                                                  | Tier 2 | Yes           | <p>OII - 1.49 Number of discharge permits granted (S)</p> <p>FYDP II 2016/17 - 2020/21 - 2.3.5.4 Households connected to conventional public sewer systems in regional centres (%) (S)</p> <p>FYDP II 2016/17 - 2020/21 - 2.3.5.8 Household connected to conventional public sewer systems in Dar es Salaam (%) (S)</p>                                        |
| 6.3.2 - Proportion of bodies of water with good ambient water quality                                                            | Tier 3 | Yes           | <p>OII - 1.14 Number of focused water quality monitoring networks established (S),</p> <p>OII - 1.88 Proportion of bodies of water with good ambient water quality (P)</p>                                                                                                                                                                                     |
| 6.4.1 - Change in water-use efficiency over time                                                                                 | Tier 2 | Yes           | <p>FYDP II 2016/17 - 2020/21 - 2.3.5.9 Non Renewable Water (NRW) for Dar es Salaam (%) (S)</p> <p>OII - 1.90 Change in water-use efficiency over time</p>                                                                                                                                                                                                      |
| 6.4.2 - Level of water stress: freshwater withdrawal as a proportion of available freshwater resources                           | Tier 1 | Yes           | <p>OII - 1.52 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources (P)</p>                                                                                                                                                                                                                                           |
| 6.5.1 - Degree of integrated water resources management implementation                                                           | Tier 2 | Yes           | <p>OII - 1.24 Number of Integrated Water Resource Management Development Plans (IWRMDP)</p>                                                                                                                                                                                                                                                                    |
| 6.5.2 - Proportion of transboundary basin area with an operational arrangement for water cooperation                             | Tier   | Yes           | <p>OII - 1.24 Number of Integrated Water Resource Management Development Plans (IWRMDP) (S),</p>                                                                                                                                                                                                                                                               |
| 6.6.1 - Change in the extent of water-related ecosystems over time                                                               | Tier 3 | Yes           | <p>OII - 1.50 Number of water sources demarcated and gazetted for protection and conservation. (S)</p> <p>FYDP II 2016/17 - 2020/21 -</p> <p>2.3.5.10 Number of water sources demarcated and gazetted for protection and conservation (S),</p>                                                                                                                 |

Appendix 2-1: Summarizes water supply and sanitation plans, targets and respective achievements by 2019/20 (Modified from NFYDP 2016/17-2020/21)

| SN | Water supply and sanitation                                             | Baseline<br>2015/16 | Planned<br>2020/21 | Achievement<br>2019/20 |
|----|-------------------------------------------------------------------------|---------------------|--------------------|------------------------|
| 1  | Rural population with access water                                      | 72                  | 85                 | 71                     |
| 2  | Households in rural areas with improved sanitation facilities           | 25                  | 75                 | 62                     |
| 3  | Regional Centre's population with a water                               | 86                  | 95                 | 84                     |
| 5  | NRW in Regional Centres                                                 | 37                  | 25                 | 31.7                   |
| 6  | District capitals and townships population with access to water         | 60                  | 70                 | 62                     |
| 7  | Dar es salaam population with access water                              | 72                  | 95                 | 85                     |
| 8  | Household connected to convention public sewer systems in Dar es Salaam | 10                  | 40                 | 10                     |

Appendix 2-2a: The Water Supply and Sanitation Act No. 5, 2019, status of prepared and published regulations

| NO. | DESCRIPTION OF REGULATION TO BE PREPARED                                                                                                                                                 | IMPLEMENTATION STATUS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | The Water Supply and Sanitation (Commencement) Notice, 2019 (Section 1)                                                                                                                  | Done.<br>Published as GN. No. 460 of 14/06/2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.  | The Water Supply and Sanitation (Registration and Operations of Community Based Water Supply Organ) Regulations, 2019 (Sections 33(1)(f), 41. -(1) (a), 41. -(1) (b), 43(2) and 41. (3)) | Done.<br>Published as GN. No. 829 of 8/11/2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3.  | Notices for Establishment/Extension Service Areas of Water Authorities (Section 9)                                                                                                       | Done<br><b>Prepared the following orders/notices:</b><br>(i). GN. 658 dated 6 <sup>th</sup> September 2019 - Iringa Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;<br>(ii). GN. 659 dated 6 <sup>th</sup> September 2019 - Dodoma Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;<br>(iii). GN. 660 dated 6 <sup>th</sup> September 2019 - Dar es Salaam Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;<br>(iv). GN. 661 dated 6 <sup>th</sup> September 2019 - Arusha Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;<br>(v). GN. 662 dated 6 <sup>th</sup> September 2019 - Babati Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;<br>(vi). GN. 664 dated 6 <sup>th</sup> September 2019 - MANAWASA (Extension of Service Area and Dis-establishment of Authority) Notice, 2019; |



| NO. | DESCRIPTION OF REGULATION TO BE PREPARED                                                                                                          | IMPLEMENTATION STATUS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                                                                                                                                   | <p>(vii). GN. 665 dated 6<sup>th</sup> September 2019 - Manyoni Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;</p> <p>(viii). GN. 666 dated 6<sup>th</sup> September 2019 - Tanga Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;</p> <p>(ix). GN. 667 dated 6<sup>th</sup> September 2019 - Tabora Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;</p> <p>(x). GN. 668 dated 6<sup>th</sup> September 2019 - Maswa Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;</p> <p>(xi). GN. 669 dated 6<sup>th</sup> September 2019 - Tabora Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;</p> <p>(xii). GN. 670 dated 6<sup>th</sup> September 2019 - Mwanza Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;</p> <p>(xiii). GN. 671 dated 6<sup>th</sup> September 2019 - Mtwara Urban Water Supply and Sanitation Authority) (Extension of Service Area and Dis-establishment of Authority) Notice, 2019;</p> <p>(xiv). GN. 672 dated 6<sup>th</sup> September 2019 - Same - Mwanga Water Supply and Sanitation Authority (Establishment) Notice, 2019;</p> <p>(xv). GN. 673 dated 6<sup>th</sup> September 2019 - Kyela - Kasumulu Water Supply and Sanitation Authority) (Establishment) Notice, 2019;</p> <p>(xvi). GN 583 dated 9<sup>th</sup> August 2019 – Executive Agencies (DDCA)(Dis-establishment) Order 2019; and</p> <p>(xvii). GN. 585 dated 9<sup>th</sup> August 2019 - Moshi Urban Water Supply and Sanitation Authority (Extension of Service Area) Notice, 2019.</p> |
| 4.  | Guidelines for the Establishment and Conducts of Affairs of Community Organization (Section 41(2))                                                | Not yet Done                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5.  | The Water Supply and Sanitation (Guidelines for the Establishment and Conducts of Affairs of Community Organization) Notice, 2019 (Section 41(2)) | Not yet Done                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 6.  | The National Water Fund Regulations, 2019 (Section 55(5))                                                                                         | Done.<br>Published as GN. No. 981 of 13/12/2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

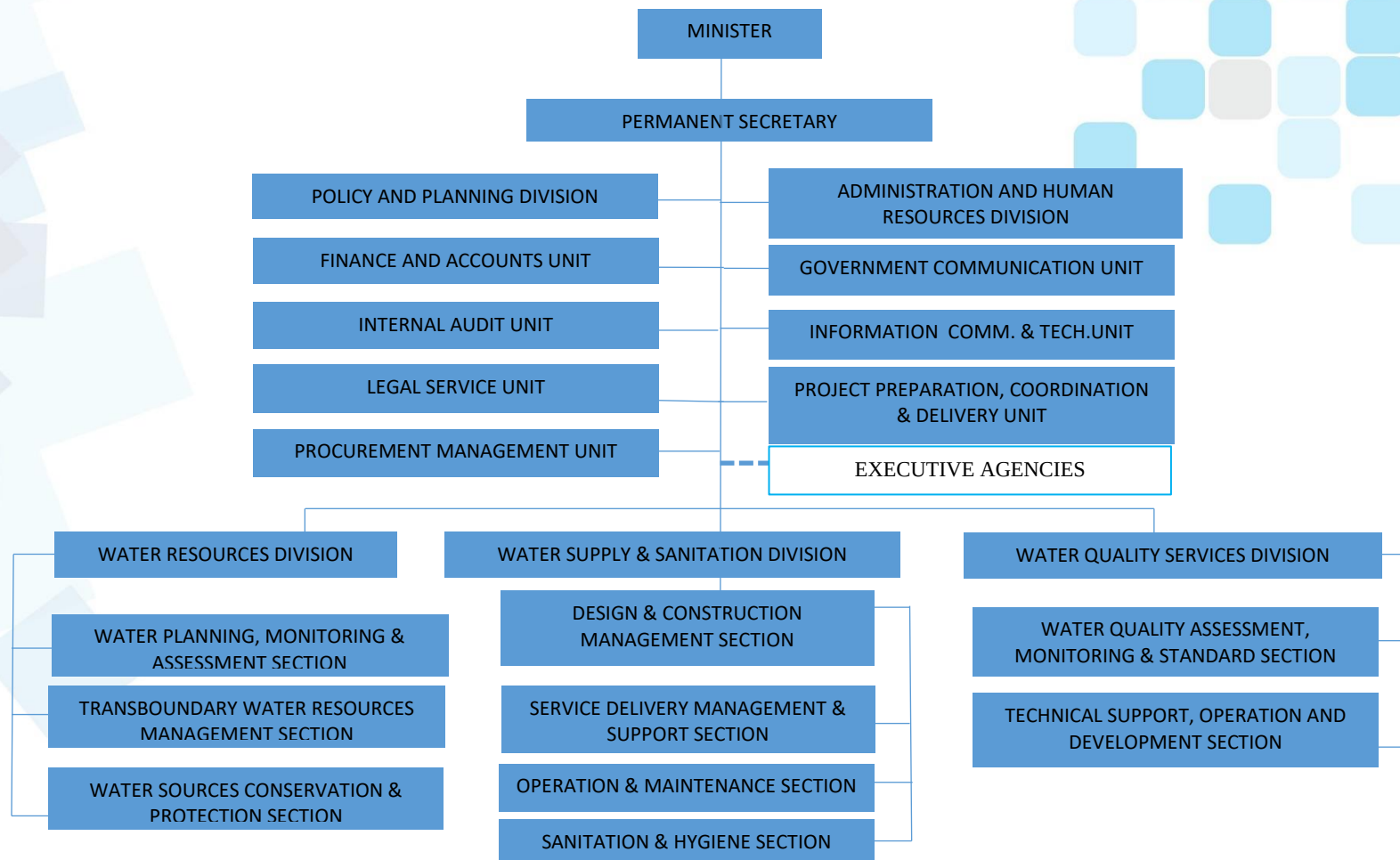
| NO. | DESCRIPTION OF REGULATION TO BE PREPARED                                                                                                                                                                                      | IMPLEMENTATION STATUS                                            |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 7.  | The Water Supply and Sanitation (Procedure for Compounding Offences) Regulations (Section 69(3)(a) and 69 (4))                                                                                                                | Not yet Done                                                     |
| 8.  | The Water Supply and Sanitation B (Forms and Notices) Regulations (Section 73. -(1)(a))                                                                                                                                       | Not yet Done                                                     |
| 9.  | The Water Supply and Sanitation (Approval and Implementation of Water Supply and Sanitation Projects) Regulations (to include aspect of consideration of IWRM in Water Supply and Sanitation Projects) (Section 73. -(1) (b)) | Not yet Done                                                     |
| 10. | The Water Supply Regulations, 2019 (Sect.73. (1) (c))                                                                                                                                                                         | Done. Published as GN. No. 828 of 8/11/2019                      |
| 11. | The Water Supply and Sanitation (Provision and Management of Sewage and Wastewater Services) Regulations, 2019 (Section 73. -(1) (c))                                                                                         | Done.<br>Published as GN. No. 827 of 8/11/2019                   |
| 12. | Water Supply and Sanitation (Clustering of Water Authorities) Regulations, 2019; (Section 73. - (1) (c))                                                                                                                      | Done.<br>Published as GN. No. 826 of 8/11/2019                   |
| 13. | The Water Supply and Sanitation (Code of Workmanships) Regulations, 2019; (Sect. 73(1) (c))                                                                                                                                   | Not yet Done                                                     |
| 14. | The Water Supply and Sanitation (Stakeholders Engagement) Regulations, 2019 (Section 73. - (1) (c))                                                                                                                           | Not yet Done                                                     |
| 15. | The Water Supply and Sanitation (Appointment of Board Members) Regulations, 2019; (Sect. 73(1) (c))                                                                                                                           | Not yet Done                                                     |
| 16. | The Water Supply and Sanitation (Water Bowers) Regulations, 2019; (Section 73. -(1) (c))                                                                                                                                      | Not yet Done                                                     |
| 17. | Any regulations made under this Act may provide that the contravention of any of their provisions shall constitute an offence and may prescribe penalties in respect of an offence committed. (Section 73. -(2))              | Ongoing.<br>Any prepared regulations will contain such provision |

Appendix 2-2b: The Water Resources and Management Act No. 11, 2009, status of prepared and published regulations

| NO. | DESCRIPTION OF REGULATION TO BE PREPARED                                                                                                                                            | IMPLEMENTATION STATUS                                                                                                                                                                                                                                                                                                                          |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Notice to be published in the Gazette to indicate when the Act shall come into operation. *(Section 1)                                                                              | Done<br>Published on 10/7/2009 GN 235                                                                                                                                                                                                                                                                                                          |
| 2.  | Registration of WUA. *(Section 82)                                                                                                                                                  | Done - Published on 22/01/2010 GN 22                                                                                                                                                                                                                                                                                                           |
| 3.  | Regulations made in respect of the Right to use water for domestic. *(Section 11(3))                                                                                                | Done<br>Published on 21/05/2010 GN 190                                                                                                                                                                                                                                                                                                         |
| 4.  | Appointment of Basin Water Officer in consultation with Basin Water Board. *(Section 24)                                                                                            | Done<br>Published on 21/05/2010 GN 187                                                                                                                                                                                                                                                                                                         |
| 5.  | Regulations made in respect of the right to rainwater harvesting. *(Section 12(2))                                                                                                  | Done<br>Published on 21/05/2010 GN 190                                                                                                                                                                                                                                                                                                         |
| 6.  | Order prescribing the form and procedure for application of water use permit, ground water permit and drainage permit. *(Section 75(1))                                             | Done<br>Published on 21/05/2010 GN 190                                                                                                                                                                                                                                                                                                         |
| 7.  | Approval and registration of water uses associations. *(Section 81)                                                                                                                 | Done<br>Published on 22/01/2010 GN 22                                                                                                                                                                                                                                                                                                          |
| 8.  | Regulations prescribing procedure of hearing appeals arising from decisions of BWBs. *(Section 106)                                                                                 | Done<br>Published on 21/05/2010 GN 190                                                                                                                                                                                                                                                                                                         |
| 9.  | Procedures for Nomination of Board Members of National Water Board and Basin Water Board (First Schedule 1(4); First Schedule 3(3); Second Schedule 1(6); and Second Schedule 3(3): | Done<br>Published on 21/05/2010 GN 187                                                                                                                                                                                                                                                                                                         |
| 15. | Order to establish a Basin Water Board. *(Section 22)                                                                                                                               | Automatically completed vide transitional provisions section 112(2)(c)                                                                                                                                                                                                                                                                         |
| 16. | Order by the Minister upon Consultation with the Basin Water Board designate and declare such area as catchment or sub catchment. *** (Section 29(1))                               | Done/Ongoing<br>Orders include Water Resources Management (Designation and Declaration of Mara river water catchment) Order, 2015; Water Resources Management (Designation and Declaration of Somoche water sub catchment) Order, 2015; Water Resources Management (Designation and Declaration of Tobora water sub catchment) Order, 2015 etc |
|     | Water Resources Management (Water Resources Classification System) Regulations, 2018 (Section 32(1))                                                                                | Done<br>Published as GN 156 published on. 20/04/2018                                                                                                                                                                                                                                                                                           |
| 17. | Notice to be published in the Gazette for the establishment of a protected zone. *** (Section 37(1))                                                                                | Done/Ongoing<br>Notices include Water Resources Management (Mindu dam protected zones), Notice 2015; Mbwinji and Mwena Springs protected zones), Notice 2015;                                                                                                                                                                                  |

|     |                                                                                                                                                                                                                                                                                                              |                                                                                                                                    |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|     |                                                                                                                                                                                                                                                                                                              | Halewa/Swaya protected zones), Notice 2015; [(Imeta protected zones), Notice 2016 etc.                                             |
| 18. | Order to be published in the gazette to prohibit human activities to be conducted beyond sixty Meters from water Dam or reservoir or a water source. *(Section 34)                                                                                                                                           | Done/Ongoing<br>Orders include Prohibition of Human Activities Beyond Sixty Metres at Kawa Dam, 2012, GN.297 of 21/09/2012         |
| 19. | Order to be published in the Gazette to declare any area of Mainland Tanzania to be a Ground water-controlled area. *<br>Section 38                                                                                                                                                                          | Done/Ongoing<br>Orders include Makutupora Groundwater Protected Zone is in place. Published on 21/09/2012 GN. 302                  |
| 20. | Regulations regarding Water abstraction, use and discharge permit were prepared under this provision and is in place. (Section 111(1))                                                                                                                                                                       | Done<br>Published on 21/05/2010 GN 190                                                                                             |
| 21. | Regulations to be made in consultation with relevant authorities to regulate the persons who are licensed to undertakes works relating to ground water prospecting, construction or Enlargement of a well or borehole (Section 62)                                                                           | Done<br>Published on 12/07/2013 GN 219                                                                                             |
| 22. | Regulations made in respect of dam safety and prevention of flood risk, to establish a register of approved professionals to inspect and monitor dam with a safety risk, the provision for technical audit of the work approved professional persons and classifying dams into categories. *<br>(Section 94) | Done<br>Published on 02/08/2013 GN 237                                                                                             |
| 23. | Regulations on Strategic Environmental Assessment (Section 8)                                                                                                                                                                                                                                                | In accordance with procedure and regulations made under EMA/ Prepared by NEMC                                                      |
| 24. | Regulations to be made to allow transfer of permit to a person who holds water use Permit, a discharge permit and a ground water permit to another person.<br>(Section 73(1))                                                                                                                                | Done<br>Published as GN 157 of 20/04/2018                                                                                          |
| 25. | Control and management of storm water<br>(Section 95)                                                                                                                                                                                                                                                        | Done - Published as GN 153 of 20/04/2018                                                                                           |
| 26. | Regulations to be made to prescribe the trading of water use permit (Section 45(5))                                                                                                                                                                                                                          |                                                                                                                                    |
| 27. | Section 85                                                                                                                                                                                                                                                                                                   | Powers of Basin water Boards in respect of monitoring and enforcing requirements for permits construction and alteration of works. |
| 28. | Water Resources Management (Water Well Quality Monitoring) Regulations, 2018.<br>(Section 111)                                                                                                                                                                                                               | Done Published as GN. 155 of 20/04/2018                                                                                            |
| 29. | Regulations to be made on charges to be levied (Section 96(4))                                                                                                                                                                                                                                               | Done Published as GN. 825 of 8/11/2019                                                                                             |

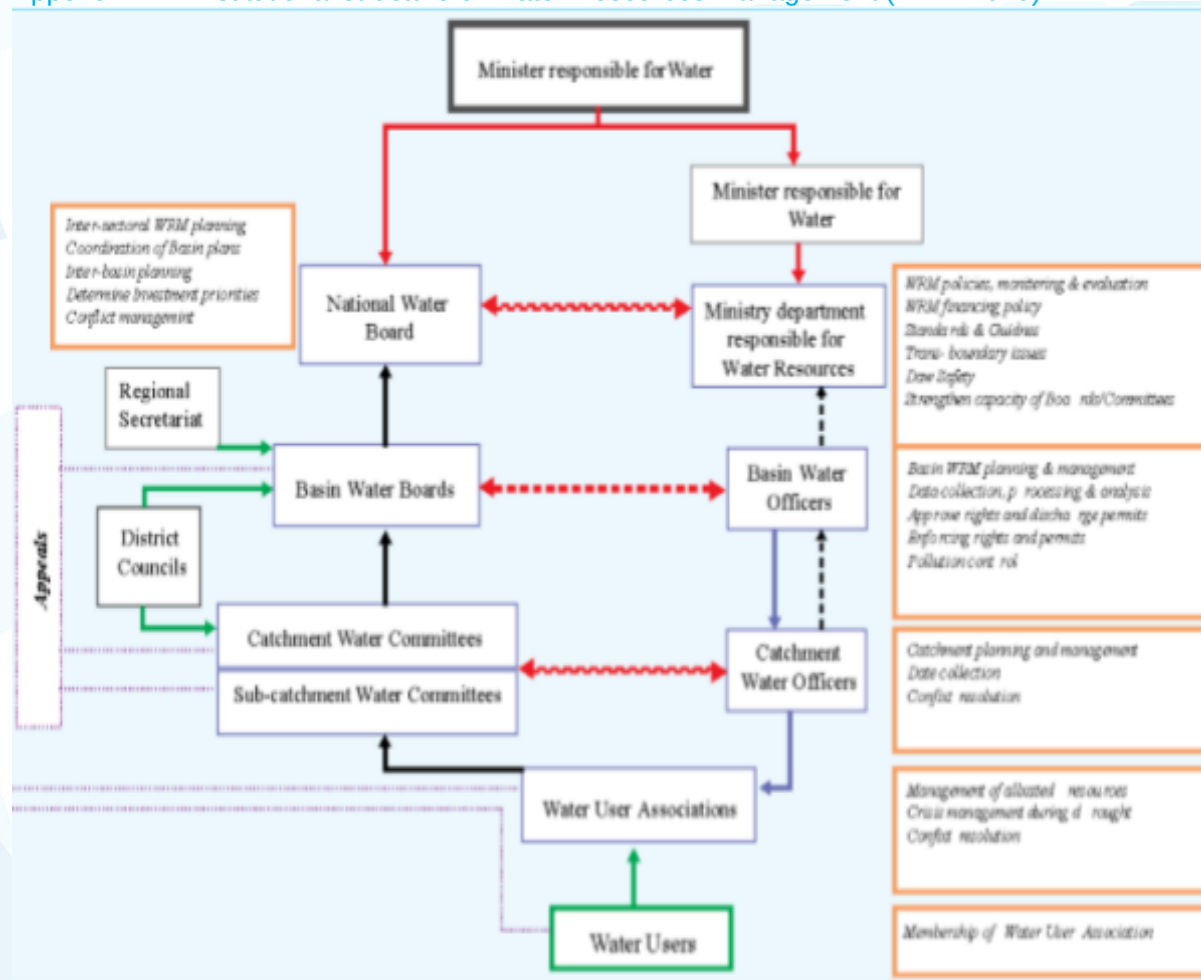
## Appendix 2-3: Organization structure for the Ministry of Water



Source: Adapted from the approved Organization structure of the Ministry of Water, 2018



Appendix 2-4: Institutional structure of Water Resources Management (WRD 2019)



#### Appendix 2-5: Regional Water Supply and Sanitation Authorities as of November 2019

| No. | Region        | Name of WSSA  |
|-----|---------------|---------------|
| 1   | Arusha        | AUWSA         |
| 2   | Dar es Salaam | DAWASA        |
| 3   | Dodoma        | DUWASA        |
| 4   | Geita         | GEUWASA       |
| 5   | Iringa        | IRUWASA       |
| 6   | Kagera        | BUWASA        |
| 7   | Katavi        | Mpanda        |
| 8   | Kigoma        | KUWASA        |
| 9   | Kilimanjaro   | MUWSA         |
| 10  | Lindi         | LUWASA        |
| 11  | Manyara       | BAWASA        |
| 12  | Mara          | MUWASA        |
| 13  | Mbeya         | Mbeya UWSSA   |
| 14  | Morogoro      | MORUWASA      |
| 15  | Mtwara        | MTUWASA       |
| 16  | Mwanza        | MWAUWASA      |
| 17  | Njombe        | NJUWASA       |
| 18  | Rukwa         | Sumbawanga    |
| 19  | Ruvuma        | SOUWASA       |
| 20  | Shinyanga     | SHUWASA       |
| 21  | Simiyu        | BAWASA        |
| 22  | Singida       | SUWASA        |
| 23  | Songwe        | Vwawa - Mlowo |
| 24  | Tabora        | TUWASA        |
| 25  | Tanga         | Tanga UWSSA   |

#### Appendix 2-6: National Projects Water Supply and Sanitation Authorities as of November 2019

| No. | Region    | Name of WSSA                  |
|-----|-----------|-------------------------------|
| 1   | Njombe    | Wanging'ombe                  |
| 2   | Shinyanga | Kahama - Shinyanga (KASHWASA) |
| 3   | Mara      | Mugango Kiabakari             |
| 4   | Mtwara    | Masasi-Nachingwea (MANAWASA)  |
| 5   | Pwani     | Chalinze (CHALIWASA)          |
| 6   | Simiyu    | Maswa                         |
| 7   | Tanga     | Handeni Truck Main (HTM)      |
| 8   | Mtwara    | Makonde                       |

Appendix 2-7: District Headquarters and Townships Water Supply and Sanitation Authorities  
as of November 2019

| NA | MKOA        | JINA LA MAMLAKA  |
|----|-------------|------------------|
| 1  | Arusha      | Karatu WSSA      |
| 2  | Geita       | Ushirombo WSSA   |
| 3  |             | Chato WSSA       |
| 4  | Iringa      | Mafinga WSSA     |
| 5  | Kagera      | Biharamulo WSSA  |
| 6  |             | Muleba WSSA      |
| 7  |             | Ngara WSSA       |
| 8  | Kigoma      | Kasulu WSSA      |
| 9  |             | Kibondo WSSA     |
| 10 | Kilimanjaro | Same-Mwanga WSSA |
| 11 | Manyara     | Mbulu WSSA       |
| 12 |             | Katesh WSSA      |
| 13 |             | Orkesumet WSSA   |
| 14 | Mara        | Bunda WSSA       |
| 15 |             | Mugumu WSSA      |
| 16 |             | Tarime WSSA      |
| 17 | Mbeya       | Tukuyu WSSA      |
| 18 | Morogoro    | Ifakara WSSA     |
| 19 | Mwanza      | Sengerema WSSA   |
| 20 | Njombe      | Makambako WSSA   |
| 21 | Shinyanga   | Kahama WSSA      |
| 22 | Simiyu      | Mwanhuzi WSSA    |
| 23 | Tabora      | Igunga WSSA      |
| 24 |             | Nzega WSSA       |
| 25 | Tanga       | Handeni WSSA     |
| 26 |             | Korogwe WSSA     |

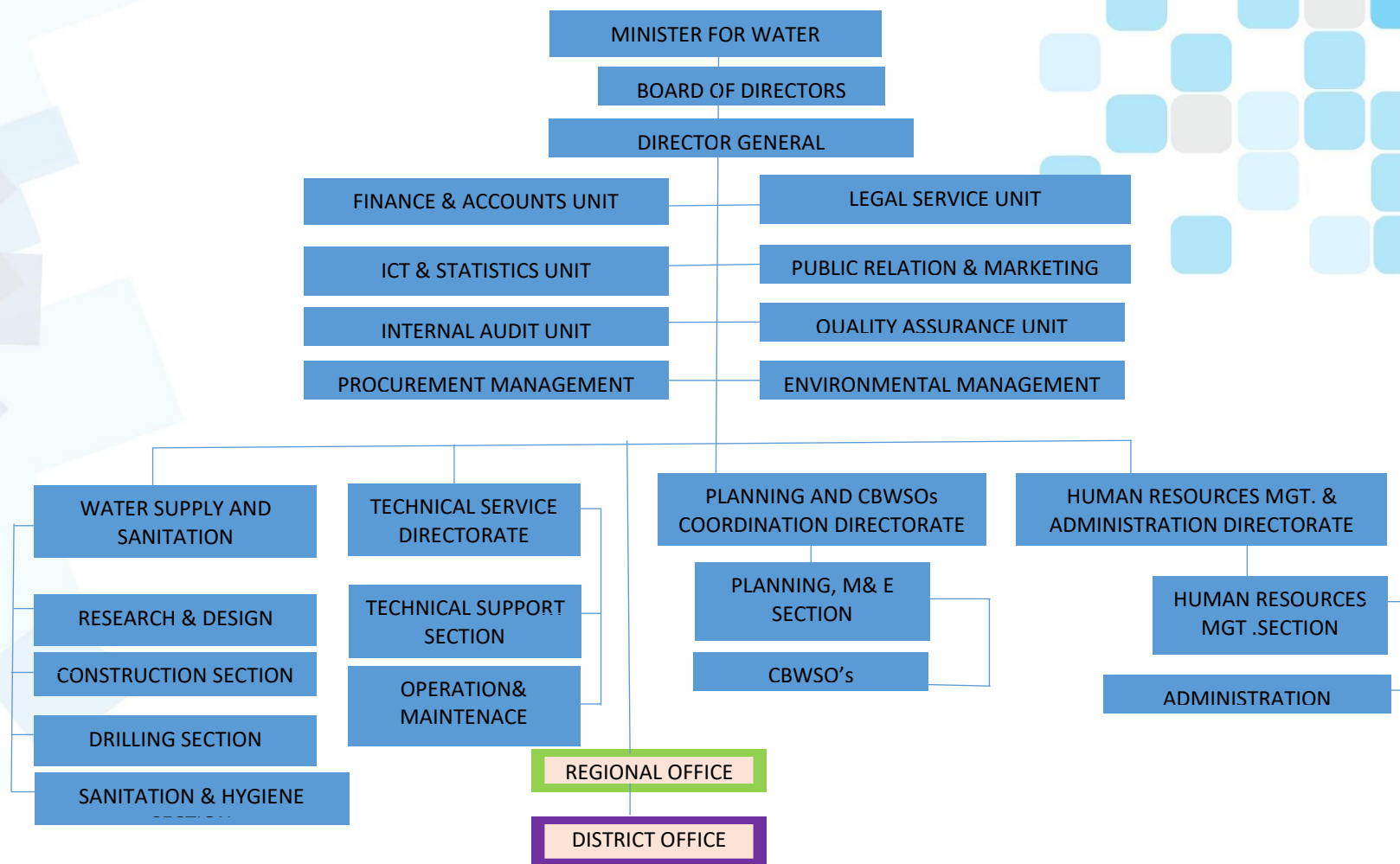
#### Appendix 2-8: Cancelled Water Supply and Sanitation Authorities as of November 2019

|                     |                          |
|---------------------|--------------------------|
| 1. Usa River        | 22. Magu WSSA            |
| 2. Monduli WSSA     | 23. Nansio WSSA          |
| 3. Longido WSSA     | 24. Ngudu WSSA           |
| 4. Chamwino WSSA    | 25. Kibaha WSSA          |
| 5. Kongwa WSSA      | 26. Kisarawe WSSA        |
| 6. Same WSSA        | 27. Mkuranga WSSA        |
| 7. Mwanga WSSA      | 28. Bagamoyo WSSA        |
| 8. Gallapo WSSA     | 29. Iselamagazi WSSA     |
| 9. Dareda WSSA      | 30. Tinde WSSA           |
| 10. Bashnet WSSA    | 31. Didia WSSA           |
| 11. Magugu WSSA     | 32. Lalago WSSA          |
| 12. Mikumi WSSA     | 33. Sangamwalugesha WSSA |
| 13. Magugu WSSA     | 34. Malampaka WSSA       |
| 14. Kyela WSSA      | 35. Isikizya WSSA        |
| 15. Kasumulu WSSA   | 36. Sikonge WSSA         |
| 16. Kilosa WSSA     | 37. Urambo WSSA          |
| 17. Nanyamba WSSA   | 38. Muheza WSSA          |
| 18. Mangaka WSSA    | 39. Pangani WSSA         |
| 19. Tandahimba WSSA | 40. Misungwi WSSA        |
| 20. Newala WSSA     | 41. Manyoni WSSA         |
| 21. Isaka WSSA      |                          |

#### Appendix 2-9: List of Water Supply and Sanitation Authorities tasked to supervise and capacitate other Authorities as of November 2019

| S/N | Name of responsible Water Supply and Sanitation Authority | Name of Authorities to be supervised and capacitated |
|-----|-----------------------------------------------------------|------------------------------------------------------|
| 1   | DUWASA                                                    | Mpwapwa and Kibaigwa                                 |
| 2   | MANAWASA                                                  | Ruangwa                                              |
| 3   | Mbeya UWASA                                               | Chunya                                               |
| 4   | NJUWASA                                                   | Makete                                               |
| 5   | SOUWASA                                                   | Mbinga and Tunduru                                   |
| 6   | SUWASA                                                    | Manyoni – Itigi cluster                              |
| 7   | Vwawa - Mlowo                                             | Tunduma                                              |

Appendix 2-10: Organisation structure for the RUWASA



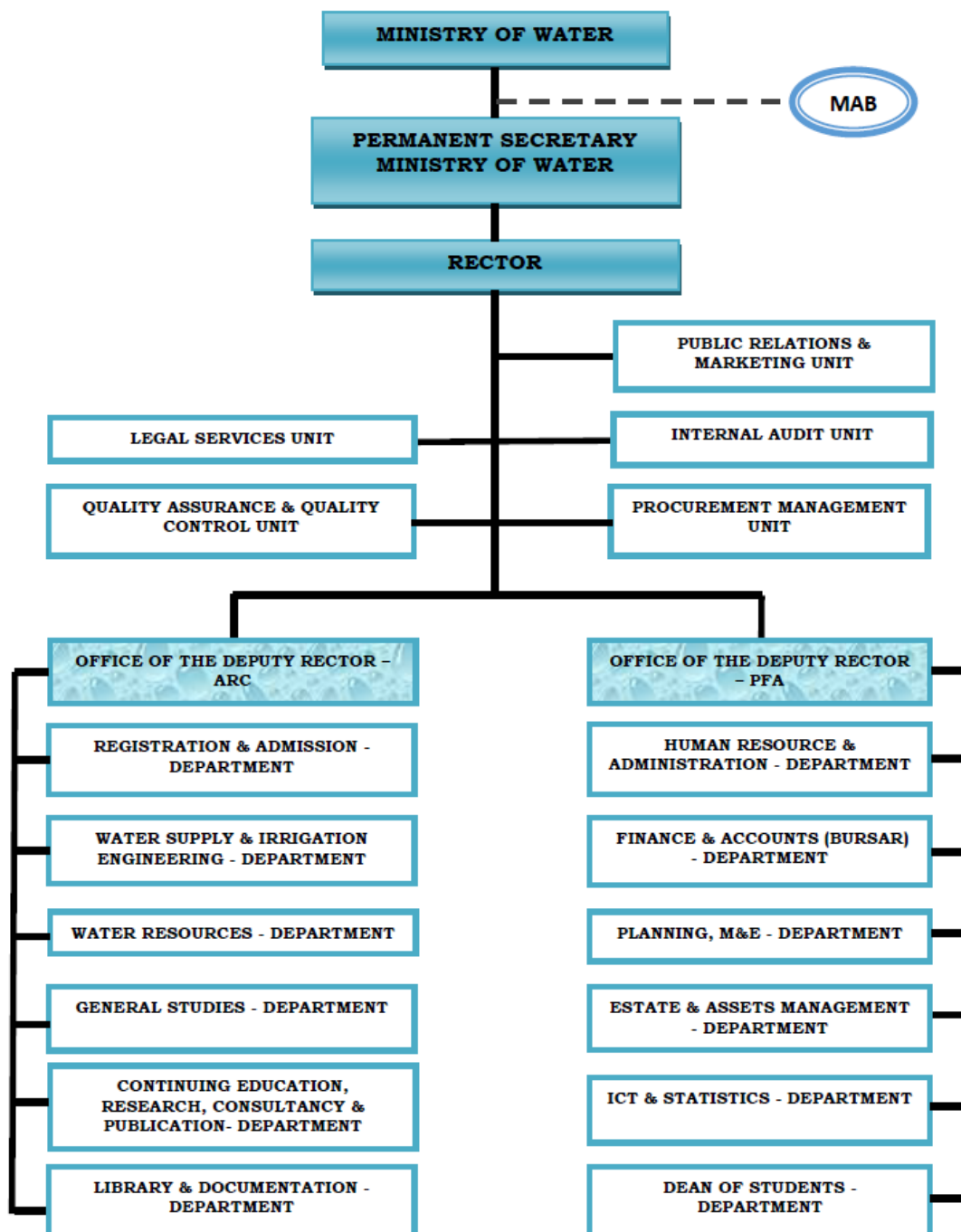
Source: Adapted from approved RUWASA Structure by PIC; 2019



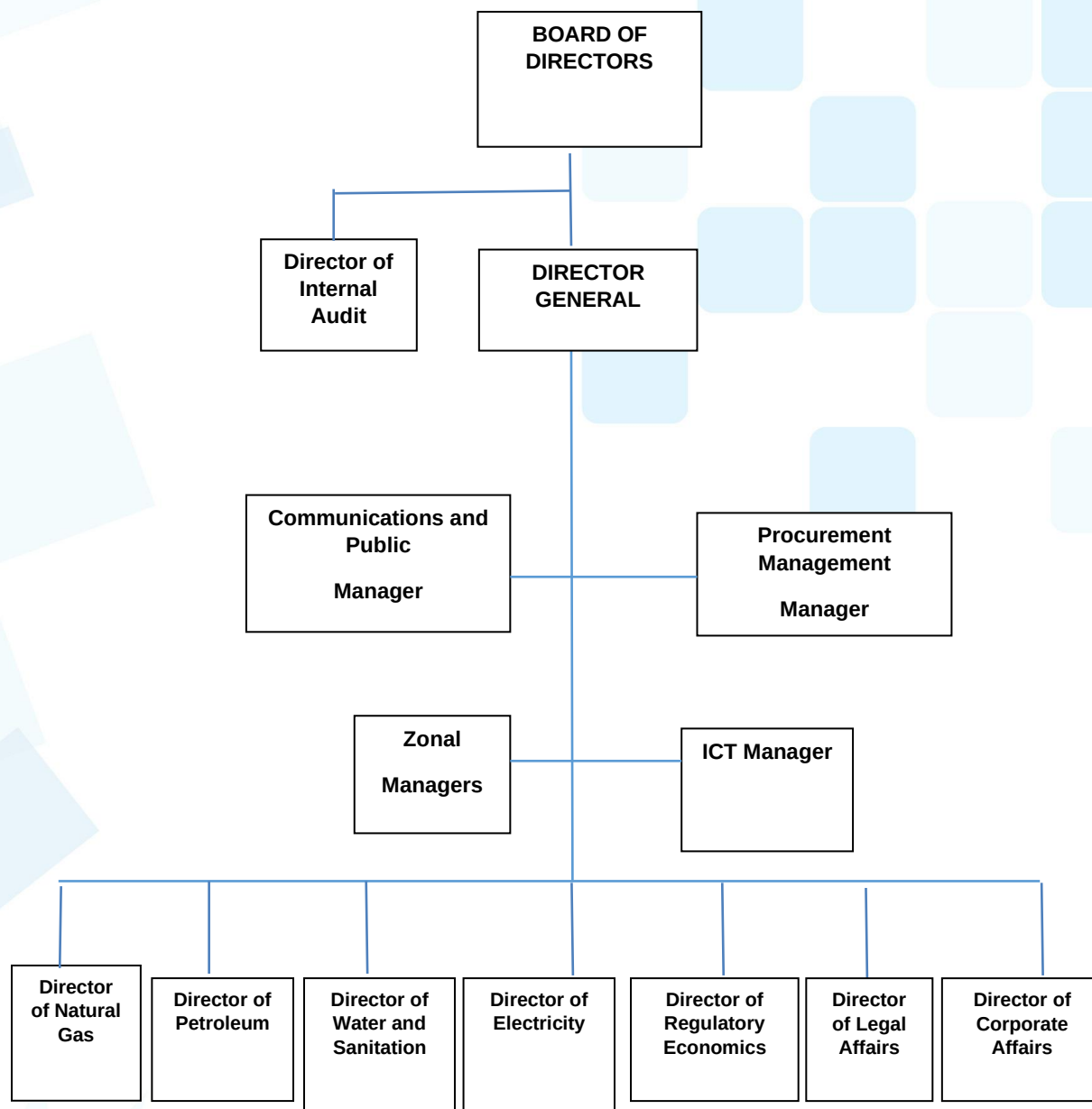
#### Appendix 2-11: Towns under RUWASA as of November 2019

| Region         | Towns Under RUWASA from Nov 2019                     |
|----------------|------------------------------------------------------|
| 1. Arusha      | Ngorongoro                                           |
| 2. Dodoma      | Kondoa and Chemba                                    |
| 3. Geita       | Katoro, Buseresere, Mbogwe and Nyangw'ale            |
| 4. Iringa      | Mufindi                                              |
| 5. Katavi      | Nsimbo, Tanganyika, Mlele and Mpimbwe                |
| 6. Kagera      | Kyerwa (Rubwera), Kyaka, Bunazi, Kayanga and Karagwe |
| 7. Kigoma      | Uvinza, Kakonko, and Buhigwe                         |
| 8. Kilimanjaro | None                                                 |
| 9. Lindi       | Kilwa Masoko and Liwale                              |
| 10. Mara       | Shirati, Utegi, Ingiri juu and Ingiri Chini          |
| 11. Manyara    | Kibaya, Haydom and Dongobesh                         |
| 12. Mbeya      | Busokelo and Rujewa                                  |
| 13. Morogoro   | Ulanga, Malinyi, Turiani, Dakawa and Gairo.          |
| 14. Mtwara     | None                                                 |
| 15. Mwanza     | Buchosa                                              |
| 16. Njombe     | Ludewa                                               |
| 17. Pwani      | Kilindoni, Utete and Kibiti                          |
| 18. Rukwa      | Laela, Namanyere and Kalambo                         |
| 19. Ruvuma     | Namtumbo, Madaba and Nyasa                           |
| 20. Shinyanga  | Ushetu, Mhunze and Maganzo                           |
| 21. Simiyu     | Busega and Itilima                                   |
| 22. Singida    | Miji ya Kiomboi, Nduguti na Ikungi.                  |
| 23. Songwe     | Miji ya Momba na Ileje (Itumba Isongole)             |
| 24. Tabora     | Kaliua                                               |
| 25. Tanga      | Lushoto, Mombo, Bumbuli and Songe (Kilindi)          |

## Appendix 2-12: Organisation structure for the Water Institute



Appendix 2-13: Organisation structure for the EWURA



#### Appendix 2-14: List of selected local Non-State Actors in the water sector

| Manufacturers                | Local Consultants                     | Local Contractors          |
|------------------------------|---------------------------------------|----------------------------|
| Tanzania Steel Pipes Limited | COWI Tanzania Limited                 | Jandu Plumbers Ltd.        |
| PLASCO Tanzania LTD          | NORPLAN Tanzania Limited              | Jos. Hansen Group          |
| Pipe Industries Co. Limited  | EWAREMA Consultant                    | COSMO Engineering Co. LTD  |
| Simba Pipe Limited           | Howard Humphrey                       | D4N Company LTD            |
| DPI Simba LTD                | Inter consult Tanzania LTD            | Fally Enterprises LTD      |
| Falcon Industries LTD        | Lahmeyer Consulting Engineers (T) Ltd | Maginga Business Holding   |
| LODHIA Plastic Industries    |                                       | TANSINO Logistic Limited   |
| KIBOKO Plastics Ltd          |                                       | F, M, Abri Company Limited |
| MM Steel LTD Tanzania        |                                       |                            |

#### Appendix 3-1: Water Resources in lakes of Tanzania

| Lake       | Surface Area (Km <sup>2</sup> ) |              | Available Water        |                        | Bordering Nations           | Notes                                                                                                                                                      | Current Uses (Tanzania share)            |
|------------|---------------------------------|--------------|------------------------|------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
|            | General                         | Tanzania     | Total                  | Tanzania               |                             |                                                                                                                                                            |                                          |
| Victoria   | 68,800                          | 35,720 (51%) |                        | 1428.8 Km <sup>3</sup> | Kenya, Tanzania and Uganda  | Lake Victoria is the largest freshwater lake in Africa. The second-largest freshwater lake in the world.                                                   | 154,244,091 m <sup>3</sup> /year (0.01%) |
| Tanganyika | 32,900                          | 13,489       | 18,900 Km <sup>3</sup> | 7,689 billion litres   | Tanzania DRC Burundi Zambia | Is the second-deepest lake in the world and the second-biggest lake by volume. It water volume is equivalent to about 16% of all fresh water on the earth. | 24,475,000 m <sup>3</sup> /year (1%)     |
| Nyasa      | 30,900,                         | 8,105        | 7,775 Km <sup>3</sup>  |                        | Tanzania Malawi Mozambique  | The lake is the eighth largest freshwater in the world. It has about 560 Km long with a maximum width of 75 km and average depth of 706 m.                 | Consumptive water use is 0%              |
| Rukwa      | -                               | 2,725.7      | -                      | 5.0076 Km <sup>3</sup> | Tanzania                    | The lake is endorheic (closed) in the Rukwa Valley                                                                                                         |                                          |
| Basotu     | -                               | 11           | -                      | 29 MCM/year            |                             | Fresh                                                                                                                                                      | Consumptive use (0%)                     |
| Babati     | -                               | 16           | -                      | 32 MCM/year            |                             | The lake is known for its large hippopotamus population.                                                                                                   | Consumptive use (0%)                     |
| Jipe       | 30                              | 14           |                        |                        | Tanzania, Kenya             |                                                                                                                                                            | Consumptive use (0%)                     |

| Lake                                                              | Surface Area (Km <sup>2</sup> ) |          | Available Water |          | Bordering Nations | Notes                                                 | Current Uses (Tanzania share) |
|-------------------------------------------------------------------|---------------------------------|----------|-----------------|----------|-------------------|-------------------------------------------------------|-------------------------------|
|                                                                   | General                         | Tanzania | Total           | Tanzania |                   |                                                       |                               |
| Chala                                                             | 4.2                             | 2        |                 |          | Tanzania Kenya    | It is a crater lake at the edge of Mount Kilimanjaro. | Consumptive use (0%)          |
| Lakes with Saline water (too saline for domestic/irrigation uses) |                                 |          |                 |          |                   |                                                       |                               |
| Eyasi                                                             | -                               | 1190     | -               |          |                   | The is endorheic                                      |                               |
| Natron                                                            |                                 | 832      |                 |          | -                 | It is a salt and soda lake.                           |                               |
| Manyara                                                           |                                 | 556      |                 |          | -                 | Saline                                                |                               |
| Kitangiri                                                         | -                               | 190      | -               | 150      | -                 | Saline                                                |                               |

### Appendix 3- 2:Water Use Permits for River Basins Indicated

| SN | Categories                              | IDB            |                                         |                |                                         | Lake Victoria  |                                         |                |                                         |
|----|-----------------------------------------|----------------|-----------------------------------------|----------------|-----------------------------------------|----------------|-----------------------------------------|----------------|-----------------------------------------|
|    |                                         | Groundwater    |                                         | Surface Water  |                                         | Groundwater    |                                         | Surface Water  |                                         |
|    |                                         | No. of Permits | Quantity of water (m <sup>3</sup> /day) | No. of Permits | Quantity of water (m <sup>3</sup> /day) | No. of Permits | Quantity of water (m <sup>3</sup> /day) | No. of Permits | Quantity of water (m <sup>3</sup> /day) |
| 1  | Domestic                                | 244            | 23,977                                  | 90             | 23,552                                  | 163            | 6,511                                   | 44             | 10,934                                  |
| 2  | Irrigation                              | 41             | 49,023                                  | 73             | 153,109                                 |                |                                         |                |                                         |
| 3  | Domestic & Irrigation                   | 3              | 424                                     | 6              | 41,340                                  |                |                                         |                |                                         |
| 4  | Construction                            | 4              | 22                                      | 4              | 81                                      | -              |                                         | 8              |                                         |
| 5  | Domestic & livestock                    | 216            | 64,319                                  | 110            | 197,783                                 |                |                                         |                |                                         |
| 6  | Fishing farm                            |                |                                         | 1              | 17,280                                  |                |                                         |                |                                         |
| 7  | Hotel                                   | 44             | 3,597                                   | 7              | 2,294                                   |                |                                         |                |                                         |
| 8  | Hydropower                              |                |                                         | 6              | 393,120                                 |                |                                         |                |                                         |
| 9  | Industrial                              | 5              | 567                                     | 3              | 597                                     | 26             | 680                                     | 31             | 72,749                                  |
| 10 | Mining                                  | 10             | 1,100                                   |                |                                         |                |                                         |                |                                         |
| 11 | Bottling                                | 1              | 60                                      |                |                                         | 2              | 21                                      | 1              | 4                                       |
| 12 | Commercial                              |                |                                         |                |                                         | 92             | 2,299                                   | 23             | 400                                     |
| 13 | Institution                             |                |                                         |                |                                         | 16             | 214                                     | 9              | 317                                     |
| 14 | Public Supply                           |                |                                         |                |                                         | 26             | 30,128                                  | 17             | 275,160                                 |
| 15 | Irrigation and fish farming             |                |                                         |                |                                         | 6              | 276                                     | 64             | 477,555                                 |
| 16 | Others (Mining, Hydropower & livestock) |                |                                         |                |                                         | 51             | 9,274                                   | 36             | 46,076,651                              |



| SN    | Categories                    | IDB            |                            | Lake Victoria  |                            |
|-------|-------------------------------|----------------|----------------------------|----------------|----------------------------|
|       |                               | Groundwater    |                            | Surface Water  |                            |
|       |                               | No. of Permits | Quantity of water (m³/day) | No. of Permits | Quantity of water (m³/day) |
| 17    | Community Water Supply        |                |                            | 2              | 30                         |
| 18    | Impoundment                   |                |                            | -              | 22                         |
| 19    | Joint (Domestic & Industrial) |                |                            |                |                            |
| 20    | Livestock                     |                |                            |                |                            |
| Total |                               | 568            | 143,089                    | 300            | 829,156                    |

### Appendix 3-3: Status of Water Resources in Lake Nyasa and WamiRuvu Basin

| SN | Categories                  | Wami/Ruvu      |                            | Lake Nyasa     |                            |
|----|-----------------------------|----------------|----------------------------|----------------|----------------------------|
|    |                             | Groundwater    |                            | Surface Water  |                            |
|    |                             | No. of Permits | Quantity of water (m³/day) | No. of Permits | Quantity of water (m³/day) |
| 1  | Domestic                    | 1,050          | 6,040                      | 29             | 1,408                      |
| 2  | Irrigation                  |                |                            |                |                            |
| 3  | Domestic & Irrigation       |                |                            |                |                            |
| 4  | Construction                | 48             |                            | 12             |                            |
| 5  | Domestic & livestock        |                |                            |                |                            |
| 6  | Fishing farm                |                |                            |                |                            |
| 7  | Hotel                       |                |                            |                |                            |
| 8  | Hydropower                  |                |                            |                |                            |
| 9  | Industrial                  | 336            | 19,098                     | 8              | 3,144                      |
| 10 | Mining                      |                |                            |                |                            |
| 11 | Bottling                    |                |                            |                |                            |
| 12 | Commercial                  | 577            | 10,401                     | 10             | 159                        |
| 13 | Institution                 | 26             | 499                        | 1              | 21                         |
| 14 | Public Supply               | 163            | 101,111                    | 40             | 542,591                    |
| 15 | Irrigation and fish farming | 106            | 46,453                     | 167            | 3,958,577                  |

| SN           | Categories                              | Wami/Ruvu      |                                         |                |                                         | Lake Nyasa     |                                         |                |                                         |
|--------------|-----------------------------------------|----------------|-----------------------------------------|----------------|-----------------------------------------|----------------|-----------------------------------------|----------------|-----------------------------------------|
|              |                                         | Groundwater    |                                         | Surface Water  |                                         | Groundwater    |                                         | Surface Water  |                                         |
|              |                                         | No. of Permits | Quantity of water (m <sup>3</sup> /day) | No. of Permits | Quantity of water (m <sup>3</sup> /day) | No. of Permits | Quantity of water (m <sup>3</sup> /day) | No. of Permits | Quantity of water (m <sup>3</sup> /day) |
| 16           | Others (Mining, Hydropower & livestock) | 11             | 1,964                                   | 14             | 597,914                                 | 1              | 30                                      | 108            | 306,241,479                             |
| 17           | Community Water Supply                  |                |                                         |                |                                         |                |                                         |                |                                         |
| 18           | Impoundment                             |                |                                         |                |                                         |                |                                         |                |                                         |
| 19           | Joint (Domestic & Industrial)           |                |                                         |                |                                         |                |                                         |                |                                         |
| 20           | Livestock                               |                |                                         |                |                                         |                |                                         |                |                                         |
| <b>Total</b> |                                         | <b>2,317</b>   | <b>185,567</b>                          | <b>281</b>     | <b>5,103,814</b>                        | <b>29</b>      | <b>22,293</b>                           | <b>476</b>     | <b>307,732,085</b>                      |

Appendix 3-3: Status of Water resources in Pangani and Lake Rukwa Basins

| SN           | Categories                              | Pangani        |                                         |                |                                         | Lake Rukwa             |                                         |
|--------------|-----------------------------------------|----------------|-----------------------------------------|----------------|-----------------------------------------|------------------------|-----------------------------------------|
|              |                                         | Groundwater    |                                         | Surface Water  |                                         | Ground & Surface Water |                                         |
|              |                                         | No. of Permits | Quantity of water (m <sup>3</sup> /day) | No. of Permits | Quantity of water (m <sup>3</sup> /day) | No. of Permits         | Quantity of water (m <sup>3</sup> /day) |
| 1            | Domestic                                | 350            | 128,959                                 | 427            | 393,217                                 | 247                    | 17,018                                  |
| 2            | Irrigation                              | 91             | 543,039                                 | 429            | 2,306,046                               | 70                     | 2,281,341                               |
| 3            | Domestic & Irrigation                   | 18             | 19,097                                  | 145            | 277,932                                 |                        |                                         |
| 4            | Construction                            | 1              | 190                                     | 7              | 3,456                                   |                        |                                         |
| 5            | Domestic & livestock                    |                |                                         |                |                                         |                        |                                         |
| 6            | Fishing farm                            | -              |                                         | 5              | 5,960                                   |                        |                                         |
| 7            | Hotel                                   |                |                                         |                |                                         | 49                     | 3,221                                   |
| 8            | Hydropower                              | -              | -                                       | 7              | 10,959,840                              | 1                      | 777,600                                 |
| 9            | Industrial                              | 67             | 93,835                                  | 33             | 47,758                                  | 11                     | 4,408                                   |
| 10           | Mining                                  | -              |                                         | 1              | 216                                     | 32                     | 9,156                                   |
| 11           | Bottling                                |                |                                         |                |                                         |                        |                                         |
| 12           | Commercial                              | 26             | 3,234                                   | 14             | 6,913                                   | 33                     | 3,378                                   |
| 13           | Institution                             |                |                                         |                |                                         | 25                     | 41,728                                  |
| 14           | Public Supply                           | 19             | 24,907                                  | 35             | 190,244                                 | 19                     | 10,959                                  |
| 15           | Irrigation and fish farming             |                |                                         |                |                                         |                        |                                         |
| 16           | Others (Mining, Hydropower & livestock) |                |                                         |                |                                         |                        |                                         |
| 17           | Community Water Supply                  |                |                                         |                |                                         |                        |                                         |
| 18           | Impoundment                             |                |                                         |                |                                         |                        |                                         |
| 19           | Joint (Domestic & Industrial)           | 5              | 1,072                                   | 15             | 9,933                                   |                        |                                         |
| 20           | Livestock                               | 3              | 47                                      | 45             | 50,580                                  |                        |                                         |
| <b>Total</b> |                                         | <b>580</b>     | <b>814,379</b>                          | <b>1,163</b>   | <b>14,252,095</b>                       | <b>487</b>             | <b>3,148,809</b>                        |

Appendix 3-4: Status of Water Resources in Rufiji and Ruvuma Basins

| SN           | Categories                              | Rufiji<br>Ground & Surface Water |                                         | Ruvuma<br>Ground & Surface Water |                                         |
|--------------|-----------------------------------------|----------------------------------|-----------------------------------------|----------------------------------|-----------------------------------------|
|              |                                         | No. of Permits                   | Quantity of water (m <sup>3</sup> /day) | No. of Permits                   | Quantity of water (m <sup>3</sup> /day) |
| 1            | Domestic                                | 133                              |                                         | 137                              |                                         |
| 2            | Irrigation                              | 417                              |                                         | 7                                |                                         |
| 3            | Domestic & Irrigation                   |                                  |                                         |                                  |                                         |
| 4            | Construction                            |                                  |                                         |                                  |                                         |
| 5            | Domestic & livestock                    |                                  |                                         |                                  |                                         |
| 6            | Fishing farm                            |                                  |                                         |                                  |                                         |
| 7            | Hotel                                   |                                  |                                         |                                  |                                         |
| 8            | Hydropower                              | 15                               |                                         | 2                                |                                         |
| 9            | Industrial                              | 10                               |                                         | 25                               |                                         |
| 10           | Mining                                  |                                  |                                         |                                  |                                         |
| 11           | Bottling                                |                                  |                                         |                                  |                                         |
|              |                                         |                                  |                                         |                                  |                                         |
| 13           | Institution                             |                                  |                                         |                                  |                                         |
| 14           | Public Supply                           |                                  |                                         |                                  |                                         |
| 15           | Irrigation and fish farming             |                                  |                                         |                                  |                                         |
| 16           | Others (Mining, Hydropower & livestock) | 32                               |                                         | 3                                |                                         |
| 17           | Community Water Supply                  |                                  |                                         |                                  |                                         |
| 18           | Impoundment                             |                                  |                                         |                                  |                                         |
| 19           | Joint (Domestic & Industrial)           |                                  |                                         |                                  |                                         |
| 20           | Livestock                               | 1                                |                                         |                                  |                                         |
| <b>Total</b> |                                         | <b>608</b>                       | <b>-</b>                                | <b>174</b>                       | <b>-</b>                                |

### Appendix 3-5: Discharge Permits of River Basin

| SN | Basin           | Discharge permits per BWB |                           | Remarks |
|----|-----------------|---------------------------|---------------------------|---------|
|    |                 | All Permits               | Permits between 2015-2020 |         |
| 1  | Pangani         | 44                        |                           |         |
| 2  | Rufiji          | 14                        | 13                        |         |
| 3  | Lake Nyasa      | 0                         | 0                         |         |
| 4  | Lake Rukwa      | 4                         | 1                         |         |
| 5  | Lake Victoria   | 29                        | 28                        |         |
| 6  | Lake Tanganyika | 0                         | 0                         |         |
| 7  | Internal        | 9                         | 9                         |         |
| 8  | Wami-Ruvu       | 42                        | 37                        |         |
| 9  | Ruvuma          | 2                         | 1                         |         |
|    | Total           | 144                       | 89                        |         |

### Appendix 3: List of Water Users Association as of 2020

| N | Basin           | Sub Catchments                                                                                                   | Quantity | Water Sources covered                                                                                                                                                                 | WUA 2015-2019 | Villages Covered |
|---|-----------------|------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------|
| 1 | Rufiji          | Great Ruaha (28), Kilombero (7)                                                                                  | 35       | Great Ruaha, Ndembera, Little Ruaha, Mlowo, Halali, Kimani, Mgeta, Mkoji, Balali, Mbukwa, Mtitu, Mswiswi, Chimala, Muhu, Gwiru, Kihansi, Mbarali, Mpanga, Dudumizi and Mfyamba rivers | 4             | 539              |
| 2 | Pangani         | Kikuletwa, Pangani, Zigi, Umba,                                                                                  | 14       | ikuletwa, Ruvu, Mkomazi, Umba, Zigi rivers; and Nyumba ya Mungu dam                                                                                                                   | 4             | 1021             |
| 3 | Lake Tanganyika | Mtunguruzi, Mungonya, Mkuti, and Makere                                                                          | 4        | Mtunguruzi, Mungonya, Mkuti, and Makere                                                                                                                                               | 1             | 32               |
| 4 | Ruvuma          | Likonde, Lulindi, Mwiti, Lumeme North, Msinjewe West, Ukanda, Matogoro Mountains, Ruvuma Highland, Lumeme South. | 8        | River Likonde, River Lulindi, River ndanda, River Lumeme, River Msinjewe, Matogoro Mountains, River Ruvuma, River Lumeme                                                              | 2             | 120              |
| 5 | Rukwa           | Songwe and Katuma                                                                                                | 8        | Myovizi river, Mlowo river, Lupa river, Katuma river, Ruanda river, Mpanda river, Mbalizi river, Mpanda                                                                               | 3             | 114              |



| N     | Basin         | Sub Catchments                                                                                                                                     | Quantit<br>y | Water Sources covered                                                                                                                                                                                   | WUA<br>2015-<br>2019 | Villages<br>Covered |
|-------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| 6     | Lake Victoria | Tigithe, Tobora, Tigithe Duma/Bariadi, Duma/Bariadi, Sumve, Ngono-Kagondo, Mara-Simachalo, Mara-Simachalo, Matu/Ng'wandu, Matu/Ng'wandu, Nyangwale | 14           | Tigithe river, Tobora river, Simiyu river, Mirongo river, Ngono river, Mara Wetland, Somoche river, Simiyu and Duma river, Nyankanga Dam                                                                | 1                    | 149                 |
| 7     | Wami/Ruvu     | Mkondoa, Wami, Ngerengere, Upper Ruvu.                                                                                                             | 21           | Kisangata River, Ilonga River, Lumuma River, Miyombo River, Mkondoa River, Msowero River, Wami River, Mkindo River, Ngerengere River, Mgolole River, Ruvu River, Mbezi River, Mvuha River, Mgeta River. | 7                    | 201                 |
| 8     | IDB           | Namanga, Lake Eyasi, Manyara                                                                                                                       | 3            | Ngarenanyuki River, Mang'ola Spring, Mto wa Mbu Rivers and springs, Dams                                                                                                                                | 0                    | 36                  |
| 9     | Lake Nyasa    | Mngaka, Songwe, Kitewaka                                                                                                                           | 4            | Luhira, Luwaita, Songwe, Kisongo                                                                                                                                                                        | 0                    | 51                  |
| TOTAL |               |                                                                                                                                                    | 111          |                                                                                                                                                                                                         | 22                   | 2263                |

#### Appendix 3-6: Water Resources Monitoring Network Status for 2020

| Basin        | River gauging stations | Rainfall stations |            | Weather stations | Groundwater stations | Lakes and Dams |           | Total Basin | per |
|--------------|------------------------|-------------------|------------|------------------|----------------------|----------------|-----------|-------------|-----|
|              |                        | Automatic         | Standard   |                  |                      | Lakes          | Dams      |             |     |
| Pangani      | 60                     | 5                 | 41         | 13               | 11                   | 3              | 3         | 136         |     |
| Wami/Ruvu    | 45                     | 11                | 31         | 32               | 19                   | 0              | 1         | 139         |     |
| Ruvuma       | 28                     | 5                 | 5          | 17               | 7                    | 0              | 0         | 62          |     |
| Rukwa        | 23                     | 2                 | 9          | 6                | 0                    | 2              | 0         | 42          |     |
| Tanganyika   | 32                     | 3                 | 8          | 14               | 0                    | 1              | 2         | 60          |     |
| IDB          | 36                     | 3                 | 8          | 8                | 31                   | 3              | 2         | 91          |     |
| Nyasa        | 28                     | 4                 | 10         | 5                | 0                    | 3              | 0         | 50          |     |
| Victoria     | 20                     | 2                 | 32         | 18               | 0                    | 5              | 0         | 77          |     |
| Rufiji       | 58                     | 7                 | 3          | 39               | 27                   | 0              | 3         | 137         |     |
| <b>Total</b> | <b>330</b>             | <b>42</b>         | <b>147</b> | <b>152</b>       | <b>95</b>            | <b>17</b>      | <b>11</b> | <b>794</b>  |     |

### Appendix 3-7: Achievements in Regional Cooperation and Trans-boundary Water Resources from 2015-2019

| SN | Area                                                                                                                                                                                      | Performance                                                                                                                                                    | Remarks                                                                                                                                                                                                                              |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Coordinate Ministry's participation in national and international dialogue, initiatives and projects pertaining to the management, development and use of trans-boundary water resources; | Chair of Nile Equatorial Lakes Subsidiary Action Plan – Coordination Unit – NELSAP-CU (2017/2018)                                                              |                                                                                                                                                                                                                                      |
|    |                                                                                                                                                                                           | Chair of Zambezi Watercourse Commission – ZAMCOM (2018/2019)                                                                                                   | Strategic Plan for the Zambezi Watercourse (2018-2040)                                                                                                                                                                               |
|    |                                                                                                                                                                                           | Songwe River Basin Development Programme                                                                                                                       | 1.1 African Ministers' Council on Water Strategy 2018-2030                                                                                                                                                                           |
|    |                                                                                                                                                                                           | Chair of African Ministers' Council on Water - AMCOW (2016-2019)                                                                                               |                                                                                                                                                                                                                                      |
|    |                                                                                                                                                                                           | Chair of AMCOW's African Water Facility                                                                                                                        |                                                                                                                                                                                                                                      |
|    |                                                                                                                                                                                           | Kimbiji Aquifer System Monitoring Project in collaboration with SADC Groundwater Management Institute 2019                                                     |                                                                                                                                                                                                                                      |
|    |                                                                                                                                                                                           | Nile Basin Hydromet Project in Lake Victoria Zone                                                                                                              |                                                                                                                                                                                                                                      |
|    |                                                                                                                                                                                           | Preparation of the Shared Vision 2050 for the Songwe River Basin in 2015                                                                                       |                                                                                                                                                                                                                                      |
|    |                                                                                                                                                                                           | and b) Preparation of the Ten Years SRBDP                                                                                                                      |                                                                                                                                                                                                                                      |
|    | <b>SDG6</b>                                                                                                                                                                               |                                                                                                                                                                |                                                                                                                                                                                                                                      |
| 2  | Coordinate the preparation and implementation of trans-boundary water resources development, utilization of management projects;                                                          | Establishment of a Joint Songwe River Basin Commission 2018                                                                                                    | The Secretariat is based in Kyela-Tanzania                                                                                                                                                                                           |
|    |                                                                                                                                                                                           | Strengthening Transboundary Cooperation and Integrated Natural Resources Management in the Songwe River Basin Project 2019-2023                                | USD 6.4 million Fund accessed from the Global Environment Facility (GEF), Euro 0.2 million and GBP 0.1 million from Stockholm International Water Institute (SIWI) and Climate Resilient Infrastructure Development Facility (CRIDF) |
|    |                                                                                                                                                                                           | Sustainable Water Partnership for the Mara River 2016-2021                                                                                                     |                                                                                                                                                                                                                                      |
| 3  | Coordinate formulation of international agreements and                                                                                                                                    | Convention between the Government of the Republic of Malawi and the Government of the United Republic of Tanzania on the Establishment of a Joint Songwe River |                                                                                                                                                                                                                                      |

| SN | Area                                                    | Performance                                                                                                                                                                                                                                            | Remarks |
|----|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|    | protocols on trans-boundary shared water course systems | Basin Commission, 2017 (in force as from 1st July, 2018)                                                                                                                                                                                               |         |
|    |                                                         | The Nile Cooperative Framework Agreement, 2010 (Tanzania ratified in 2015)                                                                                                                                                                             |         |
|    |                                                         | Memorandum of Understanding between Tanzania and Malawi for the Implementation of Phase III of Songwe River Basin Development Programme (SRBDP), 2017                                                                                                  |         |
|    |                                                         | Memorandum of Understanding on Kagera River Basin Transboundary Integrated Water Resources Management and Development between Tanzania, Burundi, Rwanda Uganda and Nile Equatorial Lakes Subsidiary Action Plan – Coordination Unit – NELSAP- CU, 2016 |         |
|    |                                                         | Memorandum of Understanding between Tanzania and Kenya for the Management of Transboundary Water Resources of Mara River Basin, 2015                                                                                                                   |         |
|    |                                                         | Memorandum of Understanding between Tanzania and DRC for the Construction of Lukuga Barr age, 2015                                                                                                                                                     |         |
|    |                                                         |                                                                                                                                                                                                                                                        |         |

#### Appendix 4-1: Access to Rural Water Supply Services as of 31<sup>st</sup> December 2019

| N | Mkoa   | Na. | Halmashauri    | Idadi ya Watu Vijijini | Idadi ya Vituo vya Kuchotea maji | Idadi ya Vituo vya Kuchotea maji Vinavyofan ya kazi | Idadi ya Watu Wanaopat a huduma | Asilimia ya Watu wanaopat a huduma ya maji |
|---|--------|-----|----------------|------------------------|----------------------------------|-----------------------------------------------------|---------------------------------|--------------------------------------------|
|   |        |     |                | (a)                    | (b)                              | (c)                                                 | (b)                             | (b)/(a)                                    |
| 1 | ARUSHA | 1   | ARUSHA DC      | 323,198                | 1,886                            | 1,694                                               | 263,500                         | 82                                         |
|   |        | 2   | KARATU DC      | 230,894                | 816                              | 786                                                 | 188,500                         | 82                                         |
|   |        | 3   | LONGIDO DC     | 129,402                | 579                              | 504                                                 | 109,000                         | 84                                         |
|   |        | 4   | MERU DC        | 268,144                | 2,044                            | 1,347                                               | 236,750                         | 88                                         |
|   |        | 5   | MONDULI DC     | 154,212                | 580                              | 532                                                 | 98,000                          | 64                                         |
|   |        | 6   | NGORONGO       | 174,278                | 759                              | 577                                                 | 134,250                         | 77                                         |
|   |        |     | <b>Jumla</b>   | <b>1,280,128</b>       | <b>6,664</b>                     | <b>5,440</b>                                        | <b>1,030,000</b>                | <b>80</b>                                  |
| 2 | DSM    | 7   | ILALA MC       |                        | 997                              | 966                                                 |                                 |                                            |
|   |        | 8   | KINONDONI      |                        | 372                              | 283                                                 |                                 |                                            |
|   |        | 9   | KIGAMBONI      |                        | 434                              | 101                                                 |                                 |                                            |
|   |        | 10  | TEMEKE MC      |                        | 508                              | 278                                                 |                                 |                                            |
|   |        | 11  | UBUNGO MC      |                        | 404                              | 392                                                 |                                 |                                            |
|   |        |     | <b>Jumla</b>   | <b>-</b>               | <b>2,715</b>                     | <b>2,020</b>                                        | <b>-</b>                        | <b>0</b>                                   |
| 3 | DODOMA | 12  | BAHI DC        | 228,378                | 855                              | 444                                                 | 181,000                         | 79                                         |
|   |        | 13  | CHAMWINO DC    | 345,195                | 1,224                            | 784                                                 | 286,000                         | 83                                         |
|   |        | 14  | CHEMBA DC      | 235,711                | 854                              | 332                                                 | 133,000                         | 56                                         |
|   |        | 15  | DODOMA CC      | 385,327                | 991                              | 430                                                 | 327,500                         | 85                                         |
|   |        | 16  | KONDOA DC      | 184,890                | 483                              | 273                                                 | 106,250                         | 57                                         |
|   |        | 17  | KONDOA TC      | 23,989                 | 94                               | 81                                                  | 20,500                          | 85                                         |
|   |        | 18  | KONGWA DC      | 283,465                | 1,333                            | 971                                                 | 182,750                         | 64                                         |
|   |        | 19  | MPWAPWA DC     | 332,509                | 1,063                            | 695                                                 | 173,750                         | 52                                         |
|   |        |     | <b>Jumla</b>   | <b>2,019,464</b>       | <b>6,897</b>                     | <b>4,010</b>                                        | <b>1,410,750</b>                | <b>70</b>                                  |
| 4 | GEITA  | 20  | BUKOMBE DC     | 265,938                | 531                              | 320                                                 | 180,000                         | 68                                         |
|   |        | 21  | CHATO DC       | 437,967                | 645                              | 469                                                 | 267,250                         | 61                                         |
|   |        | 22  | GEITA DC       | 490,044                | 512                              | 283                                                 | 320,750                         | 65                                         |
|   |        | 23  | GEITA TC       | 200,028                | 165                              | 109                                                 | 170,250                         | 85                                         |
|   |        | 24  | MBOGWE DC      | 274,777                | 545                              | 409                                                 | 182,250                         | 66                                         |
|   |        | 25  | NYANG'HWALE DC | 168,545                | 418                              | 60                                                  | 105,000                         | 62                                         |
|   |        |     | <b>Jumla</b>   | <b>1,837,299</b>       | <b>2,816</b>                     | <b>1,650</b>                                        | <b>1,225,500</b>                | <b>67</b>                                  |
| 5 | IRINGA | 26  | IRINGA DC      | 249,219                | 2,369                            | 1,764                                               | 191,000                         | 77                                         |
|   |        | 27  | IRINGA MC      | 20,711                 | 135                              | 111                                                 | 17,750                          | 86                                         |
|   |        | 28  | KILOLO DC      | 176,716                | 1,119                            | 875                                                 | 138,750                         | 79                                         |
|   |        | 29  | MAFINGA TC     | 54,749                 | 275                              | 240                                                 | 40,000                          | 73                                         |
|   |        | 30  | MUFINDI DC     | 233,281                | 1,643                            | 1,080                                               | 195,000                         | 84                                         |
|   |        |     | <b>Jumla</b>   | <b>734,676</b>         | <b>5,541</b>                     | <b>4,070</b>                                        | <b>582,500</b>                  | <b>79</b>                                  |

| N  | Mkoa        | Na. | Halmashauri   | Idadi ya Watu Vijijini | Idadi ya Vituo vya Kuchotea maji | Idadi ya Vituo vya Kuchotea maji Vinavyofan ya kazi | Idadi ya Watu Wanaopat a huduma | Asilimia ya Watu wanaopat a huduma ya maji |
|----|-------------|-----|---------------|------------------------|----------------------------------|-----------------------------------------------------|---------------------------------|--------------------------------------------|
| 6  | KAGERA      | 31  | BIHARAMULO DC | 381,042                | 880                              | 651                                                 | #252,750                        | 66                                         |
|    |             | 32  | BUKOBA DC     | 333,907                | 1,082                            | 881                                                 | 185,501                         | 56                                         |
|    |             | 33  | BUKOBA MC     | 35,432                 | 242                              | 218                                                 | 25,500                          | 72                                         |
|    |             | 34  | KARAGWE DC    | 369,963                | 992                              | 785                                                 | 216,500                         | 59                                         |
|    |             | 35  | KYERWA DC     | 371,687                | 672                              | 468                                                 | 237,000                         | 64                                         |
|    |             | 36  | MISSENYI DC   | 221,716                | 812                              | 494                                                 | 123,500                         | 56                                         |
|    |             | 37  | MULEBA DC     | 540,310                | 1,156                            | 859                                                 | 445,350                         | 82                                         |
|    |             | 38  | NGARA DC      | 391,169                | 1,046                            | 729                                                 | 215,350                         | 55                                         |
| 7  | KATAVI      |     | <b>Jumla</b>  | <b>2,645,226</b>       | <b>6,882</b>                     | <b>5,085</b>                                        | <b>1,701,451</b>                | <b>64</b>                                  |
|    |             | 39  | MLELE DC      | 69,473                 | 323                              | 301                                                 | 44,765                          | 64                                         |
|    |             | 40  | MPANDA DC     | 198,716                | 747                              | 472                                                 | 101,225                         | 51                                         |
|    |             | 41  | MPANDA TC     | 51,649                 | 138                              | 61                                                  | 45,119                          | 87                                         |
|    |             | 42  | MPIMBWE DC    | 86,420                 | 357                              | 352                                                 | 70,610                          | 82                                         |
|    |             | 43  | NSIMBO DC     | 102,425                | 346                              | 181                                                 | 55,200                          | 54                                         |
|    |             |     | <b>Jumla</b>  | <b>508,683</b>         | <b>1,911</b>                     | <b>1,367</b>                                        | <b>316,919</b>                  | <b>62</b>                                  |
| 8  | KIGOMA      | 44  | BUHIGWE DC    | 255,808                | 1,119                            | 919                                                 | 145,250                         | 57                                         |
|    |             | 45  | KAKONKO DC    | 179,537                | 754                              | 357                                                 | 89,250                          | 50                                         |
|    |             | 46  | KASULU DC     | 343,509                | 1,216                            | 813                                                 | 265,201                         | 77                                         |
|    |             | 47  | KASULU TC     | 234,462                | 886                              | 593                                                 | 188,250                         | 80                                         |
|    |             | 48  | KIBONDO DC    | 280,303                | 776                              | 475                                                 | 170,500                         | 61                                         |
|    |             | 49  | KIGOMA DC     | 248,908                | 1,661                            | 682                                                 | 180,350                         | 72                                         |
|    |             | 50  | KIGOMA MC     | 75,146                 | 49                               | 48                                                  | 55,250                          | 74                                         |
|    |             | 51  | UVINZA DC     | 412,198                | 747                              | 613                                                 | 353,250                         | 86                                         |
| 9  | KILIMANJARO |     | <b>Jumla</b>  | <b>2,029,871</b>       | <b>7,208</b>                     | <b>4,500</b>                                        | <b>1,447,301</b>                | <b>71</b>                                  |
|    |             | 52  | HAI DC        | 216,965                | 802                              | 802                                                 | 200,500                         | 92                                         |
|    |             | 53  | MOSHI DC      | 425,814                | 2,262                            | 1,924                                               | 361,000                         | 85                                         |
|    |             | 54  | MWANGA DC     | 120,560                | 1,538                            | 954                                                 | 88,500                          | 73                                         |
|    |             | 55  | ROMBO DC      | 231,951                | 785                              | 467                                                 | 206,750                         | 89                                         |
|    |             | 56  | SAME DC       | 260,807                | 1,906                            | 1,587                                               | 186,750                         | 72                                         |
|    |             | 57  | SIHA DC       | 130,149                | 600                              | 590                                                 | 107,500                         | 83                                         |
|    |             |     | <b>Jumla</b>  | <b>1,386,246</b>       | <b>7,893</b>                     | <b>6,324</b>                                        | <b>1,151,000</b>                | <b>83</b>                                  |
| 10 | LINDI       | 58  | KILWA DC      | 164,925                | 757                              | 388                                                 | 97,000                          | 59                                         |
|    |             | 59  | LINDI DC      | 185,775                | 772                              | 410                                                 | 102,500                         | 55                                         |
|    |             | 60  | LINDI MC      | 64,527                 | 269                              | 167                                                 | 41,750                          | 65                                         |
|    |             | 61  | LIWALE DC     | 92,162                 | 360                              | 180                                                 | 55,000                          | 60                                         |
|    |             | 62  | NACHINGWEA DC | 173,595                | 783                              | 190                                                 | 115,500                         | 67                                         |
|    |             | 63  | RUANGWA DC    | 136,706                | 901                              | 547                                                 | 91,750                          | 67                                         |
|    |             |     | <b>Jumla</b>  | <b>817,690</b>         | <b>3,842</b>                     | <b>1,882</b>                                        | <b>503,500</b>                  | <b>62</b>                                  |
| 11 | MANYARA     | 64  | BABATI DC     | 332,511                | 1,082                            | 870                                                 | 255,500                         | 77                                         |
|    |             | 65  | BABATI TC     | 6,351                  | 563                              | 548                                                 | 5,993                           | 94                                         |
|    |             | 66  | HANANG DC     | 306,695                | 660                              | 521                                                 | 166,286                         | 54                                         |
|    |             | 67  | KITETO DC     | 275,916                | 463                              | 236                                                 | 138,280                         | 50                                         |
|    |             | 68  | MBULU DC      | 248,716                | 500                              | 417                                                 | 118,855                         | 48                                         |
|    |             | 69  | MBULU TC      | 160,987                | 228                              | 188                                                 | 83,714                          | 52                                         |



| N | Mkoa      | Na. | Halmashauri   | Idadi ya Watu Vijijini | Idadi ya Vituo vya Kuchotea maji | Idadi ya Vituo vya Kuchotea maji Vinavyofan ya kazi | Idadi ya Watu Wanaopat a huduma | Asilimia ya Watu wanaopat a huduma ya maji |
|---|-----------|-----|---------------|------------------------|----------------------------------|-----------------------------------------------------|---------------------------------|--------------------------------------------|
|   |           | 70  | SIMANJIRO DC  | 195,207                | 673                              | 355                                                 | 107,500                         | 55                                         |
|   |           |     | <b>Jumla</b>  | <b>1,526,383</b>       | <b>4,169</b>                     | <b>3,135</b>                                        | <b>876,128</b>                  | <b>57</b>                                  |
| 1 | MARA      | 71  | BUNDA DC      | 229,340                | 833                              | 468                                                 | 157,000                         | 68                                         |
| 2 |           | 72  | BUNDA TC      | 138,817                | 335                              | 224                                                 | 86,000                          | 62                                         |
|   |           | 73  | BUTIAMA DC    | 249,292                | 634                              | 227                                                 | 156,750                         | 63                                         |
|   |           | 74  | MUSOMA DC     | 226,486                | 278                              | 210                                                 | 172,500                         | 76                                         |
|   |           | 75  | RORYA DC      | 252,586                | 553                              | 148                                                 | 167,000                         | 66                                         |
|   |           | 76  | SERENGETI DC  | 294,409                | 1,241                            | 840                                                 | 180,000                         | 61                                         |
|   |           | 77  | TARIME DC     | 317,455                | 399                              | 186                                                 | 226,500                         | 71                                         |
|   |           | 78  | TARIME TC     | 18,679                 | 81                               | 66                                                  | 14,500                          | 78                                         |
|   |           |     | <b>Jumla</b>  | <b>1,727,064</b>       | <b>4,354</b>                     | <b>2,369</b>                                        | <b>1,160,250</b>                | <b>67</b>                                  |
| 1 | MBEYA     | 79  | BUSOKELO DC   | 93,524                 | 827                              | 558                                                 | 78,500                          | 84                                         |
| 3 |           | 80  | CHUNYA DC     | 290,478                | 660                              | 505                                                 | 226,250                         | 78                                         |
|   |           | 81  | KYELA DC      | 221,490                | 1,855                            | 804                                                 | 151,000                         | 68                                         |
|   |           | 82  | MBARALI DC    | 300,517                | 1,085                            | 661                                                 | 225,250                         | 75                                         |
|   |           | 83  | MBEYA DC      | 305,319                | 1,520                            | 1,378                                               | 234,500                         | 77                                         |
|   |           | 84  | MBEYA CC      | 21,434                 | 283                              | 246                                                 | 18,500                          | 86                                         |
|   |           | 85  | RUNGWE DC     | 339,157                | 1,241                            | 1,078                                               | 299,500                         | 88                                         |
|   |           |     | <b>Jumla</b>  | <b>1,571,919</b>       | <b>7,471</b>                     | <b>5,230</b>                                        | <b>1,233,500</b>                | <b>78</b>                                  |
| 1 | MOROGOR O | 86  | GAIRO DC      | 193,011                | 201                              | 193                                                 | 118,250                         | 61                                         |
| 4 |           | 87  | IFAKARA TC    | 125,139                | 563                              | 333                                                 | 83,250                          | 67                                         |
|   |           | 88  | KILOMBERO DC  | 365,518                | 2,354                            | 1,739                                               | 284,750                         | 78                                         |
|   |           | 89  | KILOSA DC     | 329,214                | 1,704                            | 1,006                                               | 251,500                         | 76                                         |
|   |           | 90  | MALINYI DC    | 125,286                | 687                              | 464                                                 | 106,000                         | 85                                         |
|   |           | 91  | MOROGORO DC   | 250,963                | 1,246                            | 804                                                 | 181,000                         | 72                                         |
|   |           | 92  | MOROGORO MC   | 50,367                 | 436                              | 285                                                 | 31,250                          | 62                                         |
|   |           | 93  | MVOMERO DC    | 227,804                | 1,482                            | 920                                                 | 150,000                         | 66                                         |
|   |           | 94  | ULANGA DC     | 160,853                | 800                              | 564                                                 | 121,000                         | 75                                         |
|   |           |     | <b>Jumla</b>  | <b>1,828,155</b>       | <b>9,473</b>                     | <b>6,308</b>                                        | <b>1,327,000</b>                | <b>73</b>                                  |
| 1 | MTWARA    | 95  | MASASI DC     | 120,947                | 816                              | 556                                                 | 95,000                          | 79                                         |
| 5 |           | 96  | MASASI TC     | 35,249                 | 79                               | 68                                                  | 27,000                          | 77                                         |
|   |           | 97  | MTWARA DC     | 119,648                | 495                              | 229                                                 | 87,250                          | 73                                         |
|   |           | 98  | MTWARA MC     | 77,928                 | 277                              | 165                                                 | 61,250                          | 79                                         |
|   |           | 99  | NANYAMBA TC   | 106,208                | 577                              | 467                                                 | 76,750                          | 72                                         |
|   |           | 100 | NANYUMBU DC   | 150,859                | 376                              | 211                                                 | 112,750                         | 75                                         |
|   |           | 101 | NEWALA DC     | 132,540                | 448                              | 214                                                 | 73,500                          | 55                                         |
|   |           | 102 | NEWALA TC     | 97,027                 | 167                              | 84                                                  | 65,000                          | 67                                         |
|   |           | 103 | TANDAHIMBA DC | 227,514                | 1,134                            | 262                                                 | 195,500                         | 86                                         |
|   |           |     | <b>Jumla</b>  | <b>1,067,920</b>       | <b>4,369</b>                     | <b>2,256</b>                                        | <b>794,000</b>                  | <b>74</b>                                  |

| N  | Mkoa      | Na. | Halmashauri     | Idadi ya Watu Vijijini | Idadi ya Vituo vya Kuchotea maji | Idadi ya Vituo vya Kuchotea maji Vinavyofan ya kazi | Idadi ya Watu Wanaopat a huduma | Asilimia ya Watu wanaopat a huduma ya maji |
|----|-----------|-----|-----------------|------------------------|----------------------------------|-----------------------------------------------------|---------------------------------|--------------------------------------------|
| 16 | MWANZA    | 104 | BUCHOSA DC      | 332,186                | 591                              | 448                                                 | 252,000                         | 76                                         |
|    |           | 105 | ILEMELA MC      | -                      | 269                              | 166                                                 | -                               | 0                                          |
|    |           | 106 | KWIMBA DC       | 487,193                | 1,345                            | 862                                                 | 365,500                         | 75                                         |
|    |           | 107 | MAGU DC         | 347,852                | 1,042                            | 600                                                 | 240,000                         | 69                                         |
|    |           | 108 | MISUNGWI DC     | 302,873                | 664                              | 434                                                 | 238,500                         | 79                                         |
|    |           | 109 | NYAMAGANA MC    | -                      | 111                              | 21                                                  | -                               | 0                                          |
|    |           | 110 | SENGEREMA DC    | 261,477                | 386                              | 185                                                 | 186,250                         | 71                                         |
|    |           | 111 | UKERWE DC       | 331,426                | 729                              | 535                                                 | 213,750                         | 64                                         |
|    |           |     | <b>Jumla</b>    | <b>2,063,007</b>       | <b>5,137</b>                     | <b>3,251</b>                                        | <b>1,496,000</b>                | <b>73</b>                                  |
| 17 | NJOMBE    | 112 | LUDEWA DC       | 133,562                | 2,118                            | 1,990                                               | 107,500                         | 80                                         |
|    |           | 113 | MAKETE DC       | 84,790                 | 1,207                            | 1,166                                               | 71,500                          | 84                                         |
|    |           | 114 | MAKAMBAKO TC    | 42,456                 | 521                              | 465                                                 | 36,250                          | 85                                         |
|    |           | 115 | NJOMBE DC       | 88,326                 | 939                              | 615                                                 | 73,750                          | 83                                         |
|    |           | 116 | NJOMBE TC       | 79,137                 | 1,044                            | 896                                                 | 64,000                          | 81                                         |
|    |           | 117 | WANGING'OMBE DC | 167,731                | 2,433                            | 2,271                                               | 157,750                         | 94                                         |
|    |           |     | <b>Jumla</b>    | <b>596,002</b>         | <b>8,262</b>                     | <b>7,403</b>                                        | <b>510,750</b>                  | <b>86</b>                                  |
| 18 | PWANI     | 118 | BAGAMOYO DC     | 127,883                | 712                              | 380                                                 | 75,000                          | 59                                         |
|    |           | 119 | CHALINZE DC     | 224,426                | 732                              | 386                                                 | 156,500                         | 70                                         |
|    |           | 120 | KIBAHA DC       | 85,661                 | 566                              | 566                                                 | 71,500                          | 83                                         |
|    |           | 121 | KIBAHA TC       | 38,296                 | 183                              | 163                                                 | 25,000                          | 65                                         |
|    |           | 122 | KIBITI DC       | 100,106                | 276                              | 122                                                 | 55,500                          | 55                                         |
|    |           | 123 | KISARAWA DC     | 111,358                | 535                              | 269                                                 | 67,250                          | 60                                         |
|    |           | 124 | MAFIA DC        | 75,237                 | 382                              | 319                                                 | 44,750                          | 59                                         |
|    |           | 125 | MKURANGA DC     | 249,044                | 974                              | 683                                                 | 185,750                         | 75                                         |
|    |           | 126 | RUFIJI DC       | 122,213                | 723                              | 529                                                 | 67,250                          | 55                                         |
|    |           |     | <b>Jumla</b>    | <b>1,134,224</b>       | <b>5,083</b>                     | <b>3,417</b>                                        | <b>748,500</b>                  | <b>66</b>                                  |
| 19 | RUKWA     | 127 | KALAMBO DC      | 254,554                | 845                              | 396                                                 | 139,612                         | 55                                         |
|    |           | 128 | NKASI DC        | 292,163                | 998                              | 604                                                 | 148,895                         | 51                                         |
|    |           | 129 | SUMBAWANGA DC   | 305,846                | 746                              | 362                                                 | 218,358                         | 71                                         |
|    |           | 130 | SUMBAWANGA MC   | 107,573                | 631                              | 423                                                 | 93,607                          | 87                                         |
|    |           |     | <b>Jumla</b>    | <b>960,136</b>         | <b>3,220</b>                     | <b>1,785</b>                                        | <b>600,472</b>                  | <b>63</b>                                  |
| 20 | RUVUMA    | 131 | MADABA DC       | 54,102                 | 427                              | 335                                                 | 43,750                          | 81                                         |
|    |           | 132 | MBINGA DC       | 141,759                | 564                              | 409                                                 | 102,250                         | 72                                         |
|    |           | 133 | MBINGA TC       | 111,345                | 481                              | 355                                                 | 88,750                          | 80                                         |
|    |           | 134 | NAMTUMBO DC     | 230,334                | 965                              | 545                                                 | 166,250                         | 72                                         |
|    |           | 135 | NYASA DC        | 126,172                | 916                              | 839                                                 | 109,750                         | 87                                         |
|    |           | 136 | SONGEA DC       | 134,434                | 995                              | 669                                                 | 107,250                         | 80                                         |
|    |           | 137 | SONGEA MC       | 139,654                | 412                              | 380                                                 | 85,000                          | 61                                         |
|    |           | 138 | TUNDURU DC      | 245,428                | 968                              | 552                                                 | 188,000                         | 77                                         |
|    |           |     | <b>Jumla</b>    | <b>1,183,228</b>       | <b>5,728</b>                     | <b>4,084</b>                                        | <b>891,000</b>                  | <b>75</b>                                  |
|    | SHINYANGA | 139 | KAHAMA TC       | 252,424                | 550                              | 269                                                 | 217,250                         | 86                                         |

| N  | Mkoa    | Na. | Halmashauri  | Idadi ya Watu Vijijini | Idadi ya Vituo vya Kuchotea maji | Idadi ya Vituo vya Kuchotea maji Vinavyofan ya kazi | Idadi ya Watu Wanaopat a huduma | Asilimia ya Watu wanaopat a huduma ya maji |
|----|---------|-----|--------------|------------------------|----------------------------------|-----------------------------------------------------|---------------------------------|--------------------------------------------|
| 21 |         | 140 | KISHAPU DC   | 241,652                | 876                              | 537                                                 | 134,250                         | 56                                         |
|    |         | 141 | MSALALA DC   | 262,751                | 537                              | 409                                                 | 172,250                         | 66                                         |
|    |         | 142 | SHINYANGA DC | 356,884                | 1,338                            | 816                                                 | 254,000                         | 71                                         |
|    |         | 143 | SHINYANGA MC | 98,559                 | 451                              | 371                                                 | 77,750                          | 79                                         |
|    |         | 144 | USHETU DC    | 266,247                | 634                              | 417                                                 | 184,250                         | 69                                         |
|    |         |     | <b>Jumla</b> | <b>1,478,517</b>       | <b>4,386</b>                     | <b>2,819</b>                                        | <b>1,039,750</b>                | <b>70</b>                                  |
| 22 | SIMIYU  | 145 | BARIADI DC   | 304,047                | 546                              | 498                                                 | 224,500                         | 74                                         |
|    |         | 146 | BARIADI TC   | 105,059                | 602                              | 550                                                 | 82,500                          | 79                                         |
|    |         | 147 | BUSEGA DC    | 242,438                | 816                              | 409                                                 | 175,250                         | 72                                         |
|    |         | 148 | ITILIMA DC   | 382,020                | 1,240                            | 1,080                                               | 260,000                         | 68                                         |
|    |         | 149 | MASWA DC     | 398,025                | 1,525                            | 1,192                                               | 248,000                         | 62                                         |
|    |         | 150 | MEATU DC     | 299,741                | 908                              | 699                                                 | 234,750                         | 78                                         |
|    |         |     | <b>Jumla</b> | <b>1,731,330</b>       | <b>5,637</b>                     | <b>4,428</b>                                        | <b>1,225,000</b>                | <b>71</b>                                  |
| 23 | SINGIDA | 151 | IKUNGI DC    | 274,726                | 1,145                            | 649                                                 | 182,250                         | 66                                         |
|    |         | 152 | IRAMBA DC    | 252,361                | 761                              | 556                                                 | 225,000                         | 89                                         |
|    |         | 153 | ITIGI DC DC  | 88,729                 | 230                              | 128                                                 | 52,000                          | 59                                         |
|    |         | 154 | MANYONI DC   | 216,448                | 712                              | 381                                                 | 135,250                         | 62                                         |
|    |         | 155 | MKALAMA DC   | 232,537                | 759                              | 613                                                 | 153,250                         | 66                                         |
|    |         | 156 | SINGIDA DC   | 289,267                | 1,141                            | 1,013                                               | 253,250                         | 88                                         |
|    |         | 157 | SINGIDA MC   | 79,911                 | 222                              | 169                                                 | 52,250                          | 65                                         |
|    |         |     | <b>Jumla</b> | <b>1,433,979</b>       | <b>4,970</b>                     | <b>3,509</b>                                        | <b>1,053,250</b>                | <b>73</b>                                  |
| 24 | SONGWE  | 158 | ILEJE DC     | 99,039                 | 711                              | 537                                                 | 74,250                          | 75                                         |
|    |         | 159 | MBOZI DC     | 321,529                | 1,419                            | 1,072                                               | 198,000                         | 62                                         |
|    |         | 160 | MOMBA DC     | 156,246                | 276                              | 94                                                  | 123,500                         | 79                                         |
|    |         | 161 | SONGWE DC    | 102,358                | 496                              | 374                                                 | 83,500                          | 82                                         |
|    |         | 162 | TUNDUMA TC   | 81,310                 | 177                              | 150                                                 | 57,500                          | 71                                         |
|    |         |     | <b>Jumla</b> | <b>760,482</b>         | <b>3,079</b>                     | <b>2,227</b>                                        | <b>536,750</b>                  | <b>71</b>                                  |
| 25 | TABORA  | 162 | IGUNGA DC    | 374,805                | 938                              | 509                                                 | 227,250                         | 61                                         |
|    |         | 163 | KALIUA DC    | 412,012                | 501                              | 249                                                 | 282,250                         | 69                                         |
|    |         | 164 | NZEGA DC     | 423,539                | 1,156                            | 820                                                 | 285,000                         | 67                                         |
|    |         | 165 | NZEGA TC     | 94,336                 | 212                              | 168                                                 | 65,000                          | 69                                         |
|    |         | 166 | SIKONGE DC   | 179,883                | 446                              | 364                                                 | 101,000                         | 56                                         |
|    |         | 167 | TABORA MC    | 78,823                 | 239                              | 134                                                 | 43,500                          | 55                                         |
|    |         | 168 | URAMBO DC    | 218,178                | 398                              | 162                                                 | 160,500                         | 74                                         |
|    |         | 169 | UYUI DC      | 384,484                | 650                              | 347                                                 | 236,750                         | 62                                         |
|    |         |     | <b>Jumla</b> | <b>2,166,060</b>       | <b>4,540</b>                     | <b>2,753</b>                                        | <b>1,401,250</b>                | <b>65</b>                                  |
| 26 | TANGA   | 170 | BUMBULI DC   | 77,651                 | 373                              | 302                                                 | 49,635                          | 64                                         |
|    |         | 171 | HANDENI DC   | 242,624                | 496                              | 329                                                 | 123,901                         | 51                                         |
|    |         | 172 | HANDENI TC   | 75,998                 | 291                              | 180                                                 | 45,648                          | 60                                         |
|    |         | 173 | KILINDI DC   | 250,077                | 511                              | 396                                                 | 201,105                         | 80                                         |
|    |         | 174 | KOROGWE DC   | 252,038                | 1,617                            | 1,601                                               | 186,179                         | 74                                         |
|    |         | 175 | KOROGWE TC   | 68,308                 | 320                              | 293                                                 | 59,366                          | 87                                         |
|    |         | 176 | LUSHOTO DC   | 496,441                | 877                              | 781                                                 | 304,851                         | 61                                         |

| N                                                                                                                                                                            | Mkoa | Na. | Halmashauri                | Idadi ya Watu Vijijini | Idadi ya Vituo vya Kuchotea maji | Idadi ya Vituo vya Kuchotea maji Vinavyofan ya kazi | Idadi ya Watu Wanaopat a huduma | Asilimia ya Watu wanaopat a huduma ya maji |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|----------------------------|------------------------|----------------------------------|-----------------------------------------------------|---------------------------------|--------------------------------------------|
|                                                                                                                                                                              |      | 177 | MKINGA DC                  | 118,065                | 856                              | 672                                                 | 72,096                          | 61                                         |
|                                                                                                                                                                              |      | 178 | MUHEZA DC                  | 205,107                | 678                              | 455                                                 | 105,089                         | 51                                         |
|                                                                                                                                                                              |      | 179 | PANGANI DC                 | 54,025                 | 505                              | 495                                                 | 46,045                          | 85                                         |
|                                                                                                                                                                              |      | 180 | TANGA CC                   | -                      | 216                              | 126                                                 | -                               |                                            |
|                                                                                                                                                                              |      |     | <b>Jumla</b>               | <b>1,840,334</b>       | <b>6,740</b>                     | <b>5,630</b>                                        | <b>1,193,915</b>                | <b>65</b>                                  |
|                                                                                                                                                                              |      |     | <b>Jumla ya Mikoa yote</b> | <b>36,328,023</b>      | <b>138,987</b>                   | <b>96,952</b>                                       | <b>25,456,436</b>               | <b>70.1</b>                                |
|                                                                                                                                                                              |      |     |                            |                        |                                  |                                                     |                                 |                                            |
| Source: NBS data 2012: Rural Population in Tanzania Mainland is estimated at a tune of 36,328,023 which is 67.4 Percent of the Total Population by 2019 which is 53,934,967. |      |     |                            |                        |                                  |                                                     |                                 |                                            |

## Appendix 4-2: Access to Urban Water Supply Services at at 31st December 2019

| A: Regional Water Supply and Sanitation Authorities                 |               |                                  |         |         |         |         |                                     |         |         |         |         |                              |                |         |                |                                                   |           |
|---------------------------------------------------------------------|---------------|----------------------------------|---------|---------|---------|---------|-------------------------------------|---------|---------|---------|---------|------------------------------|----------------|---------|----------------|---------------------------------------------------|-----------|
| Sr/N<br>o                                                           | Utilities     | Total Water Connections (Number) |         |         |         |         | Domestic Water Connections (Number) |         |         |         |         | Public Water Kiosks (Number) |                |         |                | No. of people with access to clean and safe water |           |
|                                                                     |               | 2014/15                          | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2014/15                             | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2014/15                      | Working Kiosks | 2018/19 | Working Kiosks | 2014/15                                           | 2018/19   |
| 1                                                                   | Arusha        | 39,177                           | 41,601  | 45,902  | 49,902  | 57,015  | 33,347                              | 35,713  | 39,833  | 43,633  | 50,505  | 118                          | 83             | 372     | 289            | 350,070                                           | 292,228   |
| 2                                                                   | DAWASCO       | 142,960                          | 156,059 | 262,476 | 286,115 | 261,294 | 137,783                             | 150,778 | 256,290 | 211,043 | 254,018 | 223                          | 203            | 510     | 431            | 1,418,430                                         | 4,934,092 |
| 3                                                                   | Dodoma        | 30,504                           | 33,276  | 36,084  | 39,205  | 43,837  | 28,248                              | 30,748  | 33,378  | 36,672  | 40,240  | 346                          | 346            | 304     | 304            | 351,680                                           | 423,394   |
| 4                                                                   | Iringa        | 16,976                           | 17,868  | 19,355  | 22,080  | 25,058  | 15,928                              | 16,762  | 18,226  | 20,895  | 23,800  | 93                           | 90             | 128     | 128            | 177,280                                           | 169,167   |
| 5                                                                   | Kahama        | 11,405                           | 12,704  | 14,157  | 15,773  | 17,622  | 10,512                              | 11,771  | 13,114  | 14,668  | 16,366  | 38                           | 33             | 83      | 83             | 111,720                                           | 112,540   |
| 6                                                                   | Mbeya         | 43,890                           | 48,658  | 50,403  | 53,089  | 65,389  | 42,753                              | 47,451  | 49,230  | 51,903  | 62,895  | 158                          | 158            | 88      | 88             | 459,130                                           | 424,430   |
| 7                                                                   | Morogoro      | 25,632                           | 27,428  | 28,880  | 30,127  | 31,476  | 24,014                              | 25,917  | 27,117  | 28,306  | 29,630  | 146                          | 63             | 177     | 67             | 252,740                                           | 219,135   |
| 8                                                                   | Moshi         | 24,340                           | 27,459  | 30,324  | 33,744  | 36,379  | 22,153                              | 25,172  | 27,973  | 31,273  | 33,844  | 170                          | 143            | 184     | 156            | 250,130                                           | 339,224   |
| 9                                                                   | Mtwara        | 9,905                            | 10,609  | 11,228  | 12,405  | 13,057  | 9,204                               | 9,845   | 10,454  | 11,486  | 12,092  | 41                           | 41             | 108     | 108            | 100,240                                           | 111,644   |
| 10                                                                  | Musoma        | 10,352                           | 10,796  | 12,050  | 13,416  | 15,251  | 9,520                               | 9,922   | 11,249  | 12,442  | 14,240  | 19                           | 0              | 13      | 13             | 95,200                                            | 146,300   |
| 11                                                                  | Mwanza        | 51,516                           | 58,220  | 67,465  | 74,313  | 81,310  | 47,332                              | 53,862  | 62,465  | 68,747  | 74,853  | 144                          | 141            | 185     | 357            | 501,520                                           | 987,486   |
| 12                                                                  | Shinyanga     | 16,441                           | 17,431  | 18,343  | 19,379  | 20,851  | 15,313                              | 16,276  | 17,152  | 18,106  | 19,536  | 189                          | 189            | 229     | 229            | 190,930                                           | 140,116   |
| 13                                                                  | Songea        | 12,257                           | 12,880  | 13,289  | 14,775  | 16,373  | 11,392                              | 12,003  | 12,433  | 13,843  | 15,429  | 52                           | 16             | 30      | 30             | 117,120                                           | 186,408   |
| 14                                                                  | Tabora        | 14,379                           | 15,584  | 16,851  | 18,328  | 19,691  | 13,434                              | 14,551  | 15,784  | 17,221  | 18,556  | 139                          | 79             | 183     | 94             | 150,140                                           | 232,279   |
| 15                                                                  | Tanga         | 31,241                           | 33,397  | 35,694  | 37,608  | 39,646  | 29,440                              | 31,564  | 33,785  | 35,635  | 37,651  | 281                          | 225            | 290     | 212            | 339,400                                           | 281,143   |
| 16                                                                  | Bukoba        | 8,189                            | 8,593   | 9,147   | 9,678   | 10,580  | 7,525                               | 7,921   | 8,463   | 8,978   | 9,622   | 43                           | 40             | 45      | 40             | 83,250                                            | 96,598    |
| 17                                                                  | Kigoma        | 9,098                            | 9,412   | 9,787   | 10,483  | 11,002  | 8,414                               | 8,681   | 9,140   | 9,676   | 10,314  | 43                           | 12             | 15      | 14             | 86,540                                            | 168,524   |
| 18                                                                  | Singida       | 7,429                            | 8,551   | 9,671   | 11,044  | 12,268  | 6,530                               | 7,652   | 8,706   | 9,619   | 11,233  | 56                           | 56             | 101     | 0              | 76,500                                            | 9,040     |
| 19                                                                  | Sumbawanga    | 5,930                            | 6,227   | 7,105   | 7,683   | 8,871   | 5,621                               | 5,935   | 6,542   | 7,100   | 8,238   | 17                           | 17             | 106     | 102            | 59,610                                            | 91,708    |
| 20                                                                  | Babati        | 5,094                            | 5,742   | 6,357   | 7,546   | 8,859   | 5,133                               | 5,278   | 5,850   | 7,004   | 8,259   | 78                           | 74             | 123     | 105            | 66,130                                            | 115,967   |
| 21                                                                  | Lindi         | 2,604                            | 2,813   | 3,404   | 3,663   | 4,059   | 2,323                               | 2,269   | 3,019   | 3,151   | 3,523   | 79                           | 79             | 206     | 161            | 39,030                                            | 64,911    |
| 22                                                                  | Bariadi       | 727                              | 761     | 888     | 945     | 1,141   | 624                                 | 648     | 753     | 811     | 976     | 17                           | 13             | 15      | 15             | 8,840                                             | 16,890    |
| 23                                                                  | Geita         | 513                              | 1,911   | 2,873   | 4,384   | 5,961   | 467                                 | 1,791   | 2,609   | 4,184   | 5,577   | 5                            | 3              | 13      | 11             | 5,270                                             | 80,828    |
| 24                                                                  | Mpanda        | 3,677                            | 4,203   | 4,384   | 4,620   | 5,176   | 3,357                               | 3,905   | 4,080   | 4,358   | 4,865   | 40                           | 40             | 48      | 48             | 41,570                                            | 41,190    |
| 25                                                                  | Njombe        | 4,724                            | 5,208   | 6,203   | 6,735   | 7,255   | 4,520                               | 4,988   | 5,982   | 6,513   | 7,027   | 1                            | 1              | 0       | 0              | 45,400                                            | 45,673    |
| 26                                                                  | Vwawa - Mlowo |                                  |         |         | 1,716   | 1,814   |                                     |         |         | 1,617   | 1,711   |                              |                | 6       | 6              | -                                                 | 31,449    |
| TOTAL                                                               |               | 528,960                          | 577,391 | 722,320 | 788,756 | 821,235 | 494,887                             | 541,403 | 683,627 | 678,884 | 775,000 | 2,536                        | 2,145          | 3,562   | 3,091          | 5,377,870                                         | 9,762,364 |
|                                                                     |               |                                  |         |         |         |         |                                     |         |         |         |         |                              |                |         |                |                                                   |           |
| B: District and Small Towns Water Supply and Sanitation Authorities |               |                                  |         |         |         |         |                                     |         |         |         |         |                              |                |         |                |                                                   |           |
| 1                                                                   | Biharamulo    | 887                              | 938     | 978     | 1,089   | 1,260   | 810                                 | 860     | 921     | 945     | 1,150   | 6                            | 5              | 12      | 12             | 9,350                                             | 14,500    |



| A: Regional Water Supply and Sanitation Authorities |                 |                                  |         |         |         |         |                                     |         |         |         |         |                              |                |         |                |                                                   |         |
|-----------------------------------------------------|-----------------|----------------------------------|---------|---------|---------|---------|-------------------------------------|---------|---------|---------|---------|------------------------------|----------------|---------|----------------|---------------------------------------------------|---------|
| Sr/N<br>o                                           | Utilities       | Total Water Connections (Number) |         |         |         |         | Domestic Water Connections (Number) |         |         |         |         | Public Water Kiosks (Number) |                |         |                | No. of people with access to clean and safe water |         |
|                                                     |                 | 2014/15                          | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2014/15                             | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2014/15                      | Working Kiosks | 2018/19 | Working Kiosks | 2014/15                                           | 2018/19 |
| 2                                                   | Bunda           | 1,426                            | 1,515   | 1,881   | 2,579   | 3,767   | 1,254                               | 1,333   | 1,579   | 2,223   | 3,313   | 25                           | 18             | 75      | 74             | 17,040                                            | 68,195  |
| 3                                                   | Chamwino        | 1,052                            | 1,068   | 1,182   | 1,212   | 1,504   | 997                                 | 998     | 1,106   | 1,131   | 1,408   | 0                            | 0              | 7       | 7              | 9,970                                             | 17,238  |
| 4                                                   | Chato           |                                  |         |         |         | 1,902   |                                     |         |         |         | 1,781   |                              |                | 95      | 85             |                                                   | 26,998  |
| 5                                                   | Chunya          | 1,003                            | 1,090   | 1,204   | 1,270   | 1,312   | 943                                 | 1,022   | 1,133   | 1,197   | 1,237   | 5                            | 1              | 4       | 2              | 9,680                                             | 17,066  |
| 6                                                   | Dakawa          | 450                              | 437     | 459     | 554     | 574     | 405                                 | 396     | 430     | 447     | 501     | 3                            | 3              | 18      | 10             | 4,800                                             | 7,510   |
| 7                                                   | Gairo           | 223                              | 217     | 224     | 226     | 229     | 3                                   | 3       | 2       | 3       | 3       | 176                          | 168            | 168     | 168            | 42,030                                            | 13,455  |
| 8                                                   | Handeni         | 590                              | 590     | 591     | 591     | 661     | 457                                 | 457     | 458     | 458     | 490     | 52                           | 22             | 79      | 59             | 10,070                                            | 25,861  |
| 9                                                   | Ifakara         | 802                              | 1,116   | 1,306   | 1,340   | 1,362   | 767                                 | 1,021   | 1,199   | 1,220   | 1,240   | 20                           | 18             | 48      | 35             | 12,170                                            | 21,150  |
| 10                                                  | Igunga          | 1,147                            | 1,469   | 1,714   | 1,804   | 1,976   | 1,019                               | 1,252   | 1,507   | 1,605   | 1,757   | 42                           | 15             | 33      | 33             | 13,940                                            | 24,063  |
| 11                                                  | Itumba-Isongole | 1,294                            | 1,519   | 1,575   | 1,584   | 1,614   | 1,146                               | 1,369   | 1,425   | 1,487   | 1,517   | 67                           | 13             | 69      | 15             | 14,710                                            | 19,276  |
| 12                                                  | Karagwe         | 503                              | 516     | 533     | 577     | 627     | 427                                 | 440     | 416     | 448     | 475     | 16                           | 11             | 49      | 37             | 7,020                                             | 14,000  |
| 13                                                  | Karatu          |                                  |         |         | 179     | 237     |                                     |         |         | 123     | 166     |                              |                | 17      | 17             | -                                                 | 4,912   |
| 14                                                  | Kasulu          | 3,241                            | 3,470   | 3,626   | 3,720   | 3,863   | 3,018                               | 3,218   | 3,355   | 3,429   | 3,568   | 3                            | 3              | 4       | 4              | 30,930                                            | 36,680  |
| 15                                                  | Katesh          | 1,535                            | 1,811   | 1,898   | 2,056   | 2,147   | 1,415                               | 1,673   | 1,739   | 1,889   | 1,967   | 25                           | 7              | 32      | 14             | 15,900                                            | 12,220  |
| 16                                                  | Kibaya          | 394                              | 374     | 480     | 523     | 622     | 333                                 | 304     | 408     | 446     | 530     | 19                           | 18             | 36      | 34             | 7,830                                             | 19,688  |
| 17                                                  | Kibondo         | 1,353                            | 1,559   | 1,925   | 2,018   | 2,058   | 989                                 | 1,183   | 1,186   | 1,197   | 1,037   | 8                            | 8              | 11      | 10             | 11,890                                            | 10,796  |
| 18                                                  | Kilindoni       | 396                              | 404     | 429     | 431     | 548     | 355                                 | 363     | 386     | 351     | 515     | 4                            | 2              | 4       | 2              | 4,050                                             | 3,490   |
| 19                                                  | Kilolo          | 462                              | 494     | 647     | 666     | 899     | 432                                 | 459     | 560     | 559     | 791     | 53                           | 45             | 72      | 36             | 15,570                                            | 18,594  |
| 20                                                  | Kilosa          | 531                              | 1,450   | 1,654   | 1,674   | 2,025   | 504                                 | 1,418   | 1,585   | 1,594   | 1,929   | 0                            | 0              | 48      | 48             | 5,040                                             | 23,574  |
| 21                                                  | Kilwa Masoko    | 1564                             | 1,602   | 1,738   | 1,723   | 1,824   | 1,448                               | 1,486   | 1,611   | 1,553   | 1,700   | 10                           | 10             | 8       | 7              | 16,980                                            | 10,250  |
| 22                                                  | Kiomboi         | 749                              | 767     | 817     | 900     | 915     | 686                                 | 699     | 749     | 807     | 827     | 18                           | 4              | 18      | 4              | 7,860                                             | 5,962   |
| 23                                                  | Kisarawe        | 445                              | 462     | 468     | 456     | 399     | 415                                 | 432     | 424     | 418     | 350     | 7                            | 4              | 4       | 4              | 5,150                                             | 3,100   |
| 24                                                  | Kishapu         | 130                              | 133     | 139     | 434     | 828     | 102                                 | 105     | 109     | 383     | 752     | 10                           | 10             | 11      | 11             | 3,520                                             | 10,270  |
| 26                                                  | Kongwa          | 983                              | 1,000   | 1,020   | 1,275   | 1,275   | 835                                 | 851     | 872     | 1,121   | 1,172   | 30                           | 20             | 28      | 28             | 13,350                                            | 12,208  |
| 27                                                  | Korogwe         | 3,026                            | 3,104   | 3,210   | 3,578   | 3,870   | 2,793                               | 2,870   | 2,978   | 3,309   | 3,569   | 54                           | 36             | 90      | 67             | 36,930                                            | 55,742  |
| 28                                                  | Kyela           | 3,471                            | 3,548   | 3,608   | 3,656   | 2,457   | 3,237                               | 3,314   | 3,432   | 3,492   | 2,299   | 70                           | 4              | 12      | 12             | 33,370                                            | 25,990  |
| 29                                                  | Liwale          | 1689                             | 1,821   | 1,932   | 1,735   | 1,873   | 1581                                | 1,713   | 1,816   | 1,641   | 1,779   | 5                            | 3              | 7       | 3              | 16,560                                            | 14,982  |
| 30                                                  | Loliondo        | 259                              | 419     | 579     | 660     | 732     | 231                                 | 386     | 504     | 573     | 643     | 9                            | 9              | 19      | 15             | 4,560                                             | 10,264  |
| 31                                                  | Ludewa          | 520                              | 538     | 523     | 538     | 563     | 465                                 | 477     | 469     | 496     | 520     | 7                            | 7              | 7       | 7              | 6,400                                             | 7,400   |
| 32                                                  | Lushoto         | 1,563                            | 1,625   | 1,757   | 1,879   | 1,997   | 1,390                               | 1,436   | 1,542   | 1,592   | 1,688   | 7                            | 6              | 7       | 6              | 15,400                                            | 20,997  |
| 33                                                  | Mafinga         | 3,253                            | 3,343   | 3,439   | 3,507   | 3,795   | 3,036                               | 3,091   | 3,175   | 3,189   | 3,462   | 0                            | 0              | 1       | 1              | 30,360                                            | 41,794  |
| 34                                                  | Magu            | 1,230                            | 1,230   | 1,230   | 1,230   | 1,301   | 1,070                               | 1,080   | 1,080   | 1,080   | 997     | 30                           | 15             | 30      | 27             | 14,450                                            | 14,082  |

| A: Regional Water Supply and Sanitation Authorities |           |                                  |         |         |         |         |                                     |         |         |         |         |                              |                |         |                |                                                   |         |
|-----------------------------------------------------|-----------|----------------------------------|---------|---------|---------|---------|-------------------------------------|---------|---------|---------|---------|------------------------------|----------------|---------|----------------|---------------------------------------------------|---------|
| Sr/N<br>o                                           | Utilities | Total Water Connections (Number) |         |         |         |         | Domestic Water Connections (Number) |         |         |         |         | Public Water Kiosks (Number) |                |         |                | No. of people with access to clean and safe water |         |
|                                                     |           | 2014/15                          | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2014/15                             | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2014/15                      | Working Kiosks | 2018/19 | Working Kiosks | 2014/15                                           | 2018/19 |
| 35                                                  | Mahenge   | 945                              | 700     | 921     | 731     | 943     | 921                                 | 798     | 696     | 707     | 639     | 2                            | 2              | 3       | 1              | 9,710                                             | 6,640   |
| 36                                                  | Makete    | 1,282                            | 1,364   | 1,416   | 1,536   | 1,604   | 951                                 | 1,033   | 1,332   | 1,452   | 1,479   | 0                            | 0              |         |                | 9,510                                             | 10,857  |
| 37                                                  | Mangaka   | 17                               | 17      | 22      |         | 7       | 0                                   | -       | -       |         |         | 17                           | 12             | 6       | 4              | 3,000                                             | 1,000   |
| 38                                                  | Manyoni   | 1,700                            | 1,821   | 1,947   | 2,062   | 2,438   | 1,571                               | 1,682   | 1,818   | 1,913   | 2,235   | 43                           | 39             | 52      | 41             | 25,460                                            | 23,660  |
| 39                                                  | Mbinga    | 2,150                            | 2,288   | 2,428   | 2,592   | 2,844   | 1,955                               | 2,087   | 2,228   | 2,375   | 2,626   | 2                            | 1              | 7       | 7              | 19,800                                            | 27,154  |
| 40                                                  | Mbulu     | 1,691                            | 1,814   | 1,936   | 1,970   | 2,138   | 1,406                               | 1,522   | 1,606   | 1,632   | 1,780   | 33                           | 32             | 40      | 33             | 22,060                                            | 22,710  |
| 41                                                  | Misungwi  | 1,230                            | 1,357   | 1,475   | 1,626   | 1,645   | 1,151                               | 1,269   | 1,379   | 1,526   | 1,536   | 12                           | 9              | 10      | 4              | 13,760                                            | 16,360  |
| 42                                                  | Mkuranga  | 110                              | 134     | 218     | 283     | 290     | 105                                 | 109     | 185     | 246     | 250     | 0                            | 0              |         |                | 1,050                                             | 2,500   |
| 43                                                  | Monduli   | 1,667                            | 1,872   | 2,027   | 2,128   | 2,254   | 1,511                               | 1,716   | 1,867   | 1,960   | 2,082   | 26                           | 12             | 21      | 15             | 18,110                                            | 17,716  |
| 44                                                  | Mpwapwa   | 2,603                            | 2,712   | 2,947   | 3,006   | 3,255   | 2,507                               | 2,632   | 2,862   | 2,985   | 3,134   | 16                           | 8              | 18      | 10             | 27,070                                            | 30,170  |
| 45                                                  | Mugumu    | 1,202                            | 1,218   | 1,632   | 1,740   | 1,862   | 1,122                               | 1,096   | 1,463   | 1,563   | 1,392   | 4                            | 2              | 7       | 1              | 11,720                                            | 8,452   |
| 46                                                  | Muheza    | 2,140                            | 2,179   | 2,179   | 2,179   | 2,198   | 2,052                               | 2,062   | 2,062   | 2,062   | 2,062   | 20                           | 12             | 40      | 17             | 23,520                                            | 23,485  |
| 47                                                  | Muleba    | 1,407                            | 1,637   | 1,806   | 2,039   | 2,280   | 1,296                               | 1,467   | 1,595   | 1,829   | 2,085   | 21                           | 20             | 23      | 18             | 17,960                                            | 22,650  |
| 48                                                  | Mwanga    | 1,731                            | 1,926   | 2,167   | 2,343   | 2,475   | 1,554                               | 1,752   | 1,990   | 2,143   | 2,274   | 13                           | 11             | 16      | 16             | 18,290                                            | 15,203  |
| 49                                                  | Mwanhuzi  | 1,704                            | 1,811   | 1,970   | 2,065   | 2,262   | 1,559                               | 1,658   | 1,809   | 1,898   | 2,086   | 27                           | 22             | 28      | 24             | 21,090                                            | 17,316  |
| 50                                                  | Namanyere | 128                              | 171     | 222     | 260     | 297     | 115                                 | 131     | 181     | 215     | 252     | 6                            | 6              | 15      | 10             | 2,650                                             | 5,020   |
| 51                                                  | Namtumbo  | 1,142                            | 1,193   | 1,188   | 1,233   | 1,294   | 1,005                               | 1,058   | 825     | 1,145   | 1,202   | 52                           | 0              | -       | 0              | 10,050                                            | 14,582  |
| 52                                                  | Nansio    | 929                              | 929     | 1,685   | 2,146   | 2,641   | 874                                 | 880     | 1,558   | 1,994   | 2,454   | 3                            | 1              | 49      | 49             | 8,990                                             | 39,240  |
| 53                                                  | Ngara     | 2,202                            | 2,414   | 2,554   | 2,682   | 2,801   | 2,009                               | 2,198   | 2,361   | 2,458   | 2,562   | 34                           | 28             | 33      | 30             | 27,090                                            | 34,620  |
| 54                                                  | Ngudu     | 726                              | 940     | 1,159   | 1,287   | 1,495   | 531                                 | 864     | 1,074   | 1,197   | 1,443   | 3                            | 3              | 11      | 2              | 6,060                                             | 15,030  |
| 55                                                  | Nzega     | 2,705                            | 2,925   | 2,752   | 3,041   | 3,041   | 2,494                               | 2,674   | 2,481   | 2,692   | 2,692   | 30                           | 24             | 43      | 37             | 30,940                                            | 25,402  |
| 56                                                  | Orkesumet | 74                               | 128     | 132     | 155     | 128     | 16                                  | 63      | 63      | 63      | 75      | 41                           | 41             | 23      | 14             | 10,410                                            | 4,579   |
| 57                                                  | Pangani   | 1,209                            | 1,354   | 1,378   | 1,379   | 1,288   | 1,100                               | 1,263   | 1,316   | 1,302   | 1,180   | 8                            | 2              | -       | 0              | 11,500                                            | 11,890  |
| 58                                                  | Ruangwa   | 769                              | 839     | 922     | 991     | 1,098   | 705                                 | 775     | 866     | 923     | 1,021   | 16                           | 10             | 20      | 15             | 9,550                                             | 8,855   |
| 59                                                  | Rujewa    | 1,606                            | 1,620   | 1,635   | 1,635   | 2,418   | 1,407                               | 1,421   | 1,384   | 1,533   | 2,273   | 148                          | 55             | 148     | 50             | 27,820                                            | 20,411  |
| 60                                                  | Same      | 1,420                            | 1,482   | 1,546   | 1,586   | 1,653   | 1,243                               | 1,311   | 1,371   | 1,408   | 1,475   | 46                           | 43             | 47      | 41             | 23,180                                            | 18,420  |
| 61                                                  | Sengerema | 3,261                            | 3,448   | 3,724   | 4,536   | 5,668   | 3,072                               | 3,194   | 3,579   | 4,242   | 5,217   | 96                           | 42             | 143     | 135            | 41,220                                            | 92,670  |
| 62                                                  | Sikonge   | 318                              | 328     | 424     | 474     | 524     | 224                                 | 282     | 310     | 423     | 447     | 6                            | 5              | 10      | 10             | 3,490                                             | 5,629   |
| 63                                                  | Songe     | 321                              | 364     | 348     | 362     | 400     | 265                                 | 308     | 290     | 298     | 316     | 25                           | 19             | 38      | 19             | 7,400                                             | 9,490   |
| 64                                                  | Tarime    | 1,351                            | 1,501   | 1,570   | 1,768   | 1,867   | 1,256                               | 1,260   | 1,449   | 1,471   | 1,717   | 4                            | 4              | 9       | 6              | 13,560                                            | 15,536  |
| 65                                                  | Tukuyu    | 4,298                            | 3,767   | 4,061   | 4,313   | 4,553   | 4,094                               | 3,561   | 3,857   | 4,025   | 4,252   | 1                            | 1              | 2       | 2              | 41,190                                            | 39,875  |
| 66                                                  | Tunduru   | 1,110                            | 876     | 1,114   | 1,592   | 1,963   | 1,043                               | 819     | 1,073   | 1,556   | 1,927   | 8                            | 8              | 10      | 4              | 12,430                                            | 24,624  |

| A: Regional Water Supply and Sanitation Authorities         |                   |                                  |         |         |         |         |                                     |         |         |         |         |                              |                |         |                |                                                   |           |
|-------------------------------------------------------------|-------------------|----------------------------------|---------|---------|---------|---------|-------------------------------------|---------|---------|---------|---------|------------------------------|----------------|---------|----------------|---------------------------------------------------|-----------|
| Sr/N<br>o                                                   | Utilities         | Total Water Connections (Number) |         |         |         |         | Domestic Water Connections (Number) |         |         |         |         | Public Water Kiosks (Number) |                |         |                | No. of people with access to clean and safe water |           |
|                                                             |                   | 2014/15                          | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2014/15                             | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2014/15                      | Working Kiosks | 2018/19 | Working Kiosks | 2014/15                                           | 2018/19   |
| 67                                                          | Urambo            | 292                              | 310     | 276     | 302     | 328     | 206                                 | 225     | 157     | 176     | 190     | 21                           | 18             | 40      | 40             | 6,560                                             | 11,140    |
| 68                                                          | USA River         | 1,971                            | 2,046   | 1,713   | 2,222   | 2,550   | 1,805                               | 1,876   | 1,543   | 2,055   | 2,403   | 33                           | 23             | 19      | 19             | 23,800                                            | 20,620    |
| 69                                                          | Ushirombo         | 289                              | 328     | 393     | 475     | 488     | 260                                 | 299     | 361     | 443     | 455     | 14                           | 8              | 17      | 9              | 4,600                                             | 7,250     |
| 70                                                          | Utete             | 623                              | 703     | 759     | 807     | 846     | 560                                 | 640     | 719     | 765     | 803     | 4                            | 4              | 4       | 4              | 6,600                                             | 6,621     |
| 71                                                          | Vwawa             | 1,218                            | 1,361   | 1,683   |         |         | 1,119                               | 1,275   | 1,606   |         |         | 40                           | 40             |         |                | 21,190                                            | 12,246    |
| 72                                                          | Bashnet           | 227                              | 352     | 402     | 498     | 572     | 151                                 | 277     | 317     | 375     | 436     | 59                           | 55             | 103     | 85             | 15,260                                            | 17,166    |
| 73                                                          | Gallapo           | 698                              | 819     | 896     | 996     | 1,192   | 624                                 | 746     | 805     | 899     | 1,071   | 49                           | 33             | 75      | 51             | 14,490                                            | 25,160    |
| 74                                                          | Ilula             | 824                              | 942     | 1,167   | 1,139   | 1,186   | 736                                 | 896     | 1,038   | 1,056   | 1,072   | 63                           | 49             | 70      | 56             | 19,610                                            | 17,440    |
| 75                                                          | Isaka             | 103                              | 90      | 93      | 93      | 94      | 72                                  | 65      | 77      | 77      | 78      | 7                            | 6              | 7       | 7              | 2,220                                             | 2,880     |
| 76                                                          | Kasumulu          | 848                              | 848     | 852     | 854     | 858     | 767                                 | 792     | 795     | 794     | 798     | 0                            | 0              | 26      | 1              | 7,670                                             | 8,180     |
| 77                                                          | Kilbaigwa         | 1277                             | 1,443   | 1,693   | 1,919   | 2,160   | 968                                 | 1,364   | 1,335   | 1833    | 1,971   | 63                           | 58             | 85      | 85             | 24,180                                            | 28,555    |
| 78                                                          | Maganzo           |                                  |         |         | 25      | 215     |                                     |         |         | 0       | 165     |                              |                | 25      | 25             | -                                                 | 5,990     |
| 79                                                          | Magugu            | 802                              | 1,084   | 1,346   | 1,443   | 1,638   | 676                                 | 956     | 1,205   | 1,297   | 1,481   | 66                           | 66             | 87      | 65             | 23,260                                            | 34,022    |
| 80                                                          | Makambako         | 4327                             | 4,453   | 4,625   | 4,816   | 5,055   | 4058                                | 4058    | 4,295   | 4,471   | 4,668   | 46                           | 24             | 49      | 49             | 46,580                                            | 40,309    |
| 81                                                          | Mbalizi           | 4226                             | 4,657   | 5,291   | 5,841   |         | 3940                                | 4324    | 4,949   | 5,469   |         | 119                          | 116            |         |                | 68,400                                            | -         |
| 82                                                          | Mikumi            | 202                              | 201     | 205     | 418     | 885     | 181                                 | 156     | 180     | 342     | 760     | 32                           | 11             | 72      | 72             | 4,560                                             | 8,920     |
| 83                                                          | Mlowo             | 67                               | 86      | 138     |         |         | 25                                  | 45      | 106     |         |         | 16                           | 15             |         |                | 4,000                                             | 500       |
| 84                                                          | Mombo             | 688                              | 627     | 643     | 689     | 718     | 612                                 | 540     | 508     | 603     | 630     | 22                           | 15             | 16      | 14             | 9,870                                             | 10,122    |
| 85                                                          | Tunduma           | 656                              | 668     | 673     | 698     | 715     | 524                                 | 524     | 544     | 214     | 231     | 45                           | 12             | 25      | 9              | 8,240                                             | 5,010     |
| 86                                                          | Turiani           |                                  | 1,738   | 1,782   | 1,947   | 2,362   |                                     | 1,162   | 1,568   | 1,819   | 2,251   |                              |                | 25      | 25             | -                                                 | 28,760    |
| TOTAL                                                       |                   | 104,009                          | 112,639 | 122,401 | 130,218 | 138,259 | 93,703                              | 101,829 | 110,555 | 117,809 | 124,409 | 2,254                        | 1,515          | 2,764   | 2,149          | 1,315,780                                         | 1,586,528 |
| C: National Project Water Supply and Sanitation Authorities |                   |                                  |         |         |         |         |                                     |         |         |         |         |                              |                |         |                |                                                   |           |
| 1                                                           | Chalinze          | 2,804                            | 3,360   | 3,979   | 4,262   | 4,459   | 2,104                               | 2,376   | 2,894   | 3,118   | 3,269   | 508                          | 478            | 643     | 615            | 108,224                                           | 142,614   |
| 2                                                           | HTM               | 1,901                            | 2,017   | 2,196   | 2,281   | 2,435   | 1,551                               | 1,650   | 1,816   | 1,872   | 2,000   | 190                          | 110            | 221     | 165            | 8,250                                             | 12,375    |
| 3                                                           | KASHWASA          | 50                               | 64      | 66      | 71      | 74      | 3                                   | 3       | 3       | 65      | 0       | 0                            | 0              | NA      | NA             | NA                                                | NA        |
| 4                                                           | Makonde           | 2,643                            | 2,753   | 2,830   | 2,940   | 3,089   | 2,010                               | 2,088   | 2,014   | 2,065   | 2,205   | 432                          | 400            | 550     | 250            | 140,100                                           | 97,050    |
| 5                                                           | MANAWASA          | 4,269                            | 5,745   | 7,635   | 8,853   | 10,020  | 3,825                               | 5,158   | 6,919   | 8,052   | 9,126   | 109                          | 14             | 366     | 335            | 41,750                                            | 175,010   |
| 6                                                           | Maswa             | 2,641                            | 3,099   | 3,247   | 3,285   | 3,622   | 2,461                               | 2,919   | 3,070   | 3,070   | 3,477   | 32                           | 14             | 40      | 28             | 28,110                                            | 24,385    |
| 7                                                           | Mugango-Kiabakari | 596                              | 659     | 763     | 836     | 962     | 554                                 | 588     | 681     | 748     | 870     | 3                            | 3              | 26      | 21             | 6,290                                             | 10,470    |
| 8                                                           | Wanging'ombe      | 4,028                            | 4,123   | 4,651   | 4,841   | 5,393   | 3,205                               | 3,295   | 4,013   | 4,178   | 4,700   | 476                          | 93             | 510     | 479            | 20,675                                            | 47,450    |
| TOTAL                                                       |                   | 18,932                           | 21,820  | 25,367  | 27,369  | 30,054  | 15,713                              | 18,077  | 21,410  | 23,168  | 25,647  | 1,750                        | 1,112          | 2,356   | 1,893          | 353,399                                           | 509,354   |

### Appendix 4-3: NRW in Urban Water Supply Utilities

| S/N                                                                        | Utilities       | 2014/15     | 2015/16     | NRW (%)<br>2016/17 | 2017/18      | 2018/19      |
|----------------------------------------------------------------------------|-----------------|-------------|-------------|--------------------|--------------|--------------|
| <b>A: Regional Water Supply and Sanitation Authorities</b>                 |                 |             |             |                    |              |              |
| 1                                                                          | Arusha          | 44.9        | 43.29       | 41.04              | 47.04        | 44.11        |
| 2                                                                          | DAWASCO         | 56.7        | 53.09       | 46                 | 46.68        | 48.37        |
| 3                                                                          | Dodoma          | 29.7        | 30.86       | 28.03              | 30.42        | 26.86        |
| 4                                                                          | Iringa          | 33.5        | 31.03       | 28.79              | 31.23        | 25.64        |
| 5                                                                          | Kahama          | 15          | 13.34       | 12.76              | 10.71        | 12.4         |
| 6                                                                          | Mbeya           | 35.9        | 33.71       | 28.64              | 38.78        | 40.06        |
| 7                                                                          | Morogoro        | 41          | 39.25       | 39.84              | 39.49        | 33.25        |
| 8                                                                          | Moshi           | 24.1        | 20.68       | 23.09              | 21.69        | 20.36        |
| 9                                                                          | Mtwara          | 28.8        | 30.71       | 29.96              | 28.42        | 24.53        |
| 10                                                                         | Musoma          | 42.2        | 30.75       | 40.28              | 63.5         | 59.98        |
| 11                                                                         | Mwanza          | 41.8        | 38.06       | 36.66              | 36.63        | 36.84        |
| 12                                                                         | Shinyanga       | 22.6        | 16.01       | 20.13              | 16.7         | 13.25        |
| 13                                                                         | Songea          | 26.9        | 20.81       | 21.7               | 21.04        | 20.33        |
| 14                                                                         | Tabora          | 39.4        | 37.51       | 38.44              | 36.71        | 36.67        |
| 15                                                                         | Tanga           | 22.6        | 26.75       | 24.09              | 25.74        | 28.07        |
| 16                                                                         | Bukoba          | 53          | 48.6        | 45.81              | 49.51        | 52.55        |
| 17                                                                         | Kigoma          | 30          | 29.25       | 28.59              | 28           | 28.12        |
| 18                                                                         | Singida         | 40.8        | 30.05       | 36.7               | 26.54        | 28.16        |
| 19                                                                         | Sumbawanga      | 32.7        | 40.52       | 30.97              | 30.98        | 43.21        |
| 20                                                                         | Babati          | 31.8        | 41.81       | 48.16              | 43.69        | 38.56        |
| 21                                                                         | Lindi           | 40.8        | 36.2        | 53.17              | 34.85        | 32.93        |
| 22                                                                         | Bariadi         | 32.7        | 41.75       | 26.97              | 24.17        | 22.7         |
| 23                                                                         | Geita           | 23          | 46.55       | 25                 | 30.4         | 32.09        |
| 24                                                                         | Mpanda          | 55.4        | 35.4        | 35.19              | 26.74        | 27.59        |
| 25                                                                         | Njombe          | 52          | 36.1        | 35.3               | 28.24        | 30.29        |
| 26                                                                         | Vwawa-Mlowo     |             |             |                    | 34.7         | 34.72        |
| AVERAGE                                                                    |                 | <b>43.6</b> | <b>41.6</b> | <b>38.43</b>       | <b>40.53</b> | <b>40.63</b> |
| <b>B: District and Small Towns Water Supply and Sanitation Authorities</b> |                 |             |             |                    |              |              |
| 1                                                                          | Biharamulo      | 33          | 36          | 23                 | 18           | 12           |
| 2                                                                          | Bunda           | 46          | 48          | 46                 | 45           | 35           |
| 3                                                                          | Chamwino        | 39          | 32          | 33                 | 32           | 24           |
| 4                                                                          | Chato           |             |             |                    |              | 40           |
| 5                                                                          | Chunya          | 32          | 30          | 35                 | 33           | 42           |
| 6                                                                          | Dakawa          | 67          | 30          | 34                 | 12           | 34           |
| 7                                                                          | Gairo           | 30          | 56          | 65                 | 65           | 78           |
| 8                                                                          | Handeni         | 51          | 50          | 25                 | 31           | 19           |
| 9                                                                          | Ifakara         | 32          | 50          | 33                 | 11           | 17           |
| 10                                                                         | Igunga          | 45          | 41          | 42                 | 20           | 23           |
| 11                                                                         | Itumba-Isongole | 35          | 34          | 39                 | 33           | 42           |
| 12                                                                         | Karagwe         | 26          | 33          | 23                 | 31           | 21           |
| 13                                                                         | Karatu          |             |             |                    | 35           | 26           |
| 14                                                                         | Kasulu          | 49          | 46          | 42                 | 42           | 34           |
| 15                                                                         | Katesh          | 52          | 46          | 54                 | 35           | 39           |
| 16                                                                         | Kibaya          | 35          | 41          | 39                 | 31           | 31           |
| 17                                                                         | Kibondo         | 39          | 36          | 34                 | 27           | 37           |
| 18                                                                         | Kilindoni       | 45          | 38          | 34                 | 44           | 17           |
| 19                                                                         | Kilolo          | 35          | 47          | 32                 | 32           | 32           |

| S/N | Utilities    | 2014/15 | 2015/16 | NRW (%)<br>2016/17 | 2017/18 | 2018/19 |
|-----|--------------|---------|---------|--------------------|---------|---------|
| 20  | Kilosa       | 30      | 30      | 35                 | 56      | 30      |
| 21  | Kilwa Masoko | 28      | 46      | 35                 | 38      | 46      |
| 22  | Kiomboi      | 35      | 32      | 25                 | 26      | 34      |
| 23  | Kisarawe     | 46      | 45      | 37                 | 28      | 25      |
| 24  | Kishapu      | 20      | 19      | 22                 | 18      | 10      |
| 25  | Kondoa       | 38      | 32      | 38                 | 40      | 40      |
| 26  | Kongwa       | 31      | 29      | 29                 | 44      | 32      |
| 27  | Korogwe      | 29      | 27      | 35                 | 45      | 35      |
| 28  | Kyela        | 33      | 30      | 36                 | 52      | 30      |
| 29  | Liwale       | 39      | 39      | 45                 | 28      | 28.5    |
| 30  | Loliondo     | 43      | 42      | 35                 | 36      | 44      |
| 31  | Ludewa       | 36      | 44      | 52                 | 29      | 42      |
| 32  | Lushoto      | 53      | 55      | 42                 | 45      | 48      |
| 33  | Mafinga      | 35      | 34      | 48                 | 39      | 38      |
| 34  | Magu         | 46      | 46      | 46                 | 47      | 48      |
| 35  | Mahenge      | 32      | 32      | 31                 | 17      | 45      |
| 36  | Makete       | 37      | 44      | 27                 | 42      | 44      |
| 37  | Mangaka      | no data | no data | no data            | no data | 12      |
| 38  | Manyoni      | 10      | 24      | 22                 | 24      | 21      |
| 39  | Mbinga       | 36      | 34      | 34                 | 39      | 38      |
| 40  | Mbulu        | 49      | 52      | 45                 | 47      | 55      |
| 41  | Misungwi     | 30      | 28      | 34                 | 23      | 28      |
| 42  | Mkuranga     | 24      | 53      | 50                 | 28      | 9       |
| 43  | Monduli      | 40      | 43      | 29                 | 34      | 33      |
| 44  | Mpwapwa      | 46      | 30      | 30                 | 7       | 37      |
| 45  | Mugumu       | 24      | 30      | 32                 | 27.7    | 32      |
| 46  | Muheza       | 28      | 50      | 68                 | 62      | 53      |
| 47  | Muleba       | 25      | 24      | 24                 | 20      | 25      |
| 48  | Mwanga       | 55      | 54      | 54.7               | 48.8    | 40      |
| 49  | Mwanhuzi     | 25      | 20      | 19                 | 16      | 14      |
| 50  | Namanyere    | 45      | 38      | 37                 | 63      | 65      |
| 51  | Namtumbo     | 43      | 47      | 35                 | 32      | 23      |
| 52  | Nansio       | 37      | 28      | 38                 | 28      | 23      |
| 53  | Ngara        | 53      | 51      | 49                 | 52      | 50      |
| 54  | Ngudu        | 25      | 39      | 34                 | 38      | 27      |
| 55  | Nzega        | 25      | 25      | 24                 | 25      | 34      |
| 56  | Orkesumet    | 33      | 61      | 31                 | 47      | 41      |
| 57  | Pangani      | 58      | 67      | 73                 | 61      | 58      |
| 58  | Ruangwa      | 32      | 37      | 33                 | 44      | 41      |
| 59  | Rujewa       | 30      | 28      | 38                 | 34      | 28      |
| 60  | Same         | 48      | 46      | 45                 | 43      | 34      |
| 61  | Sengerema    | 47      | 39      | 40                 | 22      | 36      |
| 62  | Sikonge      | 39      | 45      | 17                 | 11      | 22      |
| 63  | Songe        | 36      | 49      | 27                 | 49      | 48      |
| 64  | Tarime       | 48      | 39      | 48                 | 57      | 52      |
| 65  | Tukuyu       | 44      | 44      | 38                 | 35      | 29      |
| 66  | Tunduru      | 32      | 34      | 45                 | 35      | 30      |
| 67  | Urambo       | 23      | 26      | 23                 | 25      | 22      |
| 68  | USA River    | 65      | 85      | 79                 | 74      | 66      |



| S/N                                                                | Utilities         | 2014/15     | 2015/16     | NRW (%)<br>2016/17 | 2017/18     | 2018/19     |
|--------------------------------------------------------------------|-------------------|-------------|-------------|--------------------|-------------|-------------|
| 69                                                                 | Ushirombo         | 17          | 15          | 17                 | 17          | 17          |
| 70                                                                 | Utete             | 20          | 20          | 17                 | 11          | 10          |
| 71                                                                 | Vwawa             | 37          | 35          | 35                 | no data     |             |
| 72                                                                 | Bashnet           | 77          | 57          | 11                 | 56          | 46          |
| 73                                                                 | Gallapo           | 76          | 78          | 72                 | 72          | 67          |
| 74                                                                 | Ilula             | 50          | 56          | 43                 | 33          | 37          |
| 75                                                                 | Isaka             | 61          | 48          | 45                 | 40          | 25          |
| 76                                                                 | Kasumulu          | 45          | 45          | 45                 | 44          | 37          |
| 77                                                                 | Kibaigwa          | 20          | 26          | 21                 | 18          | 13          |
| 78                                                                 | Maganzo           |             |             |                    | 21          | 2           |
| 79                                                                 | Magugu            | 39          | 57          | 60                 | 43          | 45          |
| 80                                                                 | Makambako         | 32          | 31          | 30                 | 30          | 31          |
| 81                                                                 | Mbalizi           | 26          | 29          | 29                 | 26          |             |
| 82                                                                 | Mikumi            | no data     | 50          | 57                 | 43          | 21          |
| 83                                                                 | Mlowo             | no data     | 49          | 30                 | no data     |             |
| 84                                                                 | Mombo             | 47          | 51          | 36                 | 46          | 28          |
| 85                                                                 | Tunduma           | 33          | 27          | 30                 | 24          | 20          |
| 86                                                                 | Turiani           |             | 34          | 27                 | 22          | 26          |
|                                                                    | <b>AVERAGE</b>    | <b>38</b>   | <b>41</b>   | <b>39</b>          | <b>36</b>   | <b>36</b>   |
| <b>C: National Project Water Supply and Sanitation Authorities</b> |                   |             |             |                    |             |             |
| 1                                                                  | Chalinze          | 54.5        | 34.7        | 32.9               | 28.22       | 25.8        |
| 2                                                                  | HTM               | 80.6        | 80.1        | 78.7               | 79.26       | 75.8        |
| 3                                                                  | KASHWASA          | 6           | 10.6        | 7.8                | 9.32        | 8.8         |
| 4                                                                  | Makonde           | 75          | 59          | 63.3               | 51.94       | 47          |
| 5                                                                  | MANAWASA          | 26.4        | 28.2        | 25.8               | 24.75       | 25.4        |
| 6                                                                  | Maswa             | 65.4        | 60          | 73.6               | 74.69       | 36.6        |
| 7                                                                  | Mugango-Kiabakari | 76          | 76          | 76.4               | 80.34       | 85.7        |
| 8                                                                  | Wanging'ombe      | 79.7        | 75.9        | 67.4               | 62.61       | 53.6        |
|                                                                    | <b>AVERAGE</b>    | <b>47.7</b> | <b>39.4</b> | <b>33.1</b>        | <b>26.8</b> | <b>23.7</b> |

## Appendix 5-1: Funding Portfolio

| No. | Development Partner | SUBJECT OF FINANCING AGREEMENT / BUDGET                              | Target Regions / Districts / Towns / Entity                                                                                                               | FA Amount [in original DP currency] | Total DP support in original currency. | Total FA amount in [USD] equiv. calculated | Funding modality (basket or earmarked) | GoT-level financing option | IA-level financing option | Period of financing |
|-----|---------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------|--------------------------------------------|----------------------------------------|----------------------------|---------------------------|---------------------|
| 1   | Belgium             | Water and Sanitation Kigoma Region Project (WASKIRP)                 | Kigoma Region (Rural Districts)                                                                                                                           | 8,000,000                           | EUR                                    | 9,120,000                                  | Earmarked                              | Grant DPs                  | GoT budget                | 2016-2020           |
| 2   | UNICEF              | Rural Water Supply Programme                                         | Mbeya, Iringa, Njombe, Songwe, Temeke MC                                                                                                                  | 4,960,000                           | USD                                    | 4,960,000                                  | Earmarked                              | Grant DPs                  | GoT budget                | 2017-2021           |
|     |                     | Sanitation and Hygiene Programme                                     | Mbeya, Iringa, Njombe, Songwe, Temeke MC                                                                                                                  | 21,670,000                          | USD                                    | 21,670,000                                 | Earmarked                              | Grant DPs                  | GoT budget                | 2017-2021           |
|     |                     | Programme Delivery Support Programme                                 | Ministries and departments                                                                                                                                | 200,000                             | USD                                    | 200,000                                    | Earmarked                              | Grant DPs                  | GoT budget                | 2017-2021           |
| 3   | Germany – KfW       | OBA (Investment Financing Facility)                                  | Nation-wide (special window)                                                                                                                              | 12,000,000                          | EUR                                    | 13,680,000                                 | Basket                                 | Grant DPs                  | OBA grant                 | 2015 -2020          |
|     |                     | Regional Utilities Upgrading Programme Phase II                      | Mtwara, and Babati - Phase II                                                                                                                             | 21,600,000                          | EUR                                    | 24,624,000                                 | Earmarked                              | Grant DPs                  | GoT budget                | 2015-2020           |
|     |                     | Regional Utilities Upgrading Programme Phase I                       | Lindi, Sumbawanga, and Kigoma- Phase I                                                                                                                    | 81,260,000                          | EUR                                    | 92,636,400                                 | Earmarked                              | Grant DPs                  | GoT budget                | 2015-2020           |
|     |                     | Upgrading of WS-Schemes in Tunuduma and Vwawa                        | Tunduma and Vwawa                                                                                                                                         | 892,500                             | EUR                                    | 1,017,450                                  | Earmarked                              | Grant DPs                  | GoT budget                | 2018-2019           |
|     |                     | Simiyu Climate Resilience Project                                    | Busega, Bariadi, Lagangabilli, Meatu Maswa                                                                                                                | 25,000,000                          | EUR                                    | 28,500,000                                 | Earmarked                              | Grant DPs                  | GoT budget                | 2018-2023           |
| 4   | Germany –GIZ        | Support to the Development of the Water Sector                       | Nation Wide (policy level), pilot projects in Dodoma, Shinyanga, Korogwe)                                                                                 | 9,500,000                           | EUR                                    | 10,830,000                                 | Earmarked                              | Grant DPs                  | GoT budget                | 2015 -2019          |
|     |                     | Water Security and Climate Resilience in urban areas.                | Lakes Rukwa and Nyasa basins                                                                                                                              | 6,000,000                           | EUR                                    | 6,840,000                                  | Earmarked                              | Grant DPs                  | GoT budget                | 2019 -2022          |
| 5   | GCF                 | Simiyu Climate Resilience Project                                    | Busega, Bariadi, Lagangabilli, Meatu Maswa                                                                                                                | 102,700,000                         | EUR                                    | 117,078,000                                | Earmarked                              | Grant DPs                  | GoT budget                | 2018-2023           |
| 6   | EU (KfW)            | Regional Utilities Upgrading Programme Phase I                       | Lindi, Sumbawanga, and Kigoma- Phase I                                                                                                                    | 51,260,000                          | EUR                                    | 58,436,400                                 | Earmarked                              | Grant DPs                  | GoT budget                | 2015-2016           |
| 7   | DfID                | Construction, Extension and Rehabilitation                           | Nationwide                                                                                                                                                | 41,950,000                          | GBP                                    | 41,950,000                                 | Basket                                 | Grant (DPs)                | GoT budget                | 2016-2020           |
|     |                     | Support to sustainability.                                           |                                                                                                                                                           | 14,000,000                          |                                        | 14,000,000                                 | Earmarked                              |                            |                           | 2016-2020           |
|     |                     | Technical Assistance (TA)- Government.                               |                                                                                                                                                           | 1,250,000                           |                                        | 1,250,000                                  | Earmarked                              |                            |                           | 2016-2020           |
|     |                     | Payment by Results (PbR)                                             |                                                                                                                                                           | 78,600,000                          |                                        | 78,600,000                                 | Basket                                 |                            |                           | 2016-2020           |
|     |                     | Support to Sanitation and Hygiene                                    |                                                                                                                                                           | 8,500,000                           |                                        | 8,500,000                                  | Basket                                 |                            |                           | 2016-2020           |
| 8   | USAID               | Water Resources Integrated Project Initiative (WARIDI)               | Component I, II, IV & V (WRM,RWSS,S&H, PDS) in 20 districts in Rufiji +Wami-Ruvu<br>Sustainable Agroforestry<br>Biodiversity conservation                 | 60,000,000                          | USD                                    | 60,000,000                                 | Earmarked                              | Grant (DPs)                | Grant (NGO)               | 2015 - 2019         |
| 9   | CRS                 | Water Resources Management, Rural Water Supply and capacity Building | Arusha (Longido), Manyara (Karatu), Dodoma (Bahi, Chamwino & Kongwa), Njombe (Njombe & Wanging'ombe), Iringa (Mufindi & Iringa Rural) and Mbeya (Mbarali) | 3,000,000                           | USD                                    | 3,000,000                                  | Earmarked                              | Grant DPs                  | Grant (NGO)               | 2015-2019           |
| 10  | WSSCC               | Sanitation and Hygiene - Rural                                       | Arusha District Council(ADC) Arusha region                                                                                                                | 1,640,485                           | GBP                                    | 2,083,416                                  | Earmarked                              | Grant DPs                  | Grant (NGO)               | 2018-2021           |

| No. | Development Partner | SUBJECT OF FINANCING AGREEMENT / BUDGET                                                             | Target Regions / Districts / Towns / Entity                                                                    | FA Amount [in original DP currency] | Total DP support in original currency. | Total FA amount in [USD] equiv. calculated | Funding modality (basket or earmarked) | GoT-level financing option | IA-level financing option | Period of financing |
|-----|---------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------|--------------------------------------------|----------------------------------------|----------------------------|---------------------------|---------------------|
|     |                     | Sanitation & Hygiene - Dodoma Region                                                                | Dodoma Region (Bahi, Chamwino & Kongwa districts)                                                              | 6,040,000                           | USD                                    | 6,040,000                                  | Earmarked                              | Grant DPs                  | Grant (NGO)               |                     |
| 11  | WaterAid            | Rural Sanitation and Hygiene                                                                        | Babati District Council (BDC), Manyara region                                                                  | 98,881                              | GBP                                    | 125,579                                    | Earmarked                              | Grant DPs                  | Grant (NGO)               | 2018-2021           |
|     |                     |                                                                                                     | Nyangwale DC, and Geita DC. Geita region                                                                       | 1,868,782                           | GBP                                    | 2,373,353                                  | Earmarked                              | Grant (DPs)                | Grant (NGO)               |                     |
|     |                     |                                                                                                     | Babati Town Council (BTC) Manyara region                                                                       | 242,418                             | GBP                                    | 307,871                                    | Earmarked                              | Grant (DPs)                | Grant (NGO)               |                     |
|     |                     | Urban Sanitation and Hygiene                                                                        | Tembeke Municipal Council (TMC), Dar es Salaam region                                                          | 659,764                             | GBP                                    | 837,900                                    | Earmarked                              | Grant (DPs)                | Grant (NGO)               |                     |
| 12  | World Bank          | Water Sector Support Project Phase II                                                               | Dar es Salaam and Manyara                                                                                      | 14,096                              | GBP                                    | 17,902                                     | Earmarked                              | Grant (DPs)                | Grant (NGO)               | 2017-2022           |
|     |                     |                                                                                                     | Dar es Salaam Water Supply Improvement, Dar es Salaam, wastewater treatment, sewerage, and Off-Grid Sanitation | 166,000,000                         | USD                                    | 166,000,000                                | Earmarked                              | Grant (DPs)                | Grant (NGO)               |                     |
|     |                     |                                                                                                     | Integrated Water Resources Management aiming at institutions, information and investments.                     | 50,000,000                          | USD                                    | 50,000,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                |                     |
|     |                     |                                                                                                     | Programme Delivery Support / Capacity Building                                                                 | 9,000,000                           | USD                                    | 9,000,000                                  | Earmarked                              | Loan (foreign)             | GoT budget                |                     |
|     |                     | Sustainable Rural Water Supply and Sanitation (PforR)                                               | WS&S Nation-wide                                                                                               | 280,000,000                         | USD                                    | 280,000,000                                | Earmarked                              | Loan (foreign)             | GoT budget                |                     |
| 13  | AFD                 |                                                                                                     | Strategic support to rural sector nation-wide                                                                  | 20,000,000                          | USD                                    | 20,000,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2018 - 2023         |
|     |                     |                                                                                                     |                                                                                                                |                                     |                                        |                                            |                                        |                            |                           |                     |
|     |                     | Support to urban water and sanitation sector                                                        | Nationwide in all regions                                                                                      | 36,000,000                          | EUR                                    | 41,040,000                                 | Basket                                 | Loan (foreign)             | GoT budget                | 2015-2018           |
|     |                     | Support to urban water and sanitation sector                                                        | Capacity Building for Ministry/towns/LGAs                                                                      | 4,000,000                           | EUR                                    | 4,560,000                                  | Earmarked                              | Loan (foreign)             | GoT budget                | 2016-2020           |
|     |                     | Upgrading urban water supply and sanitation in Morogoro town                                        | Morogoro Water Supply & Sanitation Authority                                                                   | 70,000,000                          | EUR                                    | 79,800,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2018-2021           |
|     |                     | Lake Victoria Initiative (Additional Financing)                                                     |                                                                                                                | 30,000,000                          | EUR                                    | 34,200,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2016-2021           |
| 14  | EIB                 | Regional Utilities Upgrading Programme                                                              | Musoma, Bukoba                                                                                                 | 40,000,000                          | EUR                                    | 45,600,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2015-2019           |
|     |                     | Lake Victoria Initiative                                                                            | Lake Victoria -WATSAN, Mwanza, Musoma, Bukoba, Magu, Misungwi and Lamadi                                       | 45,000,000                          | EUR                                    | 51,300,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2015-2021           |
| 15  | EDCH KOREA          | Lake Victoria Initiative                                                                            |                                                                                                                | 45,000,000                          | EUR                                    | 51,300,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2016-2021           |
| 16  | WWF Tanzania        | Wastewater Treatment System Development in DAR Project                                              | Dar es Salaam                                                                                                  | 90,100,000                          | USD                                    | 90,100,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2018-2022           |
| 17  | SNV                 | IVRM, Capacity Building, Institutional strengthening and Climate Change mainstreaming and adaption. | Mara River Basin, Ndembera and Mblai subcatchment in the Great Ruaha Basin                                     | 2,000,000                           | USD                                    | 2,000,000                                  | Earmarked                              | Grant DPs                  | Grant (NGO)               | 2015-2017           |
|     |                     | WASH SDG - Urban Sanitation and Hygiene for Health and Development                                  | Arusha and Shinyanga Urban Districts                                                                           | 3,756,533                           | EUR                                    | 4,282,448                                  | Earmarked                              | Grant DPs                  | Grant (NGO)               | 2017-2022           |
| 18  | BADEA               | Sustainable Sanitation for All (SSH4A) 8 Districts                                                  | Districts of Misungwi, Itilima, Maswa, Msalala/Kahama, Shinyanga, Arusha Rural, Monduli and Hanang             | 1,570,160                           | EUR                                    | 1,789,982                                  | Earmarked                              | Grant DPs                  | Grant (NGO)               | 2017-2020           |
|     |                     |                                                                                                     |                                                                                                                | 15,000,000                          | USD                                    | 15,000,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2015 -2017          |

| No. | Development Partner | SUBJECT OF FINANCING AGREEMENT / BUDGET                                  | Target Regions / Districts / Towns / Entity                                                                                                                     | FA Amount [in original DP currency] | Total DP support in original currency. | Total FA amount in [USD] equiv. calculated | Funding modality (basket or earmarked) | GoT-level financing option | IA-level financing option | Period of financing |
|-----|---------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------|--------------------------------------------|----------------------------------------|----------------------------|---------------------------|---------------------|
| 19  | SAUDI               | Improving water supply in District Towns and 14-Village National Proect  | Mugango/Kiabakari/Butiama and 14 villages                                                                                                                       | 10,000,000                          | USD                                    | 10,000,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                |                     |
| 20  | AfDB                | Sustainable urban ewater supply and sanitation delivery project (Arusha) | Arusha                                                                                                                                                          | 233,915,000                         | USD                                    | 233,915,000                                | Earmarked                              | Loan (foreign)             | GoT budget                | 2015-2019           |
|     |                     | LV WATSAN II Multi-town sustainable Water Supply and Sanitation Project. | Sengerema, Nansio & Geita.                                                                                                                                      | 25,800,000                          | USD                                    | 25,800,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2011-2018           |
| 21  | INDIA               | Urban + Rural Water Supply and Sewerage                                  | Tabora, Igunga, Nzega +89 villages                                                                                                                              | 268,340,000                         | USD                                    | 268,340,000                                | Earmarked                              | Loan (foreign)             | GoT budget                | 2015- 2020          |
|     |                     | Multi-Town sustainable water supply and sanitation project (17 towns)    | Muheza, Wanging'ombe, Makambako, Kayanga, Songea, Handeni, Njombe, Mugumu, Kilwa-Masoko, Geita, Chunya, Newala, Manyoni, Sikonge, Kasulu and Rujewa (+Zanzibar) | 500,000,000                         | USD                                    | 500,000,000                                | Earmarked                              | Loan (foreign)             | GoT budget                | 2018-2022           |
|     |                     | Dar es Salaam & Chalinze - Urban Water Supply and Sewerage               | DAWASA (Upper Ruvu, Chalinze III)                                                                                                                               | 178,125,000                         | USD                                    | 178,125,000                                | Earmarked                              | Loan (foreign)             | GoT budget                | 2018-2022           |
| 22  | BADEA               | Rural Water Supply                                                       | Same, Mwanga and Villages                                                                                                                                       | 98,340,000                          | USD                                    | 98,340,000                                 | Earmarked                              | Loan (foreign)             | GoT budget                | 2014-2018           |
|     |                     | Urban Water Supply and Sewerage in Orkesumet                             | Orkesumet                                                                                                                                                       | 8,000,000                           | USD                                    | 8,000,000                                  | Earmarked                              | Loan (foreign)             | GoT budget                | 2014-2019           |
| 23  | OFID                |                                                                          |                                                                                                                                                                 | 8,000,000                           | USD                                    | 8,000,000                                  | Earmarked                              | Loan (foreign)             | GoT budget                | 2014-2020           |
| 24  | UNDP/GEF            | Water Resources Management                                               | Wami / Ruvu and Pangani Basins                                                                                                                                  | 2,000,000                           | USD                                    | 2,000,000                                  | Earmarked                              | Grant DPs                  | GoT budget                | 2015 -2020          |
| 25  | GoT                 | All WSDP Components                                                      | Nationwide                                                                                                                                                      | 783.011                             | Billion TZS                            | 343,124,890                                | GoT                                    | GoT Budget                 | GoT budget                | 2018-2021           |
| 26  | Total in US \$      |                                                                          |                                                                                                                                                                 |                                     |                                        | 3,230,295,591                              |                                        |                            |                           |                     |

## Appendix 6-1: Performance of Environmental and social safeguard on Strategic Projects (2015 – 2020)

| Area of compliance                                                                | Type of project                      | No. | Name of Project                                                                                                                     | Screened Project Category |   |   | Non-compliance by 2014/2015 | Compliance by 2019/2020 | Non-compliance by 2019/2020 | Compliance (%) |
|-----------------------------------------------------------------------------------|--------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---|---|-----------------------------|-------------------------|-----------------------------|----------------|
|                                                                                   |                                      |     |                                                                                                                                     | A                         | B | C |                             |                         |                             |                |
| <b>Projects with ESIA Studies with Environmental Clearance (EIA Certificates)</b> | Water Supply and Sanitation Projects | 1   | DAWASA -Lower Ruvu treatment and Transmission lines                                                                                 | A                         |   |   | 19                          | 17                      | 2                           | 89             |
|                                                                                   |                                      | 2   | DAWASA -Upper Ruvu treatment plant & Transmission line                                                                              | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 3   | LVWATSAN (Bukoba Sewerage Project)                                                                                                  | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 4   | LVWATSAN (Mwanza City Water Supply and Sanitation Project)                                                                          | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 5   | LVWATSAN (Musoma Sewerage Project)                                                                                                  | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 6   | LVWATSAN (Musoma Water Supply Project)                                                                                              | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 7   | LVWATSAN( Satellite Towns: (Geita, Sengerema, Ukerewe, Magu, Lamadi, Misungwi water supply and respective sludge digester projects) |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 8   | Simiyu Climate Resilient Water Supply Project,                                                                                      | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 9   | Chalinze III Water Supply Project                                                                                                   |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 10  | Lake Victoria Extension Water Supply Project, Tabora, Nzega and Igunga                                                              | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 11  | Musoma Water Supply Supply projects                                                                                                 |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 12  | Musoma Wastewater projects                                                                                                          |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 13  | Makonde National project                                                                                                            |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 14  | Mugango-Kiabakari-Butiama Water Supply Project                                                                                      |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 15  | Orkesumet Water Supply Project                                                                                                      |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 16  | Morogoro Water Supply and Improvement Project                                                                                       |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 17  | Same-Mwanga-Korogwe Water Supply Project                                                                                            |                           | B |   |                             |                         |                             |                |
|                                                                                   |                                      | 18  | Arusha Water Supply and Sanitation Project                                                                                          | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 19  | Kagongwa-Isaka Water Supply Project                                                                                                 |                           | B |   |                             |                         |                             |                |
| <b>Land Acquisition &amp; Resettlement</b>                                        | Water Resources/Strategic Dams       | 1   | Kidunda proposed dam                                                                                                                | A                         |   |   | 3                           | 3                       | 0                           | 100            |
|                                                                                   |                                      | 2   | Farkwa Proposed dam                                                                                                                 | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      | 3   | Ndembela/Logoda proposed dam                                                                                                        | A                         |   |   |                             |                         |                             |                |
|                                                                                   |                                      |     |                                                                                                                                     |                           |   |   |                             |                         |                             |                |
| <b>Land Acquisition &amp; Resettlement</b>                                        | Water Supply and Sanitation Projects | 1   | Lindi Water Supply Project                                                                                                          |                           | B |   | 12                          | 12                      | 0                           | 100            |
|                                                                                   |                                      | 2   | Kigoma Water Supply Projec                                                                                                          |                           | B |   |                             |                         |                             |                |



| Area of compliance           | Type of project                           | No. | Name of Project                                                         | Screened Project Category |   |   | Non-compliance by 2014/2015 | Compliance by 2019/2020 | Non-compliance by 2019/2020 | Compliance (%) |
|------------------------------|-------------------------------------------|-----|-------------------------------------------------------------------------|---------------------------|---|---|-----------------------------|-------------------------|-----------------------------|----------------|
|                              |                                           |     |                                                                         | A                         | B | C |                             |                         |                             |                |
| Environmental & Social Audit |                                           | 3   | Kurasini proposed WWTP in Dar es Salaam                                 | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 4   | Kagongwa-Isaka Water Supply Project                                     |                           | B |   |                             |                         |                             |                |
|                              |                                           | 5   | Arusha Water Supply and Sanitation Project                              | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 6   | Bukoba Wastewater Project                                               | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 7   | Ngaya village (Shinyanga DC) Kahama Project                             |                           |   | C |                             |                         |                             |                |
|                              |                                           | 8   | Njombe Urban proposed wastewater ponds                                  |                           | B |   |                             |                         |                             |                |
|                              |                                           | 9   | Masasi -Nachingwea Water Supply Project                                 |                           | B |   |                             |                         |                             |                |
|                              |                                           | 10  | Lake Victoria Extension Water Supply Project, Tabora, Nzega and Igunga, | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 11  | Musoma Sewerage Project                                                 |                           | B |   |                             |                         |                             |                |
|                              |                                           | 12  | Mugango-Kiabakari-Butiama Water Supply Project                          |                           | B |   |                             |                         |                             |                |
|                              | Water Resources/Strategic Dams            | 1   | Singida Urban Water Supply and Sanitation (Misake&Mwankoko Well fields) |                           | B |   | 11                          | 6                       | 5                           | 55             |
|                              |                                           | 2   | Iringa Town (Ruaha River)                                               |                           | B |   |                             |                         |                             |                |
|                              |                                           | 3   | Ruhila Catchment (Songea)                                               | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 4   | Mpara wellfield (Kilwa Masoko)                                          |                           | B |   |                             |                         |                             |                |
|                              |                                           | 5   | Farkwa Proposed dam                                                     | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 6   | Kidunda proposed dam                                                    | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 7   | Tandahimba water sources                                                |                           | B |   |                             |                         |                             |                |
|                              |                                           | 8   | Mtwara-Mikindani (Mtawanya a& Mchuchu Wellfields)                       |                           | B |   |                             |                         |                             |                |
|                              |                                           | 9   | Omorungulu Catchment (Karagwe)                                          |                           | B |   |                             |                         |                             |                |
|                              |                                           | 10  | Lugoda/Maruruma proposed Dam                                            | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 11  | Iherere (KASHWASA).                                                     |                           | B |   |                             |                         |                             |                |
| Environmental & Social Audit | Water Supply and Sanitation Projects      | 1   | Tabora (Igombe Water Treatment Plant)                                   |                           | B |   | 6                           | 6                       | 0                           | 100            |
|                              |                                           | 2   | Dodoma Urban Water Supply Improvement Project                           | A                         |   |   |                             |                         |                             |                |
|                              |                                           | 3   | Moshi Wastewater treatment, Sumbawanga Water                            |                           | B |   |                             |                         |                             |                |
|                              |                                           | 4   | Singida Water supply project                                            |                           | B |   |                             |                         |                             |                |
|                              |                                           | 5   | Chalinze II Water Supply Project                                        |                           | B |   |                             |                         |                             |                |
|                              |                                           | 6   | Sumbawanga Water Supply Project                                         |                           | B |   |                             |                         |                             |                |
| Screened Projects            | Water Resources/Dams/Water Supply Project | 1   | Matwiga earth dam                                                       |                           | B |   | 44                          | 44                      | 0                           | 100            |
|                              |                                           | 2   | Nyambori earth dam                                                      |                           | B |   |                             |                         |                             |                |
|                              |                                           | 3   | Wegero earth dam                                                        |                           | B |   |                             |                         |                             |                |

| Area of compliance | Type of project | No. | Name of Project                                  | Screened Project Category |    |   | Non-compliance by 2014/2015 | Compliance by 2019/2020 | Non-compliance by 2019/2020 | Compliance (%) |
|--------------------|-----------------|-----|--------------------------------------------------|---------------------------|----|---|-----------------------------|-------------------------|-----------------------------|----------------|
|                    |                 |     |                                                  | A                         | B  | C |                             |                         |                             |                |
|                    |                 | 4   | Iguluba Earth dam                                |                           | B  |   |                             |                         |                             |                |
|                    |                 | 5   | Mti mmoja earth dama                             |                           | B  |   |                             |                         |                             |                |
|                    |                 | 6   | Ingondin earth dam                               |                           | B  |   |                             |                         |                             |                |
|                    |                 | 7   | Kanyisambo earth dam                             |                           | B  |   |                             |                         |                             |                |
|                    |                 | 8   | Mugeta earth dam                                 |                           | B  |   |                             |                         |                             |                |
|                    |                 | 9   | Habiya earth dama                                |                           | B  |   |                             |                         |                             |                |
|                    |                 | 10  | Sekeididi earth dam                              |                           | B  |   |                             |                         |                             |                |
|                    |                 | 11  | 28 Indian proposed projects to financed by India | 1                         | 23 | 4 |                             |                         |                             |                |
|                    |                 | 12  | WSSP II Finaced projects (WRBB & DAWASA)         | 1                         | 0  | 5 |                             |                         |                             |                |

#### Appendix 6-2: Paid compensation for land acquisition and resettlement (2015-2020)

| NA: | Project                                                                           | Amount (Tsh)          | No. of PAP's  |
|-----|-----------------------------------------------------------------------------------|-----------------------|---------------|
| 1   | ARUSHA (Mradi wa Maji unaofadhiliwa na AfDB                                       | 2,690,747,549         | 629           |
| 2   | LVWATSAN Projects                                                                 | 185,316,719           | 31            |
| 3   | MANAWASA                                                                          | 160,426,906           | 126           |
| 4   | Lindi Water Supply project                                                        | 721,281,000           | 344           |
| 5   | Kigoma Water Supply Project                                                       | 200,000,000           | 1             |
| 6   | Songea (Chanzo cha maji kinachotumiwa na SOUWASA)                                 | 1,913,832,491         | 803           |
| 7   | Wilaya ya Kahama (Kijiji cha Ngaya) mradi wa KASHWASA                             | 21, 493,344.00        | 40            |
| 8   | Mwakonko na Misake (Singida)                                                      | 311,816,562           | 59            |
| 9   | Mugango-Kiabakari                                                                 | 66,450,210            | 10            |
| 10  | Kurasini WWTP-Dar es Salaam                                                       | 8,604,602,500         | 136           |
| 11  | Lake Victoria Water supply project to Tabora, Nzega and Igunga (Shinyanga Region) | 511,062,608           | 211           |
| 12  | Lake Victoria Water supply project to Tabora, Nzega and Igunga (Tabora Region)    | 896,854,663           | 244           |
| 13  | Kagongwa-Isaka Water Supply project                                               | 67,392,956            | 41            |
| 14  | Bukoba Wastewater Treatment Project                                               | 2,040,019,633         | 195           |
| 15  | Ngaya Village (Kahama Water Supply Project)                                       | 21,493,344            | 40            |
| 16  | Mpara Wellfield (Kilwa Masoko                                                     | 550,445,155           | 43            |
| 17  | Njombe Wastewater Facility project                                                | 500,000,000           | 60            |
| 18  | Chanzo cha Mto Ruaha – Iringa Mjini, (Bonde la Rufiji)                            | 19,000,000            | 1             |
| 19  | Arusha Water Supply Project                                                       | 2,690,747,549         | 629           |
| 20  | Kidunda proposed dam                                                              | 11,402,169,044        | 6,363         |
| 21  | Farkwa proposed dam                                                               | 7,748,824,886         | 2,861         |
|     | <b>TOTAL AMOUNT</b>                                                               | <b>41,302,483,775</b> | <b>12,867</b> |

#### Appendix 6-3: Pending compensation by December 2019

|   |                                                  |                      |
|---|--------------------------------------------------|----------------------|
| 1 | <b>Tandahimba</b>                                | <b>225,220,000</b>   |
| 2 | Mtwara-Mikindani (Mtawanya & Mchuchu wellfields) | 1,587,561,790        |
| 3 | Bwawa la Lugoda na Maluluma Hydropower.          | 4,000,000,000        |
| 4 | Iherere water source at Lake Victoria            | 800,000,000          |
| 5 | Omurulongo water catchment in Karagwe District   | 223,764,486          |
|   | <b>TOTAL AMOUNT</b>                              | <b>6,836,546,276</b> |

### Appendices 7-1: Overall capacity development summary

| No  | Capacity Area         | Status in 2015                                    | Status by Dec 2019                 |
|-----|-----------------------|---------------------------------------------------|------------------------------------|
| 1   | Tools                 |                                                   |                                    |
| 1.1 | Vehicles MOW          | Landcruiser 61                                    | Same status                        |
| 1.2 | Vehicles BWBs         | Bonde la Ruvuma na Pwani ya Kusini 6              | Same status                        |
|     |                       | Bonde la Pangani 9                                | Same status                        |
|     |                       | Bonde la ziwa Victoria 5                          | Same status                        |
|     |                       | Bonde la Ziwa Nyasa 6                             | Same status                        |
|     |                       | Bonde la Rukwa 6                                  | Same status                        |
|     |                       | Bonde la Kati 9                                   | Same status                        |
|     |                       | Bonde la Wami/Ruvu 8                              | Same status                        |
|     |                       | Bonde la Rufiji 6                                 | Same status                        |
| 1.3 | Vehicles RUWASA       | N/A                                               | 536 Verification is on going       |
| 1.4 | WI                    | 5Vehicles (STK 7682,7683,7684,7685 na STL 6002 ). | Same status                        |
| 2   | Working Env (Offices) |                                                   |                                    |
| 2.1 | MoW HQ                | Ubungo Maji Offices                               | Ubungo Maji House<br>Dodoma MoW HQ |

### Appendix 7-2: Data for capacity building conducted between 2015 and 2019

| Training     | 2015/16     | 2016/17    | 2017/18     | 2018/19     | 2019/20    |
|--------------|-------------|------------|-------------|-------------|------------|
| Short course | 1344        | 684        | 1117        | 1024        | 777        |
| Certificate  | 6           | 9          | 9           | 13          | 10         |
| Diploma      | 19          | 16         | 17          | 24          | 34         |
| Degree       | 22          | 19         | 19          | 30          | 29         |
| Masters      | 12          | 25         | 20          | 18          | 7          |
| PhD          | 0           | 0          | 3           | 2           | 5          |
| <b>Total</b> | <b>1403</b> | <b>753</b> | <b>1185</b> | <b>1111</b> | <b>862</b> |

### Appendix 7-3: Data showing staff needs for MoW and IAs

| Human Resources | 2015/16      |              | 2016/17      |              | 2017/18 (HR Audit) |              | 2018/19 (HR Audit) |              |
|-----------------|--------------|--------------|--------------|--------------|--------------------|--------------|--------------------|--------------|
|                 | Need         | Availab.     | Need         | Availab.     | Need               | Availab.     | Need               | Availab.     |
| Mow HQ          | 1,532        | 1,916        | 1,532        | 1,427        | 1,522              | 1,416        | 1,322              | 1,315        |
| RWSSA           | 2,167        | 1,251        | 2,172        | 1,402        | 2,278              | 1,987        | 4,043              | 3,473        |
| DWSSA           | 929          | 821          | 970          | 861          | 983                | 875          | 1,064              | 942          |
| NPs             | 508          | 479          | 518          | 489          | 532                | 503          | 549                | 501          |
| WI              | 113          | 82           | 113          | 84           | 113                | 88           | 113                | 86           |
| EWURA           | 183          | 158          | 183          | 162          | 183                | 169          | 183                | 159          |
| RUWASA          | -            | -            | -            | -            | -                  | -            | -                  | -            |
| <b>Total</b>    | <b>5,432</b> | <b>4,707</b> | <b>5,488</b> | <b>4,425</b> | <b>5,611</b>       | <b>5,038</b> | <b>7,274</b>       | <b>6,476</b> |

#### Appendix 7-4: Data indication of women empowerment 2015 – 2019

| Staff                  | 2015/16     | 2016/17     | 2017/18     | 2018/19     | 2019/20     |
|------------------------|-------------|-------------|-------------|-------------|-------------|
| Directors/Managers     | 68          | 68          | 167         | 199         | 199         |
| Senior Position        | 223         | 224         | 290         | 300         | 398         |
| Supporting staff       | 566         | 571         | 598         | 646         | 711         |
| Technician             | 83          | 79          | 64          | 67          | 29          |
| Professional Engineers | 14          | 14          | 17          | 20          | 19          |
| Board Members          | 77          | 82          | 82          | 102         | 102         |
| Board Chairs           | 0           | 1           | 1           | 1           | 1           |
| Board Vice Chairs      | 0           | 0           | 0           | 0           | 0           |
| <b>Total</b>           | <b>1031</b> | <b>1039</b> | <b>1219</b> | <b>1335</b> | <b>1459</b> |





maji\_mowi



wizarayamajitz



www.maji.go.tz