THE UNITED REPUBLIC OFTANZANIA
NATIONAL AUDIT OFFICE

PERFORMANCE AUDIT REPORT ON THE MANAGEMENT OF WATER PROJECTS IN RURAL AREAS


A REPORT OF THE CONTROLLER AND AUDITOR GENERAL OF THE UNITED REPUBLIC OF TANZANIA

March, 2019

THE UNITED REPUBLIC OF TANZANIA
NATIONAL AUDIT OFFICE

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PREFACE

The Public Audit Act No. 11 of 2008, Section 28 authorizes the Controller and Auditor General to carry-out Performance Audit (Value-for-Money Audit) for the purposes of establishing the economy, efficiency and effectiveness of any expenditure or use of resources in the Ministries, Departments and Agencies (MDAs), Local Government Authorities (LGAs) and Public Authorities and Other Bodies which involves enquiring, examining, investigating and reporting, as deemed necessary under the circumstances.

I have the honour to submit to His Excellency the President of the United Republic of Tanzania, Dr. John Pombe Joseph Magufuli and through him to the Parliament of the United Republic of Tanzania, the Performance Audit Report on the Management of Water Projects in Rural Areas in Tanzania.

The report contains findings, conclusions and recommendations that have focused mainly on the Management of Water Projects in Rural Areas. The audited entities namely, the Ministry of Water have been given the opportunity to scrutinize the factual contents of the report and commented on it. I wish to acknowledge that discussions with the audited entities have been useful and constructive.

My Office intends to carry out a follow-up audit at an appropriate time regarding actions taken by the audited entities in relation to the implementation of the recommendations given in this report.

In completion of the assignment, the office subjected the draft report to the critical reviews of Dr. Deogratias M.M. Mulungu and Dr. Simon Mkhandi, Senior Lecturers, College of Engineering and Technology, University of Dar es salaam who came up with useful inputs on improving the output of this report.

This report has been prepared by Mr. Victor F. Mapigano - Team Leader and Mr. Andalason K. Hamba- Team Member under the supervision and guidance of Ms. Esnath H. Nicodem – Audit Supervisor and Mr. George C. Haule - Assistant Auditor General and Mr. Benjamin M. Mashauri – Deputy Auditor General.

I would like to thank my staff for their assistance in the preparation of this report. My thanks should also be extended to the audited entities for their fruitful interaction with my office.

Prof. Mussa Juma Assad
Controller and Auditor General
United Republic of Tanzania
March, 2019

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LIST OF ABBREVIATIONS

BoQs	Bills of Quantities
DED	District Executive Director
MoW	Ministry of Water
PO - RALG	President's Office – Regional Administration and Local Government
LGAs	Local Government Authorities
PPRA	Public Procurement Regulatory Authority
RS	Regional Secretariat
RWSSP	Rural Water Supply and Sanitation Sub-Programme
WSSAs	Water Supply and Sanitation Authorities
WSDP I & II	Water Sector Development Programme Phase I and II
DWE	District Water Engineer

EXECUTIVE SUMMARY

Water is an essential element for life; people need clean and safe water for domestic uses and staying healthy. Lack of safe and clean water contributes to high mortality rates due to waterborne diseases and wastage of time to people searching for safe and clean water.

Access to water means availability of at least 20 litres per person per day within one kilometer of the user's dwelling[1]. The National Water Policy of 2002 provides standard for water supply whereby accessibility should be 25 liters of portable water per capita per day through water points located within 400 meters from the furthest homestead and serving 250 persons per outlet.

The Ministry of Water declared that the established water infrastructure in rural areas had the capacity of supplying water to the community in rural areas up to 85.2 % of the population. Despite this capacity, the actual status of access to clean and safe water in rural areas is 58.7%.

The overall objective of the audit was to assess whether the Ministry of Water (MoW) ensures availability of safe and clean water in rural areas through effective management of water projects. This is in order to increase access to clean water so as to minimize water borne diseases, distance travelled and time taken by people to fetch water.

The audit covered five financial years from 2013/14 to 2017/18 in order to establish the trend and come-up with reasonable analysis which enabled the audit team to come up with adequate conclusion based on the trend. The main Audited entity is the Ministry of Water. In this case, the visited 6 regions with 12 LGAs and 58 sampled water supply projects were covered in the audit.

The methods used for data collection included *interviews, document reviews* and *physical observation to sampled water projects.* The following are the audit findings, conclusion and recommendations.

Main audit findings

Low proportion of population with access to clean water in rural areas

The percentage of population with access to clean and safe water in rural areas by 2017/18 was 58.7% only, while according to National Rural Water Sustainability Strategy, 2015-2020 the target was to attain 74% by 2015.

[1] According to World Health Organization guidelines for drinking water quality of 2017

Although the Ministry showed that for the financial years 2015/2016 and 2016/2017 there were improvements in access to clean water with 74% and 72% respectively, the audit team noted that the Ministry used data which were not uniform. During that period 2013/14 and 2014/15, the Ministry used actual percentage of population of people with access to clean water while for 2015/16 and 2016/17 the Ministry used capacity of established water infrastructure which actually was different from the actual population with access to clean water in rural areas.

Among the key causes for the failure to meet the target to date was that; the established water infrastructure was not supplying water as intended, also there was noted inadequate geological and hydrogeological surveys prior to drilling of boreholes which led to dry boreholes e.g. Igwamadete in Manyoni DC, Sefunga in Singida DC and Lihimilo in Lindi DC. In addition, water projects took long time to be operational like in the cases of Kifindike and Gwata in Morogoro and 9 boreholes project in Manyoni DC.

Inadequate Implementation of water projects with regard to time, cost and quality

The audit team noted delays in the completion of implemented water projects in rural areas throughout the country whereby 79% of reviewed 58 water projects were not completed on time, with average delay of 480 days. The main causes were late payments to contractors and increased scope of work.

A number of implemented water projects had costs overruns. For the 58 reviewed water projects in 12 visited LGAs in rural areas, one third of the implemented water projects had cost overrun. The maximum range of the cost overruns was noted in Nkasi DC whose range was from around TZS 1.2 billion to TZS 7.1 billion.

The main causes for cost overrun was noted to be inadequate design, inadequate preparation of bills of quantities, inadequate needs analysis and inclusion of unqualified items which were unnecessary addition to the contract sum. In totality, these unqualified items amounted to additional total sum of TZS 309 million.

Lacking of water test reports and failure to take actions on recommendations given to tested water

For the 58 sampled water projects, the audit revealed that 22% lacked water tests reports. For these projects, the Ministry did not meet her target of ensuring that the community is supplied with clean water.

Among the causes for lack of water tests is that, Development Partners implemented water projects but LGAs did not take initiatives to ensure that all procedures are followed through during the implementation of water projects financed and implemented by Development Partners. This was noted in 6 out of 12 visited LGAs. This exposes the community to the potential risk of using unsafe water hence endangering their health.

Ineffectiveness of PO-RALG and the Ministry of Water in ensuring adequacy and timely funding of water projects in rural areas

Delays in paying contractors by the Ministry of Water

It was noted that there were delays in paying contractors who were implementing water projects in rural areas ranging from 4 to 627 days. The main causes for delays in paying contractors include: inefficiencies of the Ministry of Water in handling payment certificates approved by LGAs, misallocation of funds budgeted and given by Development Partners to implement water projects in rural areas and shifting of some key Development Partners on type of financing of water projects in rural areas.

Ineffectiveness of the Ministry of Water, PO-RALG and LGAs in monitoring the executed water projects in rural areas

Monitoring of water projects by the Ministry of Water was not adequate

It was noted that there was inadequate monitoring of water projects in the country by the Ministry of Water. For the five financial years under the scope of the audit, the Ministry only provided five monitoring reports while per annum four monitoring reports were supposed to be prepared and issued. This indicates that on average every year only one monitoring report was prepared.

Inadequate monitoring was caused by the fact that, the Ministry lacked plans for monitoring and evaluation of the activities performed by Regional Secretariats and LGAs, insufficient use of key performance indicators during monitoring, absence of frequent monitoring, and ineffective communication of monitoring results to LGAs and Regional Secretariats and inadequate follow-ups of the recommendations issued to LGAs.

This resulted in poor quality, cost overruns and delays in completion of water projects in rural areas. There were implemented water projects which are not supplying water due to poor design as noted in Kifindike in Morogoro DC, Mwamadilana in Shinyanga DC, Lipuyu and Chiola in Nachingwea DC.

Monitoring of water projects by PO-RALG was not adequately conducted

It was noted that, PO-RALG does not adequately conduct monitoring of water projects in LGAs. For five financial years under the scope of the audit, PO-RALG provided less than five monitoring reports indicating inadequate monitoring.

This was caused by the fact that, PO-RALG had no clear plans for monitoring the activities performed by Regional Secretariats and LGAs. The Ministry also lacked key performance indicators during monitoring, inadequate follow-ups for the issued recommendations and lack of documentation of actions taken to address the noted anomalies during monitoring and evaluation activities of water projects in rural areas.

Due to inadequate monitoring, there were noted delays in the completion of water projects without taking any measures, cost overruns and poor quality for the implemented water projects in rural areas.

Monitoring of water projects by the Regional Secretariats was not adequate

The audit team noted that the monitoring activities to all six visited regions were not done adequately by Regional Secretariats (RSs) due to the fact that the monitoring was not quarterly based, instead was based upon request from LGAs when a certain stage needed approval.

This was caused by the fact that, there were no clear monitoring plans, no use of performance indicators during monitoring, and the RSs were not adequately conducting follow-ups on the issued recommendations.

Monitoring of water projects by LGAs was not adequate

LGAs were not conducting monitoring adequately. This is due to the fact monitoring is done upon request from contractor when projects reaches certain stages which need approval from the LGAs. Furthermore, there were no full time personnel to supervise the activities performed by contractor.

The LGAs were noted to lack adequate plans for monitoring contractors, there were no key performance indicators during monitoring, and inadequate follow-ups for the recommendation issued to contractors.

This resulted in approval of raised certificates contrary to actual work done, delay in completion of 79% of water projects in rural areas and cost overruns due to poor designs which later needed redesigning as noted in Nkasi DC, where 36% of implemented water projects in general had cost overruns. Contractors implemented water projects without verification and approval by LGAs as noted in Mbulu and Lindi DCs.

Main Audit Conclusion

The President Office – Regional Administration and Local Government and the Ministry of Water do not effectively ensure availability of clean water in rural areas through effective management of water projects in rural areas.

The conclusion was based on the fact that the percentage of the community with access to clean water in rural areas is still 58.7% only by 2017/18. The ministry did not meet the target of 74 and 76.5% by 2015 as stated in National Rural Water Sustainability Strategy, 2015-2020 and National Rural Water Supply and Sanitation Programme (NWRSSP) respectively. There was inadequate implementation of water projects with regards to time, cost and quality.

Audit Recommendations

Regarding implementation of water projects with regards to time, cost and quality in rural areas

The Ministry of Water should ensure that:

1. There are mechanisms for testing water quality to all implemented water projects in rural areas, and the noted anomalies are communicated to the respective LGAs and solved in collaborations with Ministry of Water using affordable means;

2. There are mechanisms to ensure that feasibility studies for intended water projects are adequately conducted in order to minimize variations in contracts price; and

3. The design and contract documents of water projects are reviewed prior to implementation of projects and technical advice is given accordingly to all LGAs

Regarding funding of water projects in rural areas in the country

1. There are mechanisms to ensure that there are reliable and committed sources of funds prior to signing water projects contracts in rural areas; and

2. There are mechanisms to ensure that resources for on-going water projects are given first priority before shifting focus on the new water projects in the respective financial year and used as intended.

Regarding Monitoring of water projects in rural areas in the country

1. There are mechanisms that ensure that LGAs effectively supervise the activities performed by contractors and consultants and ensuring the construction material used are from approved suppliers, inspected and verified prior to use;

2. The mechanisms for monitoring and evaluating water projects in rural areas are strengthened from LGAs to the Ministry levels in order to achieve effective implementation with regards to time, cost and quality;

3. There are adequate follow-ups on recommendations given during monitoring; and

4. Documentation of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects should be strengthened from LGAs, RSs up to Ministry levels

CHAPTER ONE

INTRODUCTION

1.1 Background

Water is an essential element for life, people need clean and safe water for domestic uses and staying healthy. Lack of clean and safe water contributes to the high mortality rates due to water borne diseases[2] and wastage of time to people searching for clean and safe water and attending to hospital for treatment[3].

According to World Health Organization guidelines for drinking water quality of 2017, access to water means availability of at least 20 litres per person per day within one kilometer of the user's dwelling and should be within 30 minutes round trip. On the other side, the National Water Policy of 2002 provides standards for water supply whereby accessibility should be 25 litres of portable water per capita per day through water points located within 400 meters from the furthest homestead and serving 250 persons per outlet.

Tanzania aimed at reaching the Millennium Development Goals (MDGs) by 2015, the target was 76.5% rural population with access to improved water sources by 2015[4]. Currently, MDGs have been replaced by the Sustainable Development Goals of September 2015 whereby the General Assembly adopted the 2030 Agenda for Sustainable Development. There are 17 Sustainable Development Goals, of which clean water and sanitation is goal number 6 of the SDGs.

Furthermore, Initiative of Big Results Now had targeted to increase rural water supply to reach 74% of the population by 2015[5].

Despite the government having targets regarding access to clean and safe water in rural areas it was noted that, by the financial year 2017/18, access to clean and safe water in rural areas was 58.7% only[6].

1.2 Motivation for the study

The audit has been motivated by the following factors:

Differences in level of access of clean water between urban and rural areas

[2] Morisset J and Wane W (2012) Water is life but access remain a problem

3 https://arusha255.blogspot.co.uk/2013/06/tgnp-yaweka-bayana-matokeo-utafiti.html accessed on 23/5/2017

[4] National Rural Water Supply and Sanitation Programme, 2010

[5] National Rural Water Sustainability Strategy, 2015-2020

[6] Budget speech by Minister of water,2018.

According to International Organization of Supreme Audit Institutions (INTOSAI) Working Group on Environmental Auditing (2013), it is estimated that only 61% of the people in sub-Saharan countries have access to improved sources of water. In addition to geographic disparities in drinking water coverage, there are also significant differences in the level of access to safe drinking water between urban and rural populations.

Specifically, UNICEF and WHO as cited by INTOSAI Working Group on Environmental Auditing (2013), reported that in 2012 the number of people in rural areas using poor quality water sources was approximately five times greater than the number of people doing so in urban areas.

Inadequate access of clean water despite availability of water sources
It was reported that Tanzania has been blessed with surface and ground water sources, with three times more renewable water resources than Kenya and 37% more than Uganda. Despite the vast amount of fresh water available, few households have access to clean drinking water from a piped source. Statistics shows that in 2014 more than 70% of households were more than 15 minutes away from their main water sources[7].

Walking long distance to fetch water and prevailing waterborne diseases
Some rural women in Tanzania carry as much as 20 litres of water on their heads; they walk 10 Kilometers or more each way to and from water sources. In addition, villagers often contract dangerous diseases from contaminated water.

Cholera is arguably the waterborne disease that thrives most in both rural and urban centres. Inadequate access to safe water and sanitation services, coupled with poor hygiene practices has led to hundreds of people getting sick and dying every day especially children[8].

Establishment of water infrastructure which do not supply water to the people as intended
Through the budget speech of the Minister of Water to Members of the Parliament for the financial year 2017/18, the Minister gave a statement that the established water infrastructure in rural areas had the capacity of supplying water to community in rural areas up to 85.2% of the population. Despite of this capacity the actual status of access to clean and safe water in rural areas is only 58.7%.

It was further reported from above information that more than 32% of the established water infrastructure in rural areas is not working as intended.

[7] Morisset, J and Wane, W (2012) ,water is life but access is the problem.
8 speech issued by vice president when addressed to Mugumu district in Serengeti as noted by the Daily News dated June 8, 2017

This has also led to loss of government funds since water projects use huge amount of money during its installations.

Abandoned uncompleted water projects in rural areas leading to loss of government's funds
It was reported by the media[9] that, the planned water projects in rural areas were being abandoned uncompleted by contractors and LGAs were not taking initiatives to make sure that the initiated water projects were completed as per planned.

Lack of effective supervision of ongoing water projects in rural areas
It was reported by the media[10] that there is inadequate supervision by Regional and District Water Engineers for ongoing water projects in rural areas.

Due to this situation, the Controller and Auditor General decided to carry-out a performance audit on the management of water projects in rural areas with an intention of establishing performance of the audited entities and identifying areas for further improvements in this sub sector.

1.3 Audit design

1.3.1 Audit objective

The main objective of the audit was to assess whether the Ministry of Water (MoW) ensure availability of clean water in rural areas through effective management of water projects in order to minimize water borne diseases, distance walked and time taken by people to fetch water.

Specific audit objectives

In order to address the main audit objective, three specific audit objectives were used. These specific objectives were to assess whether the Ministry of Water:

a) effectively ensure water supplied in rural areas is safe for human consumption and level of water access is as per the requirements;
b) through LGAs effectively implementing water projects with regards to time, cost and quality;

c) ensure adequate and timely funding of the water projects in rural areas; and

9 clouds FM news session July 11, 2018 at 1900hours
10 ITV news session on 23/07/2018 at 2000hours

d) is effectively monitoring the executed water projects in rural areas.

Detailed main audit questions and sub – questions used during the audit in order to answer audit objectives are presented in *Appendix 2* of this report**.**

1.3.2 Assessment criteria

The following criteria formed the basis from which the audit questions were addressed in the course of assessing whether MoW have mechanisms in place to ensure rural areas have access to clean water through effective management of water projects.

The criteria were extracted from various sources like legislations, guidelines, best practices and strategic plans as detailed below:

Extent of Access to Clean Water in Rural Areas
According to the National Rural Water Supply and Sanitation Programme (NWRSSP) II, 2010, Tanzania targeted 76.5% of its rural population to have access to improved water sources by 2015.

On the other hand, design manual for water supply[11]requires that the citing of domestic water points to be at strategic locations in each village to keep walking distances to a minimum of 400m from the homestead. Moreover, it set a maximum users of 250 people per tap while 1,000 to 1,500 inhabitants per domestic point location as a maximum.

Implementation of water projects with regards to time, cost and quality

According to the Public Procurement Regulations, 2013 any procedures under which tenders are above or below a pre-determined tender value estimated by a procuring entity are automatically disqualified and shall not be accepted. Moreover, the Regulation 110 of the Public Procurement Regulations states the conditions under which the variation of contract amounts will be allowed.

Regarding time for the execution of water projects, Public Procurement Regulations, 2013 states that an order for extension of time is required to be issued only by the accounting officer, and that the reasons for granting such an order shall be fully documented in the contract implementation records.

According to the design manual for water supply and waste water disposal of 2007, in order to enhance the quality of the design, District Water

[11] Design Manual for water supply and waste water disposal third edition, volume 1, March 2007

Engineers are required to approve the designs of water projects and in case of any doubt have to consult the Regional Water Engineer. Moreover, Regional or District Water Engineers may further seek advice, final check and approval from the Ministry of Water whenever it deemed necessary.

According to Water implementation Guideline for WSDP II the design of water projects which are below TZS 200 million shall be reviewed and approved by the Assistant Administrative Secretary- Water section. On the other hand, design of water projects which ranges from TZS 200 million to 1 billion shall be reviewed and approved by Assistant Administrative Secretary- Water and Ministry of Water.

Furthermore, according to PPRA Form of contract of February 2014, the Contractor implementing water project is required to employ required personnel named in the schedule of key personnel and any replacement need to be approved by the project manager and must be of the same or more qualifications.

According to the Public Procurement Regulations, 2013, completed work delivered are required to be inspected, sampled and tested by the procuring entity and they shall not be accepted if they are below the standards stipulated in the contract.

Adequacy and timely funding of water projects in rural areas

According to Public Procurement Regulations, 2013, Procuring Entities are required to ensure that funds are allocated or committed before commencing procurement proceedings. Moreover, the Regulation requires[12] procuring entities to authorize payments by measurement and certification, at the intervals or stages stated in the contract provided. Furthermore, percentage of each such payment may be retained as retention money, if so stated in the contract.

Moreover, according to PPRA Form of contract of February 2014, the Project Manager is required to check and certify the amount to be paid to the contractor within twenty eight (28) days from the receipt of certificate.

Effectiveness of MoW and LGAs in monitoring the performance of water projects in rural areas

According to the Public Procurement Regulations, 2013, the procuring entity is required to monitor the service provider or contractor's performance against the statement of requirements or schedule of works stated in the contract, by means of daily, weekly or monthly reports from the procuring entity's supervisor responsible for the services or works.

[12] Public Procurement Regulation, Section 243(2)

Furthermore, the Public Procurement Regulations[13] states that where the performance of a service provider or contractor is not in conformity to the requirements prescribed in the contract, the procuring entity is required to notify the service provider or contractor on any short-comings, and may refuse to authorize further payments until the requirements are met.

On the other hand, the Public Procurement Act, No.9 of 2011 requires the user department to report any deviations/departure from the terms and conditions of an awarded contract to the Procurement Management Unit.

1.4 Audit scope

The audit mainly focused on the management of water projects and not the operationalization and maintenance of the completed water projects which is done by COWSOs under the supervision of LGAs.

Also, the focus were on the effectiveness in the implementation of water projects with regards to time, cost and quality; adequacy and timeliness of funding of the water projects in rural areas; and effectiveness of performance monitoring of executed water projects in rural areas. The above three issues on implementation of water supply projects would help in improving the level of access to clean water in rural areas in the country.

The main audited entity were the Ministry of Water (MoW). The Ministry of Water is responsible for the formulation of policies regarding water sector in the country and also approval of the payments to be made at each stage during the implementation of water projects.

Moreover, different stakeholders on the provision of clean water to rural areas were covered including Civil Society Organizations, Academic and Research Institutions, Professional Bodies and Water Bodies Authorities.

The audit covered five financial years from 2013/14 to 2017/18 in order to establish the trend of performance and come-up with reasonable analysis which enabled the audit team to provide conclusions based on the trend.

Similarly, the period covered is the period when the Ministry of Water and PO-RALG were implementing water projects under Water Sector Development Programme I which started in 2007/08 and ended in 2015//16 and Water Sector Development Programme II which started in financial year 2016/17 and expected to end in 2020/21.

[13] Public Procurement Regulation, 2013, Section 243(3)

1.5 Sampling, Data Collection and Analysis Methods

1.5.1 Sampling techniques used

The audit team used three sampling methods to ensure that representative data of the population was collected effectively; these were *stratified sampling, purposeful sampling* and *random sampling* methods.

Stratified sampling was used to stratify geographical zones in the country. First of all, 26 regions in mainland Tanzania in the country were grouped in strata representing seven geographical zones in the country namely Lake, Southern, Northern, Eastern, Western, Southern highland and Central Zones.

Purposive sampling was used to select regions which are within the identified geographical zones. The criteria used to select these regions were mainly based on the persistence of water shortages. Furthermore, the Water Policy of 2002 identifies these regions which are said to have acute access to clean water in rural areas, namely Shinyanga, Tabora, Dodoma and Mtwara.

Random sampling
For all other regions excluding regions with persistent water shortages, random sampling was used. Table 1.1 shows the summarized sampling process specifying zones, regions covering specified zones, selected regions, reasons for choosing the regions and selected LGAs in that particular region which were selected.

Table1. 1: Selected region and LGAs on the basis of adopted sampling process

Zones	Regions covering respective zone	Selected Region	Reason for choosing the region	Selected LGA
Lake zone	Mwanza, Simiyu, Mara, Geita, Shinyanga and Kagera	Shinyanga	Persistent water shortage	Kishapu and Shinyanga DCs
Central zone	Dodoma, Singida and Tabora	Singida	Persistent water shortage	Singida and Manyoni DCs
Western zone	Kigoma, Katavi and Rukwa	Rukwa	The population growth rate was ranked 3rd in the country, wanted to see water infrastructure in relation to	Sumbawanga and Nkasi DCs

Zones	Regions covering respective zone	Selected Region	Reason for choosing the region	Selected LGA
			growing population[14]	
Northen zone	Arusha, Kilimanjaro, Manyara and Tanga	Manyara	Among the four regions, Manyara is said to have water shortage	Kiteto and Mbulu DCs
Southern zone	Mtwara, and Lindi	Lindi	Lindi region is less developed compared to Mtwara	Lindi and Nachingwea DCs
Eastern zone	Dar es salaam, Pwani and Morogoro	Morogoro	Dar es Salaam and Pwani almost have the same conditions, costal area while Morogoro is different in environment	Morogoro and Mvomero DCs

***Source**: Auditors' analysis (2018)*

Table 1.1 Presents identified regions and LGAs selected for data collection on the basis of the sampling process used. The data used for analysis was thus collected from identified six regions namely, Singida, Shinyanga, Manyara, Morogoro, Lindi, and Rukwa regions.

1.5.2 Methods for data collection

In order to come-up with strong evidence to support audit findings, the audit team used different methods to collect information from the audited entities and other stakeholders. Both qualitative and quantitative data were obtained during the process in order to assess whether there is effectiveness in the management of water projects in the country.

The methods used include *interview, document review* and *physical observation* as detailed below:

a) Document reviews

The audit team reviewed various documents from the Ministry of Water, President's Office - Regional Administration and Local Government and 12 visited Local Government Authorities (LGAs) and other sources. The reviewed documents enabled the audit team to gather comprehensive and reliable information and come-up with constructive audit recommendations.

[14] According to the National census survey 2012

Reviewed documents covered financial years from 2013/14 to 2017/18 and included policies and guidelines, legislations, strategies and plans and different performance related reports from PO-RALG, Ministry of Water, Regional Secretariats and LGAs.

For detailed information regarding specific documents reviewed and reasons for reviews see *Appendix 3* of this report**.**

b) Interviews

Different officials responsible for the management of water projects from the Ministry of Water (MoW), President's Office – Regional Administration and Local Government (PO-RALG), 7 selected Regional Secretariats and 12 selected Local Government Authorities (LGAs) were interviewed.

Specifically the interviewed officials from each visited entity are as detailed below:

a) *Ministry of Water:* included Director of Rural Water Supply Division, officials from former Rural Water Supply Division (Now Water Supply and Sanitation Division), Director of Program and Coordination Unit (Now Director of Project preparation, Coordination and Delivery Unit) and Director of Policy and Planning;
b) *PO – RALG:* included Assistant Director of Sector Coordination Department who is responsible for implementation of water projects and other officials from the department who are responsible for implementing day to day activities under the department;
c) *Regional Secretariats:* included Assistant Regional Administrative Secretary – Water Section (AAS-W) and officials under the department who assist AAS-W on day to day activities.
d) *Local Government Authorities:* included District Water Engineer (DWE) and other officials from DWE's office.

For detailed information regarding entities, officials interviewed and reasons for interviews see Appendix 4.

c) Physical observations

In order to come-up with adequate conclusion regarding the management of water projects in rural areas, physical observations were carried-out on 23 completed and 15 on-going water projects (a total of 38 water projects were visited). The information collected through interviews and documents reviews were supplemented with site visits to confirm exactly what was implemented.

A maximum of 5 water projects were visited at each visited LGA to see the actual implementation of water projects.

For detailed information regarding water projects visited and what was observed see ***Appendix 5 - 9.***

1.5.3 Method for data Analysis

The obtained quantitative data from interviews, documents review and noted information from observations were analyzed using different methods which were not limited to:

a) Descriptive analysis whereby the obtained data were presented using pie chart, bar graph and tabulated in tables; and

b) Trends analysis whereby the audit team analyzed the trends of the given data in different years and check whether the issue analyzed were decreasing or increasing.

Qualitative data obtained from interviews, document reviews and noted information from site visits were analyzed by compiling, comparing them and related in order to came up with adequate conclusion.

Moreover, the obtained qualitative data were transformed into quantitative data by analyzing the interviews or documents reviewed and see their frequency. Thereafter the data were expressed in terms of percentage or descriptive statistics.

1.6 Data validation process

The Ministry of Water and the President's Office - Regional Administration and Local Government which are directly concerned with this report, were given the opportunity to go through the draft report and commented on the figures and information being presented. They confirmed on the accuracy of the figures used and information presented in the audit report.

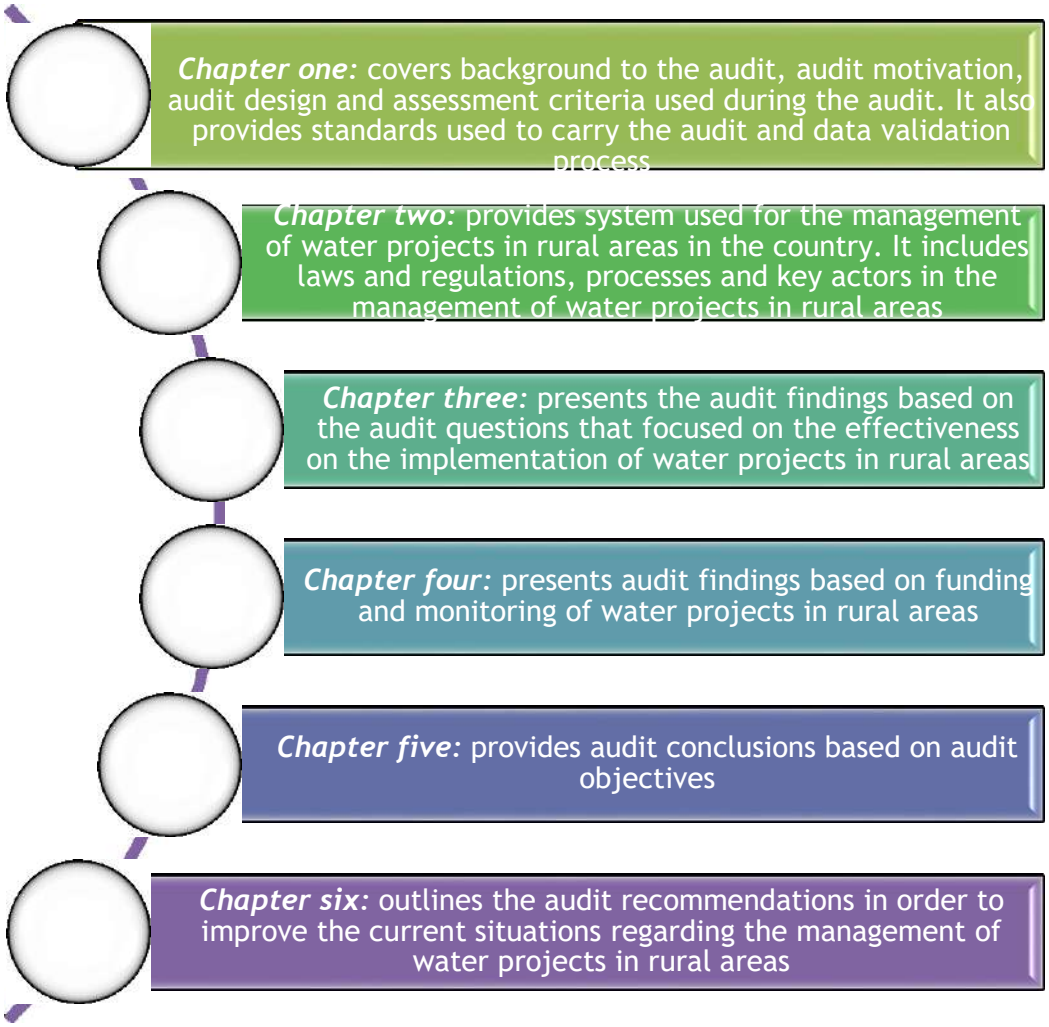
Furthermore, the information was cross-checked and discussed with subject matter experts regarding the implementation of water projects to ensure validity of the information obtained and presented.

1.7 Standard used for the audit

The audit was conducted in accordance with the International Standards for Supreme Audit Institutions (ISSAIs) issued by the International Organization of Supreme Audit Institutions (INTOSAI).

These standards guide the audit team to obtain sufficient and appropriate evidence to provide a reasonable basis for the findings and conclusions based on the audit objectives.

1.8 Structure of the report



CHAPTER TWO

SYSTEM FOR THE MANAGEMENT OF WATER PROJECTS IN RURAL AREAS

2.1 Introduction

This chapter describes the system for managing water projects in rural areas. It includes stages during the implementation of water projects, policies and laws governing water issues in rural areas, the roles and responsibilities of the key players in the provision of clean and safe water in rural areas.

2.2 Management of water Projects

The management of water projects is categorized into three main stages namely *designs, implementations of the design* and *operations* stages as described below;

2.2.1 Design stage

At the design stage usually need analysis of the project is conducted which include feasibility study of the project and detailed project design. Usually the design stage is guided by design manual for water supply which provides guidance.

Design manual for water supply and waste water disposal[15] provides required considerations during designing of the water projects. According to the manual, some of the important considerations include minimum and maximum distances for air valves and washout pipe and detailing pipe line survey with all ancillary structures such as valves, division boxes, break pressure tanks, storage tanks and troughs.

Moreover, the manual provides requirements for approval of the design of water projects[16]. According to the manual, the District Water Engineer (DWE) is required to approve design of water projects. Furthermore, according to WDSP II Implementation Guideline (2016) requires that DWEs in collaboration with Regional Secretariats, river basin offices and nearly LGAs conduct and approve design of water project.

Furthermore, according to Water project implementation guideline for WSDP II the design of water projects which are below TZS 200 million shall be reviewed and approved by the Assistant Administrative Secretary- Water section while in the other hand design of water projects which are ranges

[15] Design Manual for water supply and waste water disposal (2007)
[16] Section 1.6.1.2 of the manual

from TZS 200 million to 1 billion shall be reviewed and approved by Assistant Administrative Secretary- Water and Ministry of Water.

2.2.2 Implementation stage

After the approval of the design at each level i.e. District Water Engineer, Regional Water Engineer and the Ministry of Water, water projects are constructed. The constructions of water projects are guided by a contract for the respective water project, laws and regulations such as:

Public Procurement Regulations of 2013
The Public Procurement Regulations provides useful information which guides the implementation of water projects in rural areas. Some of the important guidance provided by the regulations include requirements for varying contract price and contract duration, quality control of works and materials for construction and responsibility of the procuring entity on paying and monitoring the works performed by contractors.

Water Supply and Sanitation Act, 2009
The Act provides important information regarding the mandate of Regional Secretariats (RS). According to the Act, Regional Secretariat has the duty to provide advice and guidance to Local Government Authorities on water supply and sanitation matters, to monitor and evaluate projects of LGAs and providing technical advices.

Water Resources Management Act, 2009
The Act provides important information regarding preparation of water resources management plans, water resources classification and reserve including the importance of controlling the pollution of water sources. Moreover, the Act has provisions relating to water resources management works. The information are useful during implementation of water projects in the country.

The Public Procurement Act, No.9 of 2011
The Public Procurement Act provides the role of user departments (in this audit include the Ministry of Water, PO-RALG and LGAs) which are to:

a) certify for payments to contractors or consultants;
b) report any departure from the terms and conditions of an awarded contract to the Procurement Management Unit;
c) forward details of any required contract amendments to the Procurement Management Unit for action; and
d) oversee contract implementation including reviewing and approving technical reports, design or any outputs as per contract.

2.2.3 Operation stages

After the completion of a water project usually the project is handled to Community Owned Water Supply Organizations (COWSOs). According to Water Supply and Sanitation Act No. 12 of 2009, COWSOs are responsible for managing, operating and maintaining water projects in rural areas.

Moreover, according to the National Water Development Strategy of 2006-2015, COWSOs are bodies legally constituted by the community to own, manage, operate and maintain the water supply systems on behalf of the community. These bodies may take various legal forms, such as Water Consumer Associations or Water Consumer Trusts.

Furthermore, COWSOs are expected to meet all the costs of operating and maintaining their water supply systems through charges levied on water consumers, and to contribute to the capital cost of their systems. For more details regarding the operation stages refer to Section 2.4.4 of this chapter.

Also, According to Water Supply and Sanitation Act No. 12 of 2009 the Minister responsible for water is responsible and monitoring their conduct and affairs, establishing and approving standards and codes of conduct in respects of the community organization and its consumers, providing guidelines and approve tariffs chargeable for the provisions of water supply services. The powers of the Minister may be delegated to the LGAs in their respective jurisdictions.

2.3 Policy and Legal Frameworks

2.3.1 National Water Policy, 2002

The national water policy states how accessibility of clean and safe water should be. According to the policy, the domestic water supply in rural areas should be 25 litres portable water per capita per day through water points located within 400 meters from the furthest homestead and serving 250 persons per outlet.

2.3.2 Legislations on the access to clean and safe water in rural areas

Water Supply and Sanitation Act No. 12 of 2009

The Water Supply and Sanitation Act No. 12 states the important role taken by the LGAs in ensuring accessibility of clean and safe water in rural areas. According to the Act, LGAs are required by law to provide water supply and sanitation services to give effect to the efficient and sustainable provision of the services in their areas of jurisdictions.

Water Resource Management Act No.11 of 2009

Water Resource Management Act No. 11 of 2009 requires all water resources in mainland Tanzania to continue being public water and vested in the President of the United Republic of Tanzania as the trustee for and on behalf of citizens. The President through the designed institutions manages water resources for the benefit of the people of mainland Tanzania.

2.4 Roles and Responsibilities of key-players

2.4.1 Ministry of Water (MoW)

According to Water Supply and Sanitation Act, 2009, the Ministry of Water is responsible for determining legislative aspects of the provision of water supply and sanitation services, determining policy and strategic aspects of the provision of water supply and sanitation services, coordinate and provide technical and financial support for construction of water supply and sanitation schemes and expansion or rehabilitation of existing schemes of national importance, secure capital finance for schemes of national importance, and ensure the provision of technical guidance to local government authorities and water authorities [17].

2.4.2 President's Office - Regional Administration and Local Government (PO-RALG)

Regarding the Management of Water Projects, PO-RALG is the main implementing entity. According to Water Supply and Sanitation Act[18] the President's Office - Regional Administration and Local Government through Local Government Division is responsible for:

a) Supervising the implementation of the provision of water supply and sanitation services;
b) Coordinating the planning and resource mobilization for water supply and sanitation authorities and community owned water supply organizations through local government budgets;
c) Providing external support to agencies, non -government organizations and the public;
d) Facilitating the provision of low cost appropriate technologies for water supply and sanitation services to communities; and
e) Creating conducive environment for community and private sector participation in development, operation and management of water supply and sanitation services in accordingly.

[17]The Water Supply and Sanitation act no.12 of 2009 section 5
[18] Water Supply and Sanitation Act No. 12 of 2009, Section 6

2.4.3 Regional Secretariat (RS)

The Regional Secretariat (RS) works on behalf of the PO-RALG at the regional level.

According to the National Water Supply and Sanitation Act of 2009, Regional Secretariat is responsible for:

a) Providing advice and guidance to Local Government Authorities on water supply and sanitation matters;
b) Monitoring and evaluating water projects of Local Government Authorities and providing technical advices; and
c) Overseeing and compiling LGAs plans and reports and forwarding the same to PO-RALG for further deliberations.

2.4.4 Local Government Authorities

Local Government Authorities (LGAs) have the duty to ensure that all activities regarding accessibility to clean and safe water in rural areas are adequately implemented. According to Water Supply and Sanitation Act of 2009, LGA has to:

(a) coordinate the budgetary requirements of the water authorities; disburse block grants to the water authorities;
(b) coordinate physical planning with the water authorities;
(c) facilitate the registration of Community Owned Water Supply Organizations (COWSOs) and maintain the register in their respective Local Government Authorities;
(d) regulate the performance of community organization; and
(e) mobilize communities to take part in water supply schemes and provide technical and financial support.

Moreover, the Local Government Authorities make by-laws in relation to water supply and sanitation to give effect to the efficient and sustainable provision of those services in their areas of jurisdictions.

2.4.5 Other stakeholders

(i) Regulatory Authorities

In order to ensure smooth implementations of water projects and construction projects in general, various authorities were formed. Regulatory Authorities monitor professional conducts of the parties involved in water projects. The followings are the key Regulatory Authorities with their responsibilities:

a) Public Procurement Regulatory Authority (PPRA)

Public Procurement Regulatory Authority (PPRA) is continuously monitoring procurement activities of the Ministry and contract throughout the implementation. PPRA may blacklist any tenderer from participating in public procurement if he fails to implement contracts according to terms and conditions contract.

b) Tanzania Bureau of Standards (TBS)

Tanzania Bureau of Standard (TBS) tests and approves the quality of materials used in water construction projects.

c) Contractors Registration Board (CRB)

Contractors Registration Board (CRB) registers local and foreign contractors working in the construction industry, regulates their activities and conducts, sets out criteria for registration of contractors, verify and ensure that all works are undertaken by registered contractors. Moreover, the board is responsible for setting class of contractors and the limit of work they are supposed to undertake with regards to cost and type of the project.

d) Engineers Registration Board (ERB)

The Engineers Registration Board (ERB) has the responsibility of registering engineers and consultants in the country. It is also responsible for monitoring and regulating engineering activities and conducts of engineers and engineering consulting firms in Tanzania. Engineers are the one who design water projects and transform the designed work into real work or physical work.

(ii) Contractors and Consultants

Contractors are the firms that perform the actual construction of the water projects according to the agreed terms in the contracts. *Consultants/Project Managers* are firms that design water projects and supervise the work depending with the terms and conditions in their respective contracts. Moreover, the consultant on behalf of the client approves completed structures with regards to specifications given and standards required.

2.5 Funding for water projects in rural areas

The rural water projects are being financed by the Government of Tanzania through the Ministry of Water. The amount of funds budgeted for the implementation of rural water projects and the amounts disbursed are as described in **Table 2.1.**

Table 2. 1: Allocated Budget for Water Supply Division for 2013/14 - 2017/18

Financial Year	2013/14	2014/15	2015/16	2016/17	2017/18
Budgeted (TZS) in Billions	345	271	232	463.3	342
Actual disbursed (TZS) in Billions	201.7	84	121	129	128
Percentage Released (%)	58	31	52	28	37

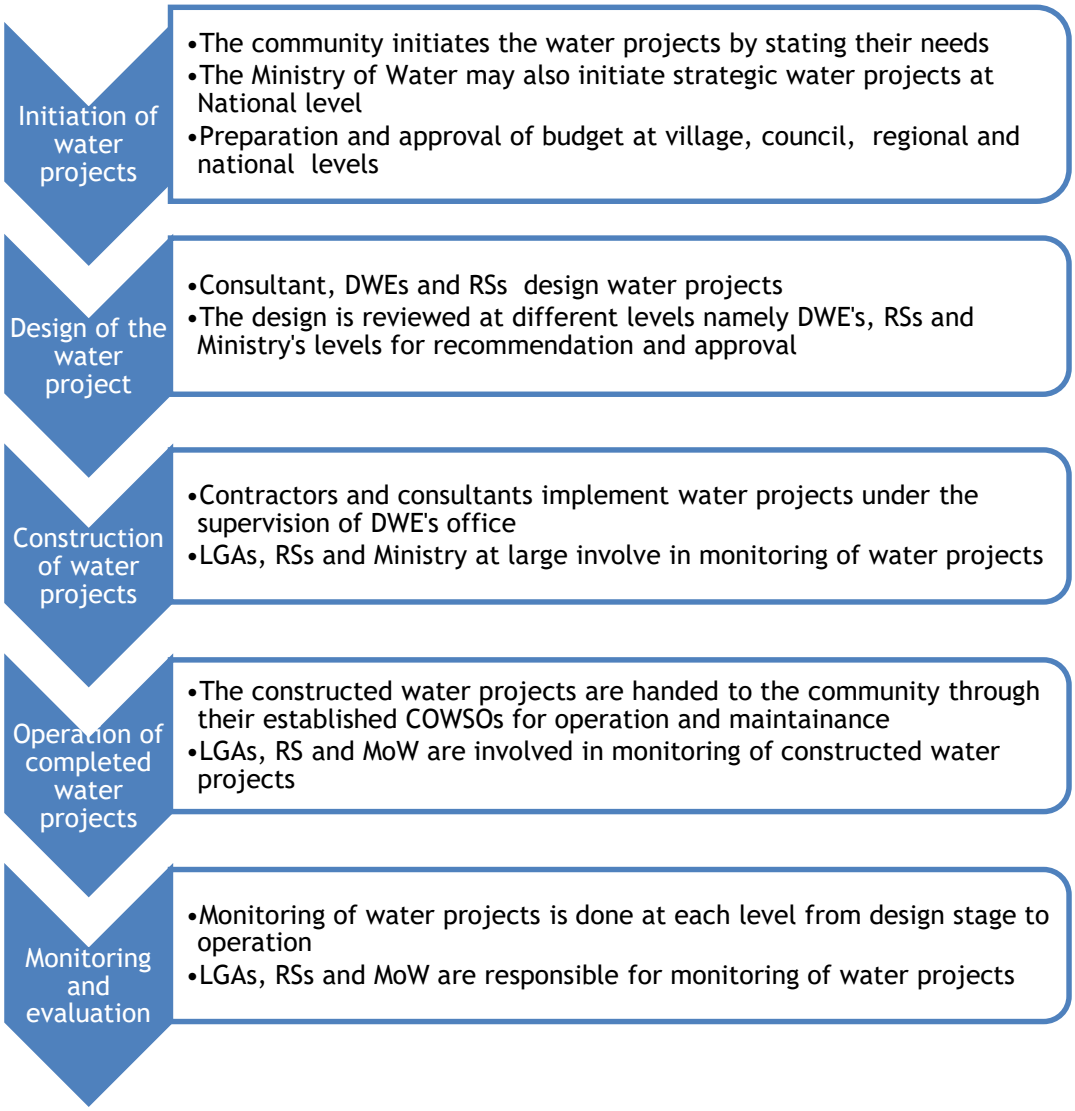
***Source**: Financial records from the Ministry of Water (2018)*

Table 2.1 shows that in the five financial years, two financial years namely 2013/14 and 2015/16, the Ministry managed to receive between 50 and 60 % of the budgeted amount, while in three financial years namely 2014/15, 2016/17 and 2017/18 the ministry received amounts that were below 40 % of the budgeted amount. The reasons given for the release of inadequate amount was shortage of funds due to poor collections from expected sources internally and from development partners. . This led to release of inadequate funds compared to requests by the Ministry of Water and other ministries. It was also revealed that usually the release of funds depends on the available funds.

2.6 Processes for managing water projects in rural Areas

In order to ensure proper functioning of completed water projects, LGAs who are implementers of water projects in rural areas follows a certain process in managing water projects. **Figure 2.1** hereunder outlines the specific processes and highlights the activities performed in managing water projects.

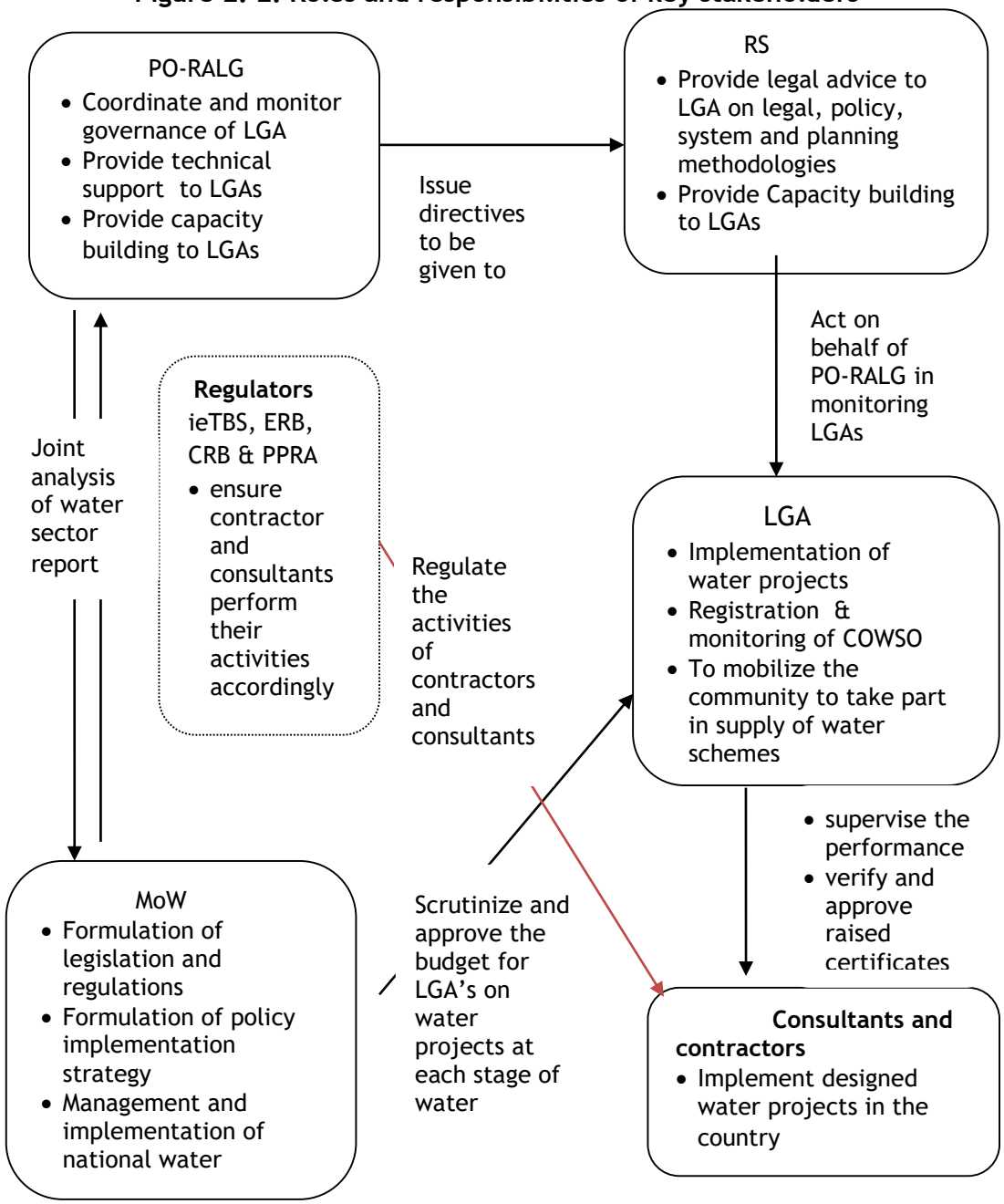
Figure2. 1: Process for managing water project



Diagrammatic summary of roles and responsibilities of key stakeholders in management of water projects in rural areas

During management of water projects there are different players who are involved. **Figure 2.2** hereunder shows key stakeholders involved in management of water projects and the main role and responsibility of each stakeholder

Figure 2. 2: Roles and responsibilities of key stakeholders



CHAPTER THREE

IMPLEMENTATION OF WATER PROJECTS IN RURAL AREAS

3.1 Introduction

This chapter presents findings of the audit which addresses audit objectives and corresponding audit questions outlined in Section 1.3.1 of this report.

Specifically, the audit focused on the management of water projects in rural areas whereby the findings covers two main areas namely:

a) Extent to which people have access to clean and safe water in rural areas; and
b) Effectiveness of PO-RALG through LGAs in implementing water projects in rural areas;

3.2 Extent to which people have access to clean and safe water in rural areas

3.2.1 Access to clean and safe water in rural areas

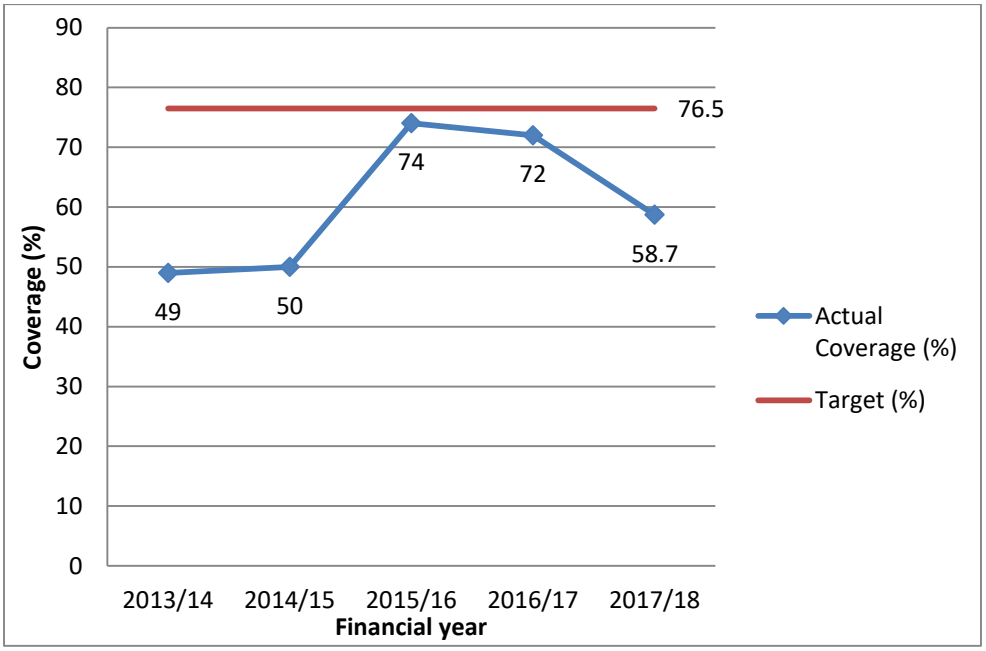
It was found-out that the access to clean and safe water in rural areas was 72.58 percent by March, 2017[19] only despite the Ministry of Water's target that the rural population with access to improved water sources to be 76.5% by 2015. Furthermore, Initiative of Big Results Now targeted to increase rural water supply to reach 74 percent by 2015[20].

On the other hand, through the reviewed 2017/18 annual budget for the Ministry of Water, it was indicated that the percentage of people with access to clean and safe water in rural areas in 2017/18 is only 58.7%. This indicates that the access to clean and safe water in rural areas has decreased by 13.88 % for the current financial year when compared to the last financial year.

Figure 3.1 provides trend of the percentages of people with access to clean and safe water in rural areas for the period of 5 years i.e. from 2013/14 to 2017/18.

[19] Speech of Minister of Water to the members of the parliament 2017/18
[20] National Rural Water Sustainability Strategy, 2015-2020

Figure3. 1: Trend showing access to clean water in rural areas for the last five years at national level



***Source**: Performance Reports from the Ministry of Water (2018)*

Figure 3.1 shows that for the period of five years under the scope of the audit the Ministry failed to meet the target of ensuring that population with access to clean water in rural areas reach 76.5 percent by 2015.

Moreover, although it was noted from the analysis that in 2016 and 2017 the coverage was higher compared to other years, interviews with Ag. Director of Rural Water Supply and other official from Rural Water Supply Division of the Ministry of Water declared that actually the reported coverage was based on the established infrastructure which had capacity to supply water to the reported percentages of 74 and 72 respectively. In 2018, the percentage seemed to drop since actually the Ministry reported percentage of population with access to clean water instead of capacity of the established infrastructures.

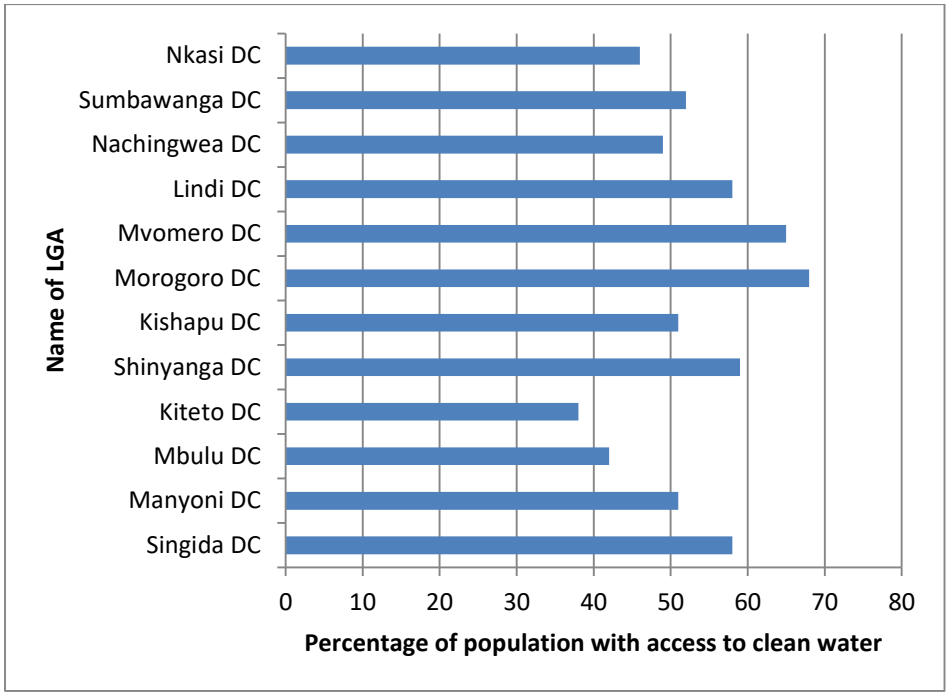
There is a risk that the Ministry of Water decided to report the percentages of people with access to clean water in rural areas using capacity of the established water infrastructure instead of actual percentage of population in order to show that they met the target in 2015. The Ministry of Water was not consistent by reporting the same data using two benchmarks i.e. showing trend using actual percentages of people with access to clean water in rural areas in all years except 2015/16 and 2016/17 which distorted the intended trends to be communicated. The established water infrastructures in rural areas do not supply water at their maximum capacities due to

different reasons such as failure to operate them due to high running costs and poor design of constructed projects which result in failure to deliver water to domestic points.

During factual clearance the Director of Water Supply and Sanitation stated that the aim of altering the way of reporting so as to be more realistic from population wise to number of functional water points.

Furthermore, the review of water status reports from 12 visited LGAs[21] and interviews held with the District Water Engineers (DWEs) and water technicians, it was revealed that all visited LGAs did not meet the target of 76.5 percent of population with access to clean water in rural areas by 2015. **Figure 3.2** shows the percentage of population with access to clean water as specified in respective LGAs.

Figure3.2: Percentage of population with access to clean water in visited LGAs



Source: *Quarterly reports from Local Government Authorities (2017/2018)*

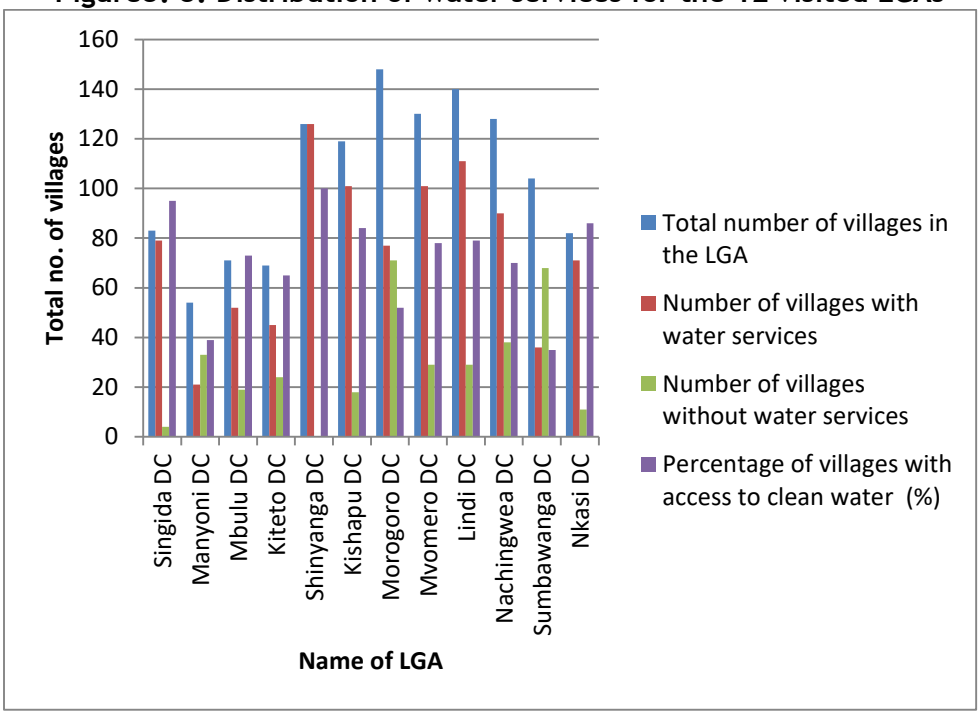
Figure 3.2 shows the extent to which LGAs have tried to meet the target of ensuring the population in rural area has access to clean water. Despite of all LGAs failing to meet the target as depicted in Figure 3.2, Morogoro DC has a higher percentage of population with access to clean water of 68% while Kiteto DC had a lower percentage of population with access to clean

[21] Singida DC, Manyoni DC, Mbulu DC, Kiteto DC, Shinyanga DC, Morogoro DC, Mvomero DC, Sumbawanga DC, Nkasi DC, Lindi DC, Nachingwea DC and Kishapu DC

water of only 38% of the population which is below 50%. Similarly, 4 LGAs had a low percentage of population with access to clean water which is below 50%.

Further analysis was done village-wise in order to establish villages with water services in rural areas. Despite the percentage of population in rural areas with access to clean water being 58.7 by 2017/18, the audit team noted that not all villages from 12 visited LGAs were having water services. It was further noted that even for villages with access to clean water, there is uneven distribution of water services between villages. **Figure 3.3:** shows the number of villages with and without water services from 12 visited LGAs.

Figure3. 3: Distribution of water services for the 12 visited LGAs



***Source**: Status Report from twelve visited Local Government Authorities (2018)*

Figure 3.3 shows access to clean water in rural areas villages wise. The analysis shows that 7 out of 12 visited LGAs have access to water services above 76 percent. Despite the percentage of villages with access to water services being high in these DCs, the population with access to clean water is small because even-though every village has a water point but those water points are few and widely scattered within respective villages.

Furthermore, from the analysis made on Figure 3.2, on average only 54% of the people in those villages have access to water services. Good example is shown in Shinyanga DC whereby the percentage of villages with access to clean water is 100% while the population with access to clean water is only

59%. It implies that at least in each village there is water project which supply water although it does not suffice the needs of the available population.

Contributing factors for not meeting the set targets of water services in rural areas

Failure to meet the target set and demand of water services in rural areas was contributed by factors which are not limited to:

(i) Established water infrastructures which are not supplying water

The intention of building water infrastructure is to ensure that they supply water to the intended community while raising the standard of living of the respective community. Despite the government efforts to build water infrastructures, some of the built infrastructures were not working.

The review of speech during the presentation of the budget of Ministry of water for the financial year 2017/18 the audit team noted that, the established water infrastructure have capacity to supply water in rural areas to 85 % of the population although actually only 58% of the populations in rural areas get clean water. This shows that 27 percent[22] of the population in rural areas who qualified to get water services from established infrastructure do not get water. Some of the constructed water structures are white elephants in the sense that they have been constructed without ensuring the available water supply source is reliable. The implication is that there can be a water supply network/infrastructure in place but the water source is dry.

The planned water infrastructures were established but due to different reasons they do not supply water to the intended population in rural areas. In this case, the government has lost funds since the established water infrastructures cost a lot of money during the construction.

(ii) Inadequate geological and hydrogeological survey prior to drilling of boreholes

Through reviews of water project documents for nine boreholes at Manyoni DC, it was noted that eight out of nine water projects were implemented successfully in their respective villages while one project was not. There were several unsuccessful attempts of drilling boreholes at Igwamadete village.

[22] This was obtained by the difference of the population which receive water (which is 58%) and the current infrastructure in place which have capacity to supply water to 85% of the population.

Furthermore, during site visits for the sampled water projects in Singida DC, the audit team noted that there were several attempts to find water by drilling three boreholes at Sefunga village which previously had a water producing borehole which operated for one year and then became dry. The drilling attempt for the new boreholes was done closer to the old dried borehole but without success.

It was further noted that there was a problem of *drying of boreholes*, some boreholes were found to have large amount of water during the period of implementation and later on the amount of available water supply started to dry out while for other boreholes, the quality of its water changed as noted in the visited LGAs. The issue of drying of boreholes is likely linked to poor groundwater investigation prior to drilling and not conducting proper testing of aquifer water yield. For detailed information see **Table 3.1** hereunder:

Table3. 1: Boreholes with problem in supplying water

Name of LGA	Name of Water Project	Status of Boreholes		
		Increase of dangerous mineral	Initially operated then dried	Dry
Manyoni DC	Igwamadete			×
Singida DC	Sefunda		×	
	Sefunga (Survey-3 Attemp)			×
Lindi DC	Namangale	×		
	Kilolambwani	×		
	Lihimilo			×
	Kiwawa		×	
Nachingwea DC	Mkotokuyama			×
	Mkoka			×
	Kitandi 1			×
	Kitandi 2			×
Sumbawanga DC	Ikozi borehole		×	

***Source**: Progress Reports from the visited Local Government Authorities (2018)*

Table 3.1 shows water projects which had problems of ensuring reliable water supply to the community due to inadequate geological and hydrological survey. For visited LGAs, Lindi DC seemed to have more problems whereby four boreholes were either dry or had higher amounts of unsafe minerals which made water not safe for human consumption.

Failure to get groundwater in the visited LGAs was a result of inadequate geological and hydrogeological survey for the intended water projects before implementation.

The attempt of drilling in areas without water, delay the intention of the government to ensure that the community receives clean water in rural areas.

(iii) Taking long time for water projects to be operational

The audit team noted that it takes an average of 3 years before a water project becomes operational and provide water to the community in rural areas. This is due to different reasons such as:

a) Delays in completion of the project due to different reasons as stated in **Table 3.7***; and*
b) Implementing projects in phases like drilling boreholes only and leaving them without supplying water to community for a long time. For more information regarding specific water projects and time taken without completion see details in **Table 3.2** hereunder;

Table3. 2: Water projects which were left idle without completions

Name of LGA	Name of Water Projects	Time Taken Without Supply of Water
Manyoni DC	Water projects for 9 boreholes	June, 2015 until the date of this report
Morogoro DC	Kifindike water project	June, 2015 until the date of this report
	Gwata water project	February, 2016 until the date of this report

Source*: Progress Reports from the visited Local Government Authorities (2018)*

Table 3.2 above shows that water projects which were planned and actually implemented but were later on stopped. It can be seen from the table that 2 water projects, out of 12 visited LGAs were uncompleted and left idle for more than three years.

3.2.2 Extent to which provided water was tested to meet quality requirements before consumed by the community

The objective of National Water Policy is to have water resources with an acceptable water quality. Water quality monitoring and assessment was to be undertaken systematically so as to identify extent and status of the quality of the water resources so that problems are detected early and remedial actions employed timely[23].

[23] National Water Policy, 2002 pg 20

Several weaknesses were noted during the implementation of water projects in 12 visited LGAs as described hereunder:

(i) More than one-third of water projects were not having water test reports

Through the review of information regarding the implementation of water projects in rural areas the audit team noted that eleven water projects lacked water test reports. The audit team requested water test reports for the sampled water projects but were not availed for 11 water project.

Table 3.3 shows the total number of water projects which were reviewed and the projects with and without[24] water test reports for the 12 visited LGAs.

Table3. 3: Analysis of water test reports on implemented water projects

Name of LGA	Number of Water Projects reviewed	Number of Projects without water test reports	Water projects without water test report (%age)
Singida DC	8	2	25
Manyoni DC	3	2	67
Mbulu DC	5	2	40
Kiteto DC	5	2	40
Shinyanga DC	5	2	40
Kishapu DC	3	0	0
Morogoro DC	5	N/A	N/A25
Mvomero DC	5	1	20
Lindi DC	5	0	0
Nachingwea DC	5	0	0
Sumbawanga DC	5	N/A	N/A26
Nkasi DC	5	1	20

***Source**: Water Project Files from respective LGAs (2018)*

From **Table 3.3** it was noted that in the visited LGAs there are water projects which were implemented without conducting needed water tests such as Mlali Kipera, Mbwasa, Pohama, Itaja, Kaloleni, Nchinila, Singu, Hydom, Didia and Mendo. Such water tests are vital for establishing if the quality of water is fit for human consumption. This is a matter of great concern from the health point of view.

[24] Include water projects with source from surface water which is not tested
[25] No borehole, only surface water
[26] Reviewed water project was for surface water

Table 3.4 shows the names of water projects without water test reports for the visited LGAs.

Table3. 4: Names of Water projects without water test reports from 12 visited LGAs

Name of LGA	Number of Projects without water test reports	Name of Water projects without water test report
Singida DC	2	Pohama and Itaja
Manyoni DC	2	Londoni and Mbwasa
Mbulu DC	2	Hydom and singu
Kiteto DC	2	Kaloleni and Nchinila
Shinyanga DC	2	Mendo and Didia
Kishapu DC	-	-
Morogoro DC	-	-
Mvomero DC	1	Mlali Kipera
Lindi DC	-	-
Nachingwea DC	-	-
Sumbawanga DC	-	-
Nkasi DC	1	Kabwe water project

***Source**: Water Project files from respective LGAs (2018)*

From **Table 3.4**, it was noted that 7 out of 12 visited LGAs (equivalent to 58 percent) had no water test reports regarding the implemented water projects in their areas of jurisdictions. This means that the number of projects with no water test reports is 12 out of 58 water projects from 12 visited LGAs. This is equivalent to 21 percent of all water projects from the visited LGAs. The LGAs implemented water projects without checking the quality of water to be supplied to the community.

The audit team found-out that among the causes for failure to have water test reports is that some of the water projects were implemented without adhering to laid down requirements for the implementation of the water projects in the country. The requirements set forth by the Ministry of Water require that implementing entity should conduct among others the water tests to establish the quality of water for human consumption. According to DWEs from LGAs with this anomaly is that Development Partners implemented water projects but LGAs did not take initiatives to ensure that all procedures were followed through during the implementation of water projects. On the other hand, the guidelines for implementation of WSDP I & II did not cover issues to do with water quality tests (i.e. the focus was on water quantity only). So, obvious implementers in the LGAs were not obliged to carry out water quality tests.

Moreover, the audit team noted that there were inadequate mechanisms to monitor different ongoing water projects in LGAs, which would ensure that

implementation of such projects meets the required standards and procedures.

It was further noted that failure to conduct water tests for the visited water projects poses the risks to the health of the community who use such water. This is because LGAs could not conclude whether sources of water in those projects met the required standards for human consumptions since water test reports were not availed.

(ii) LGAs failed to take actions for given recommendations on water test reports

Through the reviewed 39 out of 46 water test reports from 12 visited LGAs, the audit team noted that there are key recommendations given by water basin authorities regarding the quality of water for the intended projects but the responsible LGAs did not take actions to implement the given recommendations.

Table 3.4 shows detailed information on the reviewed water test reports and the recommendations given.

Table3. 4: Analysis of water test report for visited water projects in rural areas

Name of the LGA	Name of Water Project	Remarks and recommendations	Actions taken
Manyoni DC	Hydrological and Geophysical survey, Drilling, Development, Pumping test and capping of nine productive boreholes, specific on sanza borehole	Water is alkaline with high contents of chloride, total dissolved salt, solids, Magnesium and Hardness Water is acceptable for domestic use but not for human consumption (for drinking)	DWE was not aware of the recommendation, he promised the audit team to consult Internal Drainage Basin-Singida on how to handle the situation while all the activities were stopped
Singida DC	Mtinko borehole	Water is very hard Reverse Osmosis or Ion – exchange desalination technique is needed to reduce the hardness	They were proceeding with the project and promised to consult water basin authority for advice.
	Ngamu borehole	• Water is very hard and saline • Reverse Osmosis or Ion – exchange desalination	Promised to consult water basin authority for advice on the matter.

Name of the LGA	Name of Water Project	Remarks and recommendations	Actions taken
		technique is needed to reduce the hardness	
Mbulu DC	Yaeda chini-Basodom	• Slightly alkaline and hard water • Water should be treated by calcium hypochlorite before installation of pump so as to be suitable for domestic use	All boreholes were drilled by development partners through TAG church, DWE's office promised to communicate to development partners to know what actions were taken as per given recommendations
	Yaeda chini-Giduru	Slightly alkaline with elevated turbidity and color Water should be treated before supplied to consumer in order to reduce turbility and color	
	Eshkesh village	Desalination of drinking and cooking water is recommended	
	Domanga village-borehole	• Concentration of fluoride is slightly high • Defluoridation of both drinking and cooking water is recommended	
Kiteto DC	Eseki village borehole	• Water is alkaline and very hard with high contents of Nitrate, hardness, chloride, calcium, magnesium and Potassium above the Tanzanian Domestic water standard • Water is not acceptable for domestic use	No response from DWE up to the issue of this report
Lindi DC	Namangale borehole	Water from the source was very high with turbidity, manganese, magnesium, calcium and sulphate,	The LGA used another source-Mihima spring which was not tested

Name of the LGA	Name of Water Project	Remarks and recommendations	Actions taken
		Source should pumped for 72 hrs and sample should be rechecked before use, Water needs to be disinfected by calcium hypochlorite and boiled before drinking	
	Kiwawa borehole	Water is saline and hard, bacteriologically water does not meet the standard Not suitable for domestic use unless treated for salinity and hardness removal and disinfected to kill the bacteria	The Borehole has been abandoned
	Kiwawa old shallow well	• Water is very hard with high calcium, color, turbidity, iron and manganese • Water should be aerated in order to reduce the concentration of manganese and iron	The borehole has been abandoned
	Nyangamara borehole	• The water from this source has high concentration of iron • Water should be aerated to reduce the iron concentration followed by addition of lime water to rise pH.	This is the old source, the source was abandoned, currently Chemchem village is used as the source but it's water was not tested
	Namkongo borehole	Water from this entire source is very hard with high concentration of electrical conductivity, calcium, manganese, and Chloride	The community was advised to boil water while water was pumped and aerated to the water tank

Name of the LGA	Name of Water Project	Remarks and recommendations	Actions taken
Nachingwea DC	Construction of borehole pumped scheme for mituguru village	• All parameters analysed except iron are acceptable for domestic water quality • Iron can be reduced by aeration/ when water is disinfected by chlorine	No response from Nachingwea DC up to the date of this report
	Construction of borehole pumped scheme for nditi and completion of pumped scheme at Mnero miembeni as per BOQ at Nachingwea	• Water has high concentration of manganese and turbidity • Aeration process is needed to reduce the amount of manganese and filtration is needed to reduce turbidity	No response from Nachingwea DC up to the date of this report
	Construction of borehole pumped scheme for chiola village	• Water is permanently hard and saline due to presence of Magnesium chloride and Magnesium Sulphate • Water is not suitable for domestic use	Reverse Osmosis Plant. The plant was installed but not operational
	Construction of borehole pumped piped scheme fitted pumped wit for farm 8 village	• Water is saline due to presence of high value of chloride which makes off taste of the water • Its saline is 376mg/l NaCl	No response from Nachingwea DC up to the date of this report
	Construction of borehole pumped piped scheme for lipuyu village	• Water is permanently hard and saline due to presence of Magnesium chloride and	Reverse Osmosis Plant. The plant was installed but not operational

Name of the LGA	Name of Water Project	Remarks and recommendations	Actions taken
		Magnesium Sulphate • Water is not suitable for domestic use	

***Source**: Water Test Reports from respective LGAs (2018)*

From **Table 3.4,** the analysis shows that out of 20 water projects with recommendations, only 11 recommendations were acted upon by respective LGAs, for the rest of recommendations, LGAs did not take any action apart from focusing on implementing those water projects.

Furthermore, the audit team noted that there was a similar recommendation which was given to four water projects; two to Singida DC and another two to Nachingwea DC. The recommendation required the respective LGAs to use reverse osmosis in treating water which was found not safe for human consumptions. According to the DWE in Singida DC the recommendation was very costly and needed substantial funds for maintenance. The cost factor made them not to implement. However, Nachingwea DC decided to implement the recommendation accordingly in Lipuyu and Chiola water projects respectively. The two projects in Nachingwea DC costed TZS 746 million in total although to date the projects are not working due to high running costs which were not met by LGAs.

In general, the given recommendations showed an impact to the community if the water is supplied without addressing the noted water quality problems.

For example, the recommendation given to Manyoni DC on Sanza borehole water project was that water is not safe for human consumptions (drinking) yet the LGA went on into implementation of the project. It was further noted that, there are no mechanisms to limit the use of supplied water to the community, if the project is implemented then certainly some people might drink the untreated water and can be affected.

(iii) LGAs failed to ensure community protects sources of water

Through site visits at Kigugu water projects in Mvomero DC, the audit team found out those members of the community who were washing their clothes exactly at the intake point. The health of the community who were using such water sources were at risk to epidemic diseases like cholera due to pollution of water at the intake point. **Photo 3.1** hereunder shows the activities which were going-on at the intake of Kigugu water project.

Water intake at Kigugu water project

Photo 3.1

***Source**: Site visit Kigugu water project*

Also, through the reviewed monitoring report of Gombe water project in Ulanga DC in Morogoro region dated June, 2016, the audit team noted that there were pollution of water source for two water projects namely Gombe and Lukande which had population of not less than 5000 people. According to the report there were activities which were going on at water source which include agriculture and other human settlement associated activities such as putting public toilets near the water source.

Pollution of water sources was caused by the fact that during feasibility study the economic and social conditions were not considered. The community was not engaged to ensure that they protect water sources and alternative means of ensuring that they get water for their day to day use was not considered.

Moreover, the audit team noted that there was no monitoring of the sources of water at Kigugu water project from LGA to village level which led to conduction of activities at the intake. This has resulted to pollution of the water sources by the community who live nearby the intake of Kigugu water project. The health of the community was put in danger due to washing of clothes and other human activities at the intake.

3.3 Implementation of water projects in rural areas with regards to time, cost and quality of workmanship

3.3.1 Large number of water projects in rural areas were not completed on time

Through the review of files for the implemented water projects in rural areas for the financial years 2013/14 to 2017/18 in the 12 visited LGAs[27], the audit team noted that most of the implemented water projects were not completed within the specified time contrary to the planned completion time. **Table 3.5** provides detailed information regarding the completion time of implemented water projects in rural areas from the visited LGAs.

Table 3. 5: Number of uncompleted water projects from 2013/14 to 2017/18

Financial year	Total Number of water projects implemented	Number of projects completed within planned time	Number of water projects not completed on time	Percentage water projects not completed on time (%age)
2013/14	66	23	43	65
2014/15	43	6	37	86
2015/16	31	5	26	84
2016/17	28	7	21	75
2017/18	46	5	41	89
Total	*214*	*46*	*168*	-
Average	-	-	-	*79.5*

***Source**: Reviewed Project Files from visited LGAs (2018)*[28]

From **Table 3.5,** the analysis shows that the situation was the best in financial year 2013/14 whereby the percentage of water projects which were not completed timely was 65. The worst situation was noted in 2017/18 whereby the percentage of water projects which were not completed on time was 89 percent.

Delayed completion time for water projects

Further analysis was made to establish the extent of delays in terms of number of days. Delayed time was established by counting the number of delays beyond the given period stipulated in a specific contract.
Table 3.6 provides a detailed analysis of number of water projects reviewed in each of the 12 visited LGAs, average delayed completion time for the water projects in LGAs.

[27] Singida DC, Manyoni DC, Mbulu DC, Kiteto DC, Shinyanga DC, Morogoro DC, Mvomero DC, Sumbawanga DC, Nkasi DC, Lindi DC, Nachingwea DC and Kishapu DC
[28] Manyoni, Singida, mvomero, Mbullu

Table 3. 6: Average delayed completion time for water projects in LGA

Name of LGA	Number of water projects not completed on time	Average Delayed completion Time (in Days)
Morogoro DC	5	95
Singida DC	5	103
Mvomero DC	5	125
Kishapu DC	5	162
Mnyoni DC	2	210
Kiteto DC	5	242
Nachingwea DC	3	252
Shinyanga DC	5	600
Nkasi DC	5	750
Sumbawanga Dc	5	816
Mbulu DC	5	1110
Lindi DC	3	1299

***Source**: Auditors' analysis of completion time of water projects from LGAs (2018)*

The analysis from **Table 3.6** shows that 53 out 58 water projects (equivalent to 91%) were not completed on time, and the average delayed time for completion of implemented water projects in rural areas was 480 days. For the 12 visited LGAs, Lindi DC had highest number of delayed completion time of more than 3 years for the water projects implemented, while Morogoro DC had minimum number of delayed completion time of around three months.

*For detailed information regarding specific LGA, name of project and number of days delayed refer **Appendix 5**.*

The reasons for huge difference in project implementation time between Lindi DC (*LGA with poor management of completion time*) and Morogoro DC (*LGA with better management of completion time*) included:

a) Employing contractors who had no financial capacity to implement water projects without depending on funds from raised certificates;

b) Employing contractors who were financially capable but hesitant to use their money in implementing water projects due to prior experience in delayed payment for raised certificates; and

c) Morogoro DC having employed trustworthy contractors who were capable to link suppliers of materials and Morogoro DC who committed to pay the bill later while contractors proceeded with the implementation of water projects. This reduced delays in the completion of water projects.

Reasons for delayed completion time

According to reviews of approved letters of extension of time for completion of water projects for the 12 visited LGAs in rural areas, it was noted that delays were caused by reasons categorized into 6 clusters as detailed below:

Payment related factors. These are factors such as:

- Late payment of raised payment certificates: for the last five financial years under the scope of the audit, water projects experienced delays in payment of raised certificates in all 12 visited LGAs; reasons given being lack of adequate funds to pay all raised certificates. The audit team noted that the Ministry of Water approved implementation of many water projects at a time, while it certainly knew that all of them could not be paid within the signed contract period.

  For example, in the financial years 2016/17 and 2017/18 the budget to implement water projects was estimated at TZS 373 billion and TZS 220 billion respectively. The National Water Investment Fund collected around TZS 137 billion and TZS 150 billion respectively. The committed and used fund for two financial years was only 37% and 68% of the demand respectively. While the collected funds could not meet committed obligations, the Ministry of Water kept on approving implementation of water projects which lack committed funds.

- Unsolved exemptions of tax issues: during implementation of WSDP I & II, the government allowed VAT exemptions to purchase materials used in implementing water projects. Despite of this known fact, the audit team noted requests from contractors for extension of time due to failure of LGAs to facilitate procedures for acquiring exemptions of VAT from TRA in order to purchase materials for the construction of water projects in rural areas. This fact was noted in 3 out of 12 visited LGAs.

Change of scope related factors. These are factors such as:

- Change of scope: It was noted that frequent changes of scope during the implementation of water projects in rural areas was caused by ineffective needs analysis which led to increase of scope of work. Apart from having cost implications, the contractors requested extension of time in order to accommodate increased scope. This was noted in 5 out of 12 visited LGAs during the audit.

- Reconstruction of areas affected by rainfall: The audit noted that projects implemented during rainfall seasons were facing some

challenges. 21 out of 58 reviewed water projects extended completion period due to effects of rainfall.

Availability of construction material related factors. These are factors such as:

- Unavailability of constructions materials: Some contractors extended completion time of water projects due to unavailability of construction materials. This was noted in 5 out of 58 reviewed water projects.
- Order of materials outside the country: ordering of materials from outside the country affected completion time of water projects since it took long time, this was noted in 4 out of 58 reviewed water projects.

Contractors' staffing related factors. These are factors such as:

- Sickness of technical staff: This factor, which is not contractual, was noted to affect completion time of water project in Mbulu DC.
- Changing of administration of the construction company after the death of the Managing Director: Although this factor is contractually unacceptable, it was also noted to affect completion time of water project in Mbulu DC
- Long illness of Managing Director of the construction company: The factor was accepted to allow extension of time in Mbulu DC despite of not being accepted contractually.

Monitoring related factors. These are factors such as:

- Negotiation with the community for land to establish water infrastructure: This factor could be avoided through involvement of the community prior to construction of water projects. Two out of 58 reviewed water projects extended completion time of water project due to this factor.
- Delays to respond to letters of requests from contractors.

Unforeseen events related factors. These are factors such as:

- Weather conditions specifically heavy rainfall: 21 out of 58 reviewed water projects extended completion time due to this factor.
- Construction of road: Interference of either construction of road or destruction of road also was noted to contribute in extension of completion time of water projects. This was noted in 3 out of 58 reviewed water projects in rural areas.
- Missing of groundwater source: Due to inadequate survey Sefunga project in Singida DC extended its completion time due to absence of water from planned drilled borehole.
- Presence of rock: Mwakitolyo water project extended its completion time due to unforeseen rock along water pipelines route.

The audit made further analysis to establish the extent of contribution to the delayed completion time for each factor in 58 reviewed water projects from the visited LGAs. **Table 3.7** hereunder presents the outcome of that analysis:

Table3. 7: Reasons for delays in the completion of water projects in rural areas

Reasons for delay	Number of project affected out of total 58 water projects
Late payment of raised payment certificates	21
Weather conditions specifically heavy rainfalls	21
Unavailability of constructions materials	6
Change of scope	5
Negotiation with the community for land to establish water infrastructure	5
Unsolved exemptions of tax issues	4
Construction of road	4
Order of materials outside the country	4
Late site possession	3
Sickness of technical staff	2
Absence of contractors from site	2
Delays to respond letters of requests from contractors	1
Changing of administration of the construction company after the death of the Managing Director	1
Long illness of managing director of the construction company	1
Missing of underground source of water	1
Presence of rock	1
Reconstruction of areas affected by rainfall	1

***Source**: Auditors' analysis of project files and letters requesting and approving the extension of time from visited LGAs (2018)*

Table 3.7 indicates the main causes for late completion of water projects implemented in rural areas. Late payments for raised payment certificates was the main cause for delayed completion of water projects and it affected almost all sampled water projects under implementations.

Employing contractors and consultants who have no capacity

Through reviewed contracts documents and monitoring reports from 12 visited LGAs, the audit team noted that LGAs employ contractors who cannot adhere and deliver as per contract terms. Out of 12 visited LGAs, there were notably 3 LGAs whose contracts were terminated due to reasons detailed in **Table 3.8** hereunder:

Table3. 8: Name of contractors and the reasons for terminating their contracts

Name of LGA	Name of water project	Name of contractor	Reasons for termination
Mbulu DC	Hydom	M/s PNR Ltd	Failure to complete the projects timely
			Vacation of the site without notice to project manager
			Failure to comply to terms of contracts
	Mongay-Tumati	M/s Dabengo Enterprices Ltd	Failure to complete the projects timely
			Vacation of the site without notice to project manager
			Failure to comply to terms of contracts
Morogoro DC	Kifindike	M/s Fair class construction Ltd	Unsatisfactory progress of the work
			Abandoning the project for long time without communication to his employee
			Delay in completion of the project
Nachingwea DC	Chiola	M/s NANRA Construction Ltd	Delays of construction as per working schedule
			Poor performance of the Contractor

***Source**: Respective Local Government Authorities (2018)*

Table 3.8 shows termination of four contractors out of fifty eighty reviewed water projects in rural areas. Although the number of contractors terminated is only 7% percent, the audit noted poor quality in most of the implemented water projects but contractors and consultants were not terminated. For more clarification regarding water projects with quality issues refer Table 3.22 of this report.

Impact of delays

The impact of delays is huge and can result into severe effects to the implementation of water projects. According to DWEs from 12 visited LGAs most local contractors do not claim interest for late payment unlike foreign contractors who mostly claim interest in case of delays in payments. In case the contractors decide to claim interest for noted delayed payments, the government could be subjected to interest claim amounting to TZS 544 million as detailed in **Table 3.9** hereunder

Table3. 9: The interest the government supposed to pay contractors

Name of LGA	Number of Projects with delay in payment	Number of Certificates with delays	Total Outstanding Amount[29] (TZS)	Average delays (Days)	Interest Amount (TZS)
Mbulu DC	5	14	1,066,521,054	174	108,498,064
Kiteto DC	2	2	278,066,595	64	9,728,848
Kishapu DC	5	7	1,076,861,021	132	66,032,113
Morogoro DC	5	14	2,866,192,816	72	102,657,780
Mvomero DC	4	5	391,132,208	90	21,885,827
Lindi DC	5	5	552,533,884	176	47,656,546
Shinyanga DC	5	9	782,204,238	166	81,073,699
Nkasi DC	2	3	1,467,473,593	81	83,430,262
Sumbawanga DC	2	3	210,770,550	160	15,784,871
Manyoni DC	1	1	225,182,350	59	7,046,457
Total					***543,794,468***

***Source**: Raised certificates and payment records from the visited LGAs (2018)*

Table 3.9 shows that the government was exposed to risk of paying contractors TZS 544 million if they decided to claim interests for delayed payment from the raised certificates. For more details see *Appendix 6*.

The analysis further indicated that weather conditions specifically heavy rainfall had contributed to delays in completion of water projects. The audit team also noted that this factor could have been avoided if the following two main factors were addressed:

a) Commencement of the water projects without paying attention to rainy season; and
b) Long and several extensions of time for the contractor that disregard the occurrence of rainfalls

Late completion of water projects has severe effects as it could lead to cost increase since the price of construction materials vary according to time. In addition, some of the established water infrastructure impaired before the water projects starts operating while the intention to provide clean water to communities in rural areas is not met.

3.3.2 Large number of water projects had cost overruns

Through the reviewed project documents, variation orders and the cost related information provided by District Water Engineers like raised certificate from the visited LGAs, it was noted that there were cost variations to a large number of water projects implemented in rural areas.

[29] This amount was paid outside the agreed contract timeline

Table 3.10 provides details of the number of water projects implemented by the visited LGAs that had cost overruns for the period from 2013/14 to 2017/18.

Table 3. 10: Number of water projects with cost variations from visited LGAs

Financial year	Total Number of water projects implemented	Total Number of completed water projects	Number of water projects with cost overruns	Percentage water projects with cost overruns (%)
2013/14	66	37	16	24
2014/15	43	9	25	58
2015/16	31	9	14	45
2016/17	28	5	14	50
2017/18	46	7	9	20

Source: Reviewed Water Project Files from visited LGAs (2018)

Table 3.10 indicates that for the last 5 financial years from 2013/14 to 2017/18 more than one-third of the projects were experiencing cost overruns. For the same period, the number of projects with cost overruns ranged between 20 to 58% of the total water projects implemented by LGAs.

Total cost overruns for the water projects implemented by LGAs

Further analysis was made to establish the extent of cost overruns in terms of cost exceeding the original contract price. Cost overruns were established by finding the difference between the original planned contract price and actual price disbursed to complete the project.

Table 3.11 provides a detailed analysis of water projects completed with cost overruns in each of the 12 visited LGAs and range of cost overruns (smallest and largest cost overruns among the projects implemented by LGA).

Table3. 11: Range of cost overruns for water projects in LGAs

Name of LGA	No. of water projects completed with cost overruns	Range of cost overruns (TZS Million)
Singida DC	0	0
Mnyoni DC	0	0
Mbulu DC	0	0
Kiteto DC	0	0
Shinyanga DC	1	120,667,664
Kishapu DC	0	0
Morogoro DC	3	16,679,650 - 239,737,150
Mvomero DC	1	45,682,000.00
Lindi DC	1	62545966.5
Nachingwea DC	1	99,316,127
Sumbawanga Dc	0	0
Nkasi DC[30]	3	1,248,120,164 - 7,136,540,057

***Source**: Auditors' analysis of cost incurred in water projects from LGAs (2018)*

Table 3.11 shows that Nkasi DC has the maximum cost overrun ranging from 1.2 billion to 7.1 billion. The cost of implementing water projects in Nkasi DC were the highest in the country.

According to the Assistant Administrative Secretary Water Section from Rukwa region, the costs were higher due to poor design of all water projects to be implemented under the consultant O & A Co. Ltd. The designed water projects needed to be redesigned which raised the cost of implementing water projects in Nkasi DC. The contract prices were all revised due to changes of the scope of the water projects to be implemented.

Through the reviews of monitoring reports for three LGAs in Rukwa region namely Kalambo, Sumbawanga and Nkasi DCs, dated 3rd of March, 2014, it further clarifies that in Nkasi DC almost all water projects implemented were above engineer's estimates. This was due to the fact that during the tender evaluation and negotiation of bidders, Nkasi DC and regional secretariat did not provide appropriate advice to ensure that contract prices were within engineer's estimates.

Factors contributing to cost overruns in water projects

Through reviews of specific files of completed and ongoing water projects in rural areas, the audit team noted various factors which led to cost overrun for the implemented water projects. These include;

[30]The three project were not completed to date the revised cost was used to obtain overrun

(i) Inadequate needs analysis leading to unnecessary cost

Over estimate of work materials

Through site visits in Manyoni DC in Singida region it was noted that needs analysis were inadequately done on Londoni village water project. The audit team noted that there were 30 water pipes, which remained after construction of Londoni water project was completed. These pipes cover approximately 174 meters which according to contract BoQs cost around 6.9 million. This amount was paid without considering that they were in excess of the required number of pipes.

Furthermore, neither the accompanied district water engineer nor secretary of COWSOs were able to tell the exact number of excess water pipes available until when they were counted with the audit team. This poses the risk of loss of some of the water pipes. The projects completed in 2014 and no one was monitoring the remaining pipes. Photo 3.2 shows the remained water pipes at Londoni water projects.

Photo 3.2 (a) and **(b):** Show remained pipes at Londoni water projects in Manyoni DC

Photo 3.2 (a)

Photo 3.2 (b)

Source*: Londoni water project in Manyoni DC*

Photo 3.2 shows water pipes which remained after completion of implementation of water projects at Londoni village in Manyoni DC.

Inadequate needs analysis had resulted to overestimate of materials, which increased cost unnecessarily during the implementation of water project at Londoni in Manyoni DC.

Increase in scope of work for planned water projects in rural areas

Review of site meeting reports from the projects implemented in 12 visited LGAs, various approvals for the extension of time from LGAs and Tender Board meetings noted increase in scope of works, which led to increase of

the cost for water projects. For detailed information regarding specific water projects see Table 3.12 hereunder

Table3. 12: Water project and reasons for variations of costs

LGA	Name of Water Project	Cost (TZS)	Increased scope
Mbulu	Pumped water scheme for Haydom village	4,500,000	Increase in fence size from 15X15m to 30X30m at main tank area in order to accommodate old tank.
		2,260,000	Water meter installation to community water projects
		1,183,200	Reserve PVC 280mm of 17.4m long pipe for Maintenance[31]
Singida	Laghanida project	15,000,000	Increase in Tank height from 6m to 9m
	Construction of water supply at Sefunga village	7,628,500	Addition of toilet
	Itaja water project	8,500,000	Addition of toilet
Shinyanga	Construction of water Supply Civil works For Mwamadilanha Village	60,500,000	Increase in raising main pipe and change in their specifications due to changes in Tank location[32].
	Construction of water Supply Civil works For Didia Village	24,592,400	Addition of water supply to Chembeli and Bukumbi villages[33] where water infrastructure pass.
Morogoro DC	The construction of gravity flow piped scheme for Fulwe village	195,385,000	Addendum for Construction of new water project in Bamba village in order to avoid conflict as the source of water for Fulwe project is in Bamba village.
		9,847,825	Rehabilitation of existing Tank
	The construction of gravity flow piped scheme for Kibwaya village.	16,475,000	Construction of break pressure Tank, Additional water point including water meter from 13nr to

[31] The rate used for supply only of pipe was that used for supply, Install and excavation of trench which in contract was priced at TZS 68,000.
[32] Variation order no.1
[33] Contract for additional work dated 12/12/2013

LGA	Name of Water Project	Cost (TZS)	Increased scope
			15nr, Increase of OD 25 HDPE PN 10 from 58m to 463m, Increase of OD 32 HDPE PN 10 from 2262m to 2412m[34],
Lindi DC	Construction of Borehole pumped scheme for Namangale Village	175,556,0000	Change of water source from borehole to spring water. This resulted in additional pipes and their fittings for about 8892m, one Weir and 2 DPs[35]
	Construction of Borehole pumped scheme, Supply and Installation of Submersible pump, Generator and rain water harvest System for Hingawali Village	101,956,637	Construction of water tank 50 cubic metres, pump house, supplying and installation of new electromechanical equipment and power plant[36]
Nachingwea DC	Construction of borehole pumped Piped scheme for nditi village and completion of pumped piped scheme at Mneromiembeni	13,051,000	Construction of pump house at Mneromiembeni, fencing at water source and completion of laying pipe of work that was done by DC and not completed[37].
Sumbawanga DC	Construction of water supply project and civil works for Mfinga Village.	4,268,000	Additional of 2 DPs and its components[38]
Nkasi DC	Construction of water supply scheme at Mpasa Village.	1,248,120,164	Addendum No. 1
	Construction of Piped Water Supply scheme for Isale villages	2,466,750,721	Additional work and villages as per report from Rukwa's regional secretariat after design review
	Construction of piped water supply	7,136,540,057	Addendum No. 1 dated 29 June 2017 which

[34] Certificate no 5 and Variation order no.1
[35] Variation order no.2
[36] Variation order no.1
[37] Final Payment certificate
[38] Evaluation for Completion payment certificate

LGA	Name of Water Project	Cost (TZS)	Increased scope
	scheme at kamwanda Village phase II		increased the scope of work by increasing a number of villages and changing sources of water from Lake Tanganyika to River Lwafi[39]
Total Cost		13,072,118,505	

***Source**: Respective Local Government Authorities*

Table 3.12 shows that around TZS 13 billion was increased costs due to different reasons in the individual water projects. It was further noted that 83% of the increased cost was from Nkasi DC.

Generally, changes in scope led to increased cost during the implementation of water projects in rural areas. The increased cost may cause difficulties in obtaining funds timely since it was not budgeted before.

Moreover, the increased cost in Didia water project in Shinyanga DC was a result of cost saving since the cost for implementation of water tank was priced twice in BoQs. Shinyanga DC decided to use the saved amount in extending the water service in Chembeli and Bukumbi villages where water infrastructure was passing through. The breakdown on how such amount was used was not provided to the audit team. The officials from DWE's office were not in the position to provide such detail and declared that they just costed it as lump sum. This poses the risk of misusing some of the funds since there is no detailed information on how the work was executed and paid.

Moreover it further indicates that, there was inadequate needs analysis as the increase of scope arose after saving of funds.

(ii) Inadequate feasibility study

Through reviews of Tender Board meetings, Variations Orders and Contract documents from 12 visited LGAs, the audit team noted that there was approval for change of specification of pipes for ongoing water projects due to different reasons; however, these reasons were not taken on board during the feasibility study. For detailed information regarding specific water project and changes of specification including reasons for change see **Table 3.13.**

[39] Also on 6 March 2018 the Minister of water at that time Eng. Isack Kamwelwe instructed to redesign the project by using water from lake Tanganyika as a source which as per design report of November 2018 the project could cost a total of TZS 4,678,430,844 where by Auditor did not see its agreement with contractor.

Table3. 13: Water projects and specified changes in specification and reasons

LGA	Water project	Removed item in BoQs		Cost of new work to accommodate changes		Reason for change
		Item	Amount (TZS)	Item	Amount (TZS)	
Mbulu	Haydom	Galvanized steel (GS) pipe covering 602metres	42,140,000	90mm HDPE PN 10 covering 600meter	12,000,000	To avoid rust as Pipe is passing through salt area
		-	-	Fixing of GS pipe covering 12 metre	8,080,000	Pipe is passing through rock area
	Arri, Harsha, Yaendaampa and Hayesen g Water project	-	-	Galvanized steel (GS) pipe covering metres	95,571,050	Pipe crossing through river
Shinyanga	Construction of water Supply Civil works For Mwakitolyo Village.	HDPE 63mm pipe was deducted	13,695,500	Galvanized steel (GS) pipe covering 2107metres	55,045,712	Pipe is passing through rock area
		Normal trench excavation for pipe	8,310,000	Trench excavation in Rock area	182,737,370	Excavation in rock area
		-	-	Concrete for suppor	1,567,241.	To support pipe in

LGA	Water project	Removed item in BoQs		Cost of new work to accommodate changes		Reason for change
		Item	Amount (TZS)	Item	Amount (TZS)	
				ting pipe		rock area
Morogoro DC	The construction of gravity flow piped scheme for Kibwaya village.	-	-	DN 65 Galvanised steel pipe	42,000,000	The estimated quantity of GS pipe passing through the valley underestimated they will replace HDPE pipe covering 1200m
Mvomero DC	The construction of Water supply Civil work for Kwadoli villages	The pipe planned to cover the area were steel pipe is to be used was not removed		Supply and fixing of 100mm Diameter Galvanised steel pipe were hard rock seen and construction of concrete clamps to support Galvanized pipe	6,600,000	The item was not provided in contract BoQs

LGA	Water project	Removed item in BoQs		Cost of new work to accommodate changes		Reason for change
		Item	Amount (TZS)	Item	Amount (TZS)	
				about 60m long.		
Sumbawanga DC	The construction of Laela group Water Supply project.	HDPE DN 75 PN 10 PE 100	13,842,000	HDPE DN 75 PN 12 PE 100	23,070,000	There was landslide and hard rock which needed strong pipe to the area.
Total			**77,987,500**		**426,671,373**	

***Source**: Tender board meeting Minutes, variation orders and contract BoQs*

Table 3.13 shows additional costs amounting to TZS 426,671,373 for implemented water projects in 5 out of 12 visited LGAs. The increased costs were due to change of specifications and were a result of inadequate design of respective water projects. Moreover, it caused delays in completion of respective projects due to frequent request for extension of time for the completion of work from contractors as a result of increased scope as shown in Table 3.7.

(iii) Inadequate preparations of Bills of Quantities (BoQs)

Adequate preparations of BoQs are vital for proper implementation of water projects in rural areas. BoQs is among the crucial parts of the contracts documents which indicate activities to be implemented and its accompanied costs.

Through review of contracts documents of implemented water projects in rural areas for the visited LGAs, various weaknesses were noted regarding preparations of BoQs. For detailed information see **Table 3.14.**

Table3. 14: Noted weaknesses in BoQs from the implemented water projects

Name of LGA	Name of water project	Noted weakness in BoQs and its effects
Mbulu DC	Singu water project	• BoQs showed that the tank to be constructed was ground tank while the drawing showed the elevated tank • This led to addendum amounting to TZS 56,017,150 in order to construct elevated water tank as per drawing
	Hydom water project	• There was unrealistic distance provided in the BoQs to the real distance of the location of the transformer for supply of electricity, the distance shown in BoQs was 1.2 km while the actual distance as per TANESCO survey was 2.4 km • Approval of addition cost amounting to TZS 32,008,557 to cover the real distance
Kiteto DC	Kaloleni water project	• There was underestimation of 507kg of reinforcement in BoQs which was shown on drawing of Kaloleni water projects • There was an increase of cost amounting to TZS 1,774,500
Shinyanga DC	Mwakitolyo water project	• There was addition of 821m raising main pipe (PN 16 HDPE 160 MM), the BoQs indicated fewer than actual requirement. • There was approval of variation order no. 2 amounting to TZS 67, 226,788.
	Didia water project	***Costing item twice in the BoQs*** • Excavate for and construct proposed 90m3 (20,000gallons) reinforced circular storage tank on 6m raiser as per MoW modified TY/TA/40 drawing, the amount which was entered twice are TZS 20 and 33 million respectively for the same item • Construction of Diesel and Electrical Pump House and Fencing as per drawings. The amount which was entered twice are TZS 28 and 29 million respectively for the same item
Morogoro DC	Kiziwa water project	*Costing item twice in the BoQs* • Foundation slab concrete mix amounting to TZS 1,960,000 • Bottom floor slab concrete amounting TZS 3,840,000 Basically the above two items are the same and during payment they only paid for one item, its impact is that it increased contract cost unnecessarily

Name of LGA	Name of water project	Noted weakness in BoQs and its effects
		Hardcore laying was not quantified before and later on it was quantified and paid
		Costing item twice in the BoQs • Supply materials and construct water points as per drawings No. 13 including all fittings, lockable valve chambers, stop valves in the chambers and plumbing works amounting to TZS 52,000,000 • Supply materials and construct lockable valve chambers as per drawing No. 06A-06C amounting to TZS 24,700,000 The latter item is within the first item, the two items were paid as well leading to unnecessary payment and wastage of government money
	The construction of gravity flow piped scheme for Fulwe village	Less quantity in BoQs than the actual quantity of 100 PN10 HDPE Pipe and 32PN 10 HDPE Pipe. Also, Pipelines anchor blocks in valley and rivers were excluded in the BoQs. All these item resulted to additional cost amounting to TZS 121,411,650. Bu t after changing use of section in the contract the net addition was TZS 34,504,325.
	The construction of gravity flow piped scheme for Kibwaya village.	Missing of quantity in contract BoQs item 2.4.2 were after inserting the quantity leading to additional cost of TZS 2,000,000 and Using contract BoQs with errors especially for Item 3.2.12 and 5.4 which after rectification leads to additional cost amounting to TZS 5,490,000
Mvomero DC	The Construction of Water supply Civil work for Kwadoli villages	Missing of external plastering to ferro cement tank, Hardwood for supporting PVC gutters, excavation of extended washout, External painting to ferro cement tank and air vent. Also there was less quantity for floor screed in contract BoQs ferro cement tank than actual. All these lead to additional cost amounting to TZS 1,495,000
Sumbawanga DC	Construction of laela group Water supply project Phase I	Missing of finishes to tank floor (cement/and Sand screed 1:3 ratio to tank floors) which lead to additional cost amounting to TZS 2,580,000
Lindi DC	Construction of Borehole pumped scheme, Supply and Installation	Missing of items in the BoQs which are: a) Sump well, Plastering, Excavation of foundation trench exceeding 3m deep, Hardcore surrounding the tank, Backfilling and Restating the excavated area

Name of LGA	Name of water project	Noted weakness in BoQs and its effects
	of Submersible pump, Generator and rain water harvest System for Hingawali Village	b) Site clearance for pipeline route c) Riser Tank 75m^3, Backfilling of foundation, Cart away excavated materials, internal plastering for risers, Cement screed for floor, Formwork for roof slab and lintels, Reinforcement for lintels, Bituminous materials, and concrete for Blinding, floor, Intermediate lintels. d) Filling of foundation footing with selected sand for Pump house All the above lead to additional cost amounting to TZS 76,619,500/=
	Construction of Borehole pumped Pipe scheme for Litipu, Nahukahuka and Nyangamara Villages	Site clearance was missing in the BoQs which lead to additional costs of TZS 53,010,000/=
		Fittings were missing which lead to additional cost amounting to TZS 49,247,729
Nachingwea DC	Construction of Borehole pumped scheme for Namangale Village	Quantity shown on B.O.Q was less than actual quantity which lead to additional cost amounting to TZS 51,410,921.

***Source**: Contract information from projects implemented by 12 Visited LGAs (2018)*

Table 3.14 shows that in 8 out of 12 visited LGAs, there were notably weaknesses in the preparation of BoQs. The noted weaknesses include double costing of some items, missing of costing of some items and underestimating costs and scope of some works leading to increasing of cost later on.

The noted weaknesses resulted from inadequate review of contract documents by responsible officials both at LGA and Regional Secretariat levels. If there could be working mechanisms for reviewing BoQs, some weaknesses could be noted and rectified. Moreover, some weaknesses like unrealistic distance of transformer to supply electricity was caused by inadequate feasibility study

Inadequate preparations of BoQs led to unnecessary high contract costs which could have been avoided. The case of Shinyanga DC is a typical example where they decided to increase the scope of supply of water at Chembeli and Bukumbi villages after saving amount which was costed twice in Didia water projects.

(iv) Inadequate design of water projects in rural areas

Through the review of file documents and site visits to 58 implemented water projects for the 12 visited LGAs, the audit team noted several weaknesses regarding design of implemented water projects. Among the things, which were noted, includes poor location of water tanks, poor location of water intake points and wrong specifications of the materials to be used during implementation of water projects. For detailed information regarding the specific water projects and weaknesses noted regarding design, see **Table 3.15** hereunder:

Table3. 15: Water projects noted with design weaknesses

Name of LGA	Name of water projects	Noted weaknesses on design
Kiteto DC	Kaloleni water project	The slab of 200mm thickness which require bottom and top reinforcement had bottom reinforcement only
Morogoro DC	Kifindike water project	• Poor location of water intake leading to lack of supply of water • Poor location of the water tank
Shinyanga DC	Mwamadilana water project	• Pressure reducing valve which has no capacity to meet intended plan of water supply. There was a change of pressure reducing valve from 25 bar to 12 bars instead of the specification given to contractor from 25 bars to 5.4 bars
Mkalama DC	Gumanya water supply	2 DPs out of 8 with distribution network were operating with low pressure while others were not operating by December,2016
Simanjiro DC	Olichornyori Water Supply Project	Project need Booster pump to be able to deliver water at the position of storage tank.
Mbulu DC	Dongobesh Water Supply Project	Bursting of pipes due to high pressure to some areas
	Hydom water projects	Lack of stop valves which causes some difficulties when technician need to do some maintenance in case of any breakage

Name of LGA	Name of water projects	Noted weaknesses on design
Morogoro DC	Kifindike water project	Poor location of water intake leading to lack of supply of water Poor location of the water tank
	Kiziwa water project	Lack of top slab of water treatment plant and upflow rapid filter earthwork which later on was introduced
		Lack of Top slab in the contract B.O.Q which due to site condition had to be constructed which resulted to additional cost amounting to TZS 7,132,550.
Mvomero DC	The construction of Water supply and Civil work for Mlali-Kipera villages	The existing distribution system that was designed and partly constructed and abandoned thereafter. Later on, they resume the construction and found out that the previously constructed infrastructure was not working. This was because most of the distribution pipes have been damaged and needs to be replaced. The cost for replacement is TZS 45,682,000.
	The construction of water supply civil work for kwadoli villages	Inadequate design of the intake which was damaged due to floods. Pipes passing through farm about 300m were destroyed by the flood. The damaged section were fixed with the new pipes supplying of water meter to constructed cattle trough. Additional reinforcement to Ferro cement tank. All these led to additional cost to the contract amounting to TZS 11,900,000
Sumbawanga DC	The construction of Laela group water supply project	Changes in Kamnyalile tank location to Mountain area, Bitumen application, Damp Proof course to foundation, Construction of chambers to DPs, Columns and beams, reinforcement for foundation, hardcore bed to intake, Installation of air valve and washout chamber along Kachena intake to Mpembano storage tank. This led to additional cost amounting to TZS 32,330.000
Nkasi DC	Construction of water supply project and civil works for Mfinga Village	Design problem of not including columns at the centre of Tank slab, ring beam and cross beam and cross beams. These led to additional cost amounting to TZS 15,900,000.
Lindi DC	Construction of Gravity flow system for	Design review which led to change of gravity main pipes from OD 110mm to 160mm.

Name of LGA	Name of water projects	Noted weaknesses on design
	King'ombe Village	

***Source**: Performance reports and site visits as shown in last column of Table 3.12*

Table 3.15 shows various noted weaknesses on design of water projects for 11 out of 12 visited LGAs in the country. Design weaknesses were noted on the distribution system, construction of water intake and water tanks for reviewed water projects.

The noted weaknesses on design of water projects was a result of failure of DWE's office at LGAs to perform their duty of ensuring that the design of water projects are reviewed so as to rectify any weaknesses which could have been found. Moreover, the LGAs did not engage Assistant Administrative Secretary-Water section at regional level who also has a duty of reviewing the design of water projects in all districts in his/her respective region.

Moreover, some engaged contractors were not able to locate intake at the right points in order to allow supply of water to the community while insufficient supervision from LGAs to regional secretariat levels also contributed to the problem.

The inadequate design of water projects resulted to loss of government money due to the need of redesigning water projects which had some weaknesses. Moreover, the completion of water projects delayed while the intentions of supplying water to the community was either delayed or not attained at all.

(v) Change in pipeline route and location of water points

Through the reviews of letter from contractor dated 1st June, 2018 with Reference Number MGT/TNG/2018/206 requesting for approval of variation for Kaloleni water project in Kiteto DC, and the approval of the request by Kiteto DC with letter dated 20th June, 2016 with Reference Number LGA/060/2016/2017/W/WSDPII/04/02, the audit team noted that there were differences between the requirement of lengths of pipes stated in the BoQs and those obtained after survey of the contractor. **Table 3.16** below shows differences between the two

Table3. 16: Length of pipes as per survey of contractor and from BOQs

Original specs	Length in BoQs(m)	Actual length (m)	Differences (M)	Rate	Total difference in cost (TZS)
Pipe size outer diameter (OD) 32mm HDPEN 10	385	200	-185	6,000	-1,110,000
Pipe size outer diameter (OD) 50mm HDPEN 10	1265	1221	-44	8,000	-352,000
Pipe size outer diameter (OD) 75mm HDPEN 10	2520	3695	1175	15,000	17,625,000
Pipe size outer diameter (OD) 90mm HDPEN 10	1025	1122	97	19,000	1,843,000
Total additional cost					**18,006,000**

***Source**: Letter from Megatech Construction Co. Ltd with ref. MGT/TNG/2018/206*

Table 3.16 shows a total cost amounting to TZS 18,006,000 due to changes in pipelines route and water points. The change in water pipe routes resulted in increased costs caused by inadequate coordination between Kiteto DC and responsible authorities for road constructions i.e. TARURA and TANROADS. The plan to implement Kaloleni water project was interfered by the road construction leading to change of route for the water infrastructure, this led to increased cost during the implementation of water project at Kaloleni.

Moreover, through interviews held with District Water Engineer (DWE) the change of the location of the Domestic Points (DPs) which also had resulted to increased cost of the project was due to the located DP being nearby the existing DPs. Furthermore, DWE stated that some members of the community refused to provide land for locating DPs, which forced them to change their location.

The shifting of DPs due to existence of old DPs is the results of inadequate needs analysis prior to location of DPs. Kiteto DC did not ensure that proper needs analysis was done prior to implementation of Kaloleni water project. Moreover, resistance of some members of the community to provide land for locating DPs is the results of failure to engage the community and foster awareness on the benefits of intended water projects to be implemented. All these resulted to variation of the cost of water projects during their implementation and generally the risk of failure to meet the increased budget.

(vi) Authorizing variation of works without verifying the claim of the contractor

Through reviews of the letter of response from DWE with Reference Number LGA/060/2016/2017/W/WSDPII/04/02 dated 20th June, 2018, the audit team noted that DWE allowed variation of works amounting to TZS 18,006,000 without verifications. The letter was responding to the request from M/S Megatech Construction Company Limited who requested permission for variation of works at Kaloleni water project. The letter from DWE stated that the requested variation from contractor was permitted and verification at site will be done later.

Despite the fact that DWE's office was responsible for verifying the requested variation before approval, he approved and promised to conduct verification later on. The audit team further requested the report regarding the verification done but DWE was not in a position to issue such report and claimed that he did verification and the claim was genuine. Generally, the audit team noted that there was inadequate supervision of the Kaloleni water project in Kiteto DC.

There is a risk that Kiteto DC authorized variations of works which were not genuine which led to improper use of government funds. Moreover, the inadequate supervision of ongoing water projects at Kiteto DC poses the risk of implementing water projects with low quality and unqualified variations of works.

(vii) Inclusion of performance security and advance payment bond costs in the contract cost

Through reviews of contract documents in the visited LGAs it was found that performance security, advance payment guarantee and bank guarantee costs have been included in the calculation of the contract cost. These items were required to be submitted by the bidder to show their financial assurance in performing the assigned duty and should not be part of the items that contribute to the contract cost. For detailed information regarding payments made in different projects see Table 3.17 hereunder

Table3. 17: Water projects and corresponding costs for performance bond and advance payment guarantee

Name of LGA	Number of water projects affected	Provision of performance bond (TZS)	Advance payment guarantee (TZS)
Mbulu DC	6	21,100,000	14,500,000
Kiteto DC	3	12,000,000	6,000,000
Manyoni DC	1	2,500,000	0
Singida DC	4	10,000,000	8,000,000
Shinyanga DC	5	11,000,000	0

Name of LGA	Number of water projects affected	Provision of performance bond (TZS)	Advance payment guarantee (TZS)
Kishapu DC	1	1,900,000	10,0000
Morogoro DC	5	21,546,208	25,092,417
Lindi DC	4	17,000,000	25,500,000
Nachingwea DC	4	7,500,000	7,000,000
Sumbawanga DC	5	8,000,000	2,850,000
Total		**112,546,208**	**88,952,417**

Source: *Payment certificate evaluation and Contract BoQs*

Table 3.17 shows a total of TZS 112,546,208 which was paid as cost for contractor to provide performance bond. For the six visited LGAs namely Shinyanga, Mbulu, Kiteto, Manyoni, Kishapu and Singida DCs at least one project in the sampled water projects included the item in their contract costs. Moreover, in Shinyanga and Mbulu DCs all sampled water projects included the cost for provision for performance bond and it was paid as well.

Moreover, **Table 3.17** shows a total of TZS 88,952,417 as a cost for contractor to provide advance payment guarantee. These costs were included in the contract and paid to contractors. In Mbulu DC all sampled water projects included cost for advanced payment guarantee and contractors were paid. For detailed information refer ***Appendix 7***.

Through the interviews held with DWE at Mbulu DC, he declared that the payment was done by mistake as he took effort to seek explanations from the consultant to know exactly the validity of the payment. He revealed that they would avoid the payment of such items in future as there were no justifiable reasons for such payment.

The inclusion of advanced payment guarantee and provision for performance bond has led to unnecessary increase of contract costs. The increased costs could be used to implement other activities during the implementation of water projects in rural areas.

(viii) Including cost for contractor to comply with terms provided in the contracts

Section 39.2 of the General Conditions of contract requires the Contractor to be paid for the quantity of the work done at the rate in the Bill of Quantities for each item. This means that the rate provided in individual items is for carrying-out the work to meet the provided standards and specifications and hence complying with the terms provided.

Through the reviews of contract documents for the 12 visited LGAs specifically in the section of BoQs the audit team noted that there is an

item namely '*contractor to comply with terms and specifications of the contract*' which was priced and formed part of the contract costs. It is the duty of both parties to comply with the terms and specifications of the contract and this should not form part of the contract cost. For detailed information see **Table 3.18** hereunder.

Table 3. 18: Cost of contractor to comply with all binding instructions

Named of LGA	Project /Item	Amount (TZS)
Shinyanga DC	Construction of water Supply Civil works for Mendo Village[40]	700,000
	Construction of water Supply Civil works for Mwamadilanha Village[41]	3,500,000
	Construction of water Supply Civil works for Manyada Village[42]	2,500,000
	Construction of water Supply Civil works for Didia Village[43]	2,000,000
	Construction of water Supply Civil works for Mwakitolyo [44]	2,500,000
Kiteto DC	Piped pumping water supply schemes for Kona Sub village	1,000,000
	Piped pumping water supply schemes for Loolera village	2,000,000
	Piped pumping water supply schemes for Dosidosi village	1,000,000
Mbulu DC	Pumped water scheme for Haydom village	3,000,000
	Pumped water scheme for Singu village	3,200,000
	Pumped water scheme for Arri, Harsha, Yaeda Ampa and Hayaseng	3,000,000
Sumbawanga DC	Ikozi water project	200,000
	Laela water project	1,000,000
Total		25,600,000

***Source**: Contract BoQs and Payment certificates*

Table 3.18 shows inclusion of item namely '*cost of contractor to abide to all binding instructions*' amounting to TZS 25,600,000. In 4 out of 12 visited LGAs at least one water project included the item in their contract cost and paid the contractor. In Shinyanga DC, all sampled water projects included the item in their contracts cost and the contractor was paid as well.

The inclusion of cost of contractor to abide to all binding instructions in the contract costs has led to unnecessary increase to contract costs. This cost

[40] It has been paid through certificate.
[41] Was paid as through certificate number no.1
[42] Paid through certificate no. 2
[43] The item was paid through certificate no. 1
[44] Paid through certificate no.1

could be used to implement other activities during the implementation of water projects in rural areas.

(ix)Changes in specifications without omitting the cost of previous item

Through Review of Variation Order No.2 for Mwakitoliyo water projects in Shinyanga DC dated 22nd January, 2018, it was noted that there are galvanized steel pipe covering 2107 metres which was not in the BoQs.

According to Technical team report from the meeting held on 20th October, 2017 to discuss matters of Mwakitolyo water project, HDPE pipe was changed to galvanized steel pipe due to rocks found in the intended area. According to the report from the technical team, the cost of HDPE 63 MM Pipe was TZS 20,222,200 and was subject to deduction. Through the review of Variation Order Number 2, the cost for HDPE 63mm pipe which was subject to deduction after being replaced by galvanized steel pipe was not deducted. Failure to deduct the cost for HDPE 63 MM Pipe resulted into extra cost to the Mwakitolyo water project amounting to TZS 20,222,200 as per Technical team report.

(x) Reducing the cost of the generator and paying original price

Review of Variation Order No. 1 for Hingawali water project dated 11th May, 2017, the audit team noted that there was a change of specifications of the capacity of the generator from 70KVA to 60KVA without changing the original price. The audit team noted that, there were changes in specifications but payment was done based on original specifications hence paying more than required.

Review of inspection report for Lindi DC dated 30th of April, 2015 declared that during the inspection they noted that the contractor installed the generator with the capacity of 60KVA contrary to the terms of the contract which required a generator with the capacity of 70KVA.

Also, the review of letter with Reference Number LDW/H.20/20/39, dated 06th May, 2015 noted that DED instructed the contractor for Hingawaali water project to install generator with the capacity of 70KVA instead of 60KVA which has been installed.

When observing the date of three scenarios above, it was noted that the inspection team and DED, despite of noting the anomaly during the inspection they did not take actions as the generator was not changed. Furthermore, the payment was done based on the original specifications.

This was a result of not inspecting and approving major task during execution of water projects in Lindi DC. Furthermore, there is the risk that change in specification was influencing in one way or another since inspection was done in 2015 and change in specification was done in 2017 while DED's instructions were not implemented.

(xi)Variation of quantities of the major items of water projects

During reviews of evaluation of substantial completion certificates the audit team further noted that there were difference in quantities of the major items specifically water pipes. The audit team noted variations of quantities of item when compared final and initial quantities as detailed in **Table 3.19:**

Table 3.19: Variation of quantities of the major items of water projects

Name of LGA	Number of water Projects affected	Range of variations of quantities between initial and final quantities[45] (in percentages)
Singida DC	2	-25 to 802
Manyoni DC	1	-28 to 202
Shinyanga DC	Nil	Nil
Kishapu DC	1	-5 to 2
Morogoro DC	1	-41 to 126
Mvomero DC	2	-66 to 168
Lindi DC	2	-57 to 80
Nachingwea DC	4	-60 to 261
Sumbawanga DC	2	-20

***Source**: Payment certificates from the visited LGAs (2018)*

Table 3.19 shows that in all 12 visited LGAs, there were changes of major items at least to one water projects among the sampled and visited water projects in rural areas.

The issue of changing specifications of major items in water projects and specifically water pipes imply that there was inadequate feasibility study prior to implementation of the projects. Moreover, there is the risk of increasing the cost of the projects especially when the changed specifications are higher in terms of cost compared to what was planned before. For detailed information refer *Appendix 8*.

(xii) Ineffective adherence to bid validity period

Through the review of report on follow-up of expenditure of funds for implementation of water projects in LGAs and Water Authorities for the

[45] Variations on the difference between initial and final quantities of the major items presented percentages

financial year 2016/17, the audit team noted that there were differences between the dates of signing the contracts and the starting date for the implementation of water projects. According to the report most projects were signed in 2013 and implementation started late due to lack of fund. The report further stated that there was misunderstanding between contractors and LGAs due to change of prices of items. Some projects stopped due to resistance of some contractors to proceed with the projects.

Through interviews held with DWE at Mbulu DC, the audit team noted that there was on-going negotiation regarding the price of some items of the contract for Ari Harsha water project. This was due to the fact that it was a long time since the contractor tendered for the project and the prices of some items have changed.

Through the reviews of contract documents from the 12 visited LGAs, the audit team noted that there was difference between tendering and signing date of contracts of water projects in rural areas in the country. The signing date was noted to take more than 120 days contrary to the requirements of bid validity period as detailed in **Table 3.20** hereunder.

Table3. 20: Dates for tendering and signing of contracts of water projects

Name of water project	Date of tendering	Date of signing of contract	Difference (days)
King'ombe water project	18/07/2013	07/08/2013	20
Mpasa water project	05/06/2017	29/06/2017	24
Isale water project	05/06/2017	29/06/2017	24
Kamwanda water project	05/06/2017	29/06/2017	24
Mituguru water project	18/11/2013	18/12/2013	30
Namangale borehole	05/08/2013	13/09/2013	39
Mnero miembeni water project	26/11/2016	11/01/2017	46
Zimba water project	09/09/2017	02/11/2017	54
Namkongo	20/01/2014	17/03/2014	56
Chiola water project	24/03/2014	23/05/2014	60
Lipuyu water project	05/03/2015	07/05/2015	63
Kona water project	11/07/2013	12/09/2013	63
Laela water project	02/11/2013	10/01/2014	69
Mfinga water project	25/11/2013	12/02/2014	79
Dosidosi water project	27/02/2013	17/05/2013	79
Hingawali borehole	05/08/2013	28/10/2013	84
Solola water project	24/06/2013	30/09/2013	98
Ikozi water project	24/06/2013	30/09/2013	98
Singu	11/10/2013	22/01/2014	103
Moringa	11/10/2013	22/01/2014	103
Hyadom	11/10/2013	22/01/2014	103
Gwata water project	20/03/2015	08/07/2015	110

Name of water project	Date of tendering	Date of signing of contract	Difference (days)
Fulwe water project	20/03/2015	08/07/2015	110
Farm 8 water project	28/03/2013	18/07/2013	112
Manyada	17/10/2013	12/02/2014	118
Dihimba water project	18/08/2017	28/12/2017	132
Masimba water project	18/08/2017	28/12/2017	132
Kiziwa water project	31/03/2014	23/08/2014	145
Litipu, Nahukahuka and Nyangamara borehole	22/10/2013	17/03/2014	146
Kifindike water project	06/02/2017	02/11/2017	206
Kibwaya water project	31/03/2014	08/12/2014	252
Mendo	17/03/2013	30/04/2014	409
Mongay Tumati	11/08/2011	25/02/2013	564
Ari Harsha	12/07/2011	11/10/2013	822
Kifindike water project	31/03/2014	23/08/2018	1606

***Source**: Contracts documents from the visited LGAs (2018)*

Table 3.20 shows that, 29 percent of the water projects implemented from 12 visited LGAs had a difference of more than 120 days. Despite the validity period being 120 days, the difference of tendering and signing of contracts took more than 120 days.

The consequence of time difference between tendering and signing date and actual implementation of water projects resulted in late completion of water projects and intended supply of water in rural areas. Furthermore, some prices of items increased and caused increases of contract prices as well. This in turn posed potential risk for not meeting the increased budget since it was not planned before.

(xiii) Termination of contracts without valuation of completed work

Through the reviews of letter with Reference Number MDC/DED/WI/2/VIII/160 to the contractor, the audit team noted that Mbulu DC terminated M/s DABENGO ENTERPRISES LTD who was implementing water project at Mongahay Tumati due to failure to perform.

Further the audit team requested valuation of the work done after termination but Mbulu DC did not provide the valuation report. Through interviews with held technicians at Mbulu DC the audit team noted that Mbulu DC did not conduct valuation after termination.

Failure to conduct the valuation including level of completed work against the amount paid to contractor poses the risk of Mbulu DC to forego its right especially when the contractor was entitled to pay some compensation after default. Moreover, despite engaging other contractor to finish the remained

work there were no basis for the contract price for the remaining work since no valuations were done.

Effectiveness of implementation of water projects with regards to quality

Through the review of the information regarding the quality of the implemented water projects in rural areas the audit team noted that some of the implemented water projects do lack required qualities. Table 3.21 hereunder shows the analysis of water projects with regards to quality from 12 visited LGAs.

Table3. 21: Analysis of quality of implemented water projects in rural area

Financial year	No. of projects implemented	No. of projects with required quality	No. of projects with defects
2013/14	66	40	4
2014/15	43	23	0
2015/16	31	12	0
2016/17	28	13	0
2017/18	46	27	0

***Source**: Progress Reports and Data from 12 visited[46] LGAs*

Table 3.21 Shows the number of water projects which were implemented in the five financial years and status of their quality. Despite the given data from LGAs showing that the implemented water projects lacked quality in the financial year 2013/2014 only, the audit team noted some other weaknesses regarding quality on water projects during documents reviews and site visits. For detailed information see Table 3.22

Noted weaknesses on quality of water projects from documents reviews
Through reviews of progress reports for the financial years 2013/14 to 2017/18 from Regional Secretariat for the visited regions namely Singida, Manyara, Morogoro, Lindi, Rukwa and Shinyanga it was further noted that the implemented water projects do lack required quality as noted in **Table 3.22** hereunder:

[46] Singida, Manyoni, Sumbawanga, Nkasi, Lindi, Nachingwea, Shinyanga, Kiteto, Mbulu, Kishapu, Morogoro and Mvomero DCs.

Table3. 22: Number of water projects with quality problems

Name of LGA	Name Of Project	Weakness Observed
Singida DC	Pohama Water Supply project	Leakage of water in the rising main and absence of non-return valve in the rising main.
Mkalama DC	Gumanga water supply project	Leakage of water in the Water Storage Tank
		2 DPs out of 8 with distribution network were operating with low pressure while others were not operating by December,2016
	Kikhonda Water Supply Project	Lack of water supply due to bursting of pipes and joints which allows leakages of water.
		No Water services at Mbigigi Sub – village due to elevation of the village being higher compared to elevation of the tank
Ikungi DC	Sepuka W/S project	Leakage of water in the rising main
Simanjro DC	Olichornyori Water Supply Project	Project need Booster pump to be able to get water at the position of Storage Tank. Water pipe was above the ground contrary to the requirement of BOQs which requires to be 1 metre below
Mbulu DC	Dongobesh Water Supply Project	Bursting of pipes due to high pressure to some areas
	Hydom water project	Water tank leakage Non inspection of equipment before being installed as a result manual control panel was installed instead of automatic sensor control panel for water pump as required in the contract[47]. Absence of stop valve hence during the O&M, COWSO will fail to operate the project since large amount of water will remain in the pipe"
	Tumati-Mongahay	Some of the construction materials including concrete blocks were not of good quality[48].
	Massieda water project	Bursting of pipe immediately after the project was handed over to the community due to low quality[49].

[47] Report of project implementation of water projects in Mbulu DC dated 27/06/2018
[48] Report of project implementation water projects in Mbulu DC dated 27/06/2018
[49] Manyara RS monitoring fourth Quarter 2015/16

Name of LGA	Name Of Project	Weakness Observed
Hanang DC	Malama water project (Renovation).	Water is not reaching to water tank at Lambo village due to lack of water pump[50]
Morogoro DC	Kifindike water project	Location of intake is located to stones which are falling Cracks on the floor due to inadequate concrete curing and cover for water chamber lack quality
	Dala mvua water projects	Failure of the water pump to work
	Mtamba Mtomozi water project	Destruction of water intake
Sumbawanga DC	Matai water project	There was notably improper design of water tank whereby its walls were not reinforced and at the bottom and top part of the tank
Nkasi DC	Mpasa water project	The trench for water pipes was not one meter below the ground in some areas
Lindi DC	Hingawali water project	Water not reaching water tank due to poor design Bursting of pipe due to poor design
Nachingwea DC	Mtama water project	Pumped water was not reaching to the water tank, the community was not getting water service.

***Source**: Monitoring Reports from respective Regional Secretariats (2018)*

Table 3.22 shows several weaknesses which were noted during documents reviews from Regional Secretariat in the visited regions namely Singida, Manyara, Morogoro, Lindi, Rukwa and Shinyanga. Among the weakness noted regarding the quality issues for water projects includes:

Leakage of water from pipes and water tanks

During reviews of Monitoring report from Regional Secretariat for the visited regions namely Singida, Manyara, Shinyanga and Morogoro, 7 out of 17 projects have leakages of water as shown in **Table 3.22** above. Water pipes and water tanks of different water projects were reported to have leakages in rural areas

Moreover, during site visits, it was noted at Mlali-Kipera water projects in Mvomero DC that the pipe which was supplying water from intake to water tank had leakages whereby a lot of water were lost. Photo 3.3 shows main water pipes.

[50] Manyara RS monitoring fourth Quarter 2015/16

Photo 3.3: *Mlali Kipera water project (Photo was taken on 29/11/2018)*

In most cases leakages were caused by poor quality of pipes used, missing air valves and poor joining of connectors of water pipes. LGAs responsible for supervision during the implementation of water projects did not fulfill their responsibilities which resulted into poor quality of the finished water projects. Moreover, some pipes which were frequently bursting was a result of poor design whereby pipes were subjected to high water pressure contrary to their capacity.

Frequent bursting of pipes which needed repairs has resulted to loss of government money for repairs of water projects with low quality. Moreover, there was a delay in ensuring the supply of water service reaches the intended community.

Non inspection of supplied construction materials

For the reviewed reports from Manyara Regional Secretariat, 3 out of 10 water projects were reported to have quality problems due to poor quality of materials used. In addition, interviews held with the technicians at Mvomero DC also revealed that LGAs did not conduct inspections of the supplied, construction materials to verify their quality which led to various problems including bursting of pipes.

The above mentioned weaknesses were the results of not conducting inspection of the materials supplied for the water projects in rural areas.

It was further revealed that in Hydom water project in Mbulu DC, manual control panel was installed instead of automatic control panel. The generator was purchased and installed in Olichornyori in Simanjiro DC without being inspected by Simanjiro DC. In Mongay-tumati water project in Mbulu DC the supplied blocks were reported to be of low quality.

Supply of non-intended materials and materials with low quality was a result of inadequate inspections of supplied materials and generally inadequate supervision of contractors during the implementation of water projects.

This has resulted to poor quality of the ongoing and completed water projects. Moreover, it has led to carrying out repetitive work which should have been done earlier on. For example the supplied manual control panel in Haydom water project was removed and the contractor ordered to bring an automatic control panel as per BoQs. While the client was waiting for the automatic control panel the pump was used without the protection provided by the control panel. This poses a potential risk to the operational life of the pump.

Laying pipe on the ground

In Olichornyori Water Supply Project in Simanjiro DC it was reported that pipes were laid on the bare surface of the ground as shown in photo 3.2 contrary to the requirement in the BoQs which required pipes to be laid deep at least one metre below the ground .

This was the result of inadequate supervision since this incident is totally contrary to the BOQ requirements and to the best practices. The contractor did it intentionally since there was no supervision at all and he knew that it was not acceptable and contrary to the requirements of the contract.

Photo No. 3.4 hereunder showing pipe laid above the ground instead of the required one meter deep. The contractor managed to do this due to lack of supervision from Simanjaro DC

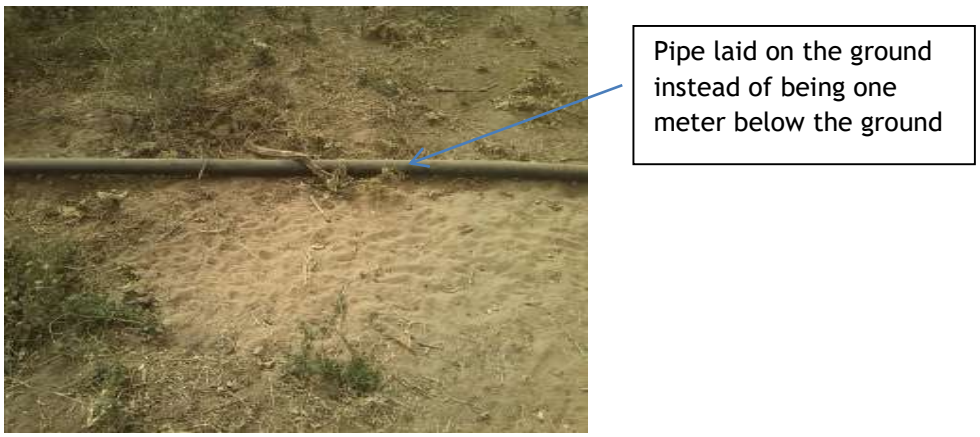


Photo 3.4: Pipe laid on the ground instead of being one meter below the ground

Noted weaknesses regarding quality of water projects during site visits

During site visits, the audit team also noted some weaknesses for the visited water projects in LGAs. Some of the observed weaknesses include leakages of water tanks, bursting of pipes and defective control panel. See detailed information as presented in **Table 3.23**.

Table3. 23: Projects and noted weaknesses during site visit

Name of LGA	Name of water projects	Weakness observed
Manyoni DC	Londoni water project	Frequent bursting of water pipes for extended water line to cattle troughs and mineral extractive industry
Mbulu DC	Haydom water project	• Leakage of water from newly constructed water tank • Removal of defective control panel for motor which pump water from booster tank to the main tank • Bursting of main water pipes leading to floods • Using stick instead of air valve • Lack of markers to risk areas where pipes lines pass
Shinyanga DC	Mwanamadilanha water projects	2 DP provide water with low pressure and 1 DP does not supply water.
Kiteto DC	Dosidosi water project	Water tank had no cover which poses the risk of pollution of water
Morogoro DC	Fulwe water project	• Water tank has no cover to protect water in it. Water chamber and its pipe were not covered
	Gwata water project	• Establishment of water infrastructure since 2016 without water supply • Impaired Domestic points as it is not working since its construction
	Kifindike water project	• Poor design of water intake • Implementation of water infrastructure without assurance of water from intake
Mvomero DC	Kwadoli water project	• Poor design of water pipes • Pipes were washed away by river water • Location of the tank do not allow water to reach all villages
	Kigugu water project	• Serious economic activities at water intake • Poor design of water intake, periodically washed by river water
	Mlali Kipera	• Salty water • Serious leakage of water from pipes which supply water to the community, no action taken

Name of LGA	Name of water projects	Weakness observed
		• The available water infrastructures are only efficiently supplying water during the rainy season
Sumbawanga DC	Mfinga water project	• The project is not working due to sand at water source
	Zimba water project	• Using HDPE pipes instead of GSP pipes
	Solola water project	• Bursting of pipes • Malfunctioning of water taps
Nkasi DC	Kabwe water project	• Water tank has no cover to protect water in it
	Isale water project	• Pipes were not covered up due to trenches being shallow, less than one meter deep.
Lindi DC	Hingawali	• The project is not functioning • Bursting of pipes • Cracks to the water pump house
	Nyamangala/Litipu/Nahukahuka water project	• The pipe was leaking at water source but no actions was taken • Water was leaking from the tank-Nangamala • Water was leaking from the tank-Litipu
Nachingwea DC	Chiola water project	• The project was not working • Generator was not functioning
	Lipuyu water project	• The project was not working • The community failed to run the project due to high running cost

***Source**: Auditors' observation during site visits (2018)*

Table 3.23 shows that 10 out of 12 visited LGAs had quality problem issues on the implemented water projects. These problems are bursting of pipes, water tank leakages, using wooden stick instead of air valve, presence of low pressure to some Domestic Points and failure of water to reach Domestic Points.

Also, reviews of inspection reports from DWE dated 08th June, 2018 for Mendo Project in Shinyanga DC, the audit team noted that there was bursting of water pipes and low water pressure to two cattle troughs. The reason provided was the pipes were passing through rocky areas and in order to rectify the situation the inspection team ordered the contractor to remove all pipes and substitute with new pipes which would be laid in a sand bedding.

It implies that, during construction there was no supervision of the contractor to ensure that the contractor constructs as per provided drawings and technical specifications. The reviews of the drawings for the projects showed that pipes were required to be bedded by sand bags as per the directives provided by the inspection team.

Further review of the drawings for the project i.e. drawing number ENGG/SH/MENDO/1007/1 with title Mendo Pipe Bedding showed that pipe should be bedded by sand bags as per directive provided by inspections' team.

Generally the audit team noted among the key causes for poor quality for the implemented water projects in rural areas included:

(i) Inadequate supervision for the ongoing water projects

For the noted leakages of water from water pipes and water tank the audit team noted that it was caused mainly by inadequate supervisions. Occurrences of poor workmanship which result to leakages, using non-specified materials instead of specified materials or using of materials with low quality as noted in implemented water projects in rural areas are caused by inadequate supervisions.

Through reviews of a letter with Reference Number DWE/G.C/1/106 from Shinyanga DC to contractor namely M/s Makima General Traders Co. Ltd, the audit team noted that Shinyanga DC did not conduct supervisions at all for the completed water projects at Didia. The letter was responding to the letter of the contractor with Reference Number MGT/SHY/WSC-15/09 who was requesting his retention money. In their reply Shinyanga DC claimed that the contractor had not finished some of the work like installation of SIM TANK with the capacity of 3000 litres and building of jar with the capacity of 1000 litres.

This implies that there was no close supervision during the implementation of Didia water project until the contractor finished his work as per his perception, the defect liability period expired and then decided to request his retention money which reminded Shinyanga DC to conduct inspections regarding the constructed water project at Didia.

(ii) Too many projects implemented by the consultants and contractors

Through reviews of monitoring and evaluation report of zone 1 issued by the Ministry of Water in July, 2016 the monitoring team noted poor quality to some of the visited water projects and the said causes was that consultants and contractors were having too many projects at the same time.

Despite of the observation of the monitoring team there is the risk that evaluation of the awarded contractors was not done properly that's why the contractors failed to fulfill their tasks accordingly. The evaluation should have included the maximum number of projects contractors and consultants are implementing at one particular point in time. Moreover, PO-RALG and MoW were not in the position to have a database regarding consultants and contractors implementing water projects at the same time and give necessary advice on its impacts to the expected quality of work.

Through review of monitoring report for three DCs namely Kalambo, Sumbawanga and Nkasi in Rukwa region dated March, 2014, the monitoring team noted that there were too many water projects which were implemented by one consultant. The team noted that there is a potential risk that the weaknesses of the consultants could affect all water projects in those three LGAs. Moreover, there is the risk of water projects to lack required quality due to inadequate supervision of construction works. According to the report, the consultant namely, M/s O &A Co Ltd had about 10 projects in Kalambo and Sumbawanga DCs.

Further review of reports from 12 visited LGAs in rural areas regarding consultants and contractors who were implementing water projects in rural areas revealed that, there are consultants who were implementing a number of water projects in different LGAs at the same time. For example, M/s Don Consultants was noted to have a total of 21 water projects in Morogoro, Nachingwea and Lindi DCs. Furthermore, it was revealed that some consultants had become territorial by dominating certain regions; like M/s O & A-Rukwa, M/s POA Engineering-Manyara. For detailed information refer *Appendix 9*.

During the audit, it was further noted from the interviews held with DWEs for the 12 visited LGAs; that some water projects are lacking quality due to the facts that cotractors and consultants have too many concurrent water projects thereby resulting in diminished capacity to handle all of them at the same time.

Coordination between PO-RALG and MoW during implementation of water projects in rural areas

It was noted that there is ineffective coordination between PO-RALG and MoW during implementation of water projects. According to DWEs there are two budgets which are prepared and submitted to the two ministries without coordinating to one another. This poses some difficulties during the execution of the budgets. The officials explained that usually the budget which is submitted to PO-RALG and entered in the system (EPICOR) is small compared to the budget which is prepared by Ministry of Water. During implementation of water projects usually LGAs receive and use the budget from MoW. Moreover, the LGAs are required to follow appropriate

procedures in order to access the budget which is higher from what was entered into the system.

Through the reviews of budgets for both PO-RALG and Ministry of Water, the audit team noted that there is the difference between the two budgets although both are aimed at implementing the same water projects in LGAs. **Table 3.24** hereunder shows the budget for the two ministries for financial year 2017/2018.

Table3. 24: Budget for Ministry of Water and PO-RALG for financial year 2017/18

Name of LGA	Budget submitted to PO-RALG (in million TZS)	Budget given by the Ministry of Water (in million TZS)
Singida DC	400	860
Manyoni DC	334	612
Mbulu DC	386	2,091
Kiteto DC	2885	708
Shinyanga DC	901	1,344
Kishapu DC	1,175	1,858
Morogoro DC	759	1,764
Mvomero DC	447	1,593
Lindi DC	224	1,310
Nachingwea DC	3,026	586
Sumbawanga DC	163	919
Nkasi DC	1,385	1,385

***Source**: Budget for two Ministries from Respective Local Government Authorities*

Table 3.24 shows that 11 out of 12 visited LGAs had two different budgets for the two Ministries. The budgets which were submitted to Ministry of Water was always higher compared to the one submitted to PO-RALG except for two LGAs.

Furthermore in order to use the received funds from the Ministry of Water which is over and above the prepared budget which was submitted to PO-RALG there are some procedure which LGAs need to follow; first they have to approve it in Council Management Team (CMT) followed by Finance, Leadership and Planning meetings. The minutes from Finance, Leadership and Planning meetings along with bank statements are attached with covering letter to request extension of activity code of the budget entered in the system to PO-RALG so that they can access and use the funds.

Procedures of LGAs to request extensions of budget to PO-RALG take time and contribute to delays to pay contractors and consultants. This affects the completion time of water projects as well since some contractors and consultants depended on payment from raised certificates to continue with the next stage of implementation of water supply projects.

Planning for water projects in rural areas

It was noted that the plans for water projects to be implemented in a particular financial year was not effectively coordinated between the Ministry of Water and PO – RALG. According to the interviews held with DWEs from 12 visited LGAs, the proposed plan of water projects to be implemented was submitted to PO – RALG which later on sets a ceiling which is obtained from the Ministry of Finance contrary to the required total budget of water projects to be implemented. Therefore, the plan for water projects to be implemented was based on the ceiling set by the Ministry of Finance and Planning. This means that the budget developed by PO-RALG through its LGAs is mainly addressing the ceiling set which is not realistic while that developed by the Ministry of Water is developed based on the five year plan for the water sector development plan.

There were notably lack of communication between the Ministry of Water and PO – RALG regarding the planned number of water projects to be implemented in rural areas. This is due to the fact that PO – RALG is governed by the ceiling set by the Ministry of Finance while Ministry of Water mostly relies on the actual plan in place. This led to differences between the budgets of the two Ministries.

Execution of approved water projects in rural areas

It was also noted that the Ministry of Water and PO – RALG do not coordinate and consult with each other effectively during the execution of approved water projects in rural areas. According to interviews held with DWEs in 12 visited LGAs, usually PO – RALG issue ceiling for water projects to be implemented contrary to planned water projects. On the other hand, the Ministry of Water's budget is based on the five year plan which LGAs submit to them, the Ministries do not communicate to each other regarding the water projects to be implemented in rural areas in particular financial year.

Due to lack of coordination on the plan and accompanied budget of water projects to be implemented in rural areas in the country, the two Ministries usually come-up with two different budgets which are intended to be implemented in the same rural areas. This causes some difficulties to LGAs during executions of two prepared different budgets as it requires to follow specific procedures prior to the funds usage.

Processing of payments during the execution of water projects in rural areas

It was further revealed that processing of payments during the execution of water projects in rural areas is not effectively coordinated between the Ministry of Water and PO – RALG. The processing of payment is monitored by PO – RALG whereby the budget entered into the system (EPICOR) cannot be executed beyond the amount approved by PO –RALG unless there is

approval from PO – RALG. In most cases the budget from the Ministry of Water was noted to be higher than the budget authorized by PO – RALG.

Due to lack of coordination between the two Ministries in processing payments, LGAs faced some difficulties in executing the two budgets. LGAs were noted to be the center for communication for the two budgets, the approved budget from the Ministry of Water is sent directly to LGAs who need to follow some procedures and request approval to PO –RALG in order to use the received funds. This took time and caused unnecessary delay of payments to contractors. Despite these differences in budgets, the two Ministries did not properly communicate to each other in order to ensure smooth execution of the budget by the LGAs.

CHAPTER FOUR

FUNDING AND MONITORING THE IMPLEMENTATION OF WATER PROJECTS

4.1 Introduction

This chapter presents findings of the audit, which address audit objective and corresponding audit questions related to funding and monitoring as outlined in Section 1.3.1 of this report.

Specifically, the audit focused on the management of water projects in rural areas whereby the findings covers two main areas namely:

(a) Effectiveness of Ministry of Water in ensuring adequacy and timely funding of water projects in rural areas; and
(b) Effectiveness of Ministry of Water and LGAs in monitoring the executed water projects in rural areas.

4.2 Funding of water projects in rural areas

4.2.1 Delays in paying contractors by the Ministry of Water

Through reviews of the raised certificates of payments for water projects implemented for the visited LGAs[51], it was noted that there are delays in paying contractors who are implementing water projects in rural areas. The audit team noted that the Ministry of Water did not pay the certificates of payments approved by LGAs timely. Most of the certificates of payments approved by LGAs were not paid within 28 days, a period stated in the contract between LGAs and Contractors.

Projects with delayed payments

Table 4.1 provides a detailed analysis of a number of projects reviewed in each of the 12 visited LGAs, and a number of projects whose payments were delayed.

[51] Singida DC, Manyoni DC, Mbulu DC, Kiteto DC, Shinyanga DC, Morogoro DC, Mvomero DC, Sumbawanga DC, Nkasi DC, Lindi DC, Nachingwea DC and Kishapu DC

Table 4. 1: Number of projects whose payments were delayed

Name of LGA	Number of projects reviewed	Number of Projects with delay	Percentage of Projects with delays (%age)
Mbulu DC	5	5	100
Shinyanga DC	5	4	100
Kishapu DC	5	5	100
Morogoro DC	5	5	100
Mvomero DC	5	5	100
Nkasi DC	4	2	50
Lindi DC	4	3	75
Nachingwea DC	5	2	40
Sumbawanga DC	5	2	40
Kiteto DC	5	2	40
Singida DC	5	3	60
Manyoni DC	4	2	50

***Source**: Auditors' analysis of payment data from twelve visited LGAs (2018)*

Table 4.1 shows that in 5 out of 12 visited LGAs, all the sampled water projects had delays for payments on the raised certificates. For all 12 visited LGAs at least 40% of the reviewed water projects had delayed payment for the raised certificates. Similarly, the percentage of projects that were delayed was 71.4%.

Delayed time

Further analysis was made to establish the extent of delays in terms of number of days. Delayed time was established by counting the number of delays beyond the given period of 28 days.

Table 4.2 provide a detailed analysis of projects reviewed in each of the 12 visited LGAs, number of projects whose payments certificates were delayed and delayed period.

Table4. 2: Analysis of Range of delays in paying contractors

Name of LGA	Number of projects reviewed	Number of Projects with delay	Range of delays (days)
Singida DC	5	3	14 – 347
Manyoni DC	4	2	92 – 122
Mbulu DC	5	5	21 – 190
Kiteto DC	5	2	51 – 71
Shinyanga DC[52]	5	4	2 – 627
Kishapu DC	5	5	4 – 270
Morogoro DC	5	5	4 – 367
Mvomero DC	5	5	4 – 186
Lindi DC	4	3	23 – 191
Nachingwea DC	5	2	143 – 337

[52] Data for Didia water project was not provided

Name of LGA	Number of projects reviewed	Number of Projects with delay	Range of delays (days)
Sumbawanga DC	5	2	20 – 371
Nkasi DC	4	2	50 – 141

***Source**: Auditors' analysis of payment data from twelve visited LGAs (2018)*

Table 4.2 shows the range of delays in paying contractors for the certificates raised in 12 visited LGAs. From the analysis, Kiteto DC was noted to have the minimum range of delayed time for paying contractors while Shinyanga DC had the maximum range.

According to the officials from the Ministry of Water and 12 visited LGAs, usually the raised certificates for payment are not paid on time, leading to late completion of projects. Moreover, contractors who are financially capable do not implement water projects using their own resources since they are not sure the government would refund them timely.

Delays in approving payment certificates by LGAs

The audit team noted that there were delays in approving payment certificates raised by the contractors in the respective LGAs.

These delays were common despite the requirement to approve raised payment certificate within 28 days from the date of receipt of the claim from the Contractor. Out of 167 claims (request for certification of payments raised by contractors), only 130 were processed within the specified period of 28 days.

Table 4.3 provides a detailed analysis of payment certificates raised by contractors for approval by LGAs in each of the 12 visited LGAs, and certificates whose approval were substantially delayed.

Table 4. 3: Projects whose payments approval were substantially delayed in LGAs

Name of LGA	Number of Payment Certificates reviewed	Number of Payment Certificates with delay in approval	Percentage Payment Certificates with delays (%age)
Morogoro DC	17	-	-
Nkasi DC	10	-	-
Mvomero DC	14	1	7
Kishapu DC	8	1	12
Mbulu DC	34	5	15
Manyoni DC	11	2	18
Shinyanga DC[53]	16	3	18
Nachingwea DC	14	4	29

[53] Data for Didia water project was not provided

Name of LGA	Number of Payment Certificates reviewed	Number of Payment Certificates with delay in approval	Percentage Payment Certificates with delays (%age)
Singida DC	22	8	36
Sumbawanga DC	16	6	42
Kiteto DC	9	4	44
Lindi DC	4	3	75

Source: Auditors' analysis of payment data from twelve visited LGAs (2018)

Table 4.3 shows that 75% of the raised certificates in Lindi DC were not approved on time. On the other hand, Morogoro and Nkasi DCs were performing better by approving all the raised certificates timely.

The audit team made further analysis to establish the overall delays in approving payment certificates among 12 visited LGAs. The results of analysis are presented in **Table 4.4**.

Table 4. 4: Analysis of time taken to approve raised certificate by LGAs

Range of duration for approval of raised certificate(days)	Number of certificate affected	Percentages
2 - 30	11	7
31 – 60	5	3
61 – 120	8	5
121-1067	12	7

***Source**: Auditors' analysis of provided data on applications and approvals from LGAs (2018)*

Table 4.4 shows that, 7% of the certificates raised by the contractors were approved within a range of 2 to 30 days while 3% were approved within 31 to 60 days. Whereas 4% of certificates were approved within 61 to 120 days, the remaining 5% were approved more than 121 days after the agreed payment period.

Delayed time

Further analysis was made to establish the extent of delays in terms of number of days in each of the visited LGAs by counting the number of delays beyond the given period of 28 days.

Table 4.5 provides a detailed analysis of a number of payment certificates reviewed in each of the 12 visited LGAs; delayed payment certificates approval and period.

Table 4. 5: Analysis of Range of delays in paying contractors

Name of LGA	Number of Payment Certificates reviewed	Number of Payment Certificates with delay	Range of delays (days)
Singida DC	22	4	17 – 348
Manyoni DC	11	4	25 – 59
Mbulu DC[54]	34	14	21 – 1073
Kiteto DC	9	2	57 – 71
Shinyanga DC[55]	16	8	2 – 627
Kishapu DC	8	7	13 – 270
Morogoro DC	17	14	4 – 367
Mvomero DC	14	4	4 – 186
Sumbawanga DC[56]	16	3	20 – 371
Nkasi DC[57]	10	3	50 – 141
Lindi DC	4	3	23 – 191
Nachingwea DC	14	2	143 – 337

***Source**: Auditors' analysis of payment data from twelve visited LGAs (2018)*

Table 4.5 revealed that Kiteto DC had the minimum range of delay in paying contractors for raised certificate while Mbulu DC shows to have a maximum range. Moreover, the table shows that at least 2 certificates from each LGA were delayed in payment. Furthermore, from Table 4.5, the minimum delay was 2 days while the maximum delay was 1073 days. The average delay was 129 days with standard deviation of 177.

It was further noted that these delays in approving payment of certificates were contributed by the following factors:

a) Delayed verification for the work-done due to:

(i) Few number of human capital to execute the activity;

Table 4. 6: Ratio of staffs to the water projects for the financial year 2017/18

LGA	No. of staffs available		No. of projects 2017/18	Ratio	
	Engineers	technicians		Engineers/No. of projects	Technicians/No. of projects
Lindi DC	2	3	2	1:1	1:1
Nachingwea DC	3	1	4	1:1	1:4
Mvomero DC	1	5	2	1:2	1:0.4
Morogoro DC	1	4	0	nil	nil

[54] One certificate was not paid up to the time of visit due to vacation of the contractor from site
[55] Data for Didia water project was not provided
[56] 3 Certificates was missing date for payment
[57] 5 Certificate was missing date for payment

Kiteto DC	1	2	12	1:12	1:6
Mbulu DC	1	2	6	1:6	1:3
Sumbawanga DC	1	6	4	1:4	1:1
Nkasi DC	1	3	7	1:7	1:2
Manyoni DC	1	1	3	1:3	1:3
Singida DC	1	4	3	1:3	1:1
Kishapu DC	1	7	2	1:2	1:0.3
Shinyanga DC	1	7	1	1:1	1:0.1

Source: Annual progress report from PO-RALG (2017/18)

Table 4.6 shows the ratio of technical staffs to water supply projects to be implemented in respective LGAs. Shinyanga, Lindi and Nachingwea DCs where at least one engineer was subjected to one water project had minimum ratio of staff to water project. Kiteto DC where one engineer was handling 12 water projects had the highest ratio. Regarding the technicians, three LGAs namely Mvomero, Kishapu and Shinyanga were noted to have at least two technicians per one projects while in Kiteto DC one technician was handling 6 water projects.

(ii) Lack of vehicle which facilitate site visit and (iii) Lack of budget for fuel to facilitate onsite verifications;

b) Late response by regional secretariat who have responsibility of verifying and approve the raised certificates.

These delays in approving payment certificates have contributed to:

a) delays of projects especially for contractors who need to be paid in order to proceed with the next stages of the construction work;
b) attraction of interest to be paid to contractors; and
c) increased cost due to deterioration of quality of established water infrastructure which are not in use.

4.2.2 Causes for the delayed payments to the contractors

The following were noted as the contributing factors for delayed payment to contractors implementing water projects in rural areas:

(i) Misallocation of fund budgeted given by Development Partners to implement water projects in rural areas. Officials revealed that during the implementation of WSDP I, funds given by Development Partners and were included to the basket fund in which their use were subjected to priority of the government. Moreover, most of the time the priority was

not the implementation of water projects. This led to delays and inadequate funding of water projects in rural areas;

(ii) Some key Development Partners decided to change type of financing of water projects in rural areas. According to the officials from Ministry of Water, some key Development Partners like World Bank, African Development Bank and German Development Bank decided to shift their support to earmarked water projects during implementation of WSDP II instead of supporting through the basket fund. This affected water projects whose budget depended on basket fund for the implementation. **Table 4.7** below shows detailed analysis on means of support by Development Partners in WSDP I and WSDP II.

Table 4. 7: Development Partners and type of support provided in WSDP I & II

Name Of Development Partner	Type Of Support-WSDP I		Type Of Support-WSDP I1	
	Basket Fund	Earmarked Water Project	Basket Fund	Earmarked Water Project
World Bank (WB)	∫	-	-	∫
African Development Bank (AfDB)	∫	-	-	∫
German Development Bank (KfW)	∫	∫	-	∫

Source: *Financial Records from the Ministry of Water (2018)*

Table 4.7 above shows the three key Development Partners who decided to change their type of support during implementation of WSDP II. During the implementation of WSDP I, WB and AfDB provided their support through basket fund while in WSDP II they shifted to earmarked water projects. Moreover, KfW who provided support in WSDP I using both basket fund and earmarked water projects decided to shift to only ear-marked water projects during the implementation of WSDP II.

(iii) Inefficiencies in the Ministry of Water in handling payment certificates approved by LGAs

The Audit found inefficiencies in handling payment certificates. Some of the noted inefficiencies in the Ministry of Water include:

a) Ministry of water pay part of the payment certificate contrary to the requirements whereby the whole amount of the approved payment certificate ought to pay once;
b) Payments are not done adequately until when some concerned officials from LGAs have made physical follow-ups;
c) Failure of the ministry to keep proper records especially certificates which were partly paid. This led to request of information from the

LGAs regarding raised certificates when the remained sum is required; and

d) Inadequate approving and submitting certificates from LGAs to the National Water Investment Fund (NWIF) for payment without verifications.

The above anomalies are exemplified by the following situations noted in different LGAs that were visited by the audit team:

In Singida region, the audit team noted inefficiency in handling raised certificates. According to the officials, a certificate for payment for water project at Ikungi DC for Iyumbu water project was submitted to the Ministry of Water but the Ministry decided to pay only part of the payments without explanation. Singida region follow-up the matter and the Ministry of Water requested them to re-submit the approved payment certificate.

Through interviews held with officials at Kiteto DC, Auditors noted inefficiencies in handling and processing submitted certificates at the Ministry of Water. For example, the Ministry of Water received raised certificate from Kiteto DC but the documents were not processed for further actions.

The reviews of the various correspondences from the Regional Secretariats to the Ministry of Water showed that certificates of three contractors namely, M/s Mkaka construction Ltd, M/s Kwilasa Investment Co. Ltd and M/s Sir Philton Company Ltd were submitted for payment to Ministry of Water on 11th June, 2018. The documents were not processed for payment until when officials from Kiteto DC did physical follow-up whereby the Ministry of Water confirmed to have received the documents. However, those documents had been mis-placed and the MoW requested for re-submission on 08 of August, 2018.

During factual clearance, officials from Ministry of Water stated that during follow ups by concerned officials from respective LGAs they request them to re-submit information in order to fasten the process instead of checking on their files which will take more time.

Inefficiencies in handling and processing the approved payment certificates caused unnecessary delays to pay contractors and consultants involved in the implementation of water projects.

Review of the report for follow up on expenditure of funds for the implementation of water projects[58] revealed that LGAs and Ministry of Water do not verify the raised certificate adequately before submission to NWIF for payments. This resulted to request of advanced payment already

[58] NWIF(2016/2017)

paid. This was noted from the certificate raised and submitted to NWIF for payment through LGAs and Ministry of Water. The responsible LGAs included Nyasa DC, Kondoa DC, Misungwi DC, Shinyanga DC, Nyangh'wale DC, Geita DC, Biharamulo DC and Meatu DC

(iv) Inefficiencies in the management of retention money to be paid to contractors

Through the reviewed financial reports for the revenue and expenditure of the Water Sector Development Programme (WSDP) from financial year 2013/14 to 2017/18, the audit team noted that the visited LGAs were not managing the retention monies adequately. Consequently when the contractors were due to be paid their retention monies, LGAs found no available funds and yet in each payment certificate made, retention money were deducted.

The following are examples of some of the practices noted by the audit team in different LGAs that were visited:

Simanjiro DC was not depositing collected retention money to deposit account. According to the report, the funds were used to pay other certificate raised for the executed work. For the financial year 2013/14 a total of TZS 42,246,468 retention money was not deposited to deposit account while in 2014/15 retention money amounting to TZS 208,247,900 was not remitted to deposit account. The same scenario was noted for Babati TC whereby retention money amounting to TZS 14,777,220 was not deposited to deposit account.

Furthermore, the audit team reviewed report on follow-up for expenditure of funds for implementation of water projects in LGAs and Water Authorities for the financial year 2016/17. Among the weaknesses noted by the officials responsible for follow-ups is that LGAs and Water Authorities were depositing retention money in the water account instead of the deposit account[59].

Generally, using retention money for non-intended use poses the risk of lack of fund to pay contractors when they are due for payment. Furthermore, this may attract interest payments to contractors as per contracts.

(v) Decreased funding for the implementation of water projects

[59] Water account is meant to the account used by LGA in day to day operation while Deposit Account is meant was fixed account whereby the fund was not used other than intended purposes

Through the reviews of the budget set aside for implementation of water projects and interviews held with officials from PO-RALG and the Ministry of Water, the audit team noted that there was inadequate funding for the implementation of water projects in rural areas in the country.

Furthermore, it was noted that there is a huge difference between budgeted and actual amounts of funds released for the implementation of water projects in rural areas. For the last five financial years, the average release of the budgeted amount is 41.2%. This is actual percentage (average) of funds out of the whole budget received for the execution of water projects in rural areas.

Table 4.7 shows the adequacy of financing implementation of water projects for five financial years in Water Supply Division in the Ministry of Water.

Table 4. 8: Allocated budget for Water Supply Division for 2013/14 – 2017/18

Financial Year	2013/14	2014/15	2015/16	2016/17	2017/18
Budgeted (TZS) in Billion	345	271	232	463	342
Actual (TZS) in Billion	202	84	121	129	128
Percentage Released (%)	58	31	52	28	37

Source: *Financial Records from the Ministry of Water (2018)*

Table 4.7 shows that in financial years 2013/14 and 2015/16 the Ministry of Water managed to receive between 50 and 60% of the budgeted amount, while for the financial years 2014/15, 2016/17 and 2017/18 the Ministry received below 40% of the budgeted amount.

4.2.3 Consequences for the delayed payments to contractors

Analysis on the consequences of delayed payments to contractors focused on four main factors namely, *completion time to the project, cost increase, quality of the completed project and attainment of the government set goals on the provision of water in rural areas.*

The analyses are depicted below:

a) Huge delays in completing water projects

The audit team noted huge delays in implementation of water projects in rural areas. The main contributing factor was delay in payment of contractors for the raised certificate as depicted in **Tables 4.1 – 4.5**.

b) Cost increased due to variations of prices and additional work

During the audit, it was noted that, there were cost increases during the implementation of water projects. Among the key causes was material price fluctuations especially for projects whose contractors stopped working for long period due to non-payment of raised certificates. There was also notably addition of work to those project not completed timely due to non-payment to contractors. The uncompleted water projects were damaged and hence reconstructed when contractors resumed work after payments were made.

c) Quality of the completed projects were questionable

The audit team noted various issues regarding poor quality for the established water infrastructure caused by delay in completion of water projects. This led to deterioration of the uncompleted water projects. Tables 3.21 – 3.23 show the extent of lack of quality to established water projects in the country.

d) Failure of the government to attain set goals on the provision of water in rural areas

The audit team further noted that for all period under the scope of the audit, the government failed to attain the target set of 76.5% by 2015. The trend in figure 3.1 in chapter three depict that, for all five financial years the government failed to reach the target while for recent years (2017 and 2018) the coverage decreased even further.

4.3 Monitoring the implementation of water projects in rural areas

4.3.1 Monitoring of water projects in rural areas by the Ministry of Water

(i) Monitoring of water projects by the Ministry of Water was not adequate

The National Rural Water Sustainability Strategy requires the Central Government through the Ministry of Water to monitor and provide quality assurance in rural water supply.

Through the review of monitoring reports from the Ministry of Water, the audit team noted that there was inadequate monitoring of water projects in the country. For the five financial years under the scope of the audit, the Ministry managed to give five monitoring reports for the whole period. It shows that conducted monitoring reports were not adequate in terms of the frequency of issuing reports. Four monitoring reports were supposed to be prepared and issued per annum.

During the audit, the team noted various weaknesses during execution of the water projects. Among the noted weaknesses included poor quality of the implemented water projects as depicted in Table 3.32, cost overrun to implemented water projects as shown in **Tables 3.10 & 3.11** and delays in completion of water projects as shown in **Tables 3.5 – 3.7**. The monitoring function of the Ministry as the overseer and technical advisor to the LGAs failed to note weaknesses during the implementation of water projects in rural areas.

Moreover, through reviewed of checklists for monitoring activities of LGAs from the Ministry of Water, the audit team noted that the prepared checklists covers important items for monitoring activities performed by LGAs. The Ministry of Water did not use the checklists during implementation of its monitoring function. Among the things covered by the checklists includes the focus on *Contract Management and Other field Observation,* it requires information on the status of execution specifically on what has been done so far for ongoing water projects, what is remaining and why, what is the quality of the workmanship.

Despite having good checklists which answers requested information of the audit team, the Ministry of Water was not in the position to issue status reports for water projects for the financial years 2013/14-2017/18, instead the Ministry started to collect such information from regions in the country. This imply that the Ministry as overseer of water projects in the country was not collecting such information on quarterly basis from regions and it is not in the position to advise them on technical issues accordingly for the noted poor performance in LGAs.

Furthermore, through reviews of report of follow-up on the implementation of water projects in LGAs and Water Authorities for the financial year 2016/17 from Ministry of Water (water basket fund team), the audit team noted that Ministry of Water was submitting them to water basket fund directly without being verified. Further, the report states that there were some double payments to raised certificates from LGAs, which the Ministry of Water did not detect, as noted in Bukoba, Shinyanga, Geita and Meatu DCs.

(ii) Factors contributing to weak monitoring of the water projects

Various factors were noted to contribute to weak monitoring of water projects implemented in rural areas under the supervision of LGAs. These factors are detailed below:

a) Lack of adequate plans for monitoring and evaluation of the activities performed by RS and LGAs on ongoing water projects in rural areas

During the audit, the team was not shown any plans for monitoring and evaluating the activities performed by RS and LGAs on ongoing water projects.

According to interviews held with DWEs from 12 visited LGAs, it was noted that the Ministry of Water and PO-RALG do not communicate its plans regarding monitoring and evaluations of the activities performed by LGAs and RS; instead it embarks on ad hoc monitoring and evaluation which is usually communicated prior to the visit.

Lack of communicated plans for monitoring to RS and LGAs do not ensure RS and LGAs improve their day-to-day implementation of water projects in rural areas. Communication of plans for monitoring would make sure that RSs and LGAs are ready for exercise at that particular time. This could have improved implementation of water projects in rural areas.

b) Key Performance Indicators in monitoring and evaluation are not sufficiently used

The audit team noted that the Ministry of Water has checklists which covers important things during the monitoring although the Ministry of Water do not use them. The Ministry of Water was not in the position to provide information based on monitoring activities under the guidance of available checklists.

Due to insufficient use of the available checklists, each official responsible for monitoring of water projects conduct monitoring according to what he thinks could be the best practices. Inexperienced officials are disadvantaged and may miss guidance regarding crucial issues to be inspected. Generally, nonuse of checklists/performance indicators during the monitoring reduced efficiency of Ministry of Water during monitoring of water projects implemented in LGAs.

c) Monitoring and evaluation are not frequently performed by the Ministry

The audit team noted that Ministry of Water does not frequently conduct monitoring and evaluation of implemented water projects in rural areas. The audit requested monitoring reports for the scope of financial year 2013/14 to 2017/18. However, only five reports were availed. Since the plan is to conduct monitoring activities quarterly, the audit team expected 20 monitoring reports.

The audit team further noted that, the contract prices for water projects implemented in Nkasi DC were highest in the country. According to the Monitoring report by Rukwa's regional secretariat[60], the cost for water projects were above approved engineer's estimates. Moreover, Isale and Mpasa water projects had no engineering estimates. Despite the Ministry being the technical advisor and having the responsibility of paying implemented water projects in the country, they failed to monitor the contracts entered by Nkasi DC.

Moreover, through interviews held with DWEs in the 12 visited LGAs, it was further noted that the Ministry of Water does not conduct monitoring and evaluation to implemented water projects in rural areas. According to DWEs the Ministry opted to do ad-hoc monitoring which is not done frequently and conducted only when there are complains or any incidence that may attract the attention of the Ministry.

d) Results of monitoring and evaluation are not effectively communicated to RS and LGAs for further actions

The audit team noted that Ministry of Water usually communicated the results from their monitoring activities of LGAs during site visits and exit meetings with DEDs. According to the officials from LGAs, the Ministry does not provide written recommendations from its monitoring activities. For all 12 visited LGAs none of them were in the position to provide written monitoring report conducted by Ministry of Water.

Lack of provision of written recommendations from monitoring activities conducted by Ministry of Water led to difficulties in making follow-ups for recommendation that were given, especially when officials from Ministry of Water other than the ones who previously conducted monitoring exercise conduct follow-up tasks. Accordingly, the new officials from Ministry of Water would continue with monitoring exercise without doing follow-ups for the previously conducted monitoring exercise.

Failure to communicate the results from monitoring and evaluation exercises to LGAs resulted in non- improvement with regards to the noted weaknesses in LGAs. The Ministry noted weaknesses during monitoring of LGAs but the communication mechanisms with LGAs was not effective.

e) Follow-ups on implementation of recommendations issued to LGAs are not conducted periodically

The audit team noted that the Ministry did not conduct adequate follow-ups of the noted weaknesses during monitoring exercises. According to officials from LGAs, the Ministry conducted follow-ups mostly through

[60] For Kalambo, Sumbawanga and Nkasi dated 03, March, 2014

communication with Regional Secretariat through telephone. Hence, they lack firsthand experience of the situation in the field

Interview held with officials from Ministry of Water, confirmed that the Ministry conducted follow-ups through communication with Regional Secretariats on the noted weaknesses during the monitoring activities in conducted in LGAs in rural areas. The mechanisms of doing follow-ups through RS and not physical visit to see the actual implementation is not proper. The RS is the one who receive directive from Ministry of Water for the Monitoring Activity conducted. Moreover, Ministry as technical advisors do not perform their role effectively since they are not effectively doing follow ups for previously recommendations given.

f) Weak documentations of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects

During the audit, the audit team noted that there was no documentation of the action taken regarding the anomalies during the monitoring and evaluation of water projects. Some of the anomalies, which were noted to have no documentation regarding the actions taken include;

Monitoring report for five zones dated October, 2016 noted that Lubaga water projects in Kyela DC was not supplying water due to the community's refusal to contribute fee for running the completed projects.

In addition, at Kapapa water projects in Kyela DC, the community decided to stop supply of water to nearby village demanding compensation of one million so that the village use such water. Although the project was completed, there was no water supply to the nearby village due to requirement of compensation to the community at the water source.

Furthermore, the monitoring team discovered that at Mufindi DC, Sawala water project was not continuing its implementation due to lack of financial capacity of the contractor and lack of technical capacity to Ikimilinzowo water projects in Mufindi DC

The rectification of noted anomalies was key in ensuring supply of water in rural areas through close follow up which will save huge funds incurred by the government. The audit team was not provided with documents to show actions taken to address noted anomalies. Weak documentation for the actions taken regarding noted anomalies imply that to a certain extent, the Ministry do not take actions to rectify noted anomalies.

4.3.2 Monitoring of water projects in rural areas by PO-RALG

(i) Monitoring of water projects by PO-RALG was not adequately conducted

The National Rural Water Sustainability Strategy 2015-2020 requires PO-RALG to monitor support provided to Local Government Authorities by Regional Secretariats as well as regional affairs

In Nkasi DC, it was noted that, 11 water projects contracts were signed despite of their costs being above engineer's estimates[61]. The ongoing water projects in Nkasi DC were the highest costed in the country, due to inadequate monitoring of PO – RALG. This situation existed although the Ministry was directly responsible for ensuring effective implementation of water projects.

The audit noted delays in completion time, cost overruns and weaknesses regarding the quality of the implemented water projects in rural areas. This is evidenced in **Tables 3.10** – **3.12** and **3.21 - 3.23** which show the actual situation in 12 visited LGAs. The mechanisms of PO – RALG to monitor and ensure effective implementation of water projects in rural areas is questionable due to those noted weaknesses.

Generally, inadequate monitoring of LGAs' performance in managing water projects by PO - RALG led to unnecessary high cost for contracts entered in LGAs and resulted to poor quality of completed water projects

Furthermore, through interviews held with Assistant Director - Sector Coordination Unit of PO-RALG, the audit team noted that PO-RALG does not conduct monitoring of water projects in LGAs adequately. For five financial years under the scope of the audit, the Assistant Director provided only five monitoring reports out of expected 20 monitoring reports if the activity had been done adequately and periodically.

Moreover, the Assistant Director was not in the position to provide follow-up reports regarding noted weaknesses during monitoring and evaluation of water projects in LGAs. He further stated that they mainly do follow ups through Regional Secretariats who act on their behalf. The noted weaknesses during the audit regarding late completion of water projects, cost overrun and poor quality for the water projects indicated inadequacy of monitoring of water projects. Despite the responsibility of PO – RALG to implement water projects in the country through LGAs, the mechanism of monitoring LGAs was shown to be inadequate.

PO – RALG contributed to the low coverage of supply of water in rural areas in the country by failure to provide sufficient number of monitoring reports

[61]Rukwa's Regional Secretariat Monitoring report-March, 2014

regarding monitoring and evaluation on the implementation of water projects in the country. PO-RALG also failed to provide follow-up reports on the noted weaknesses during motoring and evaluation of LGAs, and noted weaknesses during the implementation of water projects regarding quality, cost and late completion exemplify weak monitoring of LGAs.

(ii) Factors contributing to weak monitoring of the water projects

Various factors contributing to weak monitoring of the water projects implemented in rural areas under the supervision of LGAs were noted as detailed below:

a) Lack of adequate plans for monitoring and evaluation of the activities performed by RS and LGAs on on-going water projects in rural areas

Through the interviews held with DWEs for the visited LGAs, the audit team noted that PO –RALG has no plans for monitoring and evaluation of LGAs communicated to the LGAs. According to DWEs, PO – RALG only do ad-hoc monitoring and evaluation of LGAs. These ad hoc monitoring activities are not frequent.

The Assistant Director - Sector Coordination Unit of PO – RALG, when interviewed, declared that they do monitoring and evaluation for LGAs through meetings with Regional Secretariats in each quarter. However, neither the plans nor minutes regarding conducted meetings with RSs were provided to the auditors. This justified the fact that the Ministry lacked plans for monitoring and evaluation of the activities performed by RS and LGAs.

b) Key Performance Indicators in monitoring and evaluation are not sufficiently used

The audit team further noted that performance indicators in monitoring and evaluation are not sufficiently used. According to the PO – RALG, they use prepared terms of reference to monitor and evaluate specific water projects. PO-RALG was not able to provide some of the terms of reference used.

Officials from Sector Coordination Unit declared that there were no specific performance indicators used during the monitoring and evaluation of water projects. They use contracts terms of the specified water projects instead.

It was noted further that when PO – RALG officials conduct monitoring and evaluation of LGAs water projects, they do not use performance indicators. It implies that PO-RALG do not have performance indicators at all.

c) Monitoring and evaluation are not frequently performed by the Ministry of Water

Through reviews of requested monitoring and evaluation reports from PO-RALG, the audit team noted that the Ministry of Water does not conduct frequent monitoring and evaluation of water projects in rural areas. There were notably few monitoring reports under the scope of the audit of five years. The Ministry of Water was not in the position to avail monitoring reports from different years under the scope since they did not monitor and evaluate the performance of LGAs as expected.

Furthermore, the noted anomalies in LGAs are results of inadequate monitoring of implementation of water projects in rural areas. Issues such as poor design of water projects in Nkasi DC, which resulted to re-design, could have been detected prior to its implementation if the Ministry of Water adequately conducted monitoring activities.

d) Results of monitoring and evaluation are not effectively communicated to RS and LGAs for further actions

The audit team noted that PO-RALG usually communicated the results from monitoring of LGAs during site visits and exit meetings with DEDs. According to officials, ministries do not provide written recommendations from their monitoring activities

e) Follow-ups on the implementation of recommendations issued to LGAs are not conducted periodically

The audit team noted that follow-ups on the recommendations issued to LGAs were not conducted periodically. Although the officials from Sector Coordination Unit stated that the Ministry conducted follow-ups through Regional Secretariats, the audit team noted that only one out of six regional secretariats had follow-up reports of previously conducted monitoring and evaluation.

PO-RALG stated that they conduct follow-ups through Regional Secretariats' meeting quarterly whereby they discuss progress of the implementation of water projects in their respective regions. The audit team requested minutes from the meetings with RSs but PO –RALG failed to provide even a single meeting's minutes.

Despite of using Regional Secretariats during follow-ups on behalf of the Ministry, the Ministry is not fulfilling its responsibility by doing follow-ups at regional secretariats and LGAs levels as the overseer of both levels. Generally, all these scenarios justify that there is inadequate follow-ups on the recommendations issued to LGAs during the implementation of water projects in rural areas.

f) Weak documentations of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects

The audit team noted that the Ministry had found anomalies during the few times they conducted monitoring activities in LGAs. The noted anomalies include:

Repetition of the same noted anomalies due to weak follow-ups
Monitoring report dated April, 2017 indicated that Ministry noted that LGAs[62] had no fund for supervision, contractors were paid late leading to late completion of water projects and COWSOs failed to ensure that there are funds for operation and maintenance of completed water projects. The third quarter monitoring report for financial year 2017/18 also noted that contractors were not paid timely, there were poor design of some water projects under the consultant M/s Norplan and COWSO failure to ensure availability of operation and maintenance funds for established water projects in rural areas.

For the few conducted monitoring reports, the audit team was not given documents indicating actions taken to rectify the noted anomalies. Failure to follow-up and work on noted anomalies resulted to the repetition of the same anomalies. Moreover, the ministry did not assist LGAs in ensuring that they develop action plans for the noted anomalies and act accordingly.

4.3.3 Monitoring of water projects in rural areas by the Regional Secretariats

(i) Monitoring of water projects by the Regional Secretariats was not adequately

Through the review of monitoring reports from Regional Secretariats for the financial years 2013/14 to 2017/18, the audit team noted inadequate monitoring activities to all six visited regions.

Reviews of the monitoring reports provided by RSs for their respective LGAs, noted that the reports were not quarterly based; indicating that there was inadequate monitoring to activities performed by LGAs. The RSs did monitoring upon request from the LGAs when certain level of implementation required the RS involvement for approval processes like verification for raised certificates.

Moreover, there were noted delays on the completion of water projects, cost overrun and poor quality for the implemented water projects in rural

[62] Namely Kisarawe, Bagamoyo, Kibaha, Mvomero, Kilosa and Gairo

areas. The Region Secretariats that have the responsibility for monitoring the activities performed by the LGAs did not perform their duties.

(ii) Factors contributing to weak monitoring of the water projects

Various factors were noted to contribute to weak monitoring of the water projects implemented in rural areas under the supervision of LGAs. These factors are detailed below:

a) Lack of adequate plans for monitoring and evaluation of the activities performed by LGAs on ongoing water projects in rural areas

The audit team noted that Regional Secretariats have inadequate plans for monitoring and evaluating activities performed by LGAs on on-going water projects in rural areas. According to the officials from PO – RALG and RSs, plans for monitoring the activities performed by LGAs are prepared on quarterly basis.

PO – RALG and RSs were not in the position to provide plans for monitoring activities to water projects which they collaborate with LGAs as consultant. For example, there was on-going project namely Kintinku/Lusirie water projects in Manyoni DC. The project was under the supervision of Manyoni DC and Regional Secretariat. The RS was noted to have no clear plans regarding supervision of the projects despite of knowing that they were responsible for the project.

b) Key Performance Indicators in monitoring and evaluation are not sufficiently used

Through interviews with DWEs and officials from Regional Secretariats from 12 visited LGAs, the audit team noted that the Regional Secretariats had no specific indicators used in monitoring the activities performed by LGAs. The officials use specific contracts of on-going water projects as performance indicators during monitoring and evaluations.

c) Monitoring and evaluations are not frequently performed by the Regional Secretariats

The audit team noted that Regional Secretariats do not frequently conduct monitoring and evaluation activities on the implementation of water projects by LGAs. This was noted in all six visited Regional Secretariats. Few reports were availed which did not reflect monitoring was conducted on quarterly basis.
The audit team requested information regarding monitoring and evaluation activities by Regional Secretariat for Morogoro region for financial years from 2013/14 to 2017/18, only five reports were availed for all five financial

years. This implied that monitoring activities were in average conducted once a year with one monitoring report provided.

In addition, the requested and received information on monitoring reports from Regional Secretariat of Shinyanga for the same period were inadequate. The availed reports were mainly for 2017/18. Monitoring reports for other financial years were not given. It also implies that RS in Shinyanga conducted inadequate monitoring activities as they failed to provide monitoring reports requested by the audit team. Similar scenarios were noted in Singida and Manyara regions.

d) Results of monitoring and evaluation were not effectively communicated to LGAs for further actions

The audit team noted that RS do not communicate effectively results of monitoring and evaluation of activities performed by LGAs. According to the officials from LGAs, although in most cases the RSs communicate the results from monitoring and evaluation of LGAs, the written recommendations were sometimes not provided to the respective LGAs.

e) Follow-ups on the implementation of recommendations issued to LGAs are not conducted periodically

The audit team noted that there were adequate follow-ups on the implementation of recommendation issued to LGAs by the Regional Secretariats.

Moreover, upon reviewing reports on monitoring and evaluation for the activities performed by LGAs, the audit team was not provided with reports on follow-ups made for the implementation of recommendations given to LGAs. RSs were not able to provide follow-ups reports on the recommendations issued to LGAs.

f) Weak documentations of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects

For the six visited regions, the audit team was provided with inadequate monitoring reports of their respective LGAs. Documentations of the actions taken regarding the noted anomalies were not provide. The six visited RSs had no documented actions despite of noted anomalies during the monitoring and evaluation of the activities performed by LGAs.

4.3.4 Monitoring of water projects in rural areas by the LGAs

(i) Monitoring of water projects by LGAs was not adequate

The Public Procurement Act requires user department to report any departure from the terms and conditions of an awarded contract to the Procurement Management Unit[63].

The Public Procurement Regulations[64] require that, in case of contracts for non-consultant services or works, a procuring entity should monitor the service provider or contractor's performance against the statement of requirements or schedule of works stated in the contract, by means of daily, weekly or monthly reports from the procuring entity's supervisor responsible for the services or works

Through the review of different reports as specified in **Table 4.8,** it was noted that there is inadequate monitoring of water projects in rural areas by LGAs. The audit team noted several issues indicating inadequacy of monitoring as shown in **Table 4.9** hereunder:

Table 4. 9: Indicators of weaknesses in monitoring of water projects in LGAs

Name of LGA	Noted weaknesses related to monitoring of water projects	Source of information
Shinyanga DC	Approval of raised certificate amounting to TZS 409,228,000 for Mwamadilana water projects contrary to TZS 106,980,262 by RS after verification, this indicates that Shinyanga DC did not verify the work done at all	Letter with reference number ED.245/335/01'1'/68
Manyoni DC	It was noted at Kutinku/Kusirie water project in Manyoni DC that the total project cost was TZS 8 billion and Phase I had a cost of TZS 2 billion. The project was qualified for the consultant who was not there and according to contractor, DWE's office only visit and carry inspection when project reaches certain	Site visits

[63] The Public Procurement Act, No.9 0f 2011 section 39(1) (g)
[64] Public Procurement Regulation, 2013, Section 243.

Name of LGA	Noted weaknesses related to monitoring of water projects	Source of information
	crucial stage for verifications.	
Mbeya DC	Consultants NETWAS was not using reliable statistical data in designing Swaya-Lupeta water project. Moreover, the consultant lacked topographic survey and used GPS only leading to the destruction of constructed water infrastructure	Monitoring and evaluation third quarter report (2017/2018)-PO – RALG
Nkasi DC	Signing contracts with contractors and consultants to implement water projects using quotations that are above engineering estimates.	Rukwa's regional secretariat report, March 2015

Source: *Correspondences and Reports from visited LGAs (2018)*

Table 4.9 shows noted weaknesses regarding monitoring of water projects in rural areas. The lack of awareness and shortage of M&E manpower contributes to poor designs of water projects, approving improper payment and executing projects without guidance of the consultants.

(ii) Factors contributing to weak monitoring of water projects

Various factors were contributing to weak monitoring of the water projects implemented in rural areas under the supervision of LGAs. These factors are as detailed below:

a) Lack of adequate plans for monitoring and evaluation of the activities performed by contractors and consultants on ongoing water projects in rural areas

It was noted that LGAs had no specific plans regarding monitoring and evaluation of the activities performed by contractors and consultants on on-going water projects in rural areas. The noted practice is that LGAs do ad hoc monitoring and upon request by the contractors when projects reach a certain level which needs verification prior to continuing implementation of the water project's next stage.

b) Key Performance Indicators in monitoring and evaluation are not sufficiently used

During the carrying out of the audit, the audit team noted that key performance indicators in monitoring and evaluation of contractors work

are not sufficiently used. According to DWEs and technicians for 12 visited LGAs, they use contracts of respective water projects as indicators during monitoring of on-going water projects.

Despite claiming usage of contracts as indicators during monitoring of water projects, several weaknesses were noted during the implementation contrary to the terms of the contracts without actions from respective LGAs. Among the noted major breaches by the LGAs was not using contracts terms during monitoring of water projects. Other noted anomalies were;

(i) Extension of time during the execution of Moringa water project in Mbulu DC without proper and solid reasons. The given flimsy reasons such as death of company director, long illness of Managing Director and or change of administration of the company are not acceptable and contrary to the terms of the contracts; and

(ii) Mbulu DC terminated the contract with M/s Dabengo Enterprises and engaged the new contractor without valuation of work previously done contrary to the terms of the contracts. According to DWEs from 12 visited LGAs, terms of contracts have been used as performance indicators during monitoring and evaluation exercise.

c) Monitoring and evaluation are not frequently performed by LGAs

It was noted in 12 visited LGAs that they do not conduct frequent monitoring and evaluation of on-going water projects. The LGAs were conducting monitoring when the projects reach a certain stage which needed verification like verification of work done for the raised certificates. Furthermore, inadequate monitoring and evaluations is justified by flimsy unacceptable excuses whose examples are explained hereunder:

In Sumbawanga DC, the LGA was noted to approve raised certificates without verification for Sakalilo and Kizungu water projects. Rukwa Regional Secretariat in its monitoring exercise[65] noted that the approved amount for Sakalilo water project was contrary to actual work done. Furthermore, the approved certificate was contrary to work done and some of the work which were claimed to have been done like construction of 5 water points and laying pipes was not done at all. The LGA did not monitor the activity of the contractor and consultants at all.

In Nkasi DC, the LGA was not monitoring the activity performed by consultants and contractor for Mpasa water project. In review of monitoring reports from Rukwa's Regional Secretariat[66], the audit noted several instructions requiring Nkasi DC to ensure that the consultant is available

[65] Monitoring report on 27th December, 2017
[66] Monitoring report dated 09th November, 2016 and 27th December, 2017

during the execution of Mpasa water project. During the monitoring exercise, the RS did not find consultant at the site on several occasions during monitoring of the project.

It was noted in Mbulu DC the required project materials were not verified. In Haydom water project the water pump had manual instead of automatic switch. However, the contractor fixed the problem ultimately but without engaging the DWE.

In Lindi DC, The contractor was instructed to change the installed generator from 60KVA to 70KVA. The contractor managed to install the generator contrary to terms of contracts due to inadequate monitoring of water project by Lindi DC.

Moreover, Lindi DC was not responding and acting upon advice from consultant which led to loss of government money. Through letter with Ref. Number DCL/RWSSPP/LINDI DC/Likwaya/S-018 dated 10th July, 2014 the consultants advised the LGA to change type of power from generator to TANESCO power. According to the consultant during the design there was no power from TANESCO and at the time of project commissioning the power was in place. Power for TANESCO was said to be cheap, easy to run and require minimum cost for installation.

There was no response availed to the audit team regarding the matter. Instead it was noted through Certificate Number 6 dated 17th January, 2018 that it was approved and paid. The total cost for generator amounted to TZS 35 million and cost for installation of transformer and other electrical appliances from TANESCO amounted to TZS 30 million. The LGA was required to make a decision on which type of power they wanted, either from the generator or from TANESCO. Lindi DC did not evaluate and respond to consultant's advice of changing specifications which led to a loss of government money.

To all 12 visited LGAs, there were notably different anomalies which were due to inadequate monitoring and evaluation of the performance of contractors and consultants. The noted anomalies contributed to poor design of water projects in rural areas as shown **in Table 3.15**, inclusion of unqualified items in contract costs as noted in **Table 3.13** and notably projects with quality issues as noted in **Table 3.22 – 3.23.**

d) Results of monitoring and evaluation are not effectively communicated to contractors and consultants

It was noted that, the results of monitoring and evaluation of contractors and consultants are not effectively communicated.

It was further noted in Kiteto DC where the contractor raised variation of work for Kaloleni water projects through letter LGA/060/2016/2017/W/WSDPII/04/02 dated 20th June, 2018. According to DWE, verification of the requested variation of work was done although DWE was not in the position to provide report regarding the valuation of work done. There was no evidence showing that DWE communicated his findings to contractor and consultant to state whether the variation of work was genuine.

e) Follow-ups on the implementation of recommendations issued to contractors and consultants are not conducted periodically

It was further noted that LGAs do not conduct follow-ups on the implementation of recommendation issued to contractors and consultants in rural areas. The audit team noted several scenarios in the visited LGAs which show periodic follow-ups were not done.

f) Weak documentations of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects

It was noted that, LGAs do not document the action taken to noted anomalies during monitoring and evaluation of water projects in rural areas.

Through the review of letter with Reference Number LGA/060/2016/2017/W/WSDPII/04/02 dated 20th June, 2018, it was noted that DWE at Kiteto DC did monitoring on the variation raised by the contractor and decided to approve it without documenting the report regarding the verification done. According to DWE, the variation raised by the contractor on work done at Kaloleni water project was genuine although documented report regarding the inspection done was not produced.

Furthermore, there was noted *weak documentation of project files for the implemented water projects* for all the 12 visited LGAs in rural areas. There were some difficulties in obtaining the required information regarding implementation of water projects in rural areas. This is due to the fact that DWE's office lacked copies of implemented water projects until requested from Procurement Management Unit.

Moreover, the 12 visited LGAs lacked details regarding paid certificates until they were requested from the Districts Treasury. For example in Lindi DC only final certificates for the sampled water projects were given. In Mbulu DC, out of 27 raised certificates details for 11 certificates were not provided. In Morogoro DC, 4 out of 17 raised certificates were provided while in Nkasi DC 6 out of 10 raised certificates were not provided. It was also noted that for all 12 visited LGAs there were delays in completion of water projects in rural areas. Delays were also not adequately accompanied

by letters for extension of time. The letters could be helpful in showing the reasons for extension of time; this problem was noted in Nkasi, Sumbawanga, Lindi, Nachingwea, Mbulu and Shinyanga DCs.

CHAPTER FIVE

AUDIT CONCLUSIONS

5.1 Introduction

This chapter gives out the conclusions of the audit based on the audit findings presented in the previous chapters. The conclusion is categorized into two parts namely, general conclusion and specific conclusions as detailed below:

5.2 General conclusion

Based on the facts presented in findings chapters, the audit team concluded that generally, the President Office – Regional Administration and Local Government (PO-RALG) and Ministry of Water (MoW) to some extent did not effectively ensure availability of clean water in rural areas through effective management of water projects in rural areas in order to minimize water borne diseases, distance travelled and time taken by people to fetch water.

The conclusion was based on the fact that the percentage of the community with access to clean and safe water in rural areas is still 58.7 percent only by 2017/18 while the target was 74 percent by 2015. The trend of population with access to clean water in different financial years for the past five years did not show pleasing improvements. The Ministry failed to meet the target during the whole period of five financial years.

Despite the fact that the government made efforts to ensure the percentage of population with access to clean water in rural areas is raised, still there is a challenge of ensuring that the target is reached. Among the efforts noted is construction of water projects through WSDP I and II although during execution of these projects there were noted challenges

Moreover, supervision of the implemented water projects was inadequate from LGAs to Ministries level leading to 32 percent of the established water infrastructure not supplying water as intended. Moreover, for the five financial years starting from 2013/14 to 2017/18 there were noted weaknesses in implementing water projects in rural areas. Specifically delays in completion of water projects, cost overruns and poor quality for the implemented water projects.

5.3 Specific conclusions

5.3.1 LGAs have challenges in implementing water projects effectively with regards to time, cost and quality of workmanship

LGAs do not have good mechanisms to ensure that water projects are completed timely within planned cost and required standards. For all 12 visited LGAs, there were notably weaknesses regarding the implementation of water projects in rural areas.

Despite the plan for completion time for implementation of water projects in rural areas, there was delay in completion of water projects to all 12 visited LGAs averaging to 480 days. Moreover there were avoidable causes of completion time of water projects like inadequate design of water projects which later on needed redesign, inadequate needs analysis which later on contributed to increased scope of work and failure to engage the community during the implementation of water projects which all compounded to the delays in completion of water projects executed in rural areas.

Moreover, LGAs do not effectively implement water projects with regards to cost due to the fact that there were noted variations of for 6 LGAs (Note variation in Table 3.11). The conclusion is based on the fact that the ministry of water failed to ensure that the contract costs are maintained, there were unplanned additional work which led to increase of contract cost. Furthermore, the Ministry failed to ensure that needs analysis are done adequately in order to avoid change of specifications of items and increased scope of work which finally contributed to increased costs.

The mechanisms to ensure that the implemented water projects are executed with quality in mind do not work effectively. This is due to the fact that all 12 visited LGAs implemented water projects with issues on quality problems. The Ministry of Water through LGAs hasn't got in place mechanisms to ensure construction materials used to implement water projects have required quality. Moreover, there were projects that were implemented but not commissioned and were left in a disused state for a long time as noted in Gwata and Kifindike water projects.

5.3.2 The mechanisms of the Ministry of Water to ensure timely and adequate funding of water projects in rural areas is not working effectively

The mechanisms of the Ministry of Water to ensure that there is adequate and timely funding of water projects in rural areas was not working effectively. The conclusion was based on the fact that there were shortcomings in payments of the raised certificates in all 12 visited LGAs

and late payments. Moreover, the raised certificates were not handled properly by the Ministry of Water leading to delays due to resubmission from respective LGAs as noted in Kiteto and Singida DCs.

Furthermore, the budget to fund water projects in rural areas were not certain as noted in the last five financial years where the disbursed funds were less than the budget. Generally, the Ministry of Water does not ensure that the planned water projects in rural areas in a particular financial year are accompanied with reliable and committed funds for their execution. The payments were always made late which affected the planned completion time of water projects in rural areas.

5.3.3 PO-RALG and Ministry of Water do not effectively monitor the executed water projects in rural areas

Ministry of Water has challenges to monitor and evaluate executed water projects in rural areas

The Ministry of Water does not monitor effectively the implementation of water projects in rural areas in the country. The conclusion was based on the fact that as technical advisors to LGAs, the Ministry of Water failed to ensure that the design of water projects are prepared properly and reviewed prior to implementation. This resulted in implementation of water projects in rural areas which do not finally supply water as intended due to poor designs as noted in Hydom in Mbulu DC, Kifindike water project in Morogoro DC, Mwamadilana water project in Shinyanga DC.

Moreover, the conclusion was based on the fact that, there is an ad hoc monitoring of water projects in rural areas. The Ministry does not perform monitoring activities to LGAs frequently and the prepared planned check-lists to be used was not extensively used. As a result, the Ministry was not able to provide performance information based on monitoring and available check-list for monitoring water projects. Furthermore, the results of monitoring and evaluation were not effectively communicated to RSs and LGAs for further actions. This hindered the improvements regarding the noted weaknesses during monitoring since they were not communicated effectively.

In addition, follow-ups on the implementation of recommendation issued to LGAs were not conducted periodically; the officials from the Ministry relied on Regional Secretariats. Most of them communicate when they wanted to know the level of project implementation instead of conducting physical site verifications.

Also, there were noted weak documentations of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects in rural areas. The inadequate documentation of the actions taken has

implications that point out the Ministry does not take seriously the noted anomalies.

President's Office – Regional Administration and Local Government does not effectively monitor and evaluate executed water projects in rural areas

The President's Office – Regional Administration and Local Government does not effectively monitor and evaluate executed water projects in rural areas in the country.

The conclusion was based on the fact that, there was lack of adequate plans for monitoring and evaluation of the activities performed by RSs and LGAs on ongoing water projects in rural areas. PO – RALG only communicates their plans regarding monitoring prior to implementation, there is no planned timetable which is communicated to LGAs as well.

The Key Performance Indicators in monitoring and evaluation were also not used sufficiently. During the execution of monitoring and evaluation of the activities performed by the LGAs, the Ministry mostly relies on the water projects contract terms.

Moreover, it was further noted that the monitoring and evaluation of the activities performed by LGAs are not conducted frequently. The results from monitoring are also not effectively communicated to RSs and LGAs for further actions. In most cases, the Ministry does not provide written periodic recommendations for future follow ups.

The seriousness and value attached for monitoring and evaluation activities performed by LGAs were noted to be minimal since there were weak documentations of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects. Documentation for the action taken could help in improving performance in areas with noted anomalies.

Regional Secretariats had no effective mechanisms to ensure that there is adequate monitoring of water projects in LGAs

The Regional Secretariats were noted to have ineffective mechanisms to ensure that there is adequate monitoring and evaluation of the activity performed by the LGAs.

The conclusion was based on the facts that, there was lack of adequate plans for monitoring and evaluation of the activities performed by LGAs on ongoing water projects in rural areas. The Regional Secretariat had no preplanned documents showing when they want to conduct monitoring of the activities performed by the LGAs.

Also, the Key Performance Indicators on monitoring and evaluation are not sufficiently used. The Regional Secretariats did not show any common key performance indicators which were used during monitoring the activities performed by LGAs. The Regional Secretariats only use terms of contracts for respective water contractors in LGAs.

Moreover, the Regional Secretariats were not periodically conducting follow-ups on the implementation of recommendations issued to LGAs. Inadequate follow ups for the issued recommendations hinder the intention to improve the performance of LGAs since it is not known whether they have been implemented accordingly or not.

Furthermore, there was a weak documentation of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects. There is no reference showing that for the noted anomalies the Regional Secretariats acted upon in a certain way to ensure that there is improvement in implementing water projects.

The monitoring of water projects by Local Government Authorities was not adequate

The Local Government Authorities do not adequately monitor water projects in rural areas to ensure that contractors and consultants perform their duties accordingly.

The conclusion was based on the fact that, LGAs lacked adequate plans for monitoring and evaluation of the activities performed by contractors and consultants on ongoing water projects in rural areas. The LGAs were not in the position to provide adequate plans regarding monitoring of water projects.

Moreover, there were no common key performance indicators which were used by LGAs during monitoring of water projects. The LGAs relied on the terms of the contracts for respective water projects as checklist for monitoring ongoing water projects. Furthermore, the monitoring and evaluation of ongoing water projects was not conducted frequently by the LGAs.

Furthermore, the results from monitoring and evaluation are not effectively communicated to consultants and contractors. Effective communications between LGAs and contractors and consultants was minimal as key issues from contractors and consultants were not responded timely.

The LGAs were not conducting follow ups periodically on the implementation of recommendations issued to contractors and consultants. The LGAs show weaknesses in ensuring that follow-ups are done and

contractors and consultants implement the raised issues during monitoring and evaluation of their day to day operations.

There were also weak documentations of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects. The LGAs could not provide documentary evidence regarding documented actions taken to improve the noted anomalies and what actions were taken to consultants and contractors when they failed to execute their duties accordingly.

CHAPTER SIX

AUDIT RECOMMENDATIONS

6.1 Introductions

The audit findings and conclusions point-out that there are areas that need further improvements in the management of water projects in rural areas in the country.

The areas for further improvements were noted in all the three focused areas of the audit namely: effectiveness of PO-RALG through LGAs in implementing of water projects in rural areas; effectiveness of PO-RALG and MoW in ensuring adequate and timely funding of the water projects in rural areas; and effectiveness of MoW, PO-RALG and LGAs in monitoring the executed water projects in rural areas.

Therefore, below are recommendations issued to the President's Office - Regional Administration and Local Government and Ministry of Water on what should be done in order to improve the management of water projects in rural areas.

The National Audit Office believes that based on principles of 3Es of Economy, Efficiency and Effectiveness, these recommendations need to be fully implemented so as to ensure there is improvement in Management of water projects in rural areas in the country.

6.2 Recommendations to the Ministry of Water (MoW)

Regarding implementation of water projects with regards to time, cost and quality in rural areas

The Ministry of Water should ensure that:

1. There are mechanism in place for testing water quality to all implemented water projects in rural areas by the government and development partners and the noted anomalies are communicated to the Ministry and solved in collaborations with respective LGAs using affordable means;
2. There are mechanisms in place to ensure that feasibility studies for intended water projects are adequately conducted in order to minimize variations of works;
3. Groundwater investigations are conducted by experienced agencies to minimize drilling of dry or low yield water boreholes;
4. Hydrological assessment of surface water sources is conducted in great detail to establish the firm yield of water that will be available for

extraction to meet the design water demand for the whole period of the year; and
5. The design and contract documents of water projects are reviewed and technical advice is given accordingly to all LGAs.

Regarding funding of water projects in rural areas in the country

The Ministry of Water should ensure that there are mechanisms to ensure that:

1. There are reliable and committed source of funds prior to signing of contracts for water projects in rural areas; and
2. The resources for on-going water projects are given first priority before shifting focus on the new water projects in the respective financial year and utilized for the intended purposes.

Regarding Monitoring of water projects in rural areas in the country

The Ministry of Water should ensure that:

1. There are mechanisms in place that ensure that LGAs effectively supervise the activities performed by contractors and consultants and ensuring the project materials used are from approved suppliers, inspected and verified prior to use;

2. Mechanisms in place for monitoring and evaluating water projects in rural areas are strengthened from LGAs to the Ministry levels in order to achieve effective implementation with regards to time, cost and quality;

3. There are agreed common key performance indicators that are used by LGAs during monitoring of water projects;

4. There are adequate follow-ups regarding the recommendations given during monitoring; and

5. Documentation of the actions taken to address the noted anomalies during the Monitoring and Evaluation of water projects should be strengthened from LGAs, RSs to Ministry levels.

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15. Contracts documents for water projects to visited LGAs for the financial year 2013/2014-2017/2018

16. Monitoring report from region secretariat for the financial years 2013/2014-2017/2018 in visited LGAs.

Appendices

Appendix 1: Responses from the Audited Entities

This part covers the responses from the audited entity namely, the Ministry of Water. The responses are categorized into two categories i.e. general comments and specific comments from the issued audit recommendations to the Ministry. This is detailed in part (a) and (b) below:

Responses from the Ministry of Water

(a) General Comments

The Ministry of Water acknowledges for this audit exercise on water projects and a special emphasis on groundwater which was one of dependent source of water in most of the projects implemented under the Water Sector Development Programme. The findings are very useful and will be applied to rectify and mitigate anomalies in the projects which are ongoing and those planned. Last but not least we thank the audit team for their guidance and cooperation during this assignment.

(b) Specific Comments

S/No	Recommendations to the Ministry of Water	Comments from the Ministry of Water	Planned actions	Implementation Timelines
1.	there are mechanism in place for testing water quality to all implemented water projects in rural areas by the government and development partners and the noted anomalies are communicated to the Ministry and solved in collaborations with respective LGAs using affordable means	Water Quality test is the standard item and one of the requirements in all water contracts. The anomalies noted in Audit exercise in some implementing agencies need close follow up on water quality monitoring to ensure delivery of safe water to communities.	Strengthening water quality monitoring and establishing mobile water quality laboratory services	Semi annually
2.	there are mechanisms in place to ensure that feasibility studies for intended water projects are	Feasibility studies determine the viability of an idea, such as ensuring a project is legally and technically	Strengthened contract management for Implementing Agencies	Each Financial year

S/No	Recommendations to the Ministry of Water	Comments from the Ministry of Water	Planned actions	Implementation Timelines
	adequately conducted in order to minimize variations of works	feasible as well as economically justifiable. Engineering details design gives output in plans, specifications and estimates. In order to minimize unnecessary variations of works, all water projects design (Engineering detail design) must be submitted to the Ministry for review and approval.		
3.	groundwater investigations are conducted by experienced agencies to minimize drilling of dry or low yield water boreholes	To minimize drilling of dry or low yield water the firm/contractors who perform/investigate geophysical survey are legible for drilling and for dry wells no payment shall be made for the purpose. Moreover, the minister strengthened Dam and Drilling Construction Agency (DDCA) by providing new drilling rigs and associated equipment, earth moving equipment.	The minimum yield in deep borehole is at least 3.5cum/hr.	Continuous

S/No	Recommendations to the Ministry of Water	Comments from the Ministry of Water	Planned actions	Implementation Timelines
4.	hydrological assessment of surface water sources is conducted in great detail to establish the firm yield of water that will be available for extraction to meet the design water demand for the whole period of the year	The Management agreed with the Auditor's recommendation. under WSDP implementation of development of Integrated Water Resource Management plan, hydrological assessment was the part of study.	To have more hydrological studies	Every financial year
5.	the design and contract documents of water projects are reviewed and technical advice is given accordingly to all LGAs	The review of design and contract documents by the Ministry is currently in place. No objection is given after submission of those documents to the Ministry of Water.	Strengthen capacity of staff in reviewing design and contract management	Continuous
6.	there are reliable and committed source of funds prior to signing of contract of water projects in rural areas	Approval of signed contract is based on approved budget for a particular financial year, However, The Government established the Fund called National Water Fund (NWF) for financing the water supply projects	The Ministry has instructed procuring entities for signing contract based on allocated funds	Every Financial Year
7.	the resources for on-going water	The Management agreed with the	Complete on-going projects	Every Financial Year

S/No	Recommendations to the Ministry of Water	Comments from the Ministry of Water	Planned actions	Implementation Timelines
	projects are given first priority before shifting focus on the new water projects in the respective financial year and utilized for the intended purposes	Auditor's recommendation.		
8.	there are mechanisms in place that ensure that LGAs effectively supervise the activities performed by contractors and consultants and ensuring the project material used are from approved suppliers, inspected and verified prior to use	The mechanism is in place whereby Supervision are conducted at Regional level and District level. Moreover, from July, 2019 the New Agency called Rural Water Supply and Sanitation Agency (RUWASA) will take over all activities which were implemented by LGAs .	Implementing M&E framework	Semi annually
9.	there are mechanisms in place for monitoring and evaluating water projects in rural areas are strengthened from LGAs to the Ministry levels in order to achieve effective implementation with regards to time, cost and quality	M&E is in place and is conducted quarterly, however it will be more effective after establishment of RUWASA	Implement M&E framework	Semi Annually

S/No	Recommendations to the Ministry of Water	Comments from the Ministry of Water	Planned actions	Implementation Timelines
10.	There are agreed common key performance indicators that are used by LGAs during monitoring of water projects	There is a Result framework which KPI that are implemented by all Implementing Agencies (LGAs,RSs)	Close follow-up on performance of KPIs	June, 2020
11.	there are adequate follow-ups regarding the recommendation given during monitoring	The Management agreed with the Auditor's recommendation	Close follow-up	Continuous
12.	documentation of the actions taken to address noted anomalies during the Monitoring and Evaluation of water projects should be strengthened from LGAs, RSs to Ministry levels	The Management agreed with the Auditor's recommendation.	Strengthening documentations through MIS, Folders	Quarterly

Appendix 2: Audit main questions and sub-questions

This part provides the list of four main audit questions and their respective sub-questions as detailed below:

To what extent do people in rural areas have access to clean water?	
1.1:	Is the provision of clean water by the responsible authorities in rural areas meet the demand of people?
1.2	Is the provided water in rural areas tested to meet quality requirements before consumed by the community?
Are water projects effectively implemented with regards to time, cost and quality?	
2.1	To what extent are problems with delays common in executed water construction projects and underlying possible causes of delays?
2.2	To what extent are problems with cost overruns common in executed water construction projects and underlying possible causes of cost overruns?
2.3	To what extent are problems with lacking quality common in executed water construction projects and underlying possible causes of lack of quality?
2.4	Are there working systems in place to address delays, cost overruns and quality problems of water constructed projects?
2.5	Do PO-RALG effectively coordinate activities regarding implementation of water projects in rural areas?
Are water projects in rural areas adequately and timely funded?	
3.1	Do LGAs ensure fund for the raised payment certificates by contractors are timely approved?
3.2	Does MoW effectively ensure adequate payments for the approved payments by LGAs through raised payment certificates paid?
3.3	Is there working mechanism in the MoW that ensure timely payment for the approved payment certificate by LGAs?
Do MoW, PO-RALG and LGAs effectively monitoring the performance of water projects implemented in rural areas?	
4.1	Do MoW and PO-RALG plan for monitoring and evaluation of the activities performed by RS and LGAs on ongoing water projects in rural areas?
4.2	Do LGAs use Key Performance Indicators in monitoring and evaluation the work performed by contractors and consultants in implementing water projects?
4.3	Do LGAs frequently ensure contractors and consultants perform their work on ongoing water projects in rural areas accordingly?
4.4	Are the result from monitoring and evaluation of LGAs by RS effectively communicated for further actions?
4.5	Do LGAs take actions for the noted poor performance from monitoring and evaluation of the contractors and consultants on the ongoing water projects?
4.6	Do MoW and PO-RALG frequently conduct follow-ups on the implementation of recommendations issued to LGAs?

Appendix 3: Documents reviewed and reasons for reviews

This part provides the list of documents that were reviewed by the audit team in order to obtain appropriate and sufficient information to enable the audit team to come-up with clear findings which are supported by collaborative evidences.

Category of the documents	Title of the documents	Reasons for reviewing
Policies and guidelines - MoW	Design Manual for Water Supply and Waste Water Disposal, Third Edition, Volume I 2007 PPRA forms of contracts	To understand guidance from manual on how water projects should be implemented
Legislations	The Public Procurement Act, 2011 The Public Procurement Act (CAP. 410) The Water Supply and Sanitation Act, 2009 The Water Resources Management Act, 2009	To understand specific parts from the Acts and Regulation relating to implementation of water projects
Strategies and plans-MoW and PO-RALG	Strategic plan-MoW Strategic plan-PO-RALG National water development Strategy for the period 2006-2015	To understand the plans regarding implementation of water projects
Reports from (i)LGAs (ii) MoW (iii)PO-RALG	Quarterly reports Annual internal audit reports Budgets set aside for water project in rural areas (2013/14-2017/18); Performance reports Site meeting minutes from ongoing water projects Annual plans under district water engineer's office Performance monitoring reports on ongoing water projects	To know the challenges and performance problem during implementation of ongoing water projects To know exactly how much has been planned for ongoing water projects in rural areas, to To know the level of implementation of water projects in rural areas
Publication and reports on access to clean and safe water	Water Sector Status Reports 2013-2017 by MoW	To know the extent of different problems during implementation of water projects

Appendix 4: Officials interviewed and reasons for interviewed

This part provides the list of officials interviewed by the audit team to get a broader understanding of the audit area and identify existing challenges, root causes and eventually the consequences to those problems and challenges

Institution to be covered	Title of official interviewed	Reasons for interviewing
President's Office Regional Administration and Local Government	Head Division of Local Government	To know the overall challenges in implementing water projects in rural areas
	Officials on Local Government Division	To know performance problems during implementation of water projects in rural areas
Regional Secretariat	Officials responsible for water supply in rural areas	To know the challenges and recurring performance problems for ongoing water projects
Six Regions, two Local Government Authorities from each visited LGAs	Regional Water Engineers	To know the ongoing water projects in their regions and the accompanied challenges during supervisions
	District Water Engineers and other officials responsible for water supply in their respective districts	To know the effectiveness in implementation of ongoing water projects in rural areas.
Academician from academic institutions (UDSM & WDMI)	Two expert (lecturers) in supply of clean and safe water	To get on going assistance on the understanding of the subject matter during the audit
Ministry of Water	Director - Water Coordination Unit	To know the challenges emanating from implementation of clean water in rural areas
	Director of Rural Water Supply Division	To know the performance problem arose from implementation of water projects in rural areas
	Official in the Rural Water Supply Division	To know the challenges and performance problems during implementation of policies and guidelines on implementation of water projects in rural areas
	Official from Water Quality Services Division	

Appendix 5: Shows delayed time and reasons for extension of completion time of project

This part provides name of the project, total days delayed in completion time and accompanied reasons for delay (as per granted extension of time)

Name of projects	Delay (in days)	Reasons for extension
Singida DC		
Construction of water supply piped scheme for Nkuhi village	7 months	• Prolonged rainfall • Scarcity of pipe due to high demand • Reconstruction of section affected by rainfall • Excavation of trench in cultivated lands slow down the work progress as extra time was needed to negotiate with the owner before entering the area
Construction of water scheme at mipilo village	NIL	N/A
Water supply and civil works for Sefunga village	2 months	• Missing of underground source of water after several exploration
Construction of water supply piped scheme at laghanida village	5 months	• Heavy rains fall • Increase of scope of work
Construction of water supply piped scheme at Mtinko village	NIL	N/A
Manyoni DC		
Hydrological/Geological Survey, Drilling, Development, P umping test and Capping of Nine (09) productive bore holes	4months	• Delay of fund to pay raised certificate
Construction of water supply piped scheme for London village in Manyoni district	7months	• Heavy rainfall which hindered contractor to proceed with the work
Mbulu DC		
Construction of pumped water for moringa village	43months	• Failure to pay interim payment certificate • Long illness and death of co. managing director • Changing of administration of the co. due to death of MD
Construction of pumped water scheme for Haydom	49months	• Late payment of fund

Name of projects	Delay (in days)	Reasons for extension
Construction of gravity water scheme of Arri, harsha, yaenda ampa and hayeseng	37months	• Delay and insufficient payment for the interim payment certificate no. 03 • The pending unsolved of service levies, withholding tax, variations and VAT exemption are substantially affecting our pipes purchasing procedures
Construction of gravity water scheme for Mongahay tumati village	9months	• Late release of fund to the raised certificate
Construction of pumped water scheme for singu village	12months	• Late release of fund from the treasury
Kiteto DC		
Construction of piped pumping water supply schemes at nchinila village	8 months	• Heavy rainfall • Failure to issue advance payment • Delay of payment • Order of material outside which expect to arrive late • Solar panel are bigger than the space offered for construction of solar power plant hence waiting for instruction
Construction of piped pumping water supply schemes for a village of Kaloleni in kiteto district council	8 months	• Increased volume of works • Late receipt of VAT exemption • Heavy rainfall • Conflict of land on some line route
Constructions of water project at kona village	5 months	• Unfavourable rain • Sickness of some technical staff
Construction of water project at Loolera	3 months	• Heavy rainfall
Construction of water project at Dosidosi village	11 months	• Heavy rainfall • Sickness of some technical staff • Subcontracting of the project
Kishapu DC		
Civil works for pumped piped scheme for Ikonongo village	4 months up to now	• Delay of payment • Heavy rainfall • Distracted road to the project • Unavailability of stone dust for construction of blocks due

Name of projects	Delay (in days)	Reasons for extension
		to breakdown of crushing mashine
Civil works for pumped piped scheme for Bunambiyu village	12 months	• Heavy rainfall • delay of payment
Supply of pipes for Bunambiyu village water project	3 months	• Delay of Payment
Construction of Piped water scheme at Unyanyembe village	4 months up to now	• Rainy season • Late payment of raised certificate • Unavailability of building materials
Civil works for pumped piped scheme for Shagihilu village	4 months up to now	• Heavy rainfall • Late payment of raised certificate
Shinyanga DC		
Construction of Works for Manyada scheme	5 months	• Late release of fund leading to late ordering of HDPE pipes
Construction of Mwamadilanha water piped scheme	23 months	• Procurement of pressure reducing valve outside the country • Delay to respond a letter from contractor for assurance to allow the supplier to manufacture HDPE pipe • Failure to answer timely letter to be provided with VAT relief • Addendum for changes of 160 HPDE PN 16 of raising main from shilabela KASHWASA off take to Mwamadilana tank, the said addendum took almost two years to respond • Late release of fund
Construction of water supply civil works for Didia village	12months	• Late receipt of water pipes • Delay in getting VAT exemptions
Construction of water supply civil works for mwakitolyo village	36 months	• Presence of rock • Rainfall which distract working environment • Late release of fund
Construction of water supply civil works for Mendo village	27moths	• Release of fund • Absence of contractor from the site

Appendix 6: The interest the government was supposed to pay contractors

This part provides name of projects with accompanied interest amount which the government is supposed to pay to the contractors due to late payment of the raised certificates despite of contractors not claiming it.

Name Projects	Certificate no.	Amount delayed (in TZS)	Duration of delay (Days)	(1+r)^t	Accrued Amount (in TZS)	Interest Amount (in TZS)
Construction of pumped water scheme Haydom	1	60,900,000	1073	1.751323228	106,655,585	45,755,585
	6	80875029.55	61	1.03236997	83,492,952	2,617,922
	7	74,440,835	21	1.011027559	75,261,736	820,901
	7	74,440,835	21	1.011027559	75,261,736	820,901
	7	147,439,204	246	1.137090606	167,651,734	20,212,530
Construction of pumped water scheme for Moringa village	4	66,292,000	271	1.152034015	76,370,639	10,078,639
	6	21,500,000	39	1.020576491	21,942,395	442,395
	7	16,600,000	120	1.064675127	17,673,607	1,073,607
	8	22,700,500	66	1.035069257	23,496,590	796,090
Construction of gravity water scheme of Arri, Harsha, Yaenda ampa and Hayeseng	2	124,515,000	49	1.025920369	127,742,475	3,227,475
	3	79,425,000	331	1.188704362	94,412,844	14,987,844
Construction of gravity water scheme of Mongahay - Tumati village	2	116,886,500	70	1.037233766	121,238,625	4,352,125
	3	124,489,000	41	1.021643035	127,183,320	2,694,320
Construction of pumped water scheme for singu village	6	56,017,150	21	1.011027559	56,634,882	617,732

Name Projects	Certificate no.	Amount delayed (in TZS)	Duration of delay (Days)	(1+r)^t	Accrued Amount (in TZS)	Interest Amount (in TZS)
Construction of piped pumping water supply schemes for a village of nchinila	1	175,515,626.75	71	1.0377756	182,145,835	6,630,208
Construction of piped pumping water supply schemes for a village of Kaloleni	1	102,550,968.33	57	1.030215611	105,649,608	3,098,640
Civil works for pumped piped scheme for Ikonongo village	1	244,285,500	24	1.012612821	247,366,629	3,081,129
	2	134,595,225	13	1.006812317	135,512,130	916,905
Civil works for pumped piped scheme for Bunambiyu village	1	103,667,012	170	1.092842484	113,291,715	9,624,703
Supply of pipes for Bunambiyu village water project	1	221,636,000	161	1.087717928	241,077,451	19,441,451
	2	58,296,563	270	1.151432525	67,124,559	8,827,996
Construction of Piped water scheme at Unyanyembe village	1	206,730,721	142	1.076978197	222,644,479	15,913,758
Civil works for pumped piped scheme for Shagihilu village	1	107,650,000	141	1.076415894	115,876,171	8,226,171
Construction of gravity flow scheme for Kifindike village in Morogoro DC	1	263,386,021	200	1.110099346	292,384,650	28,998,629
	1	64,496,600	41	1.021643035	65,892,502	1,395,902

Name Projects	Certificate no.	Amount delayed (in TZS)	Duration of delay (Days)	(1+r)^t	Accrued Amount (in TZS)	Interest Amount (in TZS)
Construction of gravity flow scheme for kiziwa village	4	104,474,320	56	1.029677723	107,574,880	3,100,560
	5	16,190,550	4	1.002091174	16,224,407	33,857
Construction of piped scheme for Gwata village in Morogoro DC	1	132,604,800.00	40	1.021109624	135,404,037	2,799,237
	2	63,051,624.00	16	1.008390969	63,580,688	529,064
Construction of gravity flow for Kibwaya village	1	118,293,440	18	1.009444779	119,410,695	1,117,255
	3	102,309,799	367	1.211264499	123,924,227	21,614,428
	4	41,825,056.53	24	1.012612821	42,352,588	527,532
	5	73,185,976.47	81	1.043209535	76,348,308	3,162,332
Construction of gravity flow scheme for fulwe village	1	193,744,833.60	19	1.009972097	195,676,876	1,932,042
	2	972,218,789.60	26	1.013671042	985,510,034	13,291,244
	3	494,243,080.80	75	1.039945769	513,986,001	19,742,920
	4	226,167,925.00	37	1.01951106	230,580,701	4,412,776
Construction of piped water supply and civil works for Dihimba village	1	53,104,466.65	108	1.058023703	56,185,784	3,081,318
		104,694,187.29	154	1.083748781	113,462,198	8,768,011
Construction of piped water supply scheme and civil works for Masimba village	1	100,000,000.00	133	1.071928031	107,192,803	7,192,803
Construction of water supply civil works for Mlali Kipera village	4	103,333,554.00	50	1.026456293	106,067,377	2,733,823
Construction of water civil works for kigugu village	1	30,000,000.00	7	1.003662423	30,109,873	109,873

Name Projects	Certificate no.	Amount delayed (in TZS)	Duration of delay (Days)	(1+r)^t	Accrued Amount (in TZS)	Interest Amount (in TZS)
Construction of borehole for Namangale village in lindi district	Final Certificate	24,300,000	187	1.102588165	26,792,892	2,492,892
Construction of borehole pumped piped scheme for Litipu, nahukahuka and nyangamara	Final Certificate	241,503,359	23	1.012084124	244,421,716	2,918,357
Construction of borehole pumped scheme for Hingawali village	Final Certificate	163,520,511.39	191	1.104893869	180,672,810	17,152,299
Construction of borehole pumped scheme for mituguru village	Final Certificate	71,335,916.40	337	1.192434992	85,063,443	13,727,526
Construction of borehole pumped scheme for nditi and completion of pumped scheme at Mneromiembeni	Final Certificate	51,874,096.76	143	1.077540793	63,239,568	11,365,471
Construction of water supply Civil works for Mwakitolyo village	1	146,777,983.00	627	1.387424597	203,643,384	56,865,401
Construction of works for Manyada scheme	2	125,996,338.40	27	1.014200568	127,785,558	1,789,220
	2	71,473,000.00	64	1.033988696	73,902,274	2,429,274
	1	36,288,598.00	562	1.341117376	48,667,269	12,378,671

Name Projects	Certificate no.	Amount delayed (in TZS)	Duration of delay (Days)	(1+r)^t	Accrued Amount (in TZS)	Interest Amount (in TZS)
Construction of Mwanamadilanha water piped scheme	4	148,927,998.50	2	1.001045041	149,083,634	155,636
	5	71,654,000.00	2	1.001045041	71,728,881	74,881
Construction of water piped scheme for Didia Village	1	83,393,630.00	61	1.03236997	86,093,079	2,699,449
Construction of water Supply civil works Mendo Village	2	60,054,260.00	132	1.071368366	64,340,234	4,285,974
	3	37,638,430.00	20	1.01049969	38,033,622	395,192
Kabwe	3	188,750,000	50	1.026456293	193,743,625	4,993,625
	4	394,342,150	52	1.027528982	405,197,988	10,855,838
Mpasa	1	884,381,442.60	141	1.076415894	951,962,242	67,580,799
Construction of water supply for Mfinga village	1	70,441,200	20	1.01049969	71,180,811	739,611
	2	90,279,000	90	1.048124399	94,623,623	4,344,623
Construction of water supply and civil works for Solola village	1	50,050,350	371	1.213797464	60,750,988	10,700,638
Hydrological/Geological Survey, Drilling, Development, P umping test and Capping of Nine (09) productive bore holes	1	225182350	59	1.031292228	232,228,807	7,046,457
Total						543,794,467

***Source**: Raised certificate and payment records from visited LGAs (2018)*

Appendix 7: Water projects and corresponding costs for performance bond and advance payment guarantee

This part provides projects and items which formed part of contracts sum despite of not qualifying.

Name of LGA	Name of Water Project	Provision of performance bond (TZS)	Advance payment guarantee (TZS)
Mbulu DC	Pumped water scheme for Haydom village	3,000,000	3,000,000
	Pumped water scheme for Singu village	3,100,000	3,000,000
	Gravity water scheme for Mongahay- Tumati	8,000,000	4,000,000
	Gravity water scheme for Mongahay- Tumati-mongahay2	2,500,000	2,000,000
	Pumped water scheme for Arri, Harsha, Yaeda Ampa and Hayaseng	1,500,000	1,000,000
	Pumped water scheme for Moringa village	3,000,000	1,500,000
Kiteto DC	Piped pumping water supply schemes for Kona Sub village	3,500,000	2,000,000
	Piped pumping water supply schemes for Loolera village	3,500,000	2,000,000
	Piped pumping water supply schemes for Dosidosi village	5,000,000	2,000,000
Manyoni DC	Construction of water Supply piped scheme for Londoni Village	2,500,000	–
Singida DC	Expansion of Piped Water Scheme at pohama village	2,000,000	1,500,000
	Construction of Water supply Scheme for Laghanida village	4,000,000	3,000,000
	Construction of Water supply Scheme for Nkuhi village	2,000,000	2,000,000
	Construction of Water supply Scheme for Mtinko village	2,000,000	1,500,000
Shinyanga DC	Construction of water Supply Civil works For Mendo Village67	2,000,000	–

[67] It has been paid VIA certificate.

Name of LGA	Name of Water Project	Provision of performance bond (TZS)	Advance payment guarantee (TZS)
	Construction of water Supply Civil works For Mwamadilanha Village[68]	2,500,000	–
	Construction of water Supply Civil works For Manyada Village[69]	2,500,000	–
	Construction of water Supply Civil works For DIDIA Village[70]	1,000,000	–
	Construction of water Supply Civil works For Mwakitolyo[71]	3,000,000	–
Kishapu DC	Civil works for pumped piped scheme for Bunambiyu village[72]	1,900,000	10,000
Morogoro DC	Construction of gravity flow scheme for Fulwe village	6,546,208	15,092,417
	Construction of gravity flow scheme for Kibwaya village	5,000,000	5,000,000
	Construction of piped scheme for Gwata village in Morogoro DC	4,500,000	3,000,000
	Construction of gravity flow scheme for kiziwa village	4,000,000	2,000,000
	Construction of gravity flow scheme for Kifindike village in Morogoro DC	1,500,000	0
Mvomero DC		0	0
Lindi DC	Construction of borehole for namangale village	1,000,000	500,000
	Construction of borehole pumped scheme for Hingawali village	6,000,000	5,000,000
	Completion of water supply project at Namkongo village	–	–
	Construction of borehole pumped piped scheme for Litipu, nahukahuka and nyangamara	10,000,000	20,000,000
Nachingwea DC	Lipuyu water project	2,500,000	2,500,000
	Mituguru water project	2,000,000	2,000,000
	Witfor farm 8 project	500,000	
	Chiola water project	2,500,000	2,500,000

[68] Was paid in certificate no.1

[69] Paid under certificate no. 2

[70] The item was paid in certificate no. 1

[71] Paid through certificate no.1

[72] Paid under certificate no.1 but for advance payment guarantee it was not paid

Name of LGA	Name of Water Project	Provision of performance bond (TZS)	Advance payment guarantee (TZS)
Nkasi DC	To all water project	-	-
Sumbawanga DC	Zimba water project	2,500,000	-
	Ikozi water project	-	850,000
	Solola water project	-	2,000,000
	Laela water project	1,500,000	-
	Mfinga water project	4,000,000	
	Total	***112,546,208***	***88,952,417***

Source: *Payment certificate evaluation and Contract BoQs*

Appendix 8: Variation of quantities of the major items of water projects

This part provides percentage of variation of quantities of major items during implementation of water projects in rural areas.

LGA	Projects	Item	Initial quantity	Final Quantity	Differences	Percentage Difference (%)
Singida DC	Construction of water Scheme for Nkuhi Village.	90mm HDPE PN10	1195	1098	-97	-8
		75mm HDPE PN10	732	900	168	23
		110uPVC PN6	16	12	-4	-25
		90HDPE PN6	1245	1870	625	50
		75HDPE PN6	1098	1100	2	0
		63HDPE PN6	730	1090	360	49
		50HDPE PN6	228	300	72	32
		40HDPE PN6	6393	7140	747	12
		32HDPE PN6	197	300	103	52
	Laghanida project	110mm HDPE Pipe PN 10	3862	3862	0	0
		110mm Upvc PN 6	242	-	N/A	N/A
		50HDPE PN6	2340	2791	451	19
		40HDPE PN6	9917	11668	1751	18
		32HDPE PN6	370	3337	2967	802
Manyoni DC	Londoni water supply project	PVC 160mm ODPN 10	1074	1074	0	0
		HDPE 110mm OD PN10	151	110	-41	-27
		HDPE 110mm OD PN6	484	846	362	75
		HDPE 90mm OD PN6	114	344	230	202
		HDPE 75mm OD PN6	2544	3544	1000	39

LGA	Projects	Item	Initial quantity	Final Quantity	Differences	Percentage Difference (%)
		DN 80(3") GS High class	50	36	-14	-28
Shinyanga DC	Construction of water Supply civil work for Mendo Village.	HDPE DN 75 PN6 ref P 07	100	100	0	0
		HDPE DN 75 PN6 ref P 06	860	860	0	0
		HDPE 160 PN 6 Ref P 09	10	10	0	0
		HDPE DN125 PN 6 Ref P03, P08	1080	1080	0	0
		HDPE DN110 PN 6 Ref P05, P01	1095	1095	0	0
		HDPE DN75 PN 6 Ref P02, P04	550	550	0	0
		HDPE DN25 PN 6	300	300	0	0
		Total excavation for laying pipe	3995	3995	0	0
Kishapu DC	Pumped Piped scheme for Bunambiyu Village	OD 160mm uPVC PN 16	8500	8100	-400	-5
		OD 110mm uPVC PN 12	9400	9634	234	2
Morogoro DC	Kiziwa water Projects	Pipe work				
		OD 63 HDPEPN16	3200	3196	-4	0
		DN 50 Galvanized Steel	500	396	-104	-21
		OD 32HDPEPN10	2274	2492	218	10
		OD 40HDPEPN10	3091	3116	25	1
		OD 50HDPEPN10	287	300	13	5
		Concrete Items				
		Intake				

LGA	Projects	Item	Initial quantity	Final Quantity	Differences	Percentage Difference (%)
		Reinforcements	1200	704	-496	-41
		Treatment plant				
		Base slab concrete	5	6.7	1.7	34
		Wall column & beam concrete	18	12	-6	-33
		Top slab concrete	0	3.348	3.348	NA
		Upflow rapid filter				
		RC base slab	4.25	9.612	5.362	126
		RC Wall, column & beam	7.7	10.412	2.712	35
		RC top slab	0	30	30	NA
		Ground water Tank				
		Foundation slab concrete	7	0	-7	
		Reinforcements	2454	2785	331	13
		Total excavation for laying pipe	23168	23186	18	0
Mvomero DC	Construction of Water supply and Civil works for Mlali – Kipera village.	Pipe work				
		HDPE DN 110 PN10	6700	6682	-18	0
		Bore hole flexible pipe DN 90 Ref L3	880	745	-135	-15
		HDPE DN 110 PN10 (item 2.2.1)	3410	3404	-6	0
		HDPE DN 90 PN10 (item 2.2.2)	3300	3263	-37	-1
		DN 110 GS Pipe	2	1	-1	-50
		HDPE DN 50 PN10	-	150	150	100

LGA	Projects	Item	Initial quantity	Final Quantity	Differences	Percentage Difference (%)
		HDPE DN 32 PN10	-	1010	1010	100
		HDPE DN 63 PN10	-	215	215	100
		HDPE DN 50 PN10	-	3170	3170	100
		HDPE DN 25 PN10	-	851	851	100
		Total excavation for pipe work	10990	14627	3637	33
	Construction of Water Civil works for Kigugu village.	Gravity main				
		HDPE DN 110 PN10	2710	1880	-830	-31
		HDPE DN 90 PN10	3395	3800	405	12
		HDPE DN 75 PN10	2839	2839	0	0
		Total excavation for pipe (DN 110,90 & 75)	8944	3040	-5904	-66
		Distribution				
		HDPE DN 110 PN10	275	500	225	82
		Total excavation for pipe (DN 110,90, 75, 63, 50 & 32)	3366	9021	5655	168
Lindi DC	Construction of borehole pumped piped scheme (pump house, pipe network, water tank, water points, submersible pump and	110HDPE PN 20	4000	4000	0	0
		110 HDPE PN 10	8475	8475	0	0
		OD 40HDPEPN10	2052	880	-1172	-57
		OD 50HDPEPN10	880	450	-430	-49
		OD 63HDPEPN10	854	600	-254	-30
		OD 90 HDPEPN10	359	300	-59	-16
		OD 110 HDPEPN10	1030	492	-538	-52

LGA	Projects	Item	Initial quantity	Final Quantity	Differences	Percentage Difference (%)
	generator) and rain water harvest system for Hingawali village.	G.S pipe medium class 100mm dia	0	636	636	NA
	Construction of borehole pumped piped scheme for litipu, nahukahuka and nyangamara villages	160 HDPE PN16	13,926	13,926	0	0
		160 HDPE PN10	66	115	49	74
		110 HDPE PN10	6732	6,732	0	0
		OD 32 HDPE PN 10	501	901	399.8	80
		OD 40 HDPE PN10	660	660	0	0
		OD 50 HDPE PN10	1,139	1,404	265	23
		OD 63 HDPE PN10	1,947	1,739	-208	-11
		OD 75 HDPE PN10	1,117	763	-354	-32
		OD 90 HDPE PN10	424	328	-96	-23
		OD 110 HDPE PN10	275	235	-40	-15
Nachingwea DC	Chiola Village Water Scheme	OD 50 HDPE PN10	2121	2224	103	5
		OD 25 HDPE PN 10	184	150	-34	-18
		0D 32 HDPE PN 10	352	450	98	28
		0D 40 HDPEPN 10	1491	600	-891	-60
		0D 50 HDPEPN 10	499	1800	1301	261
		0D 63 HDPE PN 10	483	600	117	24
		0D 75 HDPE PN 10	840	1050	210	25
	Borehole Pumped Scheme for	0D 75 HDPE PN 10	1050	1050	0	0

LGA	Projects	Item	Initial quantity	Final Quantity	Differences	Percentage Difference (%)
	Lipuyu village					
	Construction of Borehole Pumped Scheme for Mituguru Village	0D 32 HDPE PN 10	210	210	0	0
		0D 32 HDPE PN 6	55	55	0	0
		0D 40 HDPE PN 6	1595	1595	0	0
		0D 50 HDPE PN 6	1595	1595	0	0
		0D 63 HDPE PN 6	44	44	0	0
	Borehole Pumped Piped Scheme for Nditi Village and Completion Of Pumped Piped Scheme at Mneromiembeni	40 HDPE PN 10	2109	2109	0	0
		OD 75 HDPE PN 6	237	237	0	0
		0D 63 HDPE PN 6	1675	1675	0	0
		0D 50 HDPE PN 6	411	411	0	0
		0D 40 HDPE PN 6	660	660	0	0
		OD 32 HDPE PN 6	756	756	0	0
Sumbawanga DC	Construction of Laela Group Water Supply Project Phase 1	HDPE DN 75 PN 10 PE 100	7690	6152	-1538	-20
		GS Pipe 3' medium	6	6	0	0
		HDPE DN 90 PN 10 PE 100	150	150	0	0
		HDPE DN 75 PN 10 PE 100	710	710	0	0
		HDPE DN 63 PN 10 PE 100	750	750	0	0
		HDPE DN 32 PN 12 PE 100	1350	1350	0	0
		Total excavation for pipe	10652	10652	0	0

LGA	Projects	Item	Initial quantity	Final Quantity	Differences	Percentage Difference (%)
	Construction of Water Supply project and Civil works for Mfinga village.	HDPE DN 75 PN 10	809	809	0	0
		HDPE DN 63 PN 6	620	620	0	0
		HDPE DN 50 PN 6	890	890	0	0
		HDPE DN 32 PN 6	960	960	0	0
		HDPE DN 25 PN 6	2475	2475	0	0
		Total excavation for pipe	5754	5754	0	0

Source: *Payment certificates from visited LGAs (2018)*

Appendix 9: Distribution of Consultant and Contractor

This part provides name of LGA and water project with respective consultant who supervised the project in a particular financial year.

Name of LGA	Financial year	Name of water project	Responsible consultant
MOROGORO DC	2014/2015	Kibwaya	Don consult Limited
MOROGORO DC	2014/2015	Kiziwa	Don consult Limited
MOROGORO DC	2014/2015	Chanyumbu	Don consult Limited
MOROGORO DC	2014/2015	Singisa	Don consult Limited
MOROGORO DC	2015/2016	Kisaki	Don consult Limited
MOROGORO DC	2015/2016	Mlilingwa	Don consult Limited
MOROGORO DC	2015/2016	Gwata	Don consult Limited
MOROGORO DC	2015/2016	Kisaki	Don consult Limited
MOROGORO DC	2015/2016	Mkulazi	Don consult Limited
NACHINGWEA DC	2013/2014	Mituguru Water Supply Project	Don consult Limited
NACHINGWEA DC	2013/2014	Mkoka Water Supply Project	Don consult Limited
NACHINGWEA DC	2013/2014	Farm 8 Water Supply Project	Don consult Limited
NACHINGWEA DC	2014/2015	Chiola Water Supply Project	Don consult Limited
NACHINGWEA DC	2014/2016	Lipuyu Water Supply Project	Don consult Limited
NACHINGWEA DC	2014/2017	Nampemba Water Supply Project	Don consult Limited
LINDI DC	2013/2014	Kiwawa water project	Don consult Limited
LINDI DC	2013/2014	Namokongo Water project	Don consult Limited
LINDI DC	2013/2014	Likwaya water project	Don consult Limited
LINDI DC	2013/2014	Hingawali water project	Don consult Limited
LINDI DC	2013/2014	Namangale water Project	Don consult Limited
LINDI DC	2013/2014	Litipu,Nyangamara & Nahukahuka Co.LTD	Don consult Limited
SHINYANGA DC	2013/2014	Manyanda water supply project	ENGG Consult.

Name of LGA	Financial year	Name of water project	Responsible consultant
SHINYANGA DC	2013/2014	Mwamandilanha water suuply project	ENGG Consult.
SHINYANGA DC	2013/2014	Nyashimbi water supply project	ENGG Consult.
SHINYANGA DC	2013/2014	Mendo water supply project	ENGG Consult.
SHINYANGA DC	2013/2014	Mwakitoly water supply project	ENGG Consult.
MVOMERO DC	2013/2014	Doma	M/s ITECO CONSULT(T) LTD
MVOMERO DC	2013/2014	Kigugu	M/s ITECO CONSULT(T) LTD
MVOMERO DC	2013/2014	Kwadoli	M/s ITECO CONSULT(T) LTD
MVOMERO DC	2013/2014	Mlali na Kipera	M/s ITECO CONSULT(T) LTD
MVOMERO DC	2014/2015	Bunduki	M/s ITECO CONSULT(T) LTD
MVOMERO DC	2014/2015	Bumu	M/s ITECO CONSULT(T) LTD
MVOMERO DC	2015/2016	Hoza na Salawe	M/s ITECO CONSULT(T) LTD
MVOMERO DC	2015/2016	Lukenge	M/s ITECO CONSULT(T) LTD
MVOMERO DC	2017/2018	Lukenge	M/s ITECO CONSULT(T) LTD
SUMBAWANGA DC	2013/2014	Laela Group Water Supply Project Phase	O&A Company Ltd
NKASI	2013/2014	King'ombe	O&A Company Ltd
NKASI	2013/2014	Matala	O&A Company Ltd
NKASI	2013/2014	Kabwe	O&A Company Ltd
NKASI	2013/2014	Kisula	O&A Company Ltd
NKASI	2013/2014	Tambaruka	O&A Company Ltd
NKASI	2013/2014	Mkinga	O&A Company Ltd
SUMBAWANGA DC	2013/2014	Mpui Pumping water supply Scheme.	O&A Company Ltd
SUMBAWANGA DC	2013/2014	Ikozi Pumping Water Supply Scheme	O&A Company Ltd
SUMBAWANGA DC	2014/2015	Laela Town Water Supply	O&A Company Ltd

Name of LGA	Financial year	Name of water project	Responsible consultant
SUMBAWANGA DC	2014/2015	Laela group Water Supply (Kizumbi, Lusaka, Mpembano, and Ndelema)	O&A Company Ltd
MBULLU DC	2013/2014	Arri, Harsha, Yaeda Ampa & Hayseng Gravity flow Water Scheme	POA ENGINEERING CONSULTANT
MBULLU DC	2013/2014	Haydom Pumped Water Scheme	POA ENGINEERING CONSULTANT
MBULLU DC	2013/2014	Singu Pumped Water Scheme	POA ENGINEERING CONSULTANT
MBULLU DC	2013/2014	Moringa Pumped water Scheme LGA/061/WKS/2013/2014/WSDP/14	POA ENGINEERING CONSULTANT
KITETO DC	2013/2014	Esekii Water Supply	POA ENGINEERING CONSULTANT
KITETO DC	2013/2014	Kona Water Supply	POA ENGINEERING CONSULTANT
KITETO DC	2013/2014	Loolera Water Supply	POA ENGINEERING CONSULTANT
KITETO DC	2014/2015	Dosidosi Water Supply	POA ENGINEERING CONSULTANT
KITETO DC	2015/2016	Chapakazi Water Supply	POA ENGINEERING CONSULTANT