



**THE UNITED REPUBLIC OF TANZANIA**

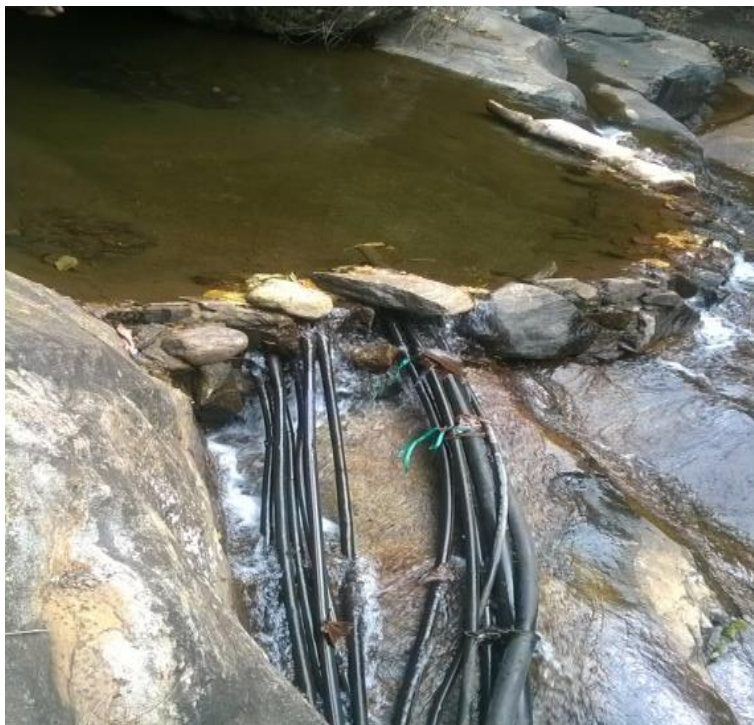
**NATIONAL AUDIT OFFICE**



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## **PERFORMANCE AUDIT REPORT ON THE CONTROL OF WATER ABSTRACTION FROM THE WATER SOURCES**

**Ministry of Water and Irrigation through Basin Water Boards**



**A Report of the Controller and Auditor General**

**March 2017**

# THE UNITED REPUBLIC OF TANZANIA



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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 MDAs, LGAs and Public Authorities and other Bodies which involves enquiring, examining, investigating and reporting, as deemed necessary under the circumstances.

I have the honor to submit to His Excellency the President of the United Republic of Tanzania, Dr. John Pombe Magufuli and through him to the Parliament a Performance Audit Report on the Control of Water Abstraction from the Water Sources.

The report contains findings, conclusions and recommendations that directly concern the Ministry of Water and Irrigation (MoWI) and the Basin Water Boards (BWBs) herein referred to as the audited entities. The audited entities have been given the opportunity to scrutinize the factual contents and comment on the draft report. I wish to acknowledge that the discussions with them have been very useful and constructive to our report.

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

In completion of the assignment, the office subjected the report to the critical reviews of the following experts namely, Dr. Joel Norbert from The University of Dar-Es Salaam Department of Water Resource Engineering and Mr. Willie Mwaruvanda who is a retired official from the Ministry of Water and Irrigation who came up with useful inputs on improving the output of this report.

This report has been prepared by Ms. Alphoncina Kagaigai (Team leader), Mr. Emmanuel Kisweka and Mr. Ishengoma Rweyongeza (Team members) under the supervision and guidance of Mr. James Pilly - Assistant Auditor General and Ms. Wendy W. Massoy - Deputy Auditor General.

I would like to thank my staff for their devotion and commitment 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, 2017**

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## **ABBREVIATION AND ACRONYMS**

BWBs:	Basin Water Boards
IDBWB:	Internal Drainage Basin Water Board
IWRMDP:	Integrated Water Resource Management and Development Plan
LGAs:	Local Government Authorities
LVBWB:	Lake Victoria Basin Water Board
MoWI:	Ministry of Water and Irrigation
NEMC:	National Environmental Management Council
NGOs:	Non-Government Organizations
PBWB:	Pangani Basin Water Board
PO-RALG:	President's Office Regional Administration and Local Government
WRBWB:	Wami/Ruvu Basin Water Board
WUA:	Water User Association



## DEFINITION OF TERMS

- i. **Water Abstraction:** means the removal of water, permanently or temporarily, from rivers, lakes, canals, reservoirs or from underground strata. Water is abstracted from surface water sources and groundwater sources for a range of uses, including agriculture, industry, power generation and public water supply
- ii. **Illegal Water User/abstractor:** means any person who abstracts water from the source without having a water use permit or who abstracts more than what has been granted to the permit
- iii. **Water Resource:** means a water course, surface water, groundwater and estuary water
- iv. **Water sources:** means (a) A river, tributary, estuary, lake, swamp, marsh or other marshland, (b) an aquifer or a spring, (c) sea waters and interface between sea water and fresh water and (d) a dam, pond, or reservoir.

## EXECUTIVE SUMMARY

Water is essential for human life and to sustain various aquatic living organisms. It is also an important economic driver as an essential requirement for industry, power generation, commerce and agriculture. The government and the responsible institutions together with water users need to make sure that abstraction is sustainable and does not damage the environment. The control of how much, where and when water is abstracted is done by issuing water use permit.

The main objective of this Audit was to assess whether the Ministry of Water and Irrigation (MoWI) through the Basin Water Boards (BWBs), effectively control water abstraction so as to protect water sources from overuse.

The Ministry of Water through Basin Water Boards is the identified main Auditee for the control of water abstraction from the water sources.

The audit covered the period of five financial years from 2011/12 up to 2015/16, for the purpose of establishing trend on measures undertaken in order to control water abstraction.

### **Main Audit Findings**

All visited BWBs planned to give out certain number of permits, however important component such as water balance was not considered before issuing water use permit. It was further noted that there was no involvement of key stakeholders in process of planning for water use. Stakeholders such as Water User Association (WUA), NGOs, LGAs, and the concerned ministries were not involved.

Inspections of water sources were not conducted properly as in some places water was still used without permits from the respective BWBs. It was observed that some abstracting structures were used to abstract water from upstream rivers leaving the downstream without water. Geographical coverage of basins and inadequate resources were claimed to be the causative factors of failure to conduct regular inspection. No follow up was made to determine whether water users, abstracted the permitted amount of water.

It was also revealed that collection of user charges were not effectively done as not all the users paid what they were supposed to pay. Both large and small scale water users were not paying their tariffs timely as prescribed in their abstracting permits. Several urban and municipal water authorities did not pay their water use fee to the Basin Water Boards as required, and the system set for collecting water bills was weak. This hassled to the weakening of monitoring activities which could have been conducted using the money collected.

Actions taken by Basin Water Boards to illegal water users were not deterrent hence the activities of illegal water abstraction were increasing throughout the visited basins.

The Audit noted that communication and information sharing between MoWI and BWBs with other actors on the control of water abstraction was not effective. It was further noted that, having different reporting structures has weakened coordination. The LGAs report to the President's Office Regional Administration and Local Government (PO-RALG) while the Basin Water Board report directly to the Ministry of Water and Irrigation has weakened their coordination.

Audit concluded that, MoWI particularly at the BWBs level are not effective enough to Control water abstraction. This is because there were no proper plans for water abstraction. BWBs had failed to have effective mechanism to monitor abstraction levels and control unauthorized water abstractors as they did not conduct regular inspections. BWBs also did not effectively collect water use fees from the authorized users and the actions taken to prevent unauthorized users were not deterrent enough to stop the tendency of abstracting water illegally. Moreover coordination between MoWI, BWBs and other stakeholders like LGAs was not effective enough to facilitate smooth information sharing between them.

#### **Audit recommendations**

The following are the recommendations issued:

##### **The Ministry of Water and Irrigation should ensure:**

- 1) Integrated Water Resource Management and Development Plan is finalized and implemented in all Basin Water Boards and also ensure that Water sources inventory is conducted by all BWBs
- 2) Basin Water Boards are staffed with required professions and equipped with all necessary equipment required for inspection and monitoring activities

##### **The Basin Water Board should:**

- 1) Ensure regular inspection is done so that water users are complying with their water use permits requirements.
- 2) Improve internally generated funds by improving the financing mechanism of Water Resources Management (WRM) activities.
- 3) Ensure all users including water authorities and Government institutions are paying for water use fee timely and without any reluctance.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

Water is essential for human life and to sustain various aquatic living organisms. It is also an important economic driver as an essential requirement for industry, power generation, commerce and agriculture<sup>1</sup>. Water is abstracted for a range of uses, including agriculture, industry, power generation and public water supply. The government and the responsible institutions together with water users need to make sure that abstraction is sustainable and does not damage the environment. The control of how much, where and when water is abstracted is done by issuing of water use permit.

If water abstraction is not controlled, it will reach a point that our water sources will deplete, and result into water stress situation where people and the surrounding environment will not have enough water for survival. Several economic activities are taking place within prohibited sites; people are abstracting water without permits, while others with permit, abstract more than the prescribed limits. There has been an increase in conflicts between different groups of water users<sup>2</sup>

Control of water abstraction goes way back before Independence. Many water rights which were allocated during the pre-Independence period allowed for very high rates of abstraction, sometimes on a 24-hr basis. The allocations were made during a time when the population was much lower than at present, and when industry and urban centers were less developed<sup>3</sup>.

Currently water is under pressure and getting scarce as a result of increasing multi-sectoral demands of the rapidly growing population. Water is also vulnerable due to increasing environmental degradation, which causes unsustainable availability of the resource and hence failure to meet demands<sup>4</sup>.

In 2009, the Water Resource Management Act was enacted and introduced the water use permits which prescribed the limit of water by non-domestic abstractor from the sources. The Basin Water Boards were given

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<sup>1</sup>Environment Agency Managing Water Abstraction, 2013

<sup>2</sup>Tanzania Daily News (Dar es Salaam) 25/09/2015

<sup>3</sup> Rural Water Tenure in East Africa, 2000

<sup>4</sup>National Water Policy, 2002

the mandate to control and monitor the water resources through granting water use permits.

Water sources in Tanzania are faced with different problems that may cause either water depletion (reduction in quantity) or water pollution (deterioration of quality). Increasing human activities and the land use practices in the various catchment areas are impacting on the availability of water resources through consequent changes to runoff patterns, groundwater recharge mechanisms and the overall water balance of catchment areas<sup>5</sup>. Deforestation, agricultural activities like use of pesticides and irrigation, livestock grazing, settlement near water sources, industrial activities, fisheries, wildlife and tourism, energy production and mining activities are some of the human activities that are detrimental to water sources.

## **1.2 Motivation**

The audit was motivated by the frequent public outcry from civil societies and parliament discussions through different local media like television, newspapers and radio stations regarding the frequent occurrence of water source pollution and depletion in different parts of the country which is threatening the growth of economy and health of the people.

According to Tanzania Water Policy 2002, Tanzania's annual renewable water resources are 2,700 cubic meters of water per person per year. Based on projected population from estimated 33 million in year 2001 to about 59.8 million by year 2025, annual average available water per capita will be reduced by 45 percent to about 1,500 cubic meters per person per year. This shows that the country will face a water stress situation, considering that quantity of below 1,700 cubic meters per person per year signifies water scarcity. Therefore, there is a need of controlling abstraction in order to protect water sources from overuse.

Moreover conflicts of water sharing have been very common in almost all the water basins. Conflicts have emerged between users of different categories in the basins. Large scale plantations using hundreds liters of water per second come into conflicts with small-scale users using small quantities of water. Similarly, the urban centers in the basins require more water as they expand at the expense of the village governments of farming communities causing more conflicts between them<sup>6</sup>.

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<sup>5</sup>Guidelines for water resources monitoring and pollution control August 2012, issued by the Ministry of Water and Irrigation

<sup>6</sup> Water and Environment in Tanzania: A Case of Pangani River Basin by Andrew Ngereza, 2005

The other issues which have motivated this study are increase in illegal abstraction and over-exploitation of water resources especially during droughts. This has brought confrontation between pastoralists and irrigation water users to the point of loss of properties and lives. The Maasai's traditional land was strained by overuse of water resources and overgrazing as the result in the past few years, 2,987 herders with 871,321 cows and 98,341 goats moved into the basin's low lands and destroyed arable lands<sup>7</sup>.

Therefore, the Controller and Auditor General decided to conduct a performance audit on the area of water abstraction from the sources based on the above motivations.

### **1.3 Design of the Audit**

#### **1.3.1 Objective of the Audit**

The overall objective of the audit was to assess whether the Ministry of Water and Irrigation (MoWI) through the Basin Water Boards (BWBs), effectively control water abstraction so as to protect water resources from overuse.

The audit objective was addressed by the following specific objectives:

- Assessing whether the BWBs have developed effective plans for water use;
- Assessing whether the MoWI and the Basin Water Boards effectively monitor activities in controlling water abstraction;
- Assessing whether the BWBs take proper actions to control water abstraction; and
- Assessing whether there is proper coordination between MoWI, BWBs and other stakeholders.

For more details about Audit questions please refer to **Appendix 4**.

#### **1.3.2 Scope of the Audit**

The audit focused on examining measures put in place by Ministry of Water and Irrigation (MoWI) particularly the Basin Water Boards (BWBs) to control water abstraction from the sources. It covered four Basin Water Boards (BWBs) namely Wami/Ruvu Basin, Lake Victoria Basin, Pagan Basin and Internal Drainage Basin. The audit focused on both surface and ground water sources.

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<sup>7</sup> Inter Press Service (IPS): Conflicts Over Water Rise in Tanzania, 2016

The audit covered a period of five financial years from 2011/12 to 2015/16 so as to allow the auditors to have a clear picture of the problem and establish a trend of performances in controlling water abstraction in the country.

### 1.3.3 Assessment Criteria

In order to assess the performance of Ministry of Water and Irrigation through Basin Water Boards on the control of water abstraction from the sources, various criteria drawn from legislations, regulations, policies and guidelines for controlling water abstraction were used.

The criteria for the audit were based on specific Audit objectives focusing on planning, Monitoring, Water use permit and coordination of activities regarding abstraction of water sources as shown in **Table 1**.

**Table 1: Specific Audit Criteria**

Audit Question	Criteria	Source
<b>Adequacy of the plans for Water abstraction</b>	<p>The Basin Water Boards are supposed to prepare basin water resources management plans, provides guidelines and standards. And plans for water use should include: Water balance for each basin, forecasted demand for each basin and requirements of reserves for each water resource</p> <p>Planning and decision-making is supposed to be participatory involving all users and stakeholders.</p>	<p>Water Resources Management Act 2009 Section 23 (a)(b) and section 31(2)</p> <p>National Water Policy, 2002, Section 3.1(vi)</p>
<b>Monitoring of activities in controlling water abstraction from the water sources</b>	<p>Where a Basin Water Board has granted a Water Use Permit subject to the construction or alteration of works, the Basin Water Board shall have powers to monitor and enforce the requirement for such construction or alteration of works in accordance with regulations made by the Minister.</p> <p>MoWI through BWBs are required to monitor all water abstractions.</p>	<p>Water Resources Management Act 2009Section 85</p> <p>National Water Policy, 2002, Section 4.1.2</p>
<b>Proper actions against illegal water users</b>	<p>BWB are required to sanction any person who abstracts or uses water in excess of what is authorized.</p>	<p>Water Resources Management Act, 2009 Section 25(a)</p>

Audit Question	Criteria	Source
Effective coordination among MoWI, BWBs and other stakeholders	<p>MoWI is required to facilitate sectoral coordination and serve as a link channel of communication between these bodies and the Government on aspects that may impact on water resources.</p> <p>MoWI is supposed to enhance effective collaboration and coordination mechanism among sectors at all levels.</p>	<p>Water Resources Management Act 2009, Section 13(2)(e) and 16(g)</p> <p>National Water Policy, 2002, Section 4.10 Water</p>

**Source: Auditors Analysis**

### **1.3.4 Methods of Data Collection**

During the implementation of the audit, auditors used various methods of data collection as explained below:

#### **Document Review**

The audit team reviewed various documents to gain an understanding of the impacts associated with uncontrolled water abstraction from the water sources and the efforts that has been deployed by relevant stakeholders in the water sector in Tanzania. For more details of documents reviewed please refer to the **Appendix 7**.

#### **Interview**

This method was used in the audit for the purpose of obtaining more information and clarification in some of the areas which the document review method left gaps. Different Officials were interviewed according to their responsibilities. **Appendix 8** gives the list of officials who were interviewed.

#### **Site Visits and physical observation**

Four Basin Water Boards were selected to be visited. The selected Basins were Wami/Ruvu Basin, Lake Victoria Basin, Pangani Basin and Internal Drainage Basin with a consideration of including both ground and surface water. This helped the audit team to have a clear picture on how water abstraction was being managed in different selected Basins.

### **1.3.5 Data Validation**

The Ministry of Water and Irrigation, which is directly concerned with this report, was given the opportunity to go through the draft report and



comment on the figures and information being presented. They confirmed on the accuracy of the figures used and information being presented in the audit report.

Furthermore, the information was cross-checked and discussed with experts on the field of water resource management to ensure validation of the information obtained.

### **1.3.6 Standards Used for the Audit**

The audit was done in accordance with International Standards for Supreme Audit Institutions (ISSAIs) issued by the International Organization of Supreme Audit Institutions (INTOSAI). These standards require that the audit is planned and performed in order to obtain sufficient and appropriate evidence to provide a reasonable basis for the findings and conclusions based on the audit objectives.

### **1.4 Structure of the Audit**

The remaining part of the report covers the following:

- Chapter two describes the system and process of controlling water abstraction from the sources, where responsibilities of different key actors in water control of water abstraction are described;
- Chapter three present the audit findings on the Planning, Monitoring and Coordination of activities regarding control of Water Abstraction;
- Chapter four provides conclusion of the audit; and
- Chapter five outlines the audit recommendations to be implemented in order to improve the current situation.

## **CHAPTER TWO**

### **SYSTEMS FOR CONTROLLING WATER ABSTRACTION FROM THE WATER SOURCES**

#### **2.1 Introduction**

This chapter provides an overview of the legal and administrative framework, Governing laws, Policies and Regulations. It also explains about stakeholders' responsibilities on controlling water abstraction from water sources.

#### **2.2 Governing Laws, Policies, and Regulations**

##### **2.2.1 National Water Policy 2002**

The National Water Policy narrates several remedial actions that have to be taken in order to protect water from pollution and harmful depletion. The policy sets an objective which is, to develop a comprehensive framework for sustainable development and management of the Nation's water resources.

##### **2.2.2 Water Resource Management Act, 2009**

The Act, among other things, provides guidance on, control of water abstraction and use<sup>8</sup> and also addresses the issues of granting water use permits. In addition to that, section 70 and 74 of the Act provides duration for the water use permit and conditions attached to a water use permit respectively.

Furthermore, the act describes sanctions to be imposed to defaulters, and entails the planning way for water use.

##### **2.2.3 National Water Sector Strategy**

According to National Water Sector Development Strategy section 3.9.5 (b) requires the Ministry to introduce water allocation procedures and guidelines for prioritizing and granting time limited water use and discharge permits

**Section 6.3.3.1** of the National Water strategy, identifies two primary sources of recurrent costs to be used for water resources managements. The sources are: The funds through budgetary allocations to the Ministry of Water, and charges imposed for water abstractions.

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<sup>8</sup>Water Resource Management Act of 2009,Section 43 to 80

#### **2.2.4 National Environmental Policy 1997**

Uncontrolled settlements due to urbanization lead to the uncontrolled abstraction of the nearby water sources. National environmental policy of 1997 section 55(1), it insists the integrated planning and improved management of urban centers and designation of urban land uses based on environmental impact considerations

### **2.3 Administrative framework**

This section describes the responsibilities main Auditee and various stakeholders towards the control of water abstraction from the water sources:

#### **2.3.1 Ministry of Water and Irrigation**

The Ministry of Water and Irrigation (MoWI) is responsible for formulation and revision of the National Water Policy, Promoting the development, management and use of nation's water resources and Providing strategic guidance, technical and operational support to Basin Water Board to enable them carry to out their mandated functions including water resources assessment, monitoring and regulation.

#### **Objectives of the Ministry of Water and Irrigation in Controlling Water Abstraction from Sources are:**

Providing guidance and support to the Basin Water Board enforcement functions, managing the national register of water use permits, water user associations and other user groups, and Coordinating and supporting activities related to control of water abstraction from the water sources.

#### **Functions of the Ministry of Water and Irrigation**

- To initiate the formulation, revision, and preparation of the National Water Policy and oversee their implementation (particularly aspects of the policy and strategies that pertain to water resources management);
- To promote the development, management and use of the nation's water resources in accordance with the National Water Policy and strategies;
- To build capacity of Regional Secretariats and Local Government Authorities in water resources management;

- To supervise the operations of the Basin Water Board and providing them with technical support.

### **2.3.2 Basin Water Boards**

The Ministry of Water and Irrigation, has established nine (9) water basins which have been given the mandate to manage and look after all the water sources in the Country by carrying out the following functions<sup>9</sup> under section 23 of Water Resource Management Act 2009:

- Prepare basin water resources management plans, projects budgets and an implementation strategy;
- Monitor and enforce water use and discharge permits and pollution prevention measures;
- Resolve intra-basin conflicts;
- Co-ordinate the inter-sectoral water resources management at the basin level and serve as a channel of communication between these sectors and water users in general;
- Prepare reports on the state of water resources in a basin; and
- Collect, process, and analyze data for water resources management.

## **2.4 Stakeholders involved in Control of Water Abstraction**

### **2.4.1 Local Government Authorities (LGA's)**

Local Government Authorities (LGA's) have been mandated under section 36 of the Environmental Management Act No. 20 of 2004 to regulate all matters related to environmental issues and ensure enforcement of compliance in area of jurisdiction.

### **2.4.2 Urban Water Supply and Sanitation Authorities**

Water authorities were established to provide water supply to the public by the Ministry of Water and Irrigation. Section 20(d) of Water Supply and Sanitation Act, 2009, requires the Water Authorities to protect and maintain the water sources from which they abstract water and they are required to pay water use fee to the Basin Water Boards.

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<sup>9</sup>Section 23(a) to (o) of the Water Resource Management Act No 11 of 2009.

### **2.4.3 Water Users Association (WUA)**

Water User Associations are established under section 80(1) of Water Resources Management Act 2009. These association were formulated to manage, distribute and conserve water from a source used jointly by the members of the water users association; acquire and operate any Permit under the provisions of water resource management act, resolve conflicts between members of the association related to the joint use of a water resource; collect water use fees on behalf of the Basin Water Board; and represent the special interests and values arising from water used for a public purpose, such as in an environmental or conservation area, or for the purpose of managing Groundwater Controlled Area.

### **2.4.4 National Environmental Management Council (NEMC)**

National Environmental Management Council (NEMC), was established to oversee environmental management issues, they are mandated to supervise the process for conducting Environmental Impact Assessment so as to enhance issuance of certificate by the minister responsible for environment, before the commencement of the large scale project which involves water abstraction.

## **2.5 Process description on Control of Water Abstraction from the Sources**

In Tanzania control of water abstraction, involves several aspects such as issuing of water use permit which indicates clearly the amount of water to be abstracted and the terms and conditions which the abstractor need to adhere while the permit is still valid, on top of that there are sanctions imposed to defaulters, and Monitoring mechanisms like inspection, reporting and follow up to ensure the compliance of abstraction is met.

### **2.5.1 Issuing of Water Use Permit**

The following are the process which the applicant has to take before the permit is issued;

- (i) An application is made by applicant to the Basin Water Board through the BWB by submitting prescribed legal forms and paying an appropriate application fee;
- (ii) The BWB registers the Application in the Water Register and informs the applicant of the Application Number and of the process;
- (iii) The BWB gazettes the application in the Government Official Gazette

- (iv) The BWB provides a copy of the application form to the Director of Water Resources (for Recording in the National Water Register);
- (v) The Gazette Notice is displayed at the District Administrative Secretary notice board (to inform the Public about the application and to invite objections if any);
- (vi) The BWB writes letters to potential objectors who have been identified in the Application Form or otherwise;
- (vii) The BWB seeks for information regarding the application from;
  - a. District Administrative Secretary
  - b. District/town/Municipal/City Executive Director
  - c. National Environmental Management Council and/or Division of the Environment
  - d. Information from the Water Resources Assessment Department
  - e. Any other person whom he deems useful to provide information.
- (viii) The BWB refers the application to the Chairman of the BWB after processing and analyzing the information;
- (ix) The Application is then referred to the Board Meeting who discusses and decides whether to grant or refuse the application;
- (x) If approved, the BWB will write and grant the temporal water use permit (which will the Board shall provide a permanent or final grant after satisfactory completion of the project);
- (xi) If the application has been refused or modified the applicant may apply for an appeal to the Minister responsible for Water Affairs who may grant or refuse the appeal application.

### **2.5.2 Sanctions to defaulters**

To control water abstraction in Tanzania various sanctions have been set by the Law. The Water Resource Management Act section 44(2) impose sanction to a person who abstracts or uses water in excess of that authorized or for a purpose other than that authorized. In addition to that, the Act has set the fine of not less than three hundred thousand shillings and not more than five hundred thousand shillings or to imprisonment for a term and an additional fine of not less than fifty thousand shillings in respect of every day during which the offence

continues. The ministry of water and irrigation through the basin water boards has been mandated to enforce the law.

### **2.5.3 Monitoring Mechanisms to Control Water Abstraction**

In controlling water abstraction in the country MoWI is supposed to monitor Basin water board through the reports sent to them by BWB and conduction of Performance Assessment Framework (PAF). In addition to that, BWBs are supposed to carryout monitoring of water sources and water users by conducting inspection and making follow-up. This is done so as to ensure presence of required abstraction structures and presence of measuring devices at the intake for recording actual abstraction on daily basis.

## **2.6 Organization structure for Controlling Water Abstraction from Water Sources**

Water abstraction is controlled by the Ministry of water and Irrigation through the following channels;

### **(i) The Ministry of Water and Irrigation**

The Ministry is responsible for overseeing national policy and strategy formulation. The Minister is responsible for appointing members of the National Water Board; and establishing Basin Water Boards which are responsible for controlling water abstraction;

Directorate of Water Resources advises the government on all matters pertaining the water resources, and co-ordinates all activities of Basin Water Boards including water abstraction;

### **(ii) The National Water Board**

The National Water Board (NWB) is an advisory board to the Minister on matters related to multi-sectorial coordination in integrated water resources planning and management as well as resolution of national and international water conflicts. Also the National Water Board recommends to the Minister legislative measures for the management of water resources;

### **(iii) The Basin Water Boards**

Basin Water Boards (BWBs) report to the MoWI specifically under the Director of Water Resource Management. The Boards are given the responsibilities to control water abstraction by issuing water use permit and collecting water use fee together with other functions of managing and monitoring the water sources;

#### **(iv) Catchment Water Committee and sub-Catchment Water Committee**

Catchment Water Committee and sub-Catchment Water Committee reports to the Basin Water Board, and it has to ensure that it resolves water resources conflicts in catchment or sub catchment. It also coordinates and harmonizes catchment or sub-catchment and integrated water resources management plan.

#### **(v) Water User Association**

Water user associations are formulated by the water users on the given locality where the catchment passes, and they report to the catchment water committee and sub catchment water committee.



## **CHAPTER THREE**

### **FINDINGS**

#### **3.1 Introduction**

This chapter presents findings on the performance of the Ministry of Water and Irrigation (MoWI) through Basin Water Boards (BWBs) on controlling water abstraction with a view to protect water sources from overuse. The findings address four areas which are:

- Effectiveness of the plans for water use;
- Effectiveness in monitoring of activities by MoWI and BWBs for controlling water abstraction from the water sources;
- Appropriateness of actions taken by BWBs to control water use; and
- Coordination between MoWI, BWBs and other stakeholders.

#### **3.2 Effectiveness of the Plans for Water Abstraction from the Water Sources**

This section reveals findings related to first audit question: “Do the BWBs develop effective plans for water abstraction from the water sources?”

The issues addressed include: planning for water use before issuing water use permit; setting limits of abstraction of water for various uses; and effective involvement of stakeholders in planning for water use.

##### **3.2.1 Planning for Water Use before Issuing Water Use Permit**

The National Water Policy of 2002 requires the planning of proper water use from national level up to the community level. Also section 31 (2) of Water Resource Management Act of 2009 requires MoWI and BWBs to prepare plans that include Water balance for each basin, forecasted demand for each basin and requirements of reserve for each water resource.

Review of both annual and action plans for years 2011/12 to 2014/15 from the four visited BWBs, revealed that, each year the BWBs planned to give out certain number of permits. However, the plans did not include water balance, forecasted demand and requirements of reserve which are useful for water allocation.

It was further noted that the basins have their common traditional way of just considering the expected number of potential water users and targeted amount of revenues that can be collected in a particular year, there after efforts are made to ensure such targets are met. On the other hand it was revealed by all visited basins that they are in process of preparing IWRMDP a tool that will facilitate consideration of available water balance and projected demand in planning for water use. The reason for not having plans for water use was, failure to conduct water inventory in the basin, and hence important information required as input for planning were lacking.

Inadequate planning led to the failure of BWBs to allocate available water equitably and this raised several conflicts among water users who depend on same water source.

### **3.2.2 Setting Limits of Abstraction of Water for Various Uses**

According to Section 44(1) of the Water Resources Management Act 2009, requires BWBs to set limit in water use permit, so that users may not abstract water in excess of the authorized limit.

Interviews conducted with officials from the four visited Basins showed that, BWBs set limits of abstraction for each water use permit provided to water users. This was done by considering either the amount of water requested by users in case a particular user specifies the exact quantity of water she/he needs, or capacity of the pump/flow measuring device set at the intake to record daily water abstraction in case user does not know, the exact quantity of water needed to be abstracted.

Furthermore, the review of sampled water use permits from the four visited BWBs revealed that limits of water to be abstracted were set to all users<sup>10</sup>. On the other hand interviews conducted with LVBWB officials, revealed that although the limits were set, it was difficult to measure actual quantity being abstracted by the users.

This was because most of the small scale water users did not have flow measuring devices at the intake before putting water into use and they did not keep records of daily amount of water abstracted. This was contrary to the terms and conditions of water use permits granted.

Furthermore, physical observation at Mwanza Urban Water Supply (MWAUWASA) intake at Lake Victoria, noted that the quantity of water that was abstracted per day was more than the quantity of water requested and granted on the permit, i.e. on the permit, LVBWB allowed MWAUWASA to abstract around 53,000 cubic meters per day but MWAUWASA abstracted about 90,000 cubic meters per day. Therefore

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<sup>10</sup>Water Permit No. IDB/SGD/415

MWAUWASA was over-abstracting almost 37,000 cubic meters per day. The water over abstracted led to a loss of about TZS 40,515,000 which could have been collected as part of water use fee per year.

### **3.2.3 Involvement of Stakeholders in Planning for Water Use**

The National Water Policy 2002, Section 3.1(vi) requires planning and decision making to be participatory involving all users and stakeholders.

According to the interviews conducted with MoWI officials, it was noted that there was no involvement of stakeholders in the process of planning for water use. Stakeholders who were supposed to be involved included Water User Association (WUA), NGOs, LGAs, BWBs and the concerned ministries.

In addition, interviews conducted with officials of the visited basins such as, Lake Victoria Basin Water office and Wami/Ruvu Basin revealed that, there was no involvement of stakeholders' plans contrary to the requirement of National Water Policy of 2002. However, the officials said that, involvement of stakeholders during planning will be effective after the implementation of Integrated Water Resource Management and Development Plans (IWRMDP) which will require them to involve all stakeholders. It is not known exactly when this will be accomplished in all the visited BWBs.

Furthermore the audit failed to obtain any document from the BWBs and MoWI which could show how the stakeholders were involved as stated in the National Water Policy, 2002.

Inadequate involvement of stakeholders in planning was due to the fact that many stakeholders were under different ministries with different reporting systems. Interview with Environmental officers and District Water Engineer at Morogoro LGA pointed out that each ministry has its own priorities in planning. Therefore each stakeholder made its own plans in isolation.

As pointed out in WSDP (2006) and National Water Sector Development Strategies (2005 to 2015), inadequate involvement of stakeholders in planning for water use results in one sector planning for significant water uses without considering the needs of other water users. This normally leads to conflicts between different sectors for example hydro power energy and irrigation sectors.

### 3.3 Monitoring of Activities by MoWI and BWBs in Controlling Water Abstraction

This section covers findings related to audit question two: “Do MoWI and BWBs effectively monitor activities in controlling water abstraction from the sources?”

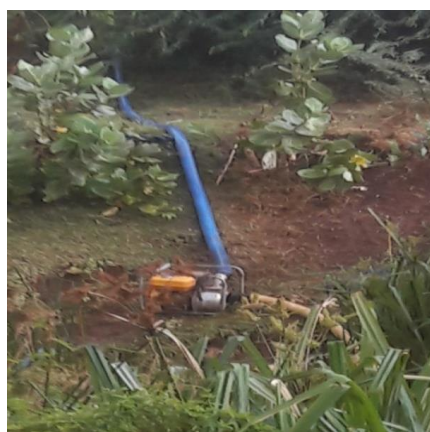
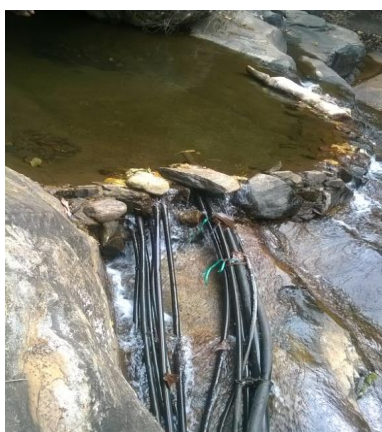
Issues covered include: inspection of water sources, follow-up to determine actual abstraction levels, reports on the state of water sources in basin, monitoring of activities of BWBs and technical support to the BWBs by the MoWI.

#### 3.3.1 Inspection of Water Sources by BWBs

According to Section 18(1) of the Water Resource Management Act of 2009, each Basin Water Board is required to appoint an authorized officer to carry out routine inspections of the use of water.

Interviews with LVBWB, WRBWB, PBWB and IDBWB officials revealed that the basin water boards were supposed to conduct inspections four times a year i.e. each quarter. However, during the same interviews, auditors noted that, an inspection of water sources were not conducted as it should be.

Furthermore, basing on the physical observation conducted at WRBWB, Auditors observed that some pipes were being used to abstract water from Mgalole River at the upstream rivers leaving the downstream without water. More physical observation at PBWB found several illegal water pumps being used to abstract water from different water sources as shown in **Photo 1**. The auditors are of the view that illegal abstractions have increased due to inadequate inspection.



**Photo 1:** shows the illegal abstraction of water which as observed at WRBWB and PBWB on 14<sup>th</sup> November 2016 and 31<sup>st</sup> January 2017 respectively.

Furthermore review of progress reports for the period of five years (2011/2012-2015/2016) from (IDBWB) and WRBWB showed that Inspections were not implemented as required. In some years the BWBs planned to conduct inspections but the actual implementation status shows they did not do as planned. Example progress report of July-December 2015<sup>11</sup> from WRBWB shows that the Basin planned to carry out dam inspection and inventory but it was not done.

The interviews with LVBWB, WRBWB, PBWB and IDBWB and a review of Internal Audit report<sup>12</sup> pointed out reasons for failure to conduct regular inspection being; geographical coverage of such basins being too wide and inadequate resources such as funds and number of staff respectively. The officials pointed out that the funds they get from the MoWI are inadequate to conduct inspections and other activities. This was due to the fact that, the budget received was less than what they have requested. They mostly depend on internal revenues through collection of water use fees which is not sufficient for the planned activities. Table 2 and Figure 1 show the budget and number of staff available at each basin respectively.

**Table 2: Budgeted versus Actual Disbursed Funds in TZS for the Year 2011/12-2015/16**

BWBs												
YEARS	WRB			IDB			LVB			PB		
	Approved budget(Millions)	Actual received(Millions)	%disbursed	Approved budget(Millions)	Actual received(Millions)	%disbursed	Approved budget(Millions)	Actual received(Millions)	%disbursed	Approved budget(Millions)	Actual received(Millions)	%disbursed
2011/12	1,674	127	8	1,923	313	16	-	-	-	-	298	-
2012/13	1,300	888	68	1,158	2,020	174	-	-	-	1,200	2,154	180
2013/14	1,300	121	9	3,339	420	13	3,323	468	14	1,775	52	3
2014/15	6,019	165	3	6,734	386	6	3,507	563	16	2,200	1,817	83
2015/16	17,336	235	1	4,053	1,345	33	3,383	1,358	40	3,054	200	7

Source: BWBs

However the BWBs officials pointed out that most of the requested budget for day to day activities was not received. The amount received was for

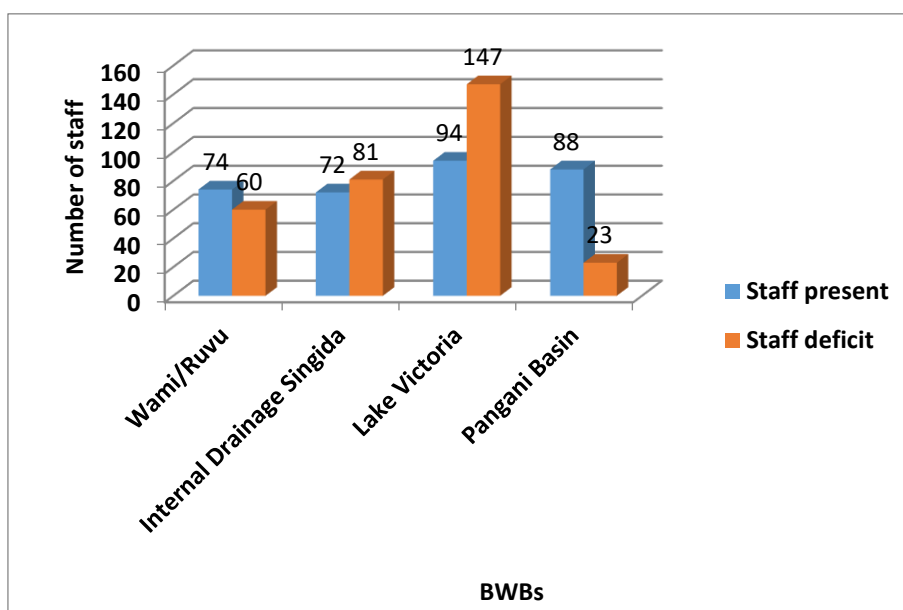
<sup>11</sup>Wami/Ruvu Basin Water Board Fourth Quarterly Progress Report For Financial Year 2015/2016

<sup>12</sup>Internal Audit Report For Wami Ruvu Basin Water Board for (2015/16) and 1st quarter (2016/17)

development purposes. Hence this has made it difficult to conduct inspections and other related activities.

**Figure 1** shows that all the BWBs did not have enough staff. The highest deficit was found in Lake Victoria Basin followed by Wami/Ruvu Basin in Morogoro. The reason given for the deficit was that the Ministry did not employ the required number of staff. The staff deficit has impaired the inspection of water sources to the extent that abstraction continues without being noticed.

**Figure 1: Number of Staff Present Versus Deficit**



Source: Data from BWBs

Inadequate inspection might have contributed to the current crisis of water scarcity. For example in the year 2016 at Morogoro District, the amount of water which was abstracted by Morogoro Urban Water Supply (MORUWASA) decreased from 6 million liters to 2.4 million liters due to several factors including illegal abstraction where some pipes were found being used to abstract water from Uluguru upstream sources.

Furthermore inadequate inspections have contributed to existence of many illegal and undefined bore holes. Example the inspection conducted by WRBWB in a year 2015 at Ilala District in Dar-Es-Salaam identified 2626 unregistered bore holes, 330 undefined and only 262 registered boreholes.

### **3.3.2 BWBs Follow-up to Determine Actual Abstraction Level from the Water Sources**

The National Water Policy of 2002, Section 4.11 (i), mandates Basin Water Board to strengthen, enforce and follow-up on existing legislation, regulations and operating rules governing water use.

The interviews conducted with officials from the four visited Basins revealed that, no follow up was made to determine whether water users abstract required amount of water or to ensure abstractors have required designed structures for abstraction. The officials at LVBWB also revealed that, follow up on actual abstraction was not done.

According to LVBWB officials, during that period they had plenty of water in Lake Victoria therefore over abstraction was not seen as a problem. Also a follow up seemed to require additional resources which would increase operational costs.

The audit noted that inadequate follow ups have contributed to the increase of number of illegal abstractors.

### **3.3.3 BWBs Reports to MoWI on the State of Water Sources in a Basin**

Water Resource Management Act of 2009, Section 23 (O), requires Basin Water Boards to prepare reports on the state of water resources in a basin and submit to MoWI.

Interviews conducted with different officials from all the visited Water Basins indicated that they were preparing and submitting regular reports to the Ministry of Water and Irrigation. These included quarterly, semi-annual and annual reports which gave information about the state of known water sources within the respective basins to the Ministry.

The audit was able to review several reports including monitoring reports, inspection reports quarterly and annual reports which were prepared and sent to the Ministry. However the review of the reports noted that there were various challenges in reporting. For example basins were required to produce four inspection reports but in some years they only reported once, and in some basin the inspection did not cover the whole basin. The reports have also reported the limitations, like insufficient budget, that hindered them to accomplish the set goals.

### **3.3.4 Provision of Technical Support to BWBs by MoWI**

The Water Resources Management Act, Section 16(m), requires the Ministry to provide technical support in terms of provision of information tools, basin models and decision support systems to the BWBs.

Interview conducted with all visited Basin Water Officers revealed that, MoWI have been providing technical support in terms of technical staff and provision of various equipment required in their day to day activities.

However the review of internal audit report of LVBWB and WRBWB revealed that there was inadequate provision of technical support to ensure adequate management of automatic weather stations. It was noted that 10 out of 12 automatic weather stations of WRBWB, were not working since 2014, and also 8 out of 18 weather stations of LVBWB were not working, despite the fact that such information were reported to the MoWI.

The malfunctioning of those stations were due to insufficient resources allocated to monitor the stations, placement of stations to the unsecured places as orchards and remote areas and lack of awareness on the importance of the station to the community. This resulted to collection of insufficient prior information on understanding water quantity which in turn led to preparation of unrealistic reports and improper decision making.

### **3.4 Actions Taken by BWBs to Control Water Abstraction**

This section covers findings related to audit question three: “Do BWBs take proper actions in controlling water use?” Issues covered include: collection of user fees and sanctions imposed to unauthorized users.

#### **3.4.1 Collection of Water use charges from Water Users by BWBs**

According to the Water Resources Management Act, 2009 Section 25(a), Basin Water Bodies are required to collect fees and charges from all water users by issuance and operation of permits.

The auditors noted that collection of user charge was not effectively done as not all the users paid what they were supposed to pay. The interviews conducted with officials from the visited Basins noted that most of the legal water users were not paying their appropriate fees. As a result it became difficult for BWBs to collect the user fee effectively.

For the past five financial years under review, the basin had accumulated debts that summed to about TZS 5,093 Million and they managed to collect TZS2, 488 million. This means that basins failed to collect charges by 51 percent. Meanwhile for the last three years the highest failure of fee collection was shown by WRBWB, where its failure ranged from 87 percent for the financial year 2014/15 and 64 percent for the financial year 2012/13. In comparison IDBWB failure to collect charges ranged from 21 percent for financial year 2013/14 and 16 percent for the financial year 2015/16. Further analysis is shown in **Appendix 1**.



Furthermore, it was also pointed out by the BWBs officials that, the water users who did not pay their fees appropriately, included the Government institutions such as water authorities and others. They delayed to pay, paid less or did not pay at all. For example, during the last three years Water Authority within LVBWB and WRBWB basins had a total debts approximately to TZS 1,183 million while other government institution had a debt of TZS14 million and other users had debt accumulated to about TZS 1,385 million out of total debt as shown in the **Table3**.

**Table 3: Debts of water users in WRBWB and LVBWB for the past three years**

YEARS	WRBWB and LVBWB			Total(TZS in Millions)
	Water Authority (TZS in Millions)	Other government Institution (TZS in Millions)	Other Users (TZS in Millions)	
2013/14	231	3	364	599
2014/15	504	5	474	985
2015/16	448	5	545	999
TOTAL	1,183	14	1,385	2,582

Source: Water user databases from BWBs

**Note:** Auditors used the above data from two basins because they were available and complete.

In Addition DAWASCO alone contributed to about TZS 869 million of the total debt. The debts of individual water authorities are stipulated on **Appendix 2** and **3**.

Review of board's meeting minutes from National Water Board (2013), WRBWB (2012,2013, and 2015) and PBWB (2015), showed that board's members raised the issue of ineffective fee collection as one of the problem which needed to be solved. The members formed a special task force that would have enabled an effective fee collection in their Basins. Despite the formation of such special task force to collect fee, still the issue of ineffective fee collection continue to exist.

At the ministerial level the directorate of water resources management tried to accumulate debts of all water authorities from all basins and the concern was presented to the permanent secretary for further action, but for the visited basins such debts still existed. To alleviate the fee collection problem, the ministry of water came up with an idea of providing consultancy service on Water Resource Management Financing Option aiming to determine financing needs for water resource management for all water using sectors at all levels and to design

financing option for all nine basin and national level WRM interventions in the short, medium and long term however since 2007 such consultancy service has not yet started.

The reason given for failing to collect charges was that, some water users are distant from BWB, and sometimes the costs required to make follow up was higher compared to the amount of fee that was to be collected. In addition to that they said Government institutions, and water authorities were both under one Government, as a result fee collection became difficult to be effected. The interview with official of Morogoro Urban Water Supply and Sanitation Authority (MORUWASA) pointed out that sometimes basin delays to bill them, resulting in delays in payments.

However, auditors are of the view that, BWBs have not developed effective mechanisms to collect water charges from water users. As a result many of them did not pay fees as required because being under one government could not stop BWBs to collect charges and fees from these institutions since it was their responsibility to bill them on time and remind them to pay. Also it was stated under the Act that whoever has a permit to abstract water from the sources should pay accordingly. Therefore this should not be an excuse.

On top of that, the review of minutes of National Water Board of April 2016 revealed the existence of few number of Water User Association (WUA) as compared to what is demanded. This has contributed much to the ineffective fee collection, as it has been evidenced from all four visited basins. All BWBs have failed to form the targeted number of WUA to help in collection of Water use fee on their behalf, and in resolving conflicts as per requirement of section 80 (1) of Water Resource Management Act of 2009, as shown in Table 4.

**Table 4: The number of WUA formed versus the required number of WUA**

Basin	Planned number of WUA	Number of WUA Present
PBWB	30	13
WRBWB	33	15
LVB	29	7
IDB	18	3

Source: Information from BWBs

Failure to collect water use fee has impaired some of the Basins functions like carrying out inspections, monitoring of water sources and awareness creation as their budget was being affected for not meeting the financial targets that were planned to be collected. This has also reduced their capacity of being self-reliance as their budget is still depending on the Ministry of Water and Irrigation to supplement the deficit.

### 3.4.2 Appropriateness of the Sanctions Imposed to defaulters

According to Water Resources Management Act, 2009 Section 44 (1), if a person abstracts or uses water in excess of that authorized or for a purpose other than that authorized, the person commits an offence and shall be liable to a punishment. Also Section 44 (2) of the same Act has set the fine of not less than three hundred thousand shillings and not more than five hundred thousand shillings or to imprisonment for a term and an additional fine of not less than fifty thousand shillings in respect of every day during which the offence continues.

However, interviews conducted with LVBWB, IDBWB and Wami/Ruvu Basin Officials, showed that, once they caught an illegal abstractor, the sanction imposed was to give them knowledge on the importance of having permit, convince the person to apply for permit and on some rare cases they destroyed their infrastructures.

The interviews also revealed that with exceptional of PBWB who imposed fines and took some legal actions like taking the caught illegal abstractors to court, the remaining three BWBs did not charge fines once they caught an illegal user and filed no cases where they had taken illegal user to court for illegal abstraction. For example when WRBWB identified 2626 unregistered boreholes at Ilala District in Dar-Es-Salaam, there was no sanction imposed to the illegal abstractors.

Failure to take proper actions is seen as legalizing these illegal boreholes and at the same time denying the BWB drilling, application and water use fees. If the 2626 unregistered boreholes were for small scale users, WRBWB would have collected about TZS 814 million. Given that the application fee for drilling permit was 150,000, water use permit was TZS 60,000 and water use fee was TZS 100,000 per one year as indicated in Table 5.

**Table 5: Estimated loss for WRBWB for not taking proper action against unregistered boreholes**

WRBWB	
Component	Number/Amount
Number of illegal boreholes	2,626
Drilling permit(150,000/ permit)	393,900,000
Water use permit fee (TZS 60,000/permit)	157,560,000
Water use fee (TZS100,000/year)	262,600,000
<b>Total (TZS)</b>	<b>814,060,000</b>

Source: Data from WRBWB

In addition the review of aPerformance Assessment Final Report of October 2015 which was used to assess the performance of the nine basins in Tanzania by the MoWI revealed that, Wami/Ruvu and Internal Drainage Basin Water Boards had Minimum application of legal actions against defaulters.

Inadequate application of proper sanctions was due to; BWBs depended on MoWI lawyer to represent them in the courts of law. The BWBs themselves did not have their own lawyers to represent them. As a result they failed to report illegal abstractors and hence failure to stop them from continuing abstracting water without proper permit and to abstract above the prescribed quantity.

The auditors were also able to note that the sanctions imposed by the BWBs were not deterrent as they were not able to resolve the problems of illegal abstractors since they kept on occurring. Furthermore, the sanctions imposed were not as they have been stated in the Act. Auditors are of the view that the BWBs do not take the actions seriously as they should do.

Inappropriateness of the sanctions imposed to illegal water users has led to continuity of people abstracting without permits and user were not scared of the sanctions since they were not deterrent enough.

### **3.5 Coordination among MoWI and BWBs with other Stakeholders**

This section discloses findings related to audit question four: “Do the MoWI and BWBs effectively coordinate with a view to control over abstraction?” The issue addressed include: Information sharing with other actors on the control of water abstraction.

#### **3.5.1 Sharing of Information between the Ministry of Water and Irrigation and Basin Water Boards with other Actors on the Control of Water Abstractions**

According to Water Resources Management Act, Section 16 (g), the MoWI through Director of Water Resources, has to supervise and co-ordinate the activities of Basin Water Boards and serve as a link or a channel of communication between these bodies and the Government. Also section 23(l) of the same Act requires the basin to coordinate with other stakeholders and serve as channel of communication between the sectors.

Review of minutes of National Water Board of July 2012, and interviews conducted with BWBs, WUA and LGAs officials from the four visited LGAs of Morogoro, Singida, Mwanza and Moshi it was noted that there was inadequate information sharing between BWBs and other actors involved in water use.

The interview with officials at Morogoro Municipal Council revealed that, there were several borehole drilling projects which were carried out without informing the basin water officials. These shallow wells especially in Morogoro, may be one of the causes for the spread of cholera in the Region. The shallow well had been prone to contamination since well development procedures were not followed, as a result of not communicating with the Basin Water Board that is responsible for conducting Hydro-geological survey and offering drilling permit.

In addition to that, the auditor's site visits at PBWB noted the existence of inadequate communication and information sharing between LGAs and PBWB. Several decisions regarding water abstraction have been made without the discretion of PBWB. For example Hai LGA has constructed a structure across Weruweru River for irrigation purposes without involving PBWB as shown in **Photo 2**. This has led to conflicts between upstream and downstream users since environmental flow of the river has been disturbed. The structure favored mostly upstream users.



**Photo 2: Irrigation structures constructed without informing PBWB as it was taken on 31<sup>st</sup> January 2017 at Weruweru River**

Inadequate coordination has been caused by different reporting system. The LGAs report to the President's Office Regional Administration and Local Government (PO-RALG) while the Basin Water Board report directly to the Ministry of Water and Irrigation. As a result the observed inadequate information sharing has led to several water conflicts as can

be seen from the Pangani River Basin progress report<sup>13</sup> which pointed out four conflicts raised due to inadequate information sharing. Examples of conflicts were MUWASA against Kilema Kusini Project in Moshi, Longuoa Water Supply against other water users in Moshi, and users of Kiseiya Furrow against those of Nambala Furrow.

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<sup>13</sup>Pangani Basin Water Board 3<sup>rd</sup> Quarter Progress Report: January-March 2015

## **CHAPTER FOUR**

### **CONCLUSION**

#### **4.1 Introduction**

This chapter draws the audit conclusion based on the findings presented in the previous chapter.

#### **4.2 Overall Conclusion**

The MoWI through BWBs are not effectively Controlling water abstraction in the country. This is because there were no proper plans for water abstraction. BWBs had failed to have effective mechanism to monitor abstraction levels and control unauthorized water abstractors as they did not conduct regular inspections.

BWBs also did not effectively collect water use fees from the authorized users and the actions taken to prevent unauthorized users were not deterrent enough to stop the tendency of abstracting water illegally. Moreover coordination between MoWI, BWBs and other stakeholders like LGAs was not effective enough to facilitate smooth information sharing between them.

#### **4.3 Specific conclusions**

The following are specific conclusion based on the audit objectives:

##### **4.3.1 Development of effective plans for water use by MoWI and BWBs**

Auditors are of the view that, MoWI and BWBs plans for water use are not effective. This is due to the fact that planning for water use was done without having important information like Water balance for each basin and requirements of reserve for each water resource. The issuance of water use permit was not supported by water balance analysis. Furthermore involvement of stakeholders in planning for water abstraction was not effective. The delay to accomplish ongoing process of developing an Integrated Water Resource Management and Development Plan (IWRMDP) which is an essential tool that could support stakeholders involvement in planning, greatly contributed to the ineffective planning for water use.

On the other hand the reporting mechanisms for BWBs and LGAs who are among many stakeholders are different as BWBs reports to the MoWI while LGAs reports to Po-RALG.As a result there is no linkage between these two

government entities where they can come together to enable them to sit, discuss and plan water allocation issues together.

This is a matter of concern because water abstraction requires effective planning so as to make sure that water resources are being used sustainably in order to protect our future generation. Due to ineffective planning for water use, the BWBs have failed to issue water user permit according to the exact quantity of water available and to prevent other water users to use water without having water use permits.

#### **4.3.2 Inadequate monitoring of activities by MoWI and BWBs in controlling water abstraction from the water sources**

It has been concluded that, monitoring of activities by MoWI and BWBs in controlling, water abstraction is inadequate. This is because inspection of water sources was not done as required. Normally inspection is supposed to be conducted four times a year. But instead it was conducted on ad-hoc basis. This has contributed to the increased of illegal water users, Permitted users abstracting above the prescribed limit and loss of income from those who should have applied for permits.

Therefore monitoring of activities by MoWI and BWBs to control water abstraction from the sources is important since it will facilitate sustainable abstraction and help to reduce the number of illegal abstractors as many users will have permits.

#### **4.3.3 Proper actions taken by BWBs to control water use**

The auditors concluded that, BWBs do not take proper actions to control water abstraction because BWBs failed to collect charges from various water users. Failure to collect water use fee impaired some of the Basins functions as their budget was affected by not meeting the target which was planned to be collected. This also reduced their capacity for being self-reliant as their budget depended on the Ministry of Water and Irrigation to supplement the deficit.

Similarly sanctions set by law are not well known to numerous small scale users who are endangering water sources by conducting activities conducted on the fringes of the water sources.

On the other hand some of the sanctions imposed by the BWBs were not deterrent enough as they were not able to resolve the problem of illegal abstractors since it kept on occurring.

Lack of proper actions to control water use facilitated the continuation of people using water without having permit, and since the sanctions were not deterrent, people continued to break the law as they were not worried of any serious action being taken against them.



#### **4.3.4 Coordination between MoWI, BWBs and other stakeholders.**

Coordination between MoWI, BWBs and other stakeholders is weak. Sharing of information between BWBs and other actors was not smooth as there has been contradicting decision between BWBs and other stakeholders. Several projects including drilling of community boreholes have been carried out without informing the Basin Water Boards and other key stakeholders. This is due to the different reporting structure between BWBs and LGAs.

Ineffective coordination has resulted into poor control of water abstraction by BWBs as they lacked full support from LGA and other stakeholders who are the main actors in making sure that water sources are maintained and protected.

## **CHAPTER FIVE**

### **RECOMMENDATIONS**

#### **5.1 Introduction**

The audit findings and conclusion indicated that there were weaknesses in Control of Water Abstraction. The weaknesses were noted on four main areas, namely: Planning; Monitoring, Actions taken by BWBs to control water use as well as coordination. The audit office is of the view that, these recommendations need to be implemented so that there is improvement in Controlling of Water Abstraction by the Basin Water Boards and the Ministry of Water and Irrigation so as to avoid unsustainable water abstraction.

#### **5.2 Recommendations to the Ministry of Water and Irrigation (MoWI)**

The Ministry of water and Irrigation should ensure that:

- 5.2.1 Integrated Water Resource Management and Development Plan is finalized and implemented in all Basin Water Boards and also ensure that Water sources inventory is conducted by all BWBs;
- 5.2.2 Basin Water Boards are staffed with required professions and equipped with all necessary equipment required for inspection and monitoring activities;
- 5.2.3 Fines and sanctions imposed to defaulters are reviewed to make them deterrent; and
- 5.2.4 Regular meetings among BWBs and other related stakeholders on issues pertaining to water use are well coordinated.

#### **5.3 Recommendations to the Basin Water Boards (BWBs)**

- 5.3.1 Enforce water allocation mechanisms and improve stakeholders' involvement in planning for water use so as to avoid fragmented plans;
- 5.3.2 Ensure regular inspection is done so that water users are complying with their water use permits requirements.

- 5.3.3 Improve internally generated funds by improving the financing mechanism of Water Resources Management (WRM) activities.
- 5.3.4 Ensure all users including water authorities and Government institutions are paying for water use fee timely and without any reluctance.
- 5.3.5 Improve Institutional set up so that all the WRM institutions are established to improve coordination and information sharing with other stakeholders which is an important attribute of good water governance.
- 5.3.6 Promote to all stakeholders participatory monitoring of activities conducted along water sources that may result into over abstraction of water from the sources.

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## **APPENDICES**

**Appendix 1: Analysis to Show the Percentage of Debts that has not Been Collected by the Basins**

Years	BWB	Total debt (TZS)	Amount Collected (TZS)	Amount not collected (TZS)	Percentage not collected
2011/12	PBWB				
	LVBWB	-	-	-	
	WRBWB	279,056,191	247,443,904	31,612,287	11%
	IDBWB	190,620,444	86,623,726	103,996,718	55%
	<b>SUB-TOTAL</b>	<b>469,676,634</b>	<b>334,067,630</b>	<b>135,609,005</b>	
2012/13	PBWB				
	LVBWB				
	WRBWB	276,550,805	193,840,571	82,710,234	30%
	IDBWB	204,118,571	118,397,971	85,720,600	42%
	<b>SUB-TOTAL</b>	<b>480,669,376</b>	<b>312,238,542</b>	<b>168,430,834</b>	
2013/14	PBWB				
	LVBWB	322,003,935	164,000,988	158,002,947	49%
	WRBWB	276,550,805	100,060,567	176,490,238	64%
	IDBWB	206,352,133	162,363,837	43,988,295	21%
	<b>SUB-TOTAL</b>	<b>804,906,872</b>	<b>426,425,392</b>	<b>378,481,480</b>	
2014/15	PBWB	368,175,715.00	106,361,715.00	261,814,000	71%
	LVBWB	340,145,976	247,060,481	93,085,495	27%
	WRBWB	644,473,698	85,750,124	558,723,574	87%
	IDBWB	250,835,904.40	196,743,216.40	54,092,688.00	22%
	<b>SUB-TOTAL</b>	<b>1,603,631,293</b>	<b>635,915,536</b>	<b>967,675,757</b>	
2015/16	PBWB	514,049,533	181,825,077	332,224,456	65%
	LVBWB	347,267,556	238,782,469	108,485,087	31%
	WRBWB	651,668,709	171,221,179	480,447,530	74%
	IDBWB	221,422,692	187,054,648	34,368,044	16%
	<b>SUB-TOTAL</b>	<b>1,734,408,490</b>	<b>778,883,373</b>	<b>955,525,117</b>	
	<b>GRAND-TOTAL</b>	<b>5,093,292,665</b>	<b>2,487,530,473</b>	<b>2,605,722,192</b>	<b>51%</b>

**NOTE: Blanks means “the information was not available at the time of Audit”**

**Appendix 2: Debts of Water Authorities from WRBWB**

Appendix 2: Debts of Water Authorities from WRDWB			
FINANCIAL YEAR	BASIN	NAME OF WATER AUTHORITY	DEBTS (TZS)
2011/12	WAMI/RUVU BASIN WATER BOARD	DAWASCO	11,826,000.00
		DUWASA	0.00
		MORUWASA	0.00
		Gairo Town Water Authority	150,000.00
		Kilosa Urban Water Supply and Sewerage Authority	0.00
		Mpwapwa Urban Water Supply and Sewerage Authority	0.00
		Kongwa Urban Water Supply and Sewerage Authority	0.00
		SUB-TOTAL	11,976,000.00
2012/13		DAWASCO	51,596,400.00
		DUWASA	0.00
		MORUWASA	0.00
		Gairo Town Water Authority	150,000.00
		Kilosa Urban Water Supply and Sewerage Authority	0.00
		Mpwapwa Urban Water Supply and Sewerage Authority	0.00
		Kongwa Urban Water Supply and Sewerage Authority	0.00
		TOTAL	51,746,400.00
2013/14		DAWASCO	145,129,200.00
		DUWASA	0.00
		MORUWASA	0.00
		Gairo Town Water Authority	150,000
		Kilosa Urban Water Supply and Sewerage Authority	0.00
		Mpwapwa Urban Water Supply and Sewerage Authority	0.00
		Kongwa Urban Water Supply and Sewerage Authority	0.00
		SUB-TOTAL	145,279,200.00
2014/15	DAWASCO	437,124,000.00	



FINANCIAL YEAR	BASIN	NAME OF WATER AUTHORITY	DEBTS (TZS)
		DUWASA	40,202,552.70
		MORUWASA	0.00
		Gairo Town Water Authority	150,000.00
		Kilosa Urban Water Supply and Sewerage Authority	0.00
		Mpwapwa Urban Water Supply and Sewerage Authority	0.00
		Kongwa Urban Water Supply and Sewerage Authority	0.00
		<b>SUB-TOTAL</b>	<b>477,476,552.70</b>
2015/16		DAWASCO	287,124,000.00
		DUWASA	67,004,254.50
		MORUWASA	36,227,965.50
		Gairo Town Water Authority	150,000.00
		Kilosa Urban Water Supply and Sewerage Authority	0.00
		Mpwapwa Urban Water Supply and Sewerage Authority	0.00
		Kongwa Urban Water Supply and Sewerage Authority	0.00
		<b>SUB-TOTAL</b>	<b>390,506,220.00</b>
		<b>GRAND-TOTAL</b>	<b>1,076,984,372.70</b>

**Appendix 3: Debts of Water Authorities from LVBWB**

Appendix 3: Debts of Water Authorities from LVWB			
FINANCIAL YEAR	BASIN	NAME OF WATER AUTHORITIES	DEBTS (TZS)
2013/14	LAKE VICTORIA BASIN WATER BOARD	Bukoba Urban and Rular Water Supply Authority (BUWASA)	14,035,890.00
		Karagwe Water Authority	1,250,000.00
		Biharamulo Urban Water Supply	0.00
		Ngara Urban Water Supply	0.00
		Muleba Water Authority	446,375.00
		Mugumu Urban Water Supply	481,800.00
		Bunda Urban Water Supply	438,000.00
		Musoma Urban Water and Sewerage Authority	20,268,058.00
		Tarime Urban Water Supply	0.00
		Mugango/Kiabakari and Butiama Water Authority	3,285,000.00
		Mwanza Urban Water Supply and Sanitation Authority	34,656,750.00
		Sengerema Urban Water Supply	2,792,250.00
		Magu Urban Water Supply	28,942,94.00
		Ngudu Urban Water Supply	578,160.00
		Maswa Water Supply and Sanitation Authority	4,613,600.00
		SUB-TOTAL	85,740,177.00
		2014/15	LAKE VICTORIA BASIN WATER BOARD
Karagwe Water Authority	500,000.00		
Biharamulo Urban Water Supply	250,000.00		
Ngara Urban Water Supply	0.00		
Muleba Water Authority	0.00		
Mugumu Urban Water Supply	219,000.00		
Bunda Urban Water Supply	273,750.00		
Musoma Urban Water and Sewerage Authority	8,882,410.00		
Tarime Urban Water Supply	273,500.00		
Mugango/Kiabakari and Butiama Water Authority	0.00		
Mwanza Urban Water Supply and Sanitation Authority	0.00		

FINANCIAL YEAR	BASIN	NAME OF WATER AUTHORITIES	DEBTS (TZS)
		Sengerema Urban Water Supply	821,250.00
		Magu Urban Water Supply	452,235.00
		Ngudu Urban Water Supply	262,800.00
		Maswa Water Supply and Sanitation Authority	1,752,000.00
		KASHWASA water Authority-Shinyanga	1,937,690.00
		SUB-TOTAL	26,833,825.00
2015/16		Bukoba Urban and Rular Water Supply Authority (BUWASA)	8,609,190
		Karagwe Water Authority	1,000,000.00
		Biharamulo Urban Water Supply	250,000.00
		Ngara Urban Water Supply	844,022.00
		Muleba Water Authority	0.00
		Mugumu Urban Water Supply	219,000.00
		Bunda Urban Water Supply	273,750.00
		Musoma Urban Water and Sewerage Authority	12,685,910.00
		Tarime Urban Water Supply	273,500.00
		Mugango/Kiabakari and Butiama Water Authority	328,000.00
		Mwanza Urban Water Supply and Sanitation Authority	14,235,000.00
		Sengerema Urban Water Supply	821,250.00
		Magu Urban Water Supply	452,235.00
		Ngudu Urban Water Supply	262,800.00
		Maswa Water Supply and Sanitation Authority	1,752,000.00
		KASHWASA water Authority-Shinyanga	0.00
		Geita Gold Mine Water Authority	15,330,000.00
		SUB-TOTAL	57,336,657.00
		GRAND-TOTAL	69,910,659.00

#### Appendix 4: Audit Questions and Sub-questions

<b>Audit question 1</b>	<b>Do BWBs develop effective plans for water abstraction from the water sources?</b>
Sub-question 1.1	Do the BWBs plan for water uses before issuing water use permit to the users?
Sub-question 1.2	Do the plans set limits of abstraction of water for various users?
Sub-question 1.3	To what extent are the stakeholders involved in planning for water use?
<b>Audit question 2</b>	<b>Do MoWI and BWBs efficiently monitor activities in controlling water sources?</b>
Sub-question 2.1	Do BWBs efficiently conduct inspection of water sources?
Sub-question 2.2	Do BWBs efficiently make follow-up to determine actual abstraction level from the water sources?
Sub-question 2.3	Do BWBs prepare reports on regular basis to MoWI on the state of water sources in a basin and advice the MoWI on way forward?
Sub-question 2.4	Does the MoWI monitor the actions of BWBs concerning water abstraction
Sub-question 2.5	Does the MoWI effectively provide technical support to the BWBs?
<b>Audit question 3</b>	<b>Do the BWBs take proper actions to control water use?</b>
Sub-question 3.1	Do the BWBs effectively collect user charges from water users?
Sub-question 3.2	Do the BWBs impose appropriate sanctions to unauthorised users and those who abstract more than the prescribed limits?
Sub-question 3.3	Are the sanctions imposed by the BWBs deterrent?
<b>Audit question 4</b>	<b>Do the MoWI and BWBs effectively coordinate with other stakeholders with a view to control over abstraction?</b>
Sub-question 4.1	Does the Ministry of Water and Irrigation share information with other actors on the control of water abstractions?

## Appendix 5: Responses from the Ministry of Water and Irrigation

### A: Overall Responses

MoWI appreciates the good work done by the National Audit Office which will help MoWI to improve performance on control of water abstractions. However, the report should recognize and appreciate existing initiatives by MoWI in protecting water sources and controlling of water abstractions. The initiatives include;

- i. Operation Program for Effective and Sustainable Protection and Conservation of Waters Sources
- ii. Stakeholders Forums at National, Basin and Catchment levels
- iii. Financing Options Study to be conducted to guide basin water boards in effective setting and collection of revenues
- iv. Regulations for issuing water use permits

### B: Specific Responses

No.	Recommendation	MoWI's Comment(s)	Action (s) to be taken	Timeline
1	Ensure that Integrated Water Resource Management and Development plan is finalized and implemented in all BWBs and also ensure that water sources inventory is conducted by all BWBs	<p>Auditor's recommendations adhered to. However the following have been done;</p> <ul style="list-style-type: none"> <li>IWRMDPs for 6 out of 9 basins (Lake Tanganyika, Lake Nyasa, Lake Rukwa, Ruvuma, IDB and Rufiji Basins) have been completed and implementation started.</li> <li>IWRMDPs for the 3 remaining basins are underway</li> </ul> <p>i. Pangani Basin -</p>	<ul style="list-style-type: none"> <li>Conclude procurement of Consultants for Pangani, Wami/Ruvu and Lake Victoria IWRMDPs</li> <li>Complete IWRMDPs for the 3 remaining Basins</li> <li>Subject all completed IWRMDPs to SESA</li> <li>Operationalize the IWRMDPs in all Basins</li> <li>Awareness raising to stakeholders</li> <li>Close follow up to BWBs so that they continue with the</li> </ul>	End of FY 2018/2019

No.	Recommendation	MoWI's Comment(s)	Action (s) to be taken	Timeline
		<p>At advanced stages of procuring a consultant.</p> <p>ii. Wami/Ruvu Basin - the Consultant has been procured and;</p> <p>iii. Lake Victoria Basin - at early procurement stages. ToRs has been sent to the World Bank for no objection</p> <ul style="list-style-type: none"> <li>• The Consultant to conduct Strategic Environmental and Social Assessment (SESA) has been procured. Assessment will start in April 2017 for the 5 completed IWRMDPs</li> <li>• SESA for Rufiji Basin has been completed.</li> <li>• BWBs have been instructed to carry out inventory of Water resources and improve their water</li> </ul>	<p>inventory of water resources and updating of their water registers</p> <ul style="list-style-type: none"> <li>• Provide guidance to BWBs accordingly.</li> <li>• Finalize establishment of National Water Register and do regular updates</li> </ul>	Continuous

No.	Recommendation	MoWI's Comment(s)	Action (s) to be taken	Timeline
		<ul style="list-style-type: none"> <li>registers</li> <li>National Water Register is being developed at MoWI</li> <li>Training on Water Register has been conducted for responsible staff from MoWI and BWBs, Chairpersons of the National and Basin Water Boards</li> </ul>		
2	BWB are well staffed with required professions and equipped with all necessary equipment required for monitoring activities	<p>Auditor's recommendations adhered to.</p> <ul style="list-style-type: none"> <li>Basins have plans to conduct inspections on quarterly basis. However, inspections are conducted on ad-hock due to financial and human resources constraints</li> <li>Portable hydrological and hydrogeological monitoring equipment have been</li> </ul>	<ul style="list-style-type: none"> <li>Insist Basin Water Boards to submit inspection reports to MoWI on quarterly basis</li> <li>Continue with establishment of required Water Users Associations and strengthen existing ones to effectively perform their roles including protection of water sources</li> <li>Enhance follow-ups to Basin Water Boards to conduct regular inspections</li> </ul>	Continuous

No.	Recommendation	MoWI's Comment(s)	Action (s) to be taken	Timeline
		<p>procured and distributed to all 9 Basins</p> <ul style="list-style-type: none"> <li>BWBs are instructed to update their equipment requirements annually for inclusion into MOWI plans and budgets</li> <li>Auditor's recommendation adhered to.</li> <li>Staff needs assessment has been conducted in all basins</li> <li>Employment of new staff is done annually depending on the budget ceiling. In 2015/2016 a total of 65 staff were employed and distributed to the basins as per requirement while in 2017/2018 a request to employ 35 staff has been submitted to PO-PSM for</li> </ul>	<ul style="list-style-type: none"> <li>Continue to mobilize and allocate adequate resources for monitoring. Procure new equipment required for new stations</li> <li>Solicit funds and make follow up on rehabilitation and repair of monitoring stations and equipment</li> <li>Provide technical support on new technological options and regular inspection</li> <li>Request PO-PSM to grant permits to employ new staff on annual basis</li> <li>Allocate newly employed staff as per basins' requirements</li> </ul>	



No.	Recommendation	MoWI's Comment(s)	Action (s) to be taken	Timeline
		consideration		
3	Fines and sanctions imposed to defaulters are reviewed to make them deterrent	<p>Auditor's recommendations adhered to.</p> <ul style="list-style-type: none"> <li>MoWI is in the process to review the Water Resources Management Act, No 11 of 2009. Fines and Sanction will be among the areas to be considered.</li> </ul>	<ul style="list-style-type: none"> <li>Review fines and sanctions in the WRM Act in order to make them deterrent</li> <li>Raise awareness to the general public to understand and comply with the Water Resources Management Legislations</li> </ul>	<p>2017/2018</p> <p>Continuous</p>
4	Regular meetings among BWBs and other related stakeholders on issues pertaining to water use are well coordinated	<ul style="list-style-type: none"> <li>Auditor's recommendations adhered to. However.</li> <li>Forums have been established at national, basin and catchment levels to enhance coordination of stakeholders at different levels;</li> </ul> <p>a) Climate Change Dialogue Forum is established at national level and in Lake Rukwa Basin</p> <p>b) National Water Board and Basin</p>	<ul style="list-style-type: none"> <li>Request PO-RALG to consider participation of Basins Water Boards in RCC and DCC meetings</li> <li>Operationalise the National Multi-sectoral Water Resources Management Forum</li> <li>Facilitate establishment of stakeholder forums at different levels as needed.</li> </ul>	<p>2016/2017</p> <p>Continuous</p> <p>2019/2020</p>

No.	Recommendation	MoWI's Comment(s)	Action (s) to be taken	Timeline
		<p>Water Board meetings are held quarterly (members are drawn from sector ministries, LGAs, private sector and Civil societies)</p> <p>c) Establishment of National Multi-sectorial Water Resources Management Forum is underway. Nomination of technical committee members has been finalized.</p> <p>d) 2030 Water Resources Group (2030 WRG) meetings for public and private sector to discuss issues on water use and conservation</p> <p>e) Catchment Water Forums have been established in Pangani, Rufiji and Rukwa basins</p>		

## Appendix 6: Responses from the Basin Water Boards

### A: Overall Responses

We commend the good work done by the National Audit Office to conduct performance audit for the Basin Water Boards on control of water abstraction from the water sources. We will adhere to the recommendations made in the audit report so as to improve performance. However, we have the opinion that the report should also take note of the efforts made by the Basin Water Boards in managing water resources despite of the limited resources as compared to the wide size of the basins.

### B: Specific comments

No	Recommendation	BWB's Comments	Action (s) to be taken	Timeline
1.	Enforce Water allocation mechanisms and improve stakeholders' involvement in planning for water use so as to avoid fragmented plans	<ul style="list-style-type: none"> <li>Before granting water use permits, BWBs conduct assessment of water availability in the sources and existing users. Also data from hydrometric stations are used to calculate water balance for a given catchment.</li> <li>Collected information is presented to the Board meeting for decision making</li> <li>Stakeholders are consulted and involved in the whole process of</li> </ul>	<ul style="list-style-type: none"> <li>Adhere to monitoring plans and conduct monitoring on quarterly basis and ensure availability of data required for water allocation decisions</li> <li>Enhance enforcement of law by taking legal measures to defaulters of water use permits and illegal abstractions</li> <li>Instruct and make follow up to all water users to install</li> </ul>	<p>Continuous</p> <p>2019/2020</p>

No	Recommendation	BWB's Comments	Action (s) to be taken	Timeline
		<p>preparation of IWRMD Plan to ensure that their respective plans and demands are properly addressed in the IWRMD plans.</p> <ul style="list-style-type: none"> <li>Basin communication strategies are in place and implementation has started</li> </ul>	<p>control infrastructures</p> <ul style="list-style-type: none"> <li>Continue with awareness creation on Water allocation mechanisms as per Water Resources Management Act No.11 of 2009</li> <li>Completion of three remaining IWRMD plans (Victoria, Pangani and Wam/Ruvu) and SESA for the all nine IWRMD Plans</li> <li>Implementation of Basin Communication Strategies</li> </ul>	
2.	Ensure regular inspection is done so that water users are complying with their water use permits requirements	<ul style="list-style-type: none"> <li>Inspections are conducted though not regularly</li> <li>Identification of illegal water users, awareness raising and enforcement of Law is done</li> </ul>	<ul style="list-style-type: none"> <li>Solicit and allocate more funds for inspections</li> <li>Conduct inspections as per action plan (Quarterly)</li> <li>Continue to take legal actions to non-complying</li> </ul>	Continuous



No	Recommendation	BWB's Comments	Action (s) to be taken	Timeline
			<ul style="list-style-type: none"> <li>Sanctions to outstanding debtors</li> <li>BWBs to utilize results of financing study options to be conducted by MoWI</li> </ul>	
4.	Ensure all users including water authorities and Government institutions are paying for water use fee timely and without any reluctance.	<ul style="list-style-type: none"> <li>MoWI has issued instructions to Water Supply and Sanitations Authorities to pay outstanding bills</li> <li>BWBs have been reminding Government institutions including Water Supply Authorities to pay outstanding bills</li> <li>Currently Basins have close contact with water users</li> <li>Regular communication is done</li> </ul>	<ul style="list-style-type: none"> <li>Conduct regular consultations with Urban Water Supply and Sanitation authorities and other Government Institutions.</li> <li>BWBs to submit to MoWI list of outstanding debts by Urban Water Supply Authorities and request MoWI to give instructions</li> <li>Timely preparation and distribution of bills and follow up</li> <li>Make physical visits to water</li> </ul>	<p>Continuous</p> <p>2016/2017</p> <p>Continuous</p>

No	Recommendation	BWB's Comments	Action (s) to be taken	Timeline
		<p>including sending of bills</p> <ul style="list-style-type: none"> <li>• Notices are sent to those who fail to pay their water use fees</li> </ul>	<p>users</p> <ul style="list-style-type: none"> <li>• Improve communications by sending reminder letters, calling and SMS reminder</li> <li>• Sanctions to outstanding debtors</li> </ul>	
5.	Improve Institutional set up so that all the WRM institutions are established to improve coordination and information sharing with other stakeholders which is an important attribute of good water governance	<ul style="list-style-type: none"> <li>• Basin Water Boards are in place and operational</li> <li>• Establishment of Water Users Associations (WUAs) is ongoing. A total of 102 Water User Associations have been developed in all basins. (Establishment of WUAs is demand driven)</li> <li>• Awareness creation is done to users on the need to form WUAs to properly manage their water sources</li> <li>• Catchment and Sub catchment</li> </ul>	<ul style="list-style-type: none"> <li>• Solicit funds for establishment of new WUAs and strengthening of existing Water Users Associations and Catchment Water Committees to efficiently undertake their roles and responsibilities</li> </ul>	Continuous

No	Recommendation	BWB's Comments	Action (s) to be taken	Timeline
		Water Committees are established where the needed WUAs are in place.		
6.	Promote to all stakeholders participatory monitoring of activities conducted along water sources that may result into over abstraction of water from the sources.	<ul style="list-style-type: none"> <li>WUAs are formed and capacitated to monitor for compliance in water use. eg use of low cost and cutting edge technology (IMoMo) in Pangani Basin</li> <li>Awareness to communities to participate in water source protection and use</li> </ul>	<ul style="list-style-type: none"> <li>Have regular visits to WUAs and share and exchange experiences</li> <li>Establish new WUAs and strengthen the existing WUAs where possible/needed</li> <li>Conduct awareness meetings at all levels.</li> <li>Pilot use of low cost and cutting edge technology (IMoMo) in other two basins so as to promote participatory monitoring at community level</li> </ul>	<p>Continuous</p> <p>Continuous</p> <p>2018/2019</p>



#### Appendix 7: List of Documents reviewed during the Audit

S/N	Document reviewed	Reason
1	Strategic Plans	To obtain information about strategies towards addressing the issues of water abstraction.
2	Activity Plans	To gain an understanding of the planned activities concerning water abstraction.
3	Approved Medium Term Expenditure Framework	To find out how the Ministries and LGAs allocate resources to water abstraction activities.
4	Implementation and Performance Reports	To assess the performance and implementation status of planned activities concerning controlling of water abstraction.
5	Monitoring Reports	To find out if the responsible authorities adequately monitor and evaluate the projects and activities that concerns abstraction of water.
6	Planning Guidelines	To find out if responsible authorities follow the directives given in these guidelines.
7	Internal Audit Report	To gain understanding on issue raised concerning abstraction of water and recommendations given.
8	Minutes of National and Basin Water Boards meetings	To understand possible water abstraction issues discussed during board meetings, and possible solutions given out
9	Performance Assessment Framework (PAF)	To understand aspects covered by Ministry of Water and Irrigation during monitoring of basins

**Appendix 8: list of officials interviewed**

Location	Official Interviewed	Reason
MoWI	Director of Water Resources.	To understand the actions of MoWI in implementing the control measures to protect water sources from overuse.
BWBs	Basin Water Officer	To assess the overall performance of BWBs in water abstraction process and how do they prepare Water Resource Management Plans.
WUA	Management Committee	To understand on how WUAs manage, distribute, and conserve water from a source used jointly by members of association.
Mwanza City, Singida, Morogoro and Moshi Municipal Councils	Municipal/District Water Engineer,  District Environmental Officer	To Assess how LGAs coordinate with Basin Water Board in various water abstraction projects
MWAWASA, SUWASA and MORUWASA	Managing Director	To understand challenges experienced in paying water use fees
Board of Management of BWB	Chairman	To understand possible issue concerning water abstraction which are raised during board meetings, and possible solutions given out.