

**PUBLIC FINANCING EFFICIENCY ON UTILITY PROJECT  
PERFORMANCE: A CASE OF WATER SECTOR DEVELOPMENT  
PROGRAMME IN DAR ES SALAAM AND SHINYANGA,  
TANZANIA**

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**A Dissertation**

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**Partial fulfillment for the award of the degree of doctor of philosophy in  
management science (Finance & accounting)**

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**BY  
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**FEBRUARY, 2019**

## **DECLARATION**

This research has not been previously accepted for any degree and is not being currently considered for any other degree at any other university.

I declare that this research contains my own work except where specifically acknowledged.

Student Name: Christine Cassian Ngonyani

Signed.....

Date .....

## APPROVAL SHEET

I confirm that this Dissertation entitled “**public financing efficiency on utility project performance: a case of water sector development prograqmme in Da Es Salaam and Shinyanga, Tanzania**” was carried out by the candidate CHRISTINE CASSIAN NGONYANI of REG. No. PHD/1805/201/DT under the guidance of her supervisor (s).

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Signature of the Director of Postgraduate Studies and Research

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Date.....

## **DEDICATION**

This work is dedicated to my children Joel, Immaculate and Pamela who exercised a great deal of perseverance by accommodating the vacuum and loneliness I created whenever and wherever I was busy researching and writing this work; May the Almighty God reward you abundantly for the high degree of patience you portrayed during the whole period.

## **ACKNOWLEDGEMENT**

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Lastly, I would like to register my sincere thanks to all my respondents for their precious time during data collection, which has enriched this study. May God bless their work and effort.

## **LIST OF ABBREVIATIONS**

AfDB	African Development Bank
BADEA	Arab Bank for Economic Development in Africa
BRN	Big Results Now
BWB	Basin Water Boards
CAG	Controller and Auditor General
COWSO	Community Owned Water Supply and Sanitation Organization
DAWASA	Dar es Salaam Water and Sewerage Authority
DAWASCO	Dar es Salaam Water and Sewerage Corporation
DMAS	District Metering Areas
DFID	Department of International Development
DPs	Development Partners
DWSSP	Dar es Salaam Water Supply and Sanitation Project
FY	Financial Year
GBP	United Kingdom Pound Sterling
GCC	General Condition of the Contract
GoT	Government of Tanzania
GPSA	Government procurement Services Agency
IAs	Implementing Agencies
IFMS	Integrated Financial Management System
IMTC	Inter-Ministerial Technical Committee
IWRMD	Integrated Water Resource Management and Development
JICA	Japan International Cooperation Agency
KIU	Kampala International University
ISO	International Standards Organization
KfW	German Bank for International Development

LGAs	Local Government Authorities
MDAs	Ministry, Department and Agency
MDGs	Millennium Development Goals
MoF	Ministry of Finance
MoFP	Ministry of Finance and Planning
MoWI	Ministry of Water and Irrigation
MoU	Memorandum of Understanding
MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Tanzania
MIS	Management Information System
MTEF	Medium Term Expenditure Framework
MTR	Medium Term Review
NBI	Nile Basin Initiative
NBS	National Bureau of Statistics
NAWAPO	National Water Policy
NRW	Non Revenue Water
NSGRP	National Strategy for Growth and Reduction of Poverty
NRWSS	National Rural Water Supply and Sanitation
NWID	National Water Investment Fund
NWSDS	National Water Sector Development Strategy
OCED	Organization for Economic Co-operation and Development
OPEC	The Organization of the Petroleum Exporting Countries
O&M	Operational and Maintenance
EWURA	Energy and Water Utilities Regulatory Authority
EUR	Euro
IDA	International Development Association
PFA	Public Finance Act
PFR	Public Finance Regulations
PIM	Programme Implementation Manual

PV	Payment Voucher
RWS	Rural Water Supply
SADC	Southern African Development Community
SWAP	Sector-Wide Approach to Planning
SPSS	Statistical Package for Social Science
TBS	Tanzania Bureau of Standard
TDV	Tanzania Development Vision
TShs	Tanzanian Shillings
TZS	Tanzania Shillings
USD	United States Dollar
UWSAs	Urban Water Supply and Sanitation Authorities
WASH	Water Sanitation and Hygiene
WB	World Bank
WQS	Water Quality Standards
WPs	Water Points
WRMA	Water Resources Management Act
WRMR	Water Resources Management Regulations
WSDP I	Water Sector Development Programme Phase I
WSDP II	Water Sector Development Programme Phase II
WSDP [E]	Water Sector Development Programme in Ethiopia
WSDP [T]	Water Sector Development Programme in Tanzania
WSSA	Water Supply and Sanitation Authority
WSSR	Water Sector Status Report
WWQM	Water and Wastewater Quality Monitoring
UfW	Unaccounted for Water
UN	United Nations



## **ABSTRACT**

The study examines effect of public financing efficiency on utility project performance taking the case of water sector development programme in Dar es Salaam and Shinyanga Regions in Tanzania. The objectives of the study were to find out how financial planning, financial budgeting, financial reporting, financial release and financial expenditure affect the performance of water utility projects. Performance includes quality of water, regular supply of water, bills and economic development. In methodological aspects, descriptive research design together with qualitative and quantitative approaches was used. Questionnaire and focus group discussion were used to collect data. Multiple linear regression model and chi-square were used to analyze data and displayed in tables, bar charts and graphs. Findings showed that, there is relationship between public financing – the independent variable (financial planning, financial budgeting, financial reporting, financial release and the level of expenditure) and dependent variable (performance of water utility projects). Financial planning, financial budgeting, financial reporting, financial release and level of expenditure had negatively affected performance of water utility projects; the effects were more in rural areas than in urban areas. In order to improve performance of water utility projects the study recommended to release funds from donors directly to water utility projects instead of channeling it via the Treasury this will avoid challenges in releasing of funds. Financial planning and budgeting should be participatory, based on research and should involve more professionals than politicians. For better achievement of the projects' objectives, compliance to relevant Laws and effective implementation of audit recommendations is highly recommended. To have sustainable rural water projects, bulky water supply through district or regional's water utilities should be implemented instead of using stand alone systems which faces sustainability problems.

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# **CHAPTER ONE**

## **INTRODUCTORY CHAPTER**

### **1.0 Introduction**

This chapter covers background of the study, statement of problem, general objectives specific objectives, research questions, hypothesis, scope of the study, significance and definition of key terms.

### **1.1 Background Information**

Public financial management is imbued with transparency and accountability and measures to achieve strategic outcomes. Experience shows, however, that financial resources are scarce and access is uneven. More challenging is the difficult task of mobilising the political will required to create a governance friendly environment, involving all stakeholders at the planning, execution and evaluation stages of development programmes (Commonwealth Secretariat, 2005). The history of public finance is a story about change over time, a tale punctuated by wars, social movements, and revolutions (Mehrotra *et al.*, 2013). Yet much of the existing scholarly literature neglects the broader context that has given meaning to fiscal policies.

According to Vries (2012) the general trend of Britain's fiscal history at the time is quite clear. Over the entire eighteenth century government revenue was on the increase, in whatever way one measures it. During the Napoleonic Wars, government's tax collecting (as well as its borrowing) hit a ceiling. From then on, taxes decreased in absolute terms and as a percentage of GDP. Over the very long eighteenth century as a whole, the inhabitants of Britain and of what we now call the Netherlands were the most heavily taxed people in Europe. According to Sestovic (2015) since the global economic and financial crisis of 2008, Serbia has struggled with a weak economy and a deteriorating fiscal position. As the economic activity has stagnated, the revenues have fallen while the expenditures mandatory spending on pensions and wages in particular have remained high.



Continued state support to state owned enterprises (SOEs) has been an additional drag on public finances. As a result, Serbia has been running high budget deficits and a public debt has more than doubled, from 34 percent of GDP in 2008 to over 70 percent at year end 2014.

In the world today, public finance management seem to be a hard work due to its huge burden to the operation and maintaining the status of full fill the basic needs to the people of respective country. The issues like food, water and shelter are among of the important things to consider in order to make sure that the public interest is concerned. This study based on the water issues especially water supply as the one of important basic need.

According to Water UK (2013) financing is central to the water sector in the United Kingdom, the water companies need to raise finance for investment in their infrastructure, to help fund the renewal of aged assets and to pay for enhancements to their networks; their investment levels are currently around £5 billion each year and in the 24 years since privatization the companies have invested £108 billion, equivalent to £5,000 for every household in England and Wales; in order to deliver further improvements in infrastructure and in services to customers, including meeting the challenge of climate change, the sector will need to undertake further significant investment.

As per ADB report (2016) Asian Development Bank approved a grant for Water District Development Sector Project in Philippines; the Project enables water districts, corporatized water utilities operating outside Metro Manila to expand and rehabilitate supply systems and to build pilot sanitation facilities; the Asian Development Bank is working with the Philippines to help water service providers outside Metro Manila cut water-borne diseases by reducing environmental pollution; this Grant Agreement between Local Water Utilities Administration and ADB was signed on 19<sup>th</sup> May 2016 and it is provided for the ADB project 41665-013 in the Philippines.

According to ADB's evaluation study (2010) between 1992 and 2009, ADB's loan approvals for the water sector amounted to \$16.3 billion, or around 13% of total lending. The total loan approvals were 59.4% for the water supply and sanitation (WSS) (33.2%) and multi component (26.2%) subsectors; the two are largely in the urban sector (ibid). The shares of the other subsectors were 14.4% for water-based natural resource management (WBNR), 13.9% for large hydropower, and 12.3% for irrigation, drainage, and flood protection (ibid). From a high of \$1.3 billion in 1995, lending fell to \$236 million in 2001, the year the policy was issued; a very small portion of the lending has gone to rural WSS (13% of total lending to WSS during 1992–2009) (ibid). The 2005 review recommended doubling water sector lending to well over \$2.0 billion per year; approvals amounted to \$1.4 billion in 2008 and \$1.7 billion in 2009; over the same period, ADB provided stand-alone grants totaling \$194 million, project preparatory technical assistance totaling \$125 million, advisory technical assistance worth \$126 million, and regional technical assistance valued at \$81 million.

India and People's Republic of China were the dominant recipients of ADB lending, followed by Pakistan with \$2.8 billion, Indonesia with \$2.4 billion, Viet Nam with \$1.3 billion, and Bangladesh with \$0.9 billion; lending to five more developing member countries (Azerbaijan, Nepal, Philippines, Sri Lanka, and Uzbekistan), exceeded \$500 million over the evaluation period 15 countries borrowed between \$20 million and \$200 million, while five Pacific developing member countries and the Maldives borrowed less than \$10 million; the top 10 countries obtained 91% of total lending, a high degree of concentration (ibid).

As stated in UN report (2012) in Africa, financing is insufficient and the institutional capacity to absorb what is available is limited, the danger of slippage to already made progress against the MDG on water and sanitation is real; with over 80% of countries reportedly falling significantly behind the trends required

to meet their defined national access targets for sanitation and drinking-water; there is insufficient domestic financing for WASH overall with particularly serious shortfalls for sanitation, this is exacerbated by difficulties in spending the limited funds that are received.

There are various challenges faced by African countries in relation to supply of clean water, they include situation of economic water scarcity, and current institutional, financial and human capacities for managing water are lacking, the situation is exacerbated by competition for public funding between sectors, and heavy public debt burdens in most countries (MDG Report, 2012).

UN report (2015) states that Northern Africa and Sub-Saharan Africa even though in one continent, have made different levels of progress towards the Millennium Development Goal on water; North Africa has 92% coverage and is on track to meet its 94% target before 2025; however, Sub-Saharan Africa experiences a contrasting case with 40% of the 783 million people without access to an improved source of drinking water from the region; Sub-Saharan Africa is off track from meeting the MDG on water with just 61% water coverage and with the current pace cannot reach the 75% target set for the region.

An analysis of data from 35 countries in sub-Saharan Africa (representing 84% of the region's population) shows significant differences between the poorest and richest fifths of the population in both rural and urban areas; whilst over 90% of the richest quintile in urban areas use improved water sources, and over 60% have piped water on premises, in rural areas, piped-in water is non-existent in the poorest 40% of households, and less than half of the population use any form of improved source of water (ibid).

In 2010, the share of the urban population with access to an improved water source ranged from 52% (Mauritania) to 100% (Egypt, Mauritius, Niger and Seychelles); the number of countries with at least 80% access to an improved

water source in urban areas climbed from 26% in 1990 to 38% in 2010; in 2010, no country had a coverage rate of less than 50%, an improvement from four countries with less than 50% coverage in 1990; coverage varied widely in 2010, from 7% in Somalia to 99% in Mauritius; the number of countries for which rural access was 80% or more rose from 5% in 1990 to 10% in 2010; other good news was that the number of countries with less than 50% coverage fell from 27% to 16% (ibid).

According to AfBD (2010) Tanzania is a vast country with almost one out of every two persons having no access to safe water supply, this is due to the vast geographic dispersion, rural Tanzanians often have to travel long distances, consuming over many hours to fetch water and this situation has a huge negative impact on economic development and often results in girls dropping out of schools as they have to join their mothers in fetching potable water; in 2006, the National Rural Water Supply and Sanitation Program (NRWSSP) was adopted by GoT, for the period 2006-2025 which is a long term plan for the rural water supply and sanitation development to meet the MDG targets and beyond in order to make sure NRWSSP successes, the water sector came up with a Water Sector Development Program (WSDP) which also include urban water supply and water resources management whereby the WSDP is supported by several Development Partners (DPs), including the Bank Group.

The World Bank report (2015) explains that Tanzania's socialist past delivered a negative result in water supply, free water policies undermined sustainability and contributed, along with broader economic stagnation, to chronic underinvestment in both expansion and maintenance; the first National Water Policy, adopted in 1991, was the start of a long process of reforms to address the shortcomings of the previous system and build donor confidence; user charges were introduced along with the establishment of urban utilities, designed to be self-financing; this included an ultimately unsuccessful attempt at introducing private sector participation to the running of Dar es Salaam's water supply in 2003; a second

National Water Policy (NAWAPO) was adopted in 2002, strengthening provisions for cost recovery and introducing stronger pro-poor rhetoric.

Since 2005, a Sector-Wide Approach (SWAp) has been adopted, represented most particularly by the WSDP; this multidonor program aims to improve coordination and increase national ownership of water sector investments and has attracted commitments worth US\$951 million over five years from the World Bank and AfDB, German, Dutch and French governments, the US Millennium Challenge Corporation, and the Government of Tanzania; finance for the sector has more than quadrupled since 2002 as a result; alongside the increased finance, the SWAp includes efforts to improve sector performance monitoring and strengthen sector capacity.

WSDP is one of interventions to strengthen water sector institutions of Tanzania for improving an integrated water resources management and development, and ensuring that the number of people with sustained access to clean and safe water supply and sanitation services in urban and rural areas reaches the targets aspired by country's macro-economic policies such as the National Development Vision 2025 (WSDP report, 2014). The WSDP was firstly implemented in Africa within two countries Ethiopia and Tanzania. Many national and international articles, formally tried to explain the achievement of WSDP. Likewise, Jarsso (2003) gives the history of WSDP in Ethiopia with a time horizon of 15 years (2002 – 2016); an important feature of WSDP is the inclusion of priority projects form river basins master-plan studies and projects as discussed and agreed under the Nile Basin Initiative (NBI). The Government of Ethiopia made a serious decision to commit itself to the time frame agreed on by the international community for achieving the MDGs. As such, the WSDP provides a structured framework to deliver a coordinated response by all relevant stakeholders to address the water sector challenges of Ethiopia while working towards the MDGs.

National Water Sector Development Strategy (2008) explains the history of the Water Sector in Tanzania which dates back to the 1930s when water supply was confined to urban areas and farming settlements owned by settlers. The policy of the Government from then was to enhance participation of beneficiaries through contributing 25% of water supply scheme capital investment costs while local governments contributed 75% of the costs. In order to redress the urban bias in water supply service provision, in 1971 the Government of the United Republic of Tanzania proclaimed a 20-year Rural Water Supply Programme (RWSP) that aimed at providing access to adequate, safe dependable water supply within a walking distance of 400 metres from each house hold by the year 1991.

According to the World Bank Report (2017) various initiatives in Tanzania's water sector including the Rural Water Supply and Sanitation Project (2002–2008) as well as the Dar es Salaam Water Supply and Sanitation Project (2003–2010) have been supported by the World Bank; the two projects provided the foundation for the development of the Government of Tanzania's Water Sector Development Program (WSDP) in 2006, to which the World Bank provided financing under Water Sector Support Project (2007–2015); the World Bank also indicates that good progress was achieved through the WSDP-1 with the development of vital legal and institutional reforms for effective Integrated Water Resource Management; these include the completion of integrated water resources management and development plans for six basins (Internal Drainage, Lake Nyasa, Ruvuma and Southern Coast Rivers, Lake Tanganyika, Rufiji River, and Lake Rukwa), with plans currently underway for the remaining three - Pangani, Lake Victoria and the Wami-Ruvu basin in which Dar es Salaam is located.

Current approval of USD 225 mil. by the World Bank for Tanzania Water Supply project addresses issues such as inadequate coordination among institutions, weak data management and reporting mechanisms, and operational inefficiency. “This project aims to lessen people's burden while contributing to Dar es

Salaam's increased competitiveness and productivity as a critical and vibrant commercial hub of the country (ibid).

According to African Development Bank Group (2015) the Government of Tanzania has embarked on a major reform process and made significant strides in its water sector policy environment over the last decade. A forward looking National Water Policy (NAWAPO -2002) that promotes an integrated approach to water resources management and development is in place; the reforms have been backed since 2005 by a significant increase in available budget, when the water sector became a priority sector; the increase in funding is starting to have an impact on the access to improved water sources, nevertheless the recent progress shows that increasing resources in it is not enough; progress has been slow, water utility operators are still heavily dependent on budgetary support with a significant part of the budget allocated for operating support, maintenance and rehabilitation.

African Development Bank Group (2015) further highlights that preliminary data from household surveys conducted in financial year 2007/2008 show that the access to improved water sources has been increasing since financial year 2004/2005, albeit that access in financial year 2007/2008 is still below the levels of 2000, especially in urban areas where rapid urbanization is putting a lot of pressure on utilities to improve access to improved water sources; the sector deals with a number of issues that explain why the goal of improving access to water supply and sanitation services is moving slower than expected, some of these issues are systematic in nature, i.e. they are mostly outside the control of the water sector, but they do influence the progress in the sector; other issues are within the direct control of the water sector and need to be addressed to ensure the sector can move more quickly to achieve its goal.

The water sector of Tanzania has specific issues that play a major role in explaining the performance of the sector in translating funds into actual outcomes;

it currently requires significant subsidies for rehabilitation and operation and maintenance, crowding out the space for expansion investment and as such delaying improvement in access to water services; improving the efficiency with which resources are used, would go a long way to improve the absorption capacity of the sector, increase the efficiency of public expenditure and ensure that access to services improved; to the effect, the following measures are suggested: improve sector investment planning; improve the capacity in the sector to conduct procurement and disbursement; a sharper focus on including incentives in the allocation of funding; efficiency gains that lower the operating cost and/or capital costs; and promote sustainability in tariff setting while guarding the affordability of access (ibid).

Futakamba (2016) reports that the water sector reforms in 2000s in Tanzania have necessitated repealing the then legislation on water resources and water supply and sanitation to give room to the new pieces of legislation which are going concurrently with the development of water sector; the new laws were enacted to provide for institutional and legal framework for sustainable management and development of water resources; to outline principles for water resources management; to provide for the prevention and control of water pollution; to provide for sustainable management and adequate operation and transparent regulation of water supply and sanitation services; and to provide for establishment of water supply and sanitation authorities as well as community owned water supply organization with a view of the NAWAPO 2002.

To give effect to NAWAPO 2002 and its National Water Development Strategy in 2009, the Parliament of the United Republic of Tanzania enacted two pieces of legislation, namely, the Water Resources Management Act No. 11 (2009) and Water supply and Sanitation Act No. 12 (2009). The two laws repealed all previous water laws except the Water Laws (Miscellaneous amendments) Act No. 1 of 1999, which reformed DAWASA; the DAWASA Act of 2001, which made DAWASA subject to regulation by the EWURA; and EWURA Act of 2001. The



Water Resources Management Act and Water Supply and Sanitation Act establish institutions and provide mandates for policy implementation (ibid).

As said by Futakamba (2015) Water Sector Development Programme is the 20-year programme (2006-2025) implemented by the Government of Tanzania in collaboration with a number of Development Partners (DPs); objectively, it is aimed at strengthening the capacity of sector institutions for improving the integrated water resources management and development; and ensuring population in the country is provided with sustained access to clean and safe water as well as sanitation services; this goal is in line with the nationally adopted development frameworks such as MKUKUTA and the Five Year Development Plan.

As indicated by Sayi (2014) GoT, through the Ministry of Water has been implementing the Water Sector Development Programme (WSDP [T]), for the period 2006 – 2025; because of the long term nature of the programme (20 years), its implementation is done in phases of five years each (The first phase 2007-2015; second phase 2015-2019 and third phase 2019-2025).

Futakamba (2015) highlights that Phase I of the WSDP reached its end on 31<sup>st</sup> December, 2015 noted achievements in terms of infrastructure developments, organizational capacities improvement, setting up of institutional and legal framework as well as policy set up; these arrangement involved enactment of Water Resources Management Act in 2009; establishment and operationalization of the national water board and nine basin water boards; establishment of catchment water committees and water user associations; further, prioritization on conservation and protection of water sources; and improved water quality compliance through systematic water quality monitoring; it is expected that, in the coming phase, equitable allocation of water resources will be realized through integrated water resources management and development plans.

Futakamba (2016) emphasizes that WSDP is in Phase II in which, the planning and budgeting process has been done, and resource mobilization is ongoing; this phase is building on lessons learnt on achievement and challenges of the previous phase; the policy, institutional and legal frameworks that have been erected during the inception of the programme enabled implementation of various planned activities all over the country, thereby facilitating the access of water services to the Tanzanian population; there are more than 300 implementing agencies carrying out the WSDP countrywide, aiming at accomplishing their goals of providing safe and clean water and sanitation services to more than 20 million people; of equally importance to improve integrated water resources management and development by ensuring equitable allocation of water resources to various sectors, however, without appropriate measures on water allocation would create water stress to the downstream users which will be detrimental to other sectors and to larger extent the environmental flora and fauna.

From key issues, challenges and lessons learnt in WSDP Phase I, a number of amendments have been made in the WSDP Phase II in terms of the Programme structure, objectives, strategic interventions, targets, key performance indicators and operational arrangement in order to enhance performance; from initial planning of phase II, the financial requirements stands at USD 1.65 billion; assurance of availability of funds is key to effective planning and implementation; there is a room for deliberating and finding solutions on issues raised in various WSDP dialogue forums which include coordination and awareness on the Integrated Water Resources Management and Development from national to the grass root level; updating the results framework for Phase II as per plan; improving rural water supply data management by establishing a reliable baseline and systematically monitor progress; addressing issue of sustainability of rural water schemes; follow up on timely transfer of funds to the implementing agencies; and enhance water quality monitoring to ensure delivery of safe water to communities (ibid).

Overall objective of WSDP is to strengthen sector institutions for improved integrated water resources management and improved access to water supply and sanitation services; therefore, this study trying to show the public financing efficiency on utilities project performance in the case study of Water Sector Development Programme in both Shinyanga and Dar es Salaam region in Tanzania, whereby the issues like financial planning, financial budgeting, financial reporting, financial release/dispensing and financial expenditure were included in public financing efficiency as independent variables; on the other hand, the issues like quality of water, sustainability, regular water supply and economic development were included in utilities project performance as dependent variables (Futakamba, 2016).

As said by Kessy & Mahali (2016) the water and sanitation sector in Tanzania has been evolving rapidly in recent years given the priority it has received in the development agenda, at least since the inception of the Poverty Reduction Strategy Paper (PRSP) where this sector was one of the priorities for poverty reduction; the same thrust was carried through in the second and third generations of poverty reduction strategies – the National Strategy for Growth and Reduction of Poverty (NSGRP) I and II, known by their Kiswahili acronym as *Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Tanzania* (MKUKUTA), and the Tanzania Five-Year Development Plan 2011/2012–2015/2016, where the water and sanitation sector was recognized as an important sector for improved production and social well-being, and as a corollary for increased contribution to economic growth (ibid).

Prioritization of the water and sanitation sector in the country's development agenda has an international impetus; in 2010 a historical resolution of the General Assembly of the United Nations recognized access to water and sanitation as a fundamental human right, an entitlement connected to enjoyment of the right to life as enshrined in the Universal Declaration of Human Rights; fulfilling the fundamental rights to health and survival hinges critically on households having

access to affordable and sustainable water and sanitation services, especially for the poor; one of the core Millennium Development Goals (MDGs), number seven, aimed to halve the proportion of people without access to water and sanitation services by 2015; the unfinished agenda on this target is carried forward in the Sustainable Development Goals (SDGs), the sixth of which aims to ensure the availability and sustainable management of water resources and sanitation for all (ibid).

In pursuing the access to water and sanitation services agenda, Tanzania is fulfilling its local and international mandates; unsafe and inadequate water supply, improper sanitation, and poor hygiene are reflected in the high incidence of a number of diseases; for instance, about 5,800 cases of cholera are reported annually in Tanzania, and 18,500 children under the age of 5 die annually from diarrhea, with about 90% of these deaths attributed to poor water, sanitation, and hygiene conditions; the lack of adequate sanitation facilities has been shown to contribute to high levels of stunting among children in Tanzania; Tanzania loses an equivalent of one million life years in productivity every year due to water, sanitation, and hygiene-related diseases (Kessy et al., 2016)

As per the World Bank (2015) water and sanitation sector in Tanzania has undergone extensive reforms in the past decade which led to the recent adoption of a Sector-Wide Approach (SWAp), that includes much greater coordination of finance for the sector as well as taking a sector wide view of performance monitoring and institutional development; through the multi donor Water Sector Development Program (WSDP), funding for the sector has quadrupled since 2002, however, Tanzania is not on track to meet the Millennium Development Goal target for water supply—the overall trend in access as reported by survey data barely keeps up with population growth in both cases, let alone extending access to the un served; although the most up-to-date survey data was collected before the recent rapid increase in funding for the sector, the funding has come too late to meet the targets; an analysis of the investment requirements and budget

allocations suggests that even with the recent increase, funding is less than what is required to meet urban water supply targets and only sufficient in rural areas if low cost technology options are deployed; in sanitation, the mechanisms for leveraging the majority of finance which is expected to come from households are yet to be defined, making it difficult to estimate the investment gap. This study suggests an additional source of finance to fill the current gap in development of water infrastructure in Tanzania.

Taylor (2008) states that Tanzania urban-rural budget equity for water has improved substantially since 2005-06, however, survey data shows that access to clean and safe water is significantly lower in rural areas – at around 45% compared to 79% in urban areas. Also in small towns have emerged as clear gap whereby there is a higher number of un served residents in small towns than in any single urban centre except Dar es Salaam, and yet the budget allocations for 2008-09 did not reflect this need (ibid).

The WSDP has brought about a major improvement in budget equity between rural districts, however, inequity in outputs and outcomes between districts remains strong; fairer budget allocations, linked to coverage levels, will need to be maintained if this inequity is to be addressed (ibid).

Inequity between rural wards is a serious issue, a significant number of wards do not have a single functioning water point.; wards with higher coverage continue to attract investment, while those with low or no water point coverage continue to be sidelined. This suggests that decision makers at LGA level are not prioritising equity, and that under-served wards lack the opportunities to influence the planning process in their favour. If MKUKUTA and MDG targets are to be met, this is a critical issue to be addressed (ibid).

Maghembe (2014) explains that the Ministry of Water in Tanzania through WSDP Phase I, has been implementing various interventions targeting efficient and sustainable management and development of water resources for socio-economic development; despite the achievements made, there are several water resources related challenges faced in the course of implementation of the planned interventions; the challenges include inadequate funds, inadequate staff equipment and institutional capacity; this form the basis for this study.

This study steps in to close the existing gap in investment and financing the water utility projects as well as minimizing the differences of performance between rural and urban water supply.

## **1.2 Statement of the Problem**

Despite timely receipting of funds from Donors into the Basket Fund at the Central Bank of Tanzania, there is a serious delay of releasing such funds from Treasury to Implementing Agents to finance WSDP's activities. Voices regarding shortage of clean water as well as high prices of buying it are a normal cry for majority of Tanzanians in both urban and rural areas, also for Members of Parliament and Non Members of Parliament.

Although there are some achievements made so far since an inception of WSDP in 2007, implementation of planned activities of the programme was affected by untimely releasing of funds which caused delays in completion of some planned activities (Futakamba, 2011). Taylor & Carlit (2014) argue that while more money is being directed toward rural water supply, it is not being spent efficiently and there is a challenge of monitoring of funds in the utility projects which leads to diverging of funds into other unrelated activities. In addition there have been diversion of funds into other un planned activities for example funds amounting to TShs 72,769,639/= which was released to DAWASA for WSDP's activities was diverted to other un-authorized activity in Songea and Lindi Water Utilities; also TShs 48,791,536/= that was released to finance WSDP's activities at four Basin Water Boards was borrowed by the Parent Ministry (MoWI) and not repaid until the end of the year (CAG Report, 2016).

Taylor & Carlit (2014) further indicate that an implementation of the "10-Village Schemes" funded by WSDP is associated with problem of poor design and construction of the projects together with weak coordination and procurement bottlenecks. Sayi (2014) indicates that there are still challenges on the submission of reports; also sustainability of rural water supply schemes remains a significant challenge, this observation was confirmed in 2014 by staff of the MoWI in the field visits to Temeke district.

Therefore this study sought to find out relationship between public financing efficiency and performance of water project utilities as well as suggesting additional sources of financing the projects in order to improve water supply.

### **1.3 General Objective**

The overall objective of the study was to assess how public financing efficiency affects performance of the utility projects in Shinyanga and Dar es Salaam region, Tanzania.

### **1.4 Specific Objectives**

- i) To examine the effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.
- ii) To investigate the influence of financial budget on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.
- iii) To evaluate the effect of financial reporting on utility performance in Shinyanga and Dar es Salaam region, Tanzania.
- iv) To examine the influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.
- v) To investigate the influence of the level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

### **1.5 Hypotheses**

The study tested five hypotheses:

- i) (H<sub>0</sub>): There was no significant effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.



(H<sub>1</sub>): There was significant effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

ii) (H<sub>0</sub>): There was no significant influence of financial budget on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

(H<sub>1</sub>): There was significant influence of financial budget on utility project performance in Shinyanga and Dar es Salaam, Tanzania.

iii) (H<sub>0</sub>): There was no significant effect of financial reporting on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

(H<sub>1</sub>): There was significant effect of financial reporting on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

iv) (H<sub>0</sub>): There was no significant influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

(H<sub>1</sub>): There was significant influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

v) (H<sub>0</sub>): There was no significant influence of level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

(H<sub>1</sub>): There was significant influence of level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

## **1.6 Scope**

### **1.6.1 Geographical Scope**

Study was carried out in two regions of Tanzania which are Shinyanga and Dar es Salaam. Tanzania is among two countries in Africa which have embarked in implementing WSDP and have been receiving funds from various external development partners in order to implement the programme. Shinyanga is found at the central of Tanzania with a serious short of rainfall, while Dar es Salaam is

on East of Tanzania along Indian Ocean. Selection of Shinyanga and Dar es Salaam was based on the fact that they are the only regions in Tanzania having multiple regional water utilities for different purposes, one being for production of bulky water and another for distribution of water supply to water users; the utilities are DAWASA and DAWASCO in Dar es Salaam; and KASHWASA, KUWASA and SHUWASA in Shinyanga; these water utilities supply water to both urban and rural or peripheral areas which is not the case for other utilities in other regions. Results of this study provide useful information to other regions in Tanzania which supply water by using single water utility.

### **1.6.2 Content Scope**

Study covers public financing efficiency as the independent variable and utility project performance as dependent variable. Other variables such as financial planning, financial budget, financial reporting, financial expenditure and financial release are constructs of (sub variables) of public financing efficiency.

### **1.6.3 Theoretical Scope**

This study adopted the following theories; (a) theory of cost model of public financial management by Khan *et al.* was developed in 2004 and still in process, it explains procurement of public entities and transaction costs, this is part of sub variables in independent variables of the study that has a great role in performance of WSDP, (b) public provision for social goods by Musgrave et al. which was developed in 1973, it talks about an efficient provision of social goods through budget determination by political process, this covers also sub variables of the independent variables of the study; and (c) principle of multiunit finance by Musgrave et al, developed in 1973, it gives a way to full cost recovery and sustainability of utility projects that can be achieved through community participation and contribution of funds which should be used in their area.

#### **1.6.4 Time Scope**

This study covers the period from 2011 to 2018, which is long enough to measure the performance since an inception of WSDP in 2007.

#### **1.7 Significance of Study**

This study provides vital information and knowledge to various stakeholders related to implementation of WSDP and water supply in general.

Ministry of Finance are guided on importance of participatory planning, monitoring of funds on expenditure, getting feedback on spending as well as awareness of the role of setting ceiling and strategies for effective financial management of public funds.

Development Partners (donors) are informed on how delay of releasing funds is affecting performance of water utility projects. It also provide them with the knowledge on the best way to channel funds to water utility projects as well as the importance of continuing to assist development countries in financing water projects.

It adds value to the policy maker especially the Ministry of Water and Irrigation in policy making and formulation of strategies to improve performance of water utilities and making sure there is effective reporting, coordination of planning and monitoring of funds.

Implementing agencies such as Water Authorities and the Local Government units are guided with recommendations especially in complying to laws, regulations, policies and procedures for effective planning, spending of public funds and reporting.

Regulators such as EWURA are informed on the effect of price setting (water bills) and how it affects provision of services as well as level of satisfaction of water user/consumers with regard to water bills:

Public or community in general get knowledge not only their role in planning and sustainability of water projects to make sure they get better and sustainable service, but also their right of getting various information including quality of water and actions taken to water utilities which do not comply with water quality standards.

To the academicians, it will be available for future reference.

Other developing countries can use findings from this study in formulation of relevant strategies and policies.

## **1.8 Operational Definition of Key Terms**

Definition of Key Words includes the following:

### **a) Efficiency**

Efficiency implies the minimization of the amount of real resources needed to administer any type or expenditure (Prest, 1975).

This study defines efficiency as the quality of doing something with no waste of time or money; ways of wasting less time and money or of saving time or money (Hornby, 2015)

### **b) Employment**

Employment as used in study means work especially when it is done to earn money; the situation in which people have work (Hornby, 2015).

**c) Release of funds**

As used in this study release of funds means to let something come out of a place where they have been kept or trapped or act of making funds available to the public (Hornby, 2015).

**d) Utility**

In this study utility means a service provided for the public, for example water (Hornby, 2015).

**e) Performance**

In this research performance indicates how well or badly something is done; how well or badly the utility project works; the act or process of performing a task. (Hornby, 2015).

**f) Financial Planning**

Financial planning formulates the way in which financial goals are to be achieved; a financial plan is thus a statement of what is to be done in future (Ross et al., 2008).

It is a set of things to do in order to achieve something, especially one that has been considered in detail in advance; a way of investing money for the future, a savings plan (Hornby 2015).

As per this study financial planning is one of the primary functions of management; it involves forecasting on the basis of available information, setting goals, framing policies, determining the alternative courses of action and deciding on the programme of activities to be undertaken, it facilitates preparation of statements in the light of past results and gives estimation for the future (Pillai et al., 2010)

#### **g) Financial Budgeting**

As per Pillai et al. (2012) A budget is a essentially a statement of the intention of management; budgeting refers to the management action of formulating budgets; preparation of budgets involves study of business situations and understanding of management objective as also the capacity of the enterprise; it is a planning function, and their application or implementation is a control function.

When a plan is expressed quantitatively such as in numbers – monetary amounts or quantities, it is known as a budget and the process of converting plans into budgets is known as budgeting (Frank, 2008).

Budgeting is concerned with the implementation of the long-term plan for the year ahead; because of the shorter planning horizon, budget rare more precise and detailed; budgets provide a clear indication of what is expected to be achieved during the budget period whereas long-term plans represent the broad directions that top management intend to follow (Drury, 2011).

This study defines budgeting as an official statement by the government of a country's income from difference sources such as taxes and donations; and how it will be spend (Hornby, 2015).

#### **h) Financial Statements**

In this study financial statements as part of financial reporting are a structured representation of the financial position and financial performance of an entity; the objective of general purpose financial statements is to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making economic decisions (IASB, 2006).

**i) Regulations**

As used in this study, regulations means an official rule made by Government or some other authority; controlling something by means of rules (Hornby, 2015).

**j) Regulator**

This study defines regulator as a person or an organization that officially controls an area of business or industry and makes sure that it is operating fairly (Hornby, 2015).

**k) Expenditure**

This research defines expenditure as the act of spending or using money; an amount of money spent (Hornby, 2015).

**l) Earmarked Project**

Earmarked project in this study refers to the project identified by donors to be used for particular purpose (Hornby, 2015).

**m) Hydrology**

Hydrology treats of water of the Earth, their occurrence, circulation, and distribution, their chemical and physical properties, and their reaction with their environment, including their relation to living things (Ray et al., 1988).

Hydrology as used in this study means the science of water that deals with the origin, distribution and properties of water on the earth including that in the atmosphere in the form of water vapor, on the surface as water, snow or ice, and beneath the surface as ground water; it is study the study of three important phases of what is known as the hydrological cycle, namely rainfall, runoff and evaporation (Mutreja, 1995).

#### **n) Public Financing Efficiency**

As used in this study the analysis of efficiency is about the relationships between inputs and outputs; assessing the efficiency public spending requires the measurement of the inputs entering into the production of public sector activities, which can be done in monetary and non-monetary (physical) terms (Mandl et al. 2008).

When measuring efficiency, a distinction can be made between technical and allocative efficiency; technical efficiency measures the pure relation between inputs and outputs taking the production possibility frontier into account; technical efficiency gains are a movement towards this production possibility frontier - best practice (ibid).

#### **o) Public Sector**

The part of the economy of a country that is owned or controlled by the government (Hornby, 20150).



The public sector in this study is defined as all organization which are not privately owned or operated; it consists of organizations the control of which is in the hands of 'public', as opposed to 'private' owners, and whose objectives involve the provision of services where profit is not a primary objective (Frank et al., 2008).

**p) Public Financing**

As per this research public finance is concerned with the income and expenditure of public authorities and with the adjustment of one to the other ((Prest, 1975).

**q) Sustainability**

Sustainability in this study refers to the ability of water utility project's to continue or be continued for a long time (Hornby, 2015).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter comprises of Literature review which comprises theoretical and empirical evidences, factors of public financing and the elements of performance of WSDP.

#### **2.1 Theoretical Perspectives**

This research was guided by the following theories:

##### **2.1.1 Cost Model of Public Financial Management**

Cost model of public financial management was developed to manage financial transactions efficiently. According to Khan *et al.* (2004) in public finance management there are two fields where formal transaction cost models are most developed: procurement and management control. A central theme in government procurement is the choice of procurement contracts that takes into account four effects which are the bidding competition effect, the risk-sharing effect, the moral hazard effect, and the cost padding effect. Another issue is the role of post-contractual price adjustment in public procurement. The dominant view is that post-contractual price adjustment is one kind of inefficiency in government procurement, which is sometimes notoriously observed in large procurement projects; these post-contractual price adjustments are viewed as a result of commitment failure.

In the field of management control, Khan *et al.* (2004) relates the concepts of transaction cost theory to budget execution with two variables; the cost structure of production and the heterogeneity of the outputs. He suggests that substantial cost savings are possible by matching the proper control techniques to each public service. Public finance management involves effectively organizing, directing, and managing financial transactions in the public sector (ibid). However, it is

carried out in a world where transaction costs are positive and where effective management and institutional design are relevant.

Organizing and managing these transactions involve transaction costs. Post contractual price adjustment and other procurement activities have greater impact on implementation of WSDP. Non completion and postponement for some of WSDP activities were due to inefficient spending of funds compared to the approved plan and budget.

Although the cost model of public financial management does not explain effect of both Procurement Act and behavior of procurement personnel which affect expenditure due to price fluctuations, it provides vital information especially on weaknesses of transaction costs and procurement by public entities which have a direct relationship with independent variables of the study. The independent variables included in this model are financial planning, financial budgeting, financial release, financial reporting and financial expenditure. This theory provides a vital knowledge on public procurement and effect of price adjustments of contract and their relation to completion of projects of WSDP.

### **2.1.2 Public Provision for Social Goods**

The theory of social or public goods provides a rationale for the allocation function of budget policy with the aim of extending the economic principle of efficient resource use to the public sector (Musgrave *et al.*, 2004). Although difficult to resolve, it is of central importance to the economics of the public sector, just as the theories of the consumer household and of the firm are at the core of private sector economics.

Social or public goods are goods the benefits of which are available in a non-rival fashion, such that A's partaking in the benefits does not interfere with B's. A competitive market can secure efficient resource use in the provision of private goods, but market failure occurs in that of social goods. Given their large number, individual consumers will not bid for social goods but will act as free riders. With consumption non-rival, exclusion would be inefficient even where

possible. To seek efficient provision of social goods, a political process of budget determination is needed.

Although the theory of public provision for social goods fails to explain an optimal solution for the problem of free rider (enjoying service without paying for it), it helps to explain how a political process can help to determine the plans and budget in provision of social goods. Political is one of intervening variables in the conceptual framework of this study. A political process is used (i) to obtain revelation of preferences (i.e., to tell the government what social goods should be provided) (ii) to furnish it with the fiscal resources needed to pay for them (ibid). This theory is helpful in this study as it highlights importance of making contributions for sustainability of water projects; also knowledge of political influence in providing social goods.

### **2.1.3 Principle of Multiunit Finance**

According to Musgrave *et al.* (2004) economic efficiency in the provision for public services calls for a multiunit system of government. It includes allocation theory as applied to the public sector which has led into conclusion that public services should be provided and their costs shared in line with the preferences of the residents of the relevant benefit region. Although there is a challenge regarding free rider, but this theory is essential in achieving sustainability of water utility projects as shown in the conceptual framework of this study.

Community participation as addressed in Water Policy of Tanzania (2002), whereby people should make contribution of funds which should be used in their area to facilitate sustainable water supply and sanitation services which are legally owned by communities themselves. This will also ensure full cost recovery for operation and maintenance, and replacement; as well as facilitating availability of spare parts and know how.

Moreover, given the fact that a political process is needed to secure preference revelation, it follows that particular services should be voted on and paid for by the residents of this region; in other words, services which are nationwide in their benefit incidence (such as national defense) should be provided for nationally, services with local benefits (e.g. streetlights) should be provided for by local units, still others (such as highways) should be provided for on a regional basis. Given the spatial characteristics of social goods, there is thus an a priori case for multiple jurisdictions.

Each jurisdiction should provide services the benefits of which accrue within its boundaries, and it should use only such sources of finance as will internalize the costs (ibid). One of specific objectives of the National Water Policy of Tanzania (2002) for rural water supply is to emphasize on communities paying for part of the capital costs, and full cost recovery for operation and maintenance of services as opposed to the previous concept of cost sharing; this promotes sustainability and enhance performance of utility project.

Importance of this model to this study is that it emphasizes people to pay for what they consume so voluntary contributions as indicated in this study will help to sustain water service.

#### **2.1.4 State Centered Water Management Model**

This is a model which treats water as a social good and hence it is a free service to people. This model is sometimes referred to as state centered model which is based on top down approach in which administrative, political institutions are the ones to design, plan, allocate and manage water resources in the interest of the community (Lein et al. 2009).

This implies that model believes that the communities are the recipients of water development initiatives from authorities. The communities are just involved in the

consumption of the projects output in terms of fees to recover cost of providing infrastructure and to fund the operation of water management authorities. The model assumes that authorities have superior knowledge and overview of available resources, possible ways of using water and also ideas and tools to decide on the optimal way of allocating resources; the example on the application of this approach can be seen in integrated river basin planning.

This model is very useful to this study because it highlights why water should be treated as social good and hence provided free because the cost of construction of water infrastructure is very huge so individuals can not afford it.

#### **2.1.5 Market centered Water Management Model**

As per Lein (2009) it is a model which insists on management of water in profit motive rather than service oriented; the market-based model presents a critique of the state model related to questions of how and by whom, decisions about the allocation of water should be made to community. With this approach, water projects should be implemented and managed in economic basis and considered as an economic commodity in all its competing uses. With this, the model emphasizes water users/community to pay for water services based on three reasons which include: water charges can be used to recover the cost of providing the service; it can provide an incentive for the efficient use of scarce water resources; and water charges can be used as a benefit tax on those receiving water services to provide potential resources for further investment for the benefit of others in society.

Market centered model has its origin on neoliberal argument that while market may not be perfect, they are certainly better than bureaucrats and politicians in allocating scarce resources (ibid). It is argued that water can and should be treated as a commodity the same as oil and other natural resources and can thus be

traded. This can be done by establishing clear tradable property rights through which a market for water can be established.

Basically, a system of water rights is a means to empowering water users/community, providing security of tenure regarding water rights and providing incentives to consider the full opportunity costs of water. With this model the role of the state remains to create conducive environment for market to operate which can be challenging in some situations; however, the approach to treat water as economic commodity has been criticized that the access to water should be seen as human rights and hence should be treated as social good.

This model is useful to this study as it insists water to be more of economic good than social good hence individuals should be also responsible to share costs of construction and maintenance of water infrastructure.

### **2.1.6 Community Centered Water Management Model**

This is a model which calls for community involvement in development spheres. The need for increased participation of community in development initiatives and nature resource management emerged after the challenges of state approach to water management by the neo populists and market model of water management in 1980-1990s. Since then local community was considered an important element in development and in managing resources including water in a sustainable manner. This argument corresponds with Dublin statement which states that water development and management should be based on participatory approach, involving users, planners and policy makers (Lein et al., 2009).

Water management community may be typically a village or group of water users sharing a schemes or a source of water. Members of the community have the rights to utilize the resources with no individual ownership of the resource. Rights to access water is implanted in fulfillment of certain agreed obligations

(for example be a member of the village or group, contribute in construction or maintenance of infrastructure). Once these obligations are fulfilled, a person has a claim to water along with other members of the community. The closer involvement of communities/users help to reduce operating cost, make water distributors more responsible thereby increasing efficiency and contributing to a general democratization in development.

In Tanzania, the current water policy of 2002 emphasizes the use of this model in implementing water projects in urban and rural areas (URT, 2002). In the context of this study, Community centered water management model is more applicable as the study examine community perception of their participation in implementation and sustainability of rural water projects which are being implemented on active participatory basis elaborated in the model.

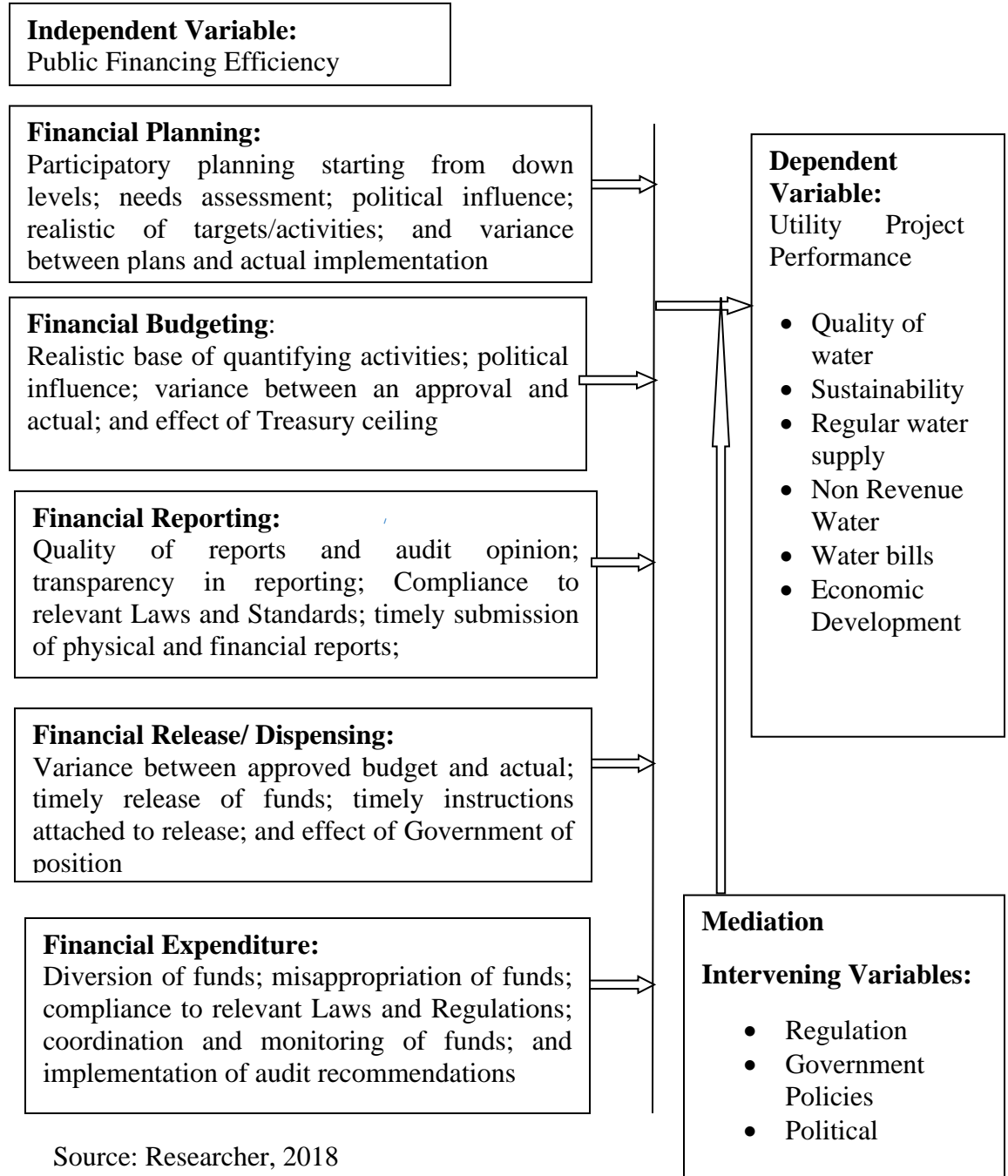
This model has helped this study to know the importance of participatory planning as well as voluntary contributions of community for sustainability of water utility projects.



## 2.2 Conceptual Framework

The conceptual framework for this study as shown in the figure 2.1 has one independent variable (public financing efficiency) and one dependent variable which is performance of water utility project:

**Figure 2.1: Conceptual Framework for both Urban and Rural Areas**



Source: Researcher, 2018

### **2.2.1 Public Financing**

Public financing is comprised of financial planning, financial budget, releasing/dispensing of funds to finance projects, and financial reporting. The objective of financing of water resources management is to have sustainable source of financial resources to meet the costs for water resources management (National Water Policy, 2002).

Official Development Assistance in the form of grants may be able to play a role in closing the financing gap in transition and developing countries, while concessional loans are a potential substitute or complement for market-based repayable finance that helps to bridge the financing gap (Peter et al, 2011). The share of Official Development Assistance (ODA) to water and sanitation varies across recipient countries, in some countries ODA subsidizes most investments, while in others it plays a more marginal role (ibid). ODA has an important role to play both as a source of finance and of capacity development for the provision and financing of water services (ibid). It can also have a catalyzing effect by reducing bottlenecks (particularly capacity constraints), ensuring access to the poor, and harmonizing and aligning assistance with national strategies (ibid).

According to WSSR (2011) WSDP is financed through two distinct funding mechanisms: a basket fund using common implementation arrangements for external and internal funds; and ‘earmarked’ projects by specific Development Partners. WSDP is the main financing mechanism for the water sector in Tanzania. The National Assembly shall be responsible to exercise control over both the total cost of the work or project and the issues of funds for the work or project during the financial year (PFR, 2001).

According to World Bank Report (2015) the WSDP represents a quadrupling of finance for the Sector a major accomplishment though managing these funds effectively, efficiently, and equitably remains challenging; furthermore, financing for sanitation remains opaque, hard to distinguish from finance for water supply

and split between multiple agencies; as a result, and as Tanzania out-scores its peers in terms of finance for water supply, though not for sanitation and hygiene.

There are two fundamental considerations for principles of local authority finance, firstly, how much should local authorities be regarded as part of Government and how much as part of the business sector of the economy; secondly, to the extent that they do form part of Government, how ought their system of revenue and expenditure to be integrated with that of the Central Government (Prest, 1975).

#### **2.2.1.1 Financing Planning**

Any strategic financial planning exercise should start with evaluating the potential for generating financial resources via reducing the costs and improving the efficiency of existing water systems, as inefficiencies are often responsible for important losses within the sector; the scope for making such gains is particularly high in developing countries; choice of hardware and technologies can also make big differences to costs, for example, the per capita cost of household connections is over three times higher than the costs of a stand post in Africa and Latin America (Peter et al, 2011).

Ross et al. (2008) put to light that lack of effective long-range planning is a commonly cited reason for financial distress and failure; financial planning establishes guidelines for change and growth in a firm, it normally focuses on the big picture, which means that it is concerned with the major elements of a firm's financial and investment policies without examining the individual components of those policies in detail.

Pillai et al. (2010) reveal that under the process of planning, management formulates policies and executes plans to achieve the desired objectives; planning and forecasting are essential for achieving business objectives, the most important function of management accounting is to make short-term and long-term forecasts

and planning the future operations of the business, it uses techniques such as standard costing, marginal costing, fund flow statement, trend ratio and correlation.

Derek et al. (2008) described how planning is strategic programming as well as tools to communicate and control. Planning cannot generate strategies, but it can make them operational by clarifying them, working out the consequences of them and identifying what must be done to achieve each strategy; also it ensures coordination and encourage everyone to pull in the same direction - planners can assist in finding successful experimental strategies which may be operating in just a small part of the organization (ibid).

As said by Peter et al. (2011) the extent to which each source of finance can generate additional funds will be highly location-specific and depend on the overall environment and on the willingness of governments to set realistic objectives and to adopt reforms so as to improve the efficiency and creditworthiness of existing service providers. Governments have to set realistic objectives for the development of the WSS sector, checked against available resources, and agreed in a multi-stakeholder policy dialogue (a process termed strategic financial planning, or SFP (ibid). It must be carried out in the context of broader sector planning that address roles and responsibilities of government agencies, policy priorities and related legislative and regulatory reforms in order to ensure that a package of measures that can realistically be financed is being put forward (ibid).

Pillai et al. (2010) are in view that financial planning involves determining both long-term and short term financial objectives of the firm, formulating financial policies and developing the financial procedures to achieve the objectives. every firm has to take a decision about the sources of raising funds, the funds can be raised either through issue of share capital or through raising loans (ibid). Again a decision is to be taken about the type of capital such as equity share capital or

preference share capital; when it decides to raise fund through loans it is to be decided whether the loans is to be short-term or long-term nature - the proportion between share capital and loan capital should be decided; all these decisions are important for financial planning (ibid).

The water and sanitation sector must include a full range of financing approaches, making the most of potential efficiency gains, adjusting targets and combining funding from both public and private sources, in order to meet its investment needs and successfully maintain and expand service; to achieve this, policy makers and water service providers need to engage in a process of strategic financial planning so as to identify what needs to be financed, how much additional resources can be generated from existing sources and how the performance of utilities can be improved to generate such efficiency gains and mobilize external financing (Peter et al., 2011).

Information on some of these financing sources tends to be patchy, however, which makes it difficult to reliably evaluate the gap between needs and available funding, for example, some financial information is available for central government and external donors spending, but information on sub national and local government expenditures is seldom aggregated at a national level (ibid). In addition, because funding for sanitation and hygiene is often spread over several different institutions, budget data are less available for sanitation and hygiene than for drinking water (ibid). Data on private sector investments (ranging from large private operators, informal providers, households or remittances) is notoriously difficult to collect, although they potentially represent an important source of funding for the sector (ibid).

To provide support to governments and water and sanitation service providers, the OECD (in conjunction with a number of other international organisations) has developed a series of tools, including financial planning tools for national and local governments (such as the FEASIBLE financial model and the Multi-year Investment Planning tool), as well as for water utilities, benchmarking and

performance tools (such as IBNET and the Guidelines for Performance-based contracts) and a Checklist for Public Action on private sector participation (ibid). These tools have been successfully tested and used in a number of OECD and developing countries; they have proven to provide economics-based analysis and approaches capable of supporting sound policy dialogue and decision-making that moves the reform agenda forward.

**Table 2.1 OECD Water Tools and Their Use in Support of Policy Dialogues**

<b>Tools</b>	<b>Objective</b>	<b>Use</b>
<b><i>Strategic Financing Planning, (FEASIBLE tool)</i></b>	Help developing and transition countries that wish to engage in a reform process for the water and sanitation sector with structuring a constructive policy dialogue, by defining realistic infrastructure targets and sustainable sources of funding, while taking into account affordability constraints for households and public budgets.	The methodology was used by the OECD/EAP Task Force, the World Bank, DEPA/DANCEE, the European Commission and the EUWI Finance Working Group in Armenia, Bulgaria, Cambodia, China, Egypt, Georgia, Kazakhstan (at the national level and in one province), Kyrgyzstan, Lesotho, Moldova, Turkey, Russia (in 6 provinces), Ukraine and others (click this link for more information).
<b><i>Financial Planning Tool for Water Utilities (FPTWU)</i></b>	Assist water utilities to achieve medium to long-term operational and financial sustainability through thorough investment planning.	The tool was developed and pilot tested in the Kyrgyz Republic for Bishkek water utility in 2005. Two additional pilot projects were carried out in Armenia and in Chisinau (Moldova).
<b><i>Multi-Year Investment Planning Tool for Municipalities</i></b>	Provide municipalities with a process and a tool for selecting strategic investment projects in a long-term perspective that achieves the largest possible benefits (financial, social, ecological and others).	The tool has been implemented in a number of local governments in Central and Eastern European countries, including in Russia and Ukraine.

<b><i>Guidelines for Performance-based contracts</i></b>	Support governments in designing performance based contracts between municipalities and water utilities and identify good international practices and standards for such contractual arrangements.	The tool has been used in several municipalities/water utilities in Armenia, Kazakhstan and Ukraine.
<b><i>Checklist for Public Action for Private Sector Participation in Water Infrastructure</i></b>	Help governments and other stakeholders to assess and manage the implications of private sector participation in the financing, development and management of water and sanitation infrastructure.	The checklist has been used in Egypt, Lebanon and Russia in 2009-2011. Under way in Mexico and Tunisia.

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Source: Peter et al, 2011

Some of specific objectives of the water resources management as addressed in the National Water Policy (2002) include promoting integrated planning and management of water resources, to raise public awareness and broaden stakeholder participation in the planning and management of water resources; and to promote regional and international cooperation the planning, management and utilization of water.

Policy issues in the National Water Policy of Tanzania (2002) include community participation in rural water supply with a focus on involvement of communities in planning, design and construction as well as involvement of communities in operation and maintenance. The goals here is to have a sustainable water supply and sanitation services legally owned by communities themselves, also to have a mechanism to enable communities to make appropriate choices of technology; as well as having communities with a feeling of ownership of sustainable water supply schemes.

As outlined by Futakamba (2015) WSDP is founded on a sector-wide approach to planning which incorporates structures for joint government-development partner

dialogue, and financing mechanisms include budget support administered via a basket fund; this financing planning has involvement of stakeholders and needs assessment through research.

The sector's investment plan, the WSDP, has its own targets and is therefore not directly based either on national (MKUKUTA) or international (MDG) targets (World Bank Report, 2015). Furthermore, the WSDP's targets (and costing) are based on routine monitoring figures while MDG monitoring draws on household surveys; similarly, operational planning processes depend on routine monitoring data (ibid). In rural water supply, this is operationalized through a formula-based allocation system, though this is not fully implemented; in urban water supply, service delivery data is used for planning, though not systematically; it is also becoming widely accepted that routine monitoring data for both urban and rural water supply is based on flawed assumptions, though there are currently efforts under way in both urban and rural water supply to improve the quality of routine monitoring data (ibid).

Futakamba (2016) points out that WSDP is founded on a sector-wide approach to planning (SWAp) which incorporates structures for joint government-development partner dialogue and financing mechanisms include budget support administered via a basket Fund, earmarked funding allocated by a number of development partners outside of the basket to support special projects in selected locations; the purpose is to address the earlier identified shortfalls in urban and rural water supply infrastructure.

A joint agreement between Development Partners and the Government of Tanzania was made to commit funds for the WSDP in the first phase of five years period from 2007/2008 to 2011/2012 at an estimated cost of USD 951 million (WSSR, 2016). Through a programme restructuring finalized in 2011 the need for the additional financing was required and the entire original budget increased to USD 1,713.5 million whilst phase one of WSDP was extended up to June 30, 2016. All Basket DPs and Got have already fully disbursed their commitments



for WSDP I. The Table 2.2 below summarizes the commitment and disbursement:

**Table 2.2: WSDP Commitments VS Disbursement as of June 2016**  
(in Million USD)

Source	Original Commitment in USD	Revised Commitment	Actual disbursement as June 2016	Performance (%)
<b>GoT</b>	251	410.4	410.4	100%
<b>Basket</b>	410	719.7	719.7	100%
<b>Partners</b>				
<b>Earmarked</b>	290	577.6	491.3	85%
<b>Partners</b>				
<b>Own Source</b>	0	5.8	5.8	100%
<b>Total</b>	<b>951</b>	<b>1,713.5</b>	<b>1,627.2</b>	<b>95%</b>

Source: Water Sector Status Report, 2016

As per CAG report (2016) audit findings shows that there were WSDP activities planned but not implemented amounting to TZS 144,950,000.00; these were for purchase of boreholes hand pumps (India Mark II), materials for construction of borehole slabs, borehole casing pipes by June, 2016

The majority of major donors for the sector are fully engaged with the SWAp, including the World Bank, AfDB, KfW, Royal Netherlands Embassy (RNE), and Agence Française de Développement (AFD) (World Bank Report, 2015). The main exceptions are JICA and the US agencies (Millennium Challenge Corporation, MCC, and USAID); nevertheless, this approach is not seen by donors or government as perfect; the shift from project funding to the WSDP has not been easy; the ministry's new role as coordinator (rather than implementer) requires a different skill-set and different thinking (ibid). This transition has contributed to the slow pace of implementation and is affecting the quality of

planning, monitoring and reporting in a way that is leaving some donors dissatisfied; some are beginning to lose faith in the approach, while others see the challenges more as growing pains, which will take time to overcome, but worth waiting for on the basis that once new systems and capacities are in place, national ownership and accountability will be substantially stronger than would be the case under a return to project financing (ibid). This is a particular concern as the initial five-year period of the WSDP comes to an end.

#### **2.2.1.2 Financial Budget**

It is important that suitable administration procedures exist to ensure that the budget process works effectively; in practice, the procedures should be tailor-made to the requirements of the organisation, but as a general rule a firm should ensure that procedures are established for approving the budgets and that the appropriate staff support is available for assisting managers in preparing their budgets (Drury, 2011).

Pillai (2012) provides objectives of financial budgeting as; to obtain more economical use of capital; to prevent waste and reduce expenses; to facilitate various departments to operate efficiently and economically; to plan and control the income and expenditure of the firm; to create a good business practice by planning for future; to fix responsibilities on different departments or head; to co-ordinate the activities of various departments; to ensure the availability of working capital ; to smooth out seasonal variations, by developing new products; and to ensure the matching of sales with production.

Drury (2011) further analyses stages in the budgeting process as follows; communicating details of budget policy and guidelines to those people responsible for the preparation of budgets; determining the factor that restricts output; preparation of the sales budget; initial preparation of various budgets;

negotiation of budgets with superiors; coordination and review of budgets; final acceptance of budgets; and ongoing review of budgets;

Futakamba (2015) pointed out that for the F/Y 2014/2015, the approved budget for WSDP was TZS 489,793,490,000, however, until the end of F/Y 2014/2015 a total of TZS 248,489,062,692 equivalent to 51% was released to the IAs; out of the total disbursement, TZS 84.34 billion was from Government and TZS 164.98 billion was from DPs; generally, during the period under review WSDP was affected by delay in release of funds that resulted into slow progress in implementation of activities, consequently, the sector could not fully achieve the key milestones and priorities set for the particular year.

In accordance with Rasheed (2011) the budget process at both Central and Local level in Tanzania is governed by a number of laws and policies; these laws and policies as the legal framework lays out in detail the roles and responsibilities of various government bodies while the policy framework clearly outlines the government's long-term goals. The legal framework of the budget involves administrative regulations which regulate the budget format, timing and procedures as well as the allocation of formal powers and responsibilities and rights in the budget cycle or process (ibid).

The legal basis for the preparation of budgets and the assignment of responsibilities to various actors in Tanzania includes the following provisions: Chapter 7 of the Constitution of the United Republic of Tanzania (1977) outlines the legislative function and the role of various bodies involved in the management of public finances, specifically Parliament (the Legislature), the President (the Executive) and the Controller and Auditor General (CAG) (ibid). The Public Finance Act covers all the four stages of the budget process, Section 18 of the Act has the following provisions; Subject to Article 137 of the Constitution, the Minister shall cause to be prepared and laid before the National Assembly as soon as practicable before the commencement of each financial year; estimates of the

revenues, expenditure and financing requirements for the Government of Tanzania for that year; for each vote of expenditure a statement of the classes of outputs expected to be provided from that vote during the year and the performance criteria to be met in providing those outputs (ibid).

The Act also covers the preparation and examination of accounts; and, audit of public authorities and other bodies; The Public Procurement Act, 2004 sets out rules and procedures for the procurement or purchasing of goods and services; this Act replaced the Public Procurement Act, 2001 in order to improve the regulation of public procurement by establishing the public procurement regulatory authority, tender boards, the principles and methods of purchasing goods and services, and dispute settlement; the act was also updated in 2005 to outline specific guidelines for the selection, recruitment and payment of consultants (ibid).

The Annual Appropriation Act gives the Minister of Finance the authority to appropriate, or obtain funds from the Consolidated Fund to cover spending by central and local government, departments, and agencies; the Act also gives the power to Minister of Finance to borrow; the Act states ‘the powers conferred upon the Minister by this section shall be in addition to the powers of the Minister under the Government Loans, Guarantees and Grants Act, 1974’ (ibid). The Annual Finance Act grants powers to the Minister of Finance to impose taxes; it gives the Government authority to appropriate, or obtain funds from the Exchequer Account to cover spending by central and local government, departments, and agencies; the Act also allows the Minister of Finance to allocate money from the Consolidated Fund to individual votes; this act grants powers to the Minister of Finance to raise money by imposing taxes to raise funds to finance the budget (ibid).

The legal base has four fundamental principles and these are; no tax shall be imposed and no money shall be spent without the authority of the National

assembly; expenditure shall be made only for purposes authorized by Parliament; there shall be a single fund known as the “Consolidated Fund” for receiving and recording all revenues and expenditures, unless otherwise directed by Parliament; and all moneys spent from the Consolidated Fund must be accounted for before Parliament (ibid).

The Local Government Finance Act, 1982 (as amended in 2000) sets out requirements for Local Government Authorities to meet while drawing up their annual estimates of revenue (income) and expenditure (spending); this Act, along with the Local Authority Financial Memorandum, 1997, require each council to advertise in the media and/or post information on the council notice boards key information including; receipts of funds from the government, expenditure statements, budgets and signed audited accounts, tender advertised, as well as allowing the public to attend the full council meetings (ibid).

A number of taxation acts govern the way in which the government raises domestic revenue; these are; Tanzania Taxation Acts (which include; the Excise (Management and Tariff) Act, 1952; The Hotels Act, 1963; The Airport Service Charges Act, 1962; Port Services Charges Act, 1972; The Motor Vehicles (Tax on Registration and Transfer) Act, 1972; The Foreign Vehicles); Transit Charges Act, 1995 (which include; The Stamp Duty Act, 1972; The Road and Fuel Tolls Act, 1985; The Vocational Educational and Training Act, 1994; The Tanzania Revenue Authority Act, 1995; The Tax Revenue Appeals Act, 2000; and The Value Added Tax Act, 1997); The Land Act, 1999 (which include; The Pools and Lotteries Act, 1963; The Gaming Act, 2003; The East African Community Customs Management Act, 2004; and The Income Tax Act, 2004) (ibid).

The Public Audit Act, 2008 intends to strengthen and increase the independence of the Controller and Auditor General (CAG); it includes a provision requiring the CAG’s budget to be guided by the advice of the Public Accounts Committee, rather than determined by MOFEA alone; with this act being in place, the CAG

can undertake his own recruitment rather than acquiring an approval from the Ministry of Finance and Planning (ibid).

Rasheed (2011) further explains that the budget process in Tanzania is about the annual budget cycle events and activities, essentially it involves the determination of resources and their uses for attainment of government objectives; a sound budget serves as a tool for economic and financial management and accountability and also serves as a mechanism for allocation of resources among different needs and priorities as well as bringing economic stability and growth. Key players in the budget process have been the Ministry of Finance; Planning commission; Public Expenditure Review (PER) Working Groups; and the Sector or Line Ministries; other key players include, the Prime Minister's Office; Local Government; Non State Actors -NSA (NGOs, CBOs, and the private sector); the cabinet and; the Parliament (ibid). The Constitution of the United Republic of Tanzania accords each Local Government Authority in Tanzania (Mainland) the status of government; this means that each local government or council can raise funds for meeting costs of delivery of public goods and services including financing development projects; further a local government should have and manage its own staff who should be accountable to it, and it should also have means of enforcing their decisions and resolutions as well as the relevant laws and bylaws.

Local government authorities have powers to levy and collect taxes, fees and charges. Indeed, the Local Government Finances Act No. 9 of 1982 requires the local government authorities in Tanzania Mainland to levy taxes and other types of revenues, which will be sufficient for meeting approved expenditure, this is a basic responsibility given to all the councils in Tanzania; the budget process involves the following stages; budget Formulation; scrutiny of Budget Proposals and Dialogue; budget Execution; and budget Monitoring and Control (ibid). Budget estimates are formulated in line with detailed macroeconomic forecasts on future growth, inflation and external sector (import) trends; donor/Government

consultations assist the budget process by confirming donor financial commitment in the budget, these discussions take place between Ministry of Finance/sectors and Development partners; once the macro-policy and sectoral performance review and resource projections are completed, the government then formulates goals, objectives and budget priorities which should be achieved in the forthcoming financial year; the budget frame is also formulated using Medium Term Expenditure Framework (MTEF) – a three-year budgeting approach, which is prepared by a Committee that comprises representatives from the Ministry of Finance and Planning, Prime Minister's Office, Civil Service Department and Regional Administration and Local Government, and which forms the basis of the budget guideline (ibid).

Additionally Rasheed (2011) says that preparation of the budget begins with the issuance of national planning and budget guidelines around December each year; the guidelines provide a review of the performance during the just ended financial year and serve to inform Ministries, Independent Departments, Executive Agencies, Regions and Local Government Authorities about the priorities of the Government as spelt out in the sector policies; the guidelines also include information to councils about levels of funding by way of grants for the ensuing year; the guidelines which are prepared by the Ministry of Finance and Planning in collaboration with the planning commission and with close involvement of the ministry responsible for regional administration and local government briefly recap the sector policies and point the area which should be accorded priority in the allocation of resources in the coming year.

The local government planning and budget cycle requires planning to start at the lowest level of the local government hierarchy passing the various stages before final approval; this means that the bottom-up planning approach should be emphasized; by using this approach it is possible to ensure that people's priorities and felt needs are captured in the course of developing the council's annual plan and budget, and that the approved plan and budget continue to reflect those

priorities and needs as perceived by the people themselves; on receipt of the budget guidelines, the ministry responsible for local government both at national and regional levels sets about clarifying the issues which are relevant to local government authorities and provide guidance on how they should treat them in their plans and budgets; this arrangement serves to obviate numerous and possibly conflicting instructions being sent out to the local government authorities by the various sector ministries whose policies are being implemented by the local government authorities; as a matter of procedure, with the exception of technical matters, for all other issues, sector ministries should get their instructions to local government authorities through and with the facilitation of the ministry responsible for local government (ibid).

The Budget Guidelines contain; an overview of macroeconomic performance and projections; priority sector MTEFs (prepared by Sector Working Groups in the Public Expenditure Review process); vote expenditure ceilings based on resource availability; and procedures for preparation and submission of the draft budget to the Ministry of Finance and Planning; the Inter – Ministerial Technical Committee (IMTC) is a committee of all Permanent Secretaries which has a role to scrutinize budget proposals before they are finally approved by the cabinet; to facilitate the discussions, the MoFP prepares a draft cabinet budget paper that covers the budget frame, the financial demands after dialogue with MDAs, the government priorities and financial implications. After a thorough review, IMTC may require the MoFP to make further technical improvements on the paper or put up recommendations for consideration by the Cabinet (ibid).

The Cabinet budget paper is then discussed by the cabinet after preliminary review by IMTC; the role of the cabinet is to deliberate on the budget cabinet paper and then approve government budget proposals for fiscal year in question before they are submitted to the legislature; the process of obtaining Parliamentary authorization starts with discussions by Sector Committees; preliminary briefs are provided by the Minister of Finance and Planning, MDA's



detailed budgets are then submitted to Parliamentary committees for scrutiny one by one; after the Estimates have been reviewed by the sector committees of the Parliament, they have to be tabled to parliament for debate and authorization (ibid).

The major events during Parliamentary debate and authorization of the government's budget are as follows; presentation of a Public Speech on macroeconomic performance and projections by the Minister for Finance; presentation of the government budget proposals to Parliament by the Minister for Finance through a budget speech; Parliamentary debates/discussions on sector estimates submitted by each minister responsible; Parliamentary approval of estimates by passing the Appropriation Bill; and Parliamentary approval and passing the Finance Bill that empowers the Minister for Finance to raise the money and finance the budget (ibid).

Budget execution is an important stage of the budget process as it is at this stage that actual revenue collections and service delivery takes place; execution of the budget therefore is about the collection and accounting for revenue, provision of services through the recurrent budget and implementation of development project; the key documents used during implementation of the budget are Revenue and Expenditure estimates books, action and cash flow plans and budget memorandum; main activities are; release of funds by the MoFP; and collection and accounting for revenue collections by Tanzania Revenue Authority (TRA) and other MDAs; accounting officers are appointed as receivers of revenue and accountable officers for expenditure in accordance with the Public Finance Act, 2001; for delivery of services and project implementation by institutions involves both government institutions and Development Partners; donors are required in some cases to release funds and award of contracts; maintenance of proper Accounts for control and Accountability; reporting on budget performance (both financial and physical) and evaluation; project inspection and expenditure monitoring; and, the Ministry of Finance publishes quarterly Budget Execution

Reports to maintain transparency on actual use of public funds in line with the budget estimates approved by Parliament.

Budget monitoring, control and evaluation are necessary for closer supervision of work programs and projects; this involves a continuous monitoring of the plans and budget in order to identify achievements and bottlenecks; basically, monitoring, control and evaluation focuses on; accountability – to ascertain appropriateness of expenditure and revenue and their conformity to the authorities through financial reports; and management assistance – for providing management with information on performance (ibid).

Mechanisms for control and monitoring include: periodic reporting and follow up. Specific formats have been issued for budget monitoring and follow up; Internal Audit; External Audit; Parliamentary control; Budget Review and Adjustments; and Project inspection.

However, the overall control and monitoring of public expenditure is now affected largely through an Integrated Financial management System (IFMS); this is a computerized system which links up most of the government paying stations in Dar es Salaam (now Dodoma); therefore most payments are centralized and controlled; hardly expenditure or commitment can be incurred without financial provision from IFMS; major outputs from IFMS include; monthly flash reports on revenue collections and expenditure; quarterly and annually performance reports; control of excess spending beyond approved budgets; specific reports based on user requirements; and, in addition to IFMS there are sub-treasuries in all the regions for processing payments from decentralized government Ministries and Regions; efforts are underway to establish sub-treasuries in all the Regions (ibid).

The plans of villages and urban neighborhoods are consolidated and coordinated by the Ward Development Committee (WDC) which handles 3 – 5 villages or neighborhood; the process of integration is further strengthened as more informed

technical input is provided to the plans since it is at this level that sector representatives are found; informed about the priorities and felt needs of the people, the WDCs prepare and submit to the District or Urban Authorities the Ward plans which indicate the expected sources and levels of funding; ideally, indicative levels of funding from the council should be made available to enable preparation of realistic plans and budgets at sub-council levels; however, it is not always possible to follow this elaborate procedure because the information regarding levels of funding is received by the council rather late, so, in most cases it ends up being a hurried exercise which limits the desired benefits (ibid).

The consolidated and integrated ward plans are submitted to the District or Urban Council as the case may be; these plans are integrated with the projects which are developed at district/urban council level and discussed by the respective sector standing committee of the council; the council executives prepare a draft council plan and budget and submit them to the respective Regional Secretariat whereby sector representatives scrutinize the draft plan and budget with the aim of establishing that sector policies as contained in the planning and budget guidelines have been adhered to; the Regional Secretariat provides written comments and advice on how the council plan and budget can be improved upon; the Council Director convenes a meeting of the council which is responsible for finance and planning whereupon the draft council plan and budget are tabled indicating how the comments and advice received from the Regional Secretariat have been dealt with (ibid).

The final draft budget is submitted to the District/Urban where it is discussed and passed at least a month before the beginning of the financial year; the council plans and budgets in the region are supposed to be consolidated into a regional plan and budget before submission to the ministry responsible for local government for further consolidation and later submitted to Ministry of Finance for inclusion in the Government Budget for Parliament approval; following changes that were made to the Local Government Finances Act No. 9 of 1982, the

central and local government financial years are now harmonized; they now run from July to June; this means that the timing for the various stages in the preparation of the council plan and budget such that they are passed by end of May (ibid).

Rasheed (2011) further adds that the budget is regarded as a tool for strategic resources allocation according to the existing plans; resources allocation in Tanzania is guided by: The Medium Term Expenditure Framework (MTEF), Strategic Plans and NSGRP (MKUKUTA) and Cluster interventions also play a role as instruments to guide resource allocation, these plans ensure that there exist appropriately sequenced stages and properly timed resources in order to provide adequate linkages and synergies among them; preparation of the Budget Guidelines is guided by the Vision 2025, MTP and NSGRP and inputs from PER process.

The Plan and Budget preparation allocation stages are summarized as follows: the first stage is the Annual Plan and Budget process which begins with the macroeconomic and sectoral performance reviews; PER Working Group's outputs provide basic data and information used in reviewing budget performance and in the preparation of the Budget Guidelines; the second stage is projection of economic growth and identifying key macro-economic and sectoral policy commitments with the view to determining a pool of resources (both external and internal inflows) expected to be available in the upcoming budget year and the other two following outer years; the third stage entails identification and linking of MDA's, Region's and Local Government Authorities strategic/medium Plans with overall Medium Term Plan objectives, NSGRP interventions, and Government policy commitments to ensure their consistency; and the fourth stage involves costing of strategic sectoral planned activities consistent with NSGRP Cluster interventions and then applying MTEF process to integrate NSGRP Cluster interventions with budget activities and to link the activities with the

resource allocation as well; this activity includes preparation of the annual budget by all MDAs (ibid).

Given the cluster dimension and outcome based NSGRP, the resource allocation process has posed new challenges. To respond to these challenges, a software was developed to facilitate resource allocation to the NSGRP clusters and strategies or outcomes, the developed software namely “Strategic Budget Allocation System (SBAS)” is in two versions: the first version is SBAS Micro; which is used by MDA’s in outlining resource requirements to implement NSGRP cluster strategies (targets); and, data from SBAS Micro is imported into SBAS Macro Version, which is used by the centre to analyse and allocate resources to NSGRP cluster strategies and the remaining MDAs requirements (ibid).

Prioritization and sequencing of NSGRP (MKUKUTA) interventions is based on the following considerations: the on-going programmes/activities that were initiated by original NSGRP (MKUKUTA); new strategies that builds on ongoing activities; strategies that have multiple effects, that is, strategies covering more people, larger or more issues; strategies that address more than one outcome; strategies that contribute to implementation and capacity development; strategies that address the regional imbalances; and strategies for mainstreaming crosscutting themes; mindful of the considerations above, the NSGRP and the proposed interventions by actors under each cluster: Growth and reduction of income poverty (cluster1); Improvement of life and social well being (Cluster II; and governance and accountability (Cluster III), these clusters have been assigned relative weights to guide resource allocation during the budgets process (ibid).

As per Memorandum of Understanding signed between GoT and DPs on the implementation of WSDP, the Government is providing DPs with a three-year rolling work plan and budget within the Medium Term Expenditure Framework (MTEF), which is used by DPs to set their funds commitments in support of GoT plans and priorities; the commitments are included in the budgeting process that

ends with approved budgets each year; the approved budget is used to prepare disbursement schedules (WSSR, 2011).

World Bank Report (2015) highlights that the WSDP represents a 400 percent increase in funding for Tanzania's water sector, even this increase, however, does not appear to be sufficient to meet the sector targets; however, increasing funding further is not likely to close the gap as absorption capacity is already insufficient to keep pace with the increases.

Public funding for water sector investments is allocated using a combination of formulae and less systematic approaches; the division of funding between urban and rural water supply is made at the political level with lobbying from civil society (supported by donors) having recently reduced a considerable bias in favor of urban investments; in urban water supply, there is no national formula-based allocation system to utilities for either capital or operational subsidy; the ministry has a set of criteria for allocating investment funds to utilities, though these criteria are not used systematically; a formula system, linked to the Local Government Capital Grant means allocations within the rural water supply subsector are more systematic, which has brought about a major improvement in equity between districts, though deviations from the formula system remain common (ibid).

As said by Futakamba (2016) there has been more pressure to the government to ensure that BRN aspiration are fully achieved for RWS sub-component, which resulted into a substantial increase in fund allocations to support this initiative; however, timely fund release has been a major challenge during the period under review resulting into slow progress; until the end of FY 2015/2016, only 64% of the annual allocation was released to the IAs as shown in table 2.3.

**Table2.3: WSDP Approved Budget VS Actual Disbursement 2015/2016**

<b>Component Description</b>		<b>Approved Budget (TZS)</b>	<b>Actual Release (TZS)</b>	<b>Variance</b>
Water	Resource	42,332,616,400	24,804,769,372	17,527,847,028
Management				
Rural Water Supply		189,747,505,600	148,349,582,149	41,397,923,451
Urban Water Supply		167,540,236,000	89,859,812,750	77,680,423,250
and Sanitation				
Institutional		27,637,546,000	11,841,809,366	15,795,736,634
Strengthening and				
Capacity Building				
<b>Total</b>		<b>427,257,904,000</b>	<b>274,855,973,637</b>	<b>152,401,930,363</b>

Source: Futakamba (2016)

As stated by Peter et al (2011) public budgets still represent an important share of revenue for the water supply and sanitation sector and are likely to play a significant role for the foreseeable future, this is especially true, where household affordability is an important constraint. In order to be efficient and effective, however, subsidies should be predictable, transparent, targeted and ideally taper off over time; whilst public funds are limited by budgetary constraints and multiple demands from other sectors, there is scope for increasing public budget spending.

### **2.2.1.3 Financial Reporting**

EWURA or its delegated Agency will carry out audit monitoring as external auditors and water utilities will conduct audit monitoring as internal auditors

(WWQM Guidelines, 2014). WWQM Guidelines states that WSSAs are required to report to EWURA monthly and quarterly for the conduct of Check monitoring and annually for the internal Audit monitoring. EWURA or its delegated agency will also conduct water quality monitoring as an external auditor. The reporting by the WSSAs should be accompanied by a good layout of a water distribution system diagram showing and naming designated sampling locations. WSSAs submit reports to EWURA in two ways, a) through Water Utilities Information System (Majls), and b) through Annual Reports which include audited Annual Financial Accounts.

As per IASB (2006) financial statements show the results of management's stewardship of the resources entrusted to it; to meet this objective, financial statements provide information about an entity's assets; liabilities; equity; income and expenses including gains and losses; other changes in equity and cash flows; this information along with other information in the notes, assists users of financial statements in predicting the entity's future cash flows and, in particular, their timing and certainty.

Ministry of Water has been facilitating and coordinating a number of audits, which includes financial audits, technical audits, in-depth financial management reviews, and reviews of statements of WSDP expenditure in compliance with the Finance Act and its Regulations, with the National Audit Act, the International Financial Standards, and WSDP's MoU, PIM, and Financial Management addendum. Reporting includes the quality of audit report, timely reporting of physical and financial reporting. According to Public Finance Act, 2001 (PFA) each accounting officer shall, within a period of three months after the end of each financial year prepare and transmit to the Controller and Auditor-General in respect of the past financial year and in respect of the votes, revenues and moneys for which he is responsible.

As stated by Pillai et al. (2010) one of the primary objectives of financial reporting as part of management accounting is to keep the management fully informed about the latest position of the concern; it facilitates management to take



proper and timely decisions with objective of providing data; it presents different alternative plans before the management in a comparative manner, the performance of various departments is also regularly communicated to the top management.

As per International Accounting Standard 1 financial statements shall be presented at least annually; when an entity's balance sheet date changes and the annual financial statements are presented for a period longer or shorter than one year, an entity shall disclose, in addition to the period covered by the financial statements; (a) the reason for using a longer or shorter period; and (b) the fact that comparative amounts for the income statement, statement of changes in equity, cash flow statement and related notes are not entirely comparable (IASB, 2006).

The International Federation Accountants (IFAC) is the worldwide organization for the accountancy profession founded in 1977, its mission is to serve the public interest, it contributes to the efficient functioning of the international economy by: improving confidence in the quality and reliability of financial reporting; encouraging the provision of high-quality performance information (financial and non-financial) within organizations; promoting the provision of high-quality services by all members of the worldwide accountancy profession; and promoting the importance of adherence to the Code of Ethics for professional Accounts by all members of the accountancy profession, including members in industry, commerce, the public sector, the not for profit sector, academia, and public practice (IFAC, 2006).

As highlighted by IASB (2006) Financial Reporting Standards (IFRSs) are Standards and Interpretations adopted by the International Accounting Standards Board (IASB), they comprise International Financial Reporting Standards; International Accounting Standards; and Interpretations originated by the International Financial Reporting Interpretations Committee (IFRIC) or the former Standing Interpretations committee (SIC).

As narrated in EWURA Report (2016) compliance of water utilities to regulatory directives and requirements is evaluated basing on the compliance with reporting

requirements, tariff conditions and compliance with the targets set in MoU between Regional WSSAs and the Ministry of Water and Irrigation;

WSSAs are obliged to submit their monthly reports electronically through a web-based software called Majls by the 15<sup>th</sup> day of the following reporting month and their annual technical report and draft financial statements before the end of 30<sup>th</sup> September of every year; during the reporting period, Shinyanga was one of eleven best performers in Majls monthly report submission who managed to submit all the 12 Majls monthly reports punctually; DAWASCO did not submit any monthly Majls report on time.

World Bank report (2015) puts to light that the quality of reports presented to the JWSRs has varied, the most recent report (for 2008/9) was considered to be an improvement on previous years, though this did not include reporting on expenditure versus budget; reports in all years have included nationally consolidated reports of sector outputs, though not consistently disaggregated by utility and district; similarly, the quality of discussion and outputs of the JWSRs has varied, though on a positive trajectory; a complementary process of twice-annual WSDP Supervision Missions has been in place since the WSDP was launched in 2007; the September–October 2009 Mission was, for the first time, timed to coincide with the JWSR; this has the positive effect of reducing duplication of dialog, but also took the final process of annual priority-setting away from the more public JWSR forum and into a closed door meeting, potentially reducing accountability; the 2007 JWSR mandated the recently formed civil society network, TAWASANET, to prepare an equity monitoring strategy and report for the sector; this report was presented at the 2008 review, stimulating some debate on the equity-orientation of the sector and resulting in the mandate being extended to TAWASANET to prepare an annual equity report as a recurring feature JWSRs; the second such report was presented at the 2009 JWSR of future JWSRs. The second such report was presented at the 2009 JWSR.

As per WSSR (2016) the WSDP got an unqualified report in 2014/2015 audited report form the Controller and Auditor General. In FY 2015/2016, there was improvement in preparation and submission of the accounts to CAG.

The International Auditing and Assurance Standards Board (IAASB) develops International Standards of Auditing (ISAs) and International Standards on Review Engagements, which deal with the audit and review of historical financial statements and International Standards on Assurance Engagements other than the audit or review of historical financial information; it also develops related practice statements; these standards and statements serve as the benchmark for high-quality auditing and assurance standards and statements worldwide; they establish standards and provide guidance for auditors and other professional accountants, giving them the tools to cope with the increased and changing demands for reports on financial information, and provide guidance in specialized areas (IFAC, 2006).

EWURA Report (2017) states that regional WSSAs report to EWURA is in two (2) ways; firstly, utilities submit monthly performance data through the Water Utilities Information System known as MajIs which is web-based software in which water utilities enter their monthly and annual data; secondly, water utilities are obliged to submit their Annual Performance Reports including Financial Statements; WSSAs are required to submit their monthly MajIs reports on or before 15th day of the following month and the annual MajIs report by 30th September each year; during the F/Y 2016/2017 Kahama, and DAWASCO were among thirteen best performers in MajIs who managed to submit all the 12 MajIs monthly reports timely; none of the WSSAs failed to submit at least one monthly MajIs report on time during the year under review, this is the significant improvement as compared to the FY 2015/16 where three WSSAs were 100% non-compliant to the monthly MajIs reporting requirement.

IFAC's International Public Sector Accounting Standards Board (IPSASB) focuses on the development of high-quality financial reporting standards for use by public sector entities around the world; it has developed a comprehensive body of IPSASs setting out the requirements for financial reporting by governments and other public sector organizations; the IPSASs represent international best practice in financial reporting by public sector entities; in many jurisdictions, the application of the requirements of IPSASs will enhance the accountability and transparency of the financial reports prepared by governments and their agencies (IFAC, 2006).

As said by Wood et al., (2012) there are many benefits of using a computerized accounting system, probably the greatest benefit comes from the fact that a computerized accounting system can do the same things as a manual system but does them better with speed and accuracy, and error detection; it is capable of an activity called exception reporting which is a process of issuing a warning message to decision-makers when something unexpected is happening for example when expenditure against a budget is higher than it should be.

International Accounting Standard 1 (IAS) requires that a complete set of financial statements comprises a balance sheet; an income statement; a cash flow statement; notes comprising a summary of significant accounting policies and other explanatory notes; a statement of changes in equity showing either (i) all changes in equity or (ii) changes in equity other than those arising from transactions with equity holders acting in their capacity as equity holders (IASB, 2006).

#### **2.2.1.4 Financial Expenditure**

As indicated by the World Bank (2015) Utilization of allocated resources is a major issue for the sector in Tanzania. In the financial year 2007/8, only 55 percent of allocated budgets were expended, with delays in donors'

disbursements, cumbersome procurement processes, and limited implementation capacity cited as the main reasons for these delays; the situation improved slightly in 2008/9, partly as a result of a budget reduction and partly due to improvements in procurement management; nevertheless, utilization challenges remain serious, and currently suggest that even if funding were to increase to the required level, the targets would not be met; the capacity constraints of coordinating authorities, implementing agencies, and private sector contractors all act as brakes on spending, and it is unlikely that additional funding for water supply would make much difference at present.

Futakamba (2016) states that in the period between 2006/2007 and June 2015 MoWI had planned to implement a total of 2,586 procurement and contract management activities through WSDP, however the actual contracts that were processed and awarded to successful bidders were 2,239 only; out of the awarded contracts, 810 contracts have been completed; 46 contracts were initiated but not yet signed; 252 contracts were cancelled; and 1,428 are contracts are still in progress.

In FY 2015/2016 the procurement management unit prepared 30 contracts, of which, goods contracts were 4; works 7; consultancy 13 and non-consultancy were 6 consecutively, the MoWI has done much in procurement during the period from year 2006/2007 to June 2016; cumulatively, during phase I there were 2,792 planned procurement activities, in which 2,583 contracts were awarded to successful bidder; out of the awarded contracts, 1,665 contracts have been completed and 897 contracts are still in progress (Futakamba, 2016).

As maintained by the CAG report of 2016 there was anomalies in the following contract procurements; Contract No. ME-011/2014-15/CONTRACT/W/01 dated 18th May, 2015 with M/S Magacon Company Ltd for Rehabilitation of central water quality laboratory and office extension at Ubungu at a contract price of TZS 896,485,844.00; Contract No. ME-011/2015-16/G/03 amounting to TZS 1,194,748,612.15 with Technotrade Investment for supply of laboratory

equipment and installation; and Contract No. ME-011/2013-2014/W/01 entered with M/s China Civil Engineering Construction Corporation on 10<sup>th</sup> November, 2014 for construction of office building for the Ministry of Water and Irrigation (Maji House) at a contract value of TZS 37,463,321,397.00. These are caused by weakness in contract managements and lack of accountability of the procurement management unit who were entrusted to make follow-up far as contract management (ibid).

Regulation 59(1) of the Public Procurement Regulations, 2013 states that, “any formal contract arising out of the acceptance of tender whose value is fifty million shillings or more shall be vetted by the Attorney-General before the contract is signed by the parties”. CAG Report (2016) noted that on 22<sup>nd</sup> October, 2015 the Ministry of Water and Irrigation through WSDP funds entered into contracts worth USD 250,000 equivalents to TZS 491,047,500.00 with M/s International Company for supply of mobile water purification unit at Gidahabeig-Hanang whose value is above TZS 50,000,000.00 without being vetted by the Attorney-General contrary to the above cited Regulation; also a review of the contract in relation with procurement procedures and payment voucher the following anomalies has been noted; the method of procurement used was a single source which is contrary to Regulation 159 (1)(a) of Public Procurement Regulation of 2013, in addition no evidence was provided to auditor for justification of the method used in relation with the criteria cited in the Regulation; thus there was inadequate management over contracts which results into the contracts being signed by the parties without being vetted by responsible authority, the value for money was not achieved and non-compliance with cited regulations.

Audit scrutiny of payment vouchers noted that a sum of TZS 63,720,000 was transferred to Wami Ruvu Basin vide payment voucher No. 1070 of 28/12/2015, the payment was for the purpose of conducting the training of Budget Act No. 11 of 2015 and the second five year development plan II to staff of the Ministry of Water in order to enhance the preparation, management and implementation of the Ministry budget; however, the project funds were diverted to unrelated

activity without prior approval of the Accounting Officer; this shows that there are inadequate controls over WSDP funds and expenditure which results into non implementation of the intended activities also non achievement of expected benefit (CAG Report, 2016).

Futakamba (5015) says that with regard to procurement, MoW, in the period between 2006/2007 and June 2015 had planned to implement a total of 2,586 procurement and contract management activities through WSDP; however, the actual contracts that were processed and awarded to successful bidders were 2,239 only; out of the awarded contracts, 810 contracts have been completed; 46 contracts were initiated but not yet signed; 252 contracts were cancelled; and 1,428 are contracts are still in progress.

Fuel was purchased but not accounted for in stores ledgers amounting to TZS 20,533,000.00 at KASHWASA, this shows weakness in internal control over stores procedures (CAG Report, 2016). An absence of proper stores documentation and procedures makes the procured fuel to be susceptible to loss or misuse it (ibid). Regulations 220(1) of the Public Finance Regulations 2001 (revised 2004) stipulates that “when stores have been checked against the receipt voucher and the vouchers given a serial number, each item will be posted without delay to the appropriate folio of the stores ledger”. Furthermore, Regulation 220(2) states that “number of the ledger folio to which each item has been posted will be entered on the receipt voucher against the item concerned and the vouchers then filed in order of the serial number accorded to them” (ibid). A list of purchased fuel but no proper documentation/register was in place is shown in table 2.4 below:

**Table 2.4: Fuel not Accounted for in Stores Ledgers**

<b>PV No. and Date</b>		<b>Cheque No. and Date</b>		<b>Amount (in TZS)</b>	<b>Name of Payee</b>	<b>Particulars</b>
1512017 23/12/2015	of	300353 23/12/2015	of	3,904,000.00	GPSA	Supply of 2,000 litres of diesel of WSDP activities as per Government bill No. 1822003 of 04/12/2015
1512070 31/12/2015	of	300359 31/12/2015	of	3,904,000.00	GPSA	Supply of 2,000 litres of diesel for WSDP activities as per Government Bill No. 1822041 of 23/12/2015
3JMCB000001 /1/of 10/08/2015		300322 10/08/2015	of	10,850,000.00	M/s New Mwendo wa Saa Filling Station	Supply of 5,000 litres of diesel
C1822172 27/01/2016	of	300374 28/01/2016	of	1,875,000.00	GPSA	Supply of 1,000 litres of diesel
<b>Total</b>				<b>20,533,000.00</b>		

Source: CAG Report, 2016

There was a delay in delivery to supply pipes amounting to TZS 931,689,360.00 by M/s Pipe Industries Co. Ltd to KASHWASA, this shows that there is a failure by the supplier to observe conditions of the contract agreement and there by increases cost of laying the pipes in terms labour and hired equipment (CAG Report, 2016). This was the Contract No. AE/063/2014-2015/G/4 amounting to TZS 11,530,772.00 entered by KASHWASA and Pipe Industries Company Ltd on



01<sup>st</sup> June 2015 to 15<sup>th</sup> July, 2016 (revised) but until 26<sup>th</sup> July, 2016 the supplier had not supplied pipes and fittings worth TZS 931,689,360.00 (ibid).

Audit review of WSDP accounting records for the 2015/2016, noted that the Ministry of Water and Irrigation released WSDP funds amounting to TZS 100,000,000.00 to DAWASA on 12<sup>th</sup> June, 2015 to be used for improvement of water supply in Mafia town (CAG Report, 2016). Furthermore, DAWASA was required to account for the utilization of the same by submitting physical and financial reports accompanied by the bank statement. (ibid). However, it was learnt during the audit that out of the transferred amount of TZS 100,000,000.00 an amount of TZS 52,029,639.00 and TZS 20,740,000.00 was transferred to Lindi and Songea Urban Water Supply and Sewerage Authorities for paying salaries to staff and to facilitate conducting of regional centres and steering committee meeting respectively (ibid). In view of the above, an amount of TZS 72,769,639.00 was not spent to meet costs related to WSDP activities of improving water supply in Mafia town, it is a non adherence to requirement of WSDP Memorandum of Understanding, also such diversion of funds may lead to misappropriation of public funds (ibid).

As indicated by EWURA Report (2017 during FY 2016/17, on average, regional utilities' O&M costs excluding depreciation were composed of water production, distribution, maintenance and repair costs (39.2%), administration costs (19.8%), personnel costs (36.9%), and other costs (4.1%); for Category A WSSAs, on average, O&M costs consisted of production, distribution and maintenance and repair costs (39.0%), administration costs (19.3%), while personnel cost was 36.5%; the FY 2016/17 cost composition is more or less similar to that recorded in FY 2015/16.

The cost structure performance for Category A shows that; in FY 2016/17, Songea WSSA (51.3%) had the highest composition of personnel costs out of the total O&M costs while Kahama WSSA (22.3%) had the lowest; Kahama WSSA had the highest proportion of production, distribution, maintenance and repair

costs compared to other WSSAs in Category A reported to be 59.4% mainly because the major cost for the utility is bulk purchases of water from KASHWASA. DAWASCO had the lowest proportion of production, distribution, maintenance and repair costs reported at 16.8% mainly because of DAWASCO incurs distribution costs for a small portion of the network while production and most of the distribution costs are covered by DAWASA (ibid). Administration cost was the highest proportion of O&M in DAWASCO (40.0%) and lowest in Dodoma WSSA (11.5%); for Category B and C WSSAs, the distribution of O&M costs was composed of production, distribution, maintenance and repair costs (39.4%), administration costs (20.7%) while personnel costs were 37.5%; other costs constituted 2.5% of total O&M costs (ibid).

During FY 2016/17, on average, regional utilities depreciation costs accounted for 17.4% of the total operating costs, while other O&M cost accounted for 82.6%; out of this DAWASCO recorded the lowest proportion of depreciation reported to be at 1.9%; the low depreciation cost for DAWASCO is due to the fact that DAWASCO is only an operator in the DAWASA designated areas and the owner of the assets is DAWASA (ibid).

#### **2.2.1.5 Financial Releasing/Dispensing of Funds**

Along with Water Sector Status Report (2014) a joint agreement between Development Partners and the Government of Tanzania in 2007 originally committed about USD 951 million to the initial five years period of WSDP till 2012, but following a programme restructuring in 2011 this budget was increased to USD 1,439 million and Phase I was extended to 30 June 2014. From the available Basket Fund of USD 617.7 million, a total of USD 593.2 million had already been disbursed by the six Basket Development Partners. By 30<sup>th</sup> June, 2014 some balances remained disburseable by AfDB (USD 8.1 million), KfW (USD 4.0 million) and DFID (USD 12.5 million); to help financing ongoing contractual obligations under the Phase I Basket Fund, additional financing

contributions were committed by KfW (EUR 10 million), DFID (GBP 10 million), IDA/WB (USD 45 million) and GoT (USD 30 million).

In keeping with WSSR (2014) for the first seven years of implementation of WSDP, a total of USD 1,243 million was disbursed, and out of this USD 1,127 million, equivalent to 91%, was released to IAs, a small portion of the unspent balance remained in the Holding Accounts (USD 4,106,486), while there was balance sitting in the accounts of the LGAs, small towns, district headquarters and basins, waiting for use on pending payments on running commitments; considering the level of disbursement of 86%, the sector could not fully achieve all target milestones and priorities; despite the increased pressure on the government to ensure that the BRN aspirations are fully achieved on the RWS sub-component, the amount to funding has been substantially increased to support this initiative; however, timely and adequate fund releases have been a major challenge, financial releasing has involved in under release (variance) and delay in release of funds.

Futakamba (2015) highlights that the GoT and DPs had jointly agreed to commit funds for the first phase of WSDP in five years' period from 2007/2008 to 2011/2012 at an estimated cost of USD 951 million; through a programme restructuring finalized in 2011 the need for the additional financing was realized and the entire original budget increased to USD 1,621 million whilst the WSDP I has been extended up to December 31, 2015; as June 2015, six basket DPs had already disbursed a total of USD 663.5 million out of the revised commitment of USD 683.8 million; the disbursement level reached 100% in October 2015 when all Basket DPs had fully disbursed their committed contributions to the Basket.

Consistency with WSSR (2016) for the past eight year of implementation of WSDP, a total of USD 1,627.2 million was allocated, out this USD 1,603.7 million, equivalent to 99% were spent. The unspent balance (USD 2 million) is still in Holding Accounts; and other balances are with LGAs UWSAs, small towns, district headquarters and basins as shown in table 2.5 below:

**Table 2.5: Funds Released VS Expenditure as at June 2016 (in Million)**

<b>Component Code</b>	<b>Component Description</b>	<b>Released Amount (in USD)</b>	<b>Used Amount (USD)</b>	<b>% Used</b>	<b>Balance Amount (USD)</b>
1	Water Resource Management	93.00	91.08	98%	1.92
2	Rural Water Supply	549.83	532.67	97%	17.17
3	Urban Water supply and 100% 2.00 Sanitation	888.47	886.38	100%	2.08
4	Institutional Strengthening and Capacity Building Funds in Holding A/Cs & Forex Account	93.80  2.00	93.57  0	100%  0%	0.23  2
<b>Total</b>		<b>1,627.10</b>	<b>1,603.69</b>		<b>23.41</b>

Source: Water Sector Status Report, 2016

In line with CAG report of 2016, in the financial year 2015/2016 the programme had an opening balance of TZS 16,088,680,574.00 while the Government of Tanzania and other Development Partners contributed to the programme as shown in table 2.6 below:

**Table 2.6: Financial Performance of the Programme**

<b>Donor/Government</b>	<b>Amount (in TZS)</b>
Government of Tanzania Contributions (counterpart funds)	0.00
National Water Investment Fund (NWIF)	122,708,495,758.00
DPS Exchequer Receipts	105,133,575,963.00
DPS Contribution to Earmarked Projects	268,928,603,644.00
Other sources - Community Contribution	474,248,884.00
Adjustment: Gain/(Loss) due to Exchange rate fluctuations	1,700,726,785.00
<b>Total Contribution/Released</b>	<b>498,945,651,034.00</b>
Add: Opening balance as on 01/07/2015	16,088,680,574.00
Total funds available during the year	515,034,331,608.00
Less: Payments during the year	510,756,096,587.00
<b>Closing Balance as at 30<sup>th</sup> June, 2016</b>	<b>4,278,235,021.00</b>

Source: CAG Report, 2016

CAG report of 2016 noted that there is weakness in financial management with regard to funds which were released to finance WSDP's activities instead they were borrowed by the parent Ministry (Ministry of Water and Irrigation) for various reasons, however until when the audit was conducted no refund/repayment was ever effected and thus confirmed to have not been paid back to respective lenders as shown in table 2.7 below:

**Table 2.7: Funds Borrowed but not Repaid**

S/N	Entity (Lender)	Borrowed Amount Not Repaid (in TZS)
1	Lake Victoria Basin Water Board	12,950,261.00
2	Pangani Basin Water Board	18,045,000.00
3	Lake Tanganyika Basin Water Office	4,672,275.00
4	Wami – Ruvu Basin Water Board	13,124,000.00
<b>5</b>	<b>Total</b>	<b>48,791,536.00</b>

Source: CAG Report, 2016

As per the WSDP financing agreement, it was agreed that the Government of Tanzania should contribute into the WSDP Fund 20% of the agreed budget (CAG Report, 2016). Contrary to the provision audit review of the submitted financial statement noted that the Government of Tanzania did not contribute to the basket instead the Ministry regarded the funds released from the newly established National Water Investment Fund TZS 122,708,495,758.90 as Government counterpart fund contribution, moreover, the audit conducted noted that it is difficult to trace the activities financed by the National Water Investment Fund from those financed by WSDP due to the current style the Fund is being managed; thus there is non- compliance with the financing agreement (ibid).

CAG Report (2016) reveals that there is late release of funds from the Ministry of Finance which cause loss of public funds. Total amount of TZS 686,238,070.14 was paid to Norconsult Tanzania Ltd for construction supervision of works for water supply project from Lake Victoria to Kahama and Shinyanga towns as interest charges due to delaying in paying outstanding certificates issued by the consultants as detailed in table 2.8 below:

**Table 2.8: Interest Charged due to Delay in Paying Consultants**

<b>Date</b>	<b>Invoice No.</b>	<b>Amount (in TZS)</b>	<b>Details</b>
08/12/2010	310013/40	24,115,828.90	Interest accrued on invoice No. 310013/034 from 1 <sup>st</sup> October, 2009 up to the date of payment on 26 <sup>th</sup> June, 2010
30/03/2015	310013/042	502,581,618.34	Interest accrued on invoice No. 310013/035 through 310013/041 up to 30 <sup>th</sup> June 2015 and
23/08/2011	310013/041	52,453,158.90	Interest accrued on invoices No. 310013/034 and 310013/035 (part) from their due dates to their settlement
09/10/2009	310013/038	107,087,464	Interest accrued on invoices No. 310013/027 to 310013/036 up to the date of payment as at 30 <sup>th</sup> September, 2009
<b>Total</b>		<b>686,238,070.14</b>	

*Source: CAG Report, 2016*

On January 30, 2017 the World Bank approved USD225m loan to improve access to water supply and sanitation services in Dar es Salaam; the funding will also support the strengthening of capacities for integrated water resources planning and management in Tanzania; the loan will benefit up to 1.9m Tanzanian citizens, including 700,000 residents of the country's largest city, Dar es Salaam (World Bank Report, 2017).

As said by Futakamba (2015) while the financial management has significantly improved through the contracts and financial monitoring and reporting capabilities of the MIS, the systems has not been able to ensure a timely flow of funds from DP disbursements in the Holding Account to the actual receipt of funds by the Implementing Agencies; huge payment delays have caused serious delays in project implementation, and additional costs to Government for payments of compensatory claims submitted by providers of work, goods and services; it is crucial therefore, that a more suitable modality of transfers through settlement accounts is established, controlled by MoW, to ensure quicker and more accountable flow funds.

### **2.2.2 Intervening Variables**

Intervening variables include Laws, Regulations, Regulators, Government policies and political.

#### **2.2.2.1 Regulation**

As stated by the Water Supply and Sanitation Act (WSSA) (2009) Sub Section (14) a water authority shall not operate except in accordance with this Act and under the authority of a license issued by EWURA. A water authority shall, as a licensee, be responsible for the efficient and economical provision of water supply and sanitation services authorized by the license. According to Water and Wastewater Quality Monitoring (WWQM) Guidelines for Water Utilities (2014) the Energy and Water Utilities Regulatory Authority (EWURA) is mandated to regulate water supply and sanitation services provided by WSSAs in regional and district headquarters, small towns, and national projects areas, and, DAWASA and DAWASCO for Dar es Salaam City and parts of Bagamoyo and Kibaha.



The functions conferred to EWURA in relation to water supply and sanitation services include, among other things, to monitor water quality and standards of performance for the provision of water supply and sanitation services {The Water Supply and Sanitation Act (Cap 272): Section 28(1) (e)} and DAWASA Act, Cap 273: Section 26(d) (WWQM Guidelines, 2014).

As stated by Section 27 of the Water Supply and Sanitation Act (2009) and Section 25 of the DAWASA Act Cap 273, EWURA is mandated to regulate Water Supply and Sanitation Authorities (WSSAs); in regulating the WSSAs under the function conferred to EWURA in Section 28(2) of the Water Supply and Sanitation Act (2009), EWURA prepares annually a comparative analysis report on the performance of the regulated water utilities (EWURA Report, 2017).

EWURA Report (2017) highlight that WSSAs were established by the Water Works Ordinance that was repealed by Water Supply and Sanitation Act, 2009 while DAWASCO was established by the Public Corporations Act, 2005 to operate water and sewerage services within DAWASA designated area as guided in the DAWASA Act Cap 273. DAWASA and DAWASCO operate under the Lease Contract under which DAWASA is the asset owner and is responsible for capital works investment while DAWASCO is the operator of water and sewerage services within the designated area. For DAWASCO, the service area is Dar es Salaam City, Bagamoyo and Kibaha Townships (ibid). Upon their establishment and according to Section 27 of the Water Supply and Sanitation Act, 2009, and Section 25 of DAWASA Act Cap 273, the established Water Authorities are regulated by EWURA through licensing. Licences issued by EWURA are in three Classes ie Class I, II and III. The superior class licence is Class I licence issued to a WSSA meeting full cost of operating water supply and sanitation services and capable of doing investment using own funds. Currently, Tanga and Moshi WSSAs have Class I licence while the remaining Regional and NP WSSAs are operating using class III licences (ibid). According to Section 6(1) of the Water

Supply Regulations, 2013 WSSAs are grouped into four categories, namely Category AA, A, B and C based on their financial capabilities (ibid).

WSSAs are established by the Water Works Ordinance that was repealed by Water Supply and Sanitation Act, 2009 while DAWASCO was established by the Public Corporation Act, 2005 to operate water and sewerage services within DAWASA Designated area as guided in the DAWASA Act Cap 273 (EWURA Report, 2016). DAWASA and DAWASCO operate under the Lease Contract under which DAWASA is the asset owner and is responsible for capital works investment while DAWASCO is the operator of water and sewerage services within the designated area (ibid). The Government Notice that establishes respective WSSA contains also the boundaries of the service area. For DAWASCO, the service area is Dar es Salaam city, Bagamoyo and Kibaha Townships (ibid).

Upon their establishment and according to Section 27 of the Water Supply and Sanitation Act, 2009, and Section 25 of DAWASA Act Cap 273, the establishment of Water Authorities are regulated EWURA through licensing. Licenses issued by EWURA are in three Classes i.e. Class I, II and III. The superior class license is Class I issued to the WSSA meeting full cost of operating water supply and sanitation services and capable of doing investment using own funds, currently, only Tanga WSSA has Class I license the remaining regional and national project WSSAs are operating using class II licenses (EWURA Report, 2016).

In addition, the Ministry of Water and Irrigation has graded WSSAs into four categories, namely Category AA, A, B and C based on their financial capabilities. Table 2.9 and 2.10 show a list of some water utilities, their categories and licenses:

**Table 2.9: Categories of Water Utilities**

S/N	Name of Utility	Category	Services Provided
<b>Regional WSSAs</b>			
	Arusha	A	Water and Sanitation
	DAWASCO	A	Water and Sanitation
	Dodoma	A	Water and Sanitation
	Iringa	A	Water and Sanitation
	Kahama	A	Water
	Mbeya	A	Water and Sanitation
	Morogoro	A	Water and Sanitation
	Moshi	A	Water and Sanitation
	Mtwara	A	Water
	Musoma	A	Water
	Mwanza	A	Water and Sanitation
	Shinyanga	A	Water
	Songea	A	Water and Sanitation
	Tabora	A	Water and Sanitation
	Tanga	A	Water and Sanitation
	Bukoba	B	Water
	Kigoma	B	Water
	Singida	B	Water
	Sumbawanga	B	Water
	Babati	C	Water
	Lindi	C	Water
	Bariadi	C	Water
	Geita	C	Water
	Mpanda	C	Water
	Njombe	C	Water
<b>National Project WSSAs</b>			
	Chalinze	C	Water
	Handeni Trunk Main	C	Water
	Kahama Shinyanga	C	Bulk Water
	Makonde	C	Water
	Maswa	C	Water

Mugango – Wanging’ombe	C	Water
Masasi - Nachingwea	C	Water

Source: EWURA Report, 2016

**Table 2.10: Key to License Class/Category**

<b>Class/Category</b>	<b>Details</b>
<b>License Class</b>	
Class I	A license issued to a licensee who has a financial, technical and managerial capability to operate a licensed facility.
Class II	A license issued to a licensee who has technical and managerial capability to operate a licensed facility and recovers all costs of operation except part of its investment cost.
Class III	A license issued to a licensee who still gets financial, managerial and technical support from the Government and partially recovers its operational costs.
<b>Key to Category</b>	
Category AA	Water utilities with water service coverage of more than 85% and meet operation, maintenance costs, depreciation and return on investment.
Category A	Water utilities with water service coverage of more than 75% and meet all operation, maintenance and depreciation costs.
Category B	Water utilities with water service coverage of more than 65% and meet all operation and maintenance costs.
Category C	Water utilities with water service coverage of less than 65% and meet operation and maintenance costs except part of plant electricity costs as shall be determined in the Memorandum of Understanding.

Source: EWURA Report, 2016

Technical and economic regulation of Water Supply and Sanitation Authorities (WSSAs) is the responsibility of EWURA, the mandate to regulate the WSSAs emanates from EWURA Act, Cap 414 and Water Supply and Sanitation Act, 2009 (EWURA Report, 2016). Among other things, EWURA is mandated to monitor performance of WSSAs and prepare a comparative analysis report on the performance of the regulated water utilities (ibid).

As part of the Member Body Compliance Program, IFAC members and associates (mostly national professional institutes) are required to demonstrate how they have used best endeavors, subject to national laws and regulations, to implement the standards issued by IFAC and the International Accounting Standards Board; the program which is overseen by IFAC's Compliance Advisory Panel, also seeks to determine how member bodies have met their obligations with respect to quality assurance and investigation and disciplinary programs for their members as set out in IFAC's Statements of Membership Obligations (SMOs); The SMOs serve as the foundation of the Compliance Program and provide clear benchmarks to current potential member bodies to assist them in ensuring high-quality performance by professional accountants (IFAC, 2006).

Audit review of the submitted financial statements in respect of activities performed by the Ministry of Water during the year as well as the challenges encountered, as per statement of the Permanent Secretary it was noted that the Ministry did not plan to implement anything regarding water resources conservation/protection as per part VI of the Water Resource Management Act, 2009 as it was mentioned nowhere in the financial statements; There is absence of priority by the Ministry regarding protection and conservation of water resources in the country which results water resources to continue vanishing now and then (CAG Report, 2016).

As per EWURA report (2017) WSSAs are obliged to comply with regulatory directives and requirements, among the major regulatory obligations with which

WSSAs need to comply include Tariff Conditions, reporting requirements and the Performance Targets as stipulated in the Memorandum of Understanding between the WSSAs and the Ministry of Water and Irrigation; DAWASCO is obliged to comply with the agreed performance targets indicated in its Lease Agreement with DAWASA. WSSAs are obliged to comply with regulatory directives and requirements. Among the major regulatory obligations with which WSSAs need to comply include Tariff Conditions, reporting requirements and the Performance Targets as stipulated in the Memorandum of Understanding between the WSSAs and the Ministry of Water and Irrigation.

EWURA report of 2017 further states that DAWASCO is obliged to comply with the agreed performance targets indicated in its Lease Agreement with DAWASA; during the period under review, EWURA approved tariff review applications from two Regional WSSAs; in financial year under review, most Regional WSSAs were implementing tariffs approved in previous multiyear tariff applications.

Tariff approvals are usually complemented by conditions that the applicant utility needs to fulfill, normally, the conditions have specified time for fulfillment; EWURA evaluates implementation of the tariff conditions by allocating weights to the implementation of each condition; during the year under review, Regional WSSAs had to comply with 84 conditions in total (EWURA Report, 2017). Some of the conditions are those that were issued in the previous years but had to be fulfilled in the FY 2015/16; on average, the overall compliance with the tariff conditions was 69%; previously, in 2015/16, Regional WSSAs were to fulfill 99 conditions to which they achieved 62% compliance; therefore, the performance during the reporting period has increased by 7%.

In November 2003, IFAC with the strong support of member bodies and international regulators, approved a series of reforms to increase confidence that the activities of IFAC are properly responsive to the public interest and will lead

to the establishment of high-quality standards and practices in auditing and assurance; the reforms provide for the following; more transparent standard-setting processes, greater public and regulatory input into those processes, regulatory monitoring, public interest oversight, and ongoing dialogue between regulators and the accountancy profession; this accomplished through the following structure: Public Interest Oversight Board (PIOB), Monitoring Group (MG) and IFAC Regulatory Liaison Group (IRLG) (IFAC, 2006).

Ministry of Water and Irrigation normally has a Memorandum of Understanding with the WSSAs, which, among other things, contains agreed performance targets on several key performance indicators; in order to determine WSSAs performance, EWURA selected 12 key performance indicators in accordance with Performance Benchmarking Guidelines (2014); it is anticipated that WSSA's performance on the selected key indicators has significant impact on the overall performance of the utility; compliance with MoU, targets are evaluated based on various Key Performance Indicators (EWURA report, 2017).

Pursuant to Section 43 of EWURA Act, Cap 414, all WSSAs are required to pay levy not exceeding one percent of the gross operating revenue from the regulated goods and services. EWURA report (2017) highlights that the amount invoiced to Regional WSSAs for the year under review was TZS 2,738,236,714, there was an opening balance receivable due to Regional WSSAs which was TZS 1,817,795,715 on 1st July 2016 making a total revenue due to levy from Regional WSSAs TZS 4,556,032,429. As of 30th June 2017 a total of TZS 2,004,477,660 equivalent to 44% compliance was collected from Regional WSSAs; as of 30th June 2017 Kahama WSSAs was among three WSSAs leading by 100% compliance. A list of water utilities and status of payment of regulatory levy as of 30th June 2017 is as shown in Table 2.11 below;

**Table 2.11: Status of Payment of EWURA Levy as of 30<sup>th</sup> June, 2017**

S/ N	NAME OF WSSA	OPENING BALANCE (TZS)	INVOICES FY 2016/2017 (TZS)	AMOUNT RECEIVED (TZS)	OUTSTANDING AMOUNT (TZS)	COMPLIANCE (%)
1	Kahama	19,299,734	41,898,279	61,198,014	0.00	100%
2	Arusha	12,418,016	129,624,855	142,042,871	0.00	100%
3	Dodoma	10,934,051	150,065,683	160,999,734	0.00	100%
4	Iringa	37,475,227	73,185,540	109,722,163	938,604	99%
5	Sumbawanga	1,031,127	9,631,456	8,456,177	2,206,406	79%
6	Mtwara	17,635,257	35,737,547	38,292,185	15,080,620	72%
7	Tanga	2,775,955	128,245,550	92,168,199	38,853,306	70%
8	Mwanza	258,763,40	197,000,274	300,000,000	155,763,678	66%
		4				
9	Njombe	0.00	7,986,700	4,007,503	3,979,197	50%
10	Mpanda	0.00	4,846,173	2,407,776	2,438,396	50%
11	DAWASCO	544,883,38	1,191,101,999	825,076,430	910,908,956	48%
		7				
12	Mbeya	75,350,379	156,214,945	88,383,084	143,180,240	38%
13	Morogoro	165,066,20	92,215,394	84,308,715	172,972,879	33%
		0				
14	Bukoba	69,059,325	17,846,016	17,201,662	69,703,679	20%
15	Singida	61,636,732	25,989,659	10,143,275	77,483,116	12%
16	Songea	21,528,999	30,535,858	6,000,000	46,064,857	12%
17	Moshi	68,809,519	154,792,796	23,166,254	200,436,061	10%
18	Shinyanga	165,426,15	37,603,416	15,901,618	187,127,956	8%
		9				
19	Musoma	124,076,40	31,932,053	10,000,000	146,008,452	6%
		0				
20	Tabora	41,286,061	185,651,255	5,000,000	221,937,317	2%
21	Babati	17,287,177	18,277,299	0.00	35,564,475	0%
22	Kigoma	99,186,920	14,553,733	0.00	113,740,654	0%
23	Lindi	3,865,686	3,300,233	0.00	7,165,919	0%
<b>Total</b>		<b>1,817,795,7</b>	<b>2,738,236,714</b>	<b>2,004,477,660</b>	<b>2,551,554,769</b>	<b>44%</b>
		15				

Source: EWURA Report, 2017



#### **2.2.2.2 Government Policies**

The National Water Policy (2002) is in line with the IWRM Principles and it advocates devolution of responsibility for water resources to River/Lake Basins and catchments management entities with active participation of local government and community based organizations.

There is lack of an effective institutional framework for integrated water supply, sewerage and sanitation which had led to overlapping roles and responsibilities between various institutions leading to inefficient use of human and financial resources, duplication of effort, and gaps in effective provision of services (Mwandosya, 2016).

Ministry of Water has been implementing sector reforms that aim at improving the integrated water resources management and improving water supply and sanitation services in both rural and urban areas whereby the guidance of the 2002 National Water Policy has continued providing the general direction of the sector in the course of attaining the aspirations of the National Development Vision by 2025; through implementation of the Water Sector Development Programme (Sayi, 2014).

WSDP is a programme which encompasses rural, urban water supply and sanitation improvement, water resources management and all measures aimed at developing sector capacity and strengthening institutional effectiveness (Futakamba, 2016).

The programme focuses on addressing the goals of the National Water Policy (2002) and National water Development Strategy 2006 which are in line with Tanzania Development Vision (TDV 2025) and the National Strategy for Growth and Reduction of Poverty II (MKUKUTA-II); these and other strategic development documents provide the roadmap for implementation of interventions in the water sector and charts out targets for improving water service availability to the rural and urban populations and ensuring availability and sustainability of water resources; the TDV 2025 pillars include universal (100%) access to water

supply in urban areas by 2025; ensuring at least the country reaches 90% water supply coverage in rural areas by 2025; and ensuring that water resources are available in a sustainable manner to serve as a driver to both social and economic needs (ibid).

In that matter, the NAWAPO (2002) provides guidance and operational directives to all water subsectors for achievement of the TDV 2025 pillars and targets. Also Water Sector Status Report (2016) highlights that the operational directives on Water resources management are channeled through the National Water Board as the sector ministry's advisory body; and participatory operations of 9 water basins boards; catchment committees and water user associations; provision of water supply and sanitation services in rural areas is governed by community ownership and management of rural water supply and sanitation facilities under close supervision of Local Government Authorities where as for the matter of ensuring sustainability of rural water schemes, communities are required to plan manage and own the scheme; in urban area the urban water supply and sanitation authorities are governed by Board of Directors who are responsible for ensuring the availability of water and sanitation services in urban area; in order to attain full cost recovery for all Urban Water authorities billing efficiency, increase in number of water connections over time, non-revenue water reduction and number public taps/kiosks constructed constitute important operational indicators.

Along with World Bank Report (2015) under Tanzania's decentralization policies, local government authorities (LGAs) have taken over responsibility for investment in rural water supply infrastructure, with the national ministry focusing on developing policy and guidelines, capacity development, and performance monitoring; this division of responsibilities technically began some years ago but did not become the norm until 2007 with the launch of the WSDP; further, centrally-coordinated rural projects continue to be initiated in large numbers; at community level, community-owned water supply organizations (COWSOs) are responsible for O&M; COWSOs can take a number of different forms, including water user groups and private companies, and are to be

established and registered as independent legal entities; however, in practice, many village water committees (the previous water supply authority at village level, formed as part of village government) remain in place and continue to be formed in some cases; furthermore, the registration of COWSOs is complex and time consuming and many therefore remain unregistered.

World Bank Report (2015) further adds that urban water supply authorities (UWSAs) have responsibility for water supply, regulated by an independent regulator, the Energy and Water Utilities Regulatory Authority (EWURA); there is some minor duplication of responsibilities between the recently formed independent regulator, EWURA, and MoWI, with the ministry continuing to perform some roles that fit more naturally with EWURA, such as monitoring and reporting (ibid). UWSAs are theoretically autonomous entities being strengthened for privatization, though the majority remain highly dependent on operational subsidies from central or local government.<sup>16</sup> Dar es Salaam has been managed separately due mainly to its size; a failed attempt at leasing the water supply operation in 2003 has left the city with two publicly-owned entities, an asset holding agency (DAWASA, Dar es Salaam Water and Sewerage Corporation) and an operating authority (DAWASCO, Dar es Salaam Water and Sewerage Authority), which coexist in an often uneasy relationship; the future remains unclear, with talk of merging DAWASA and DAWASCO taking place alongside discussion about re privatizing DAWASCO.

Also World Bank Report (2015) highlights that the status of small town utilities is currently in flux, with concerns about their financial viability leading to efforts to cluster several small town utilities together with a larger, better-established UWSA; this is being resisted by UWSAs in both small and large towns and the future of this approach remains unclear; institutional roles and responsibilities for household sanitation are much less clearly defined; at national policy-making level, the MoHSW has the mandate for coordination of sanitation policy and finance matters, but the practice is less clear cut; MoWI has responsibility for

sewerage, and the majority of aid finance for household sanitation is bundled together with finance for water supply and therefore flows through the MoWI's budgets; there have been some recent efforts to improve coordination in the sanitation sector as part of the work to develop a National Sanitation and Hygiene Policy; this brings together the Ministries of Health and Water with Education and Vocational Training and the Prime Minister's Office for Regional Administration and Local Government, including the development of a multi-ministerial Memorandum of Understanding outlining their respective roles and responsibilities.

Since 2004, the main donors in Tanzania's water sector have improved their coordination greatly, with the German development agencies KfW and GTZ playing leading roles alongside the World Bank; and AfDB, the Netherlands, and France supporting the resulting SWAp; this culminated in the development of a SWAp and the WSDP, the majority of the sector's major donors are either pooling funds in the sector basket funding mechanism or coordinating their funding closely with other donors while providing earmarked funds for particular projects or subsectors; this is a significant improvement since five years previously, when almost all donor finance for the sector was provided as project funding; there is an active Development Partner Group for Water, which acts as the main forum for coordinating donor activities (ibid).

### **2.2.2.3 Political**

As said by Taylor (2008) has explained that many of villages already have relatively good access to clean and safe water, but that fact doesn't carry much weight when decisions are made; available data on rural water points (hand pumps, standpipes, protected springs) in Tanzania suggests that only just over half (54%) are functioning; the system for keeping them functional has itself broken down, with much more attention given to the more exciting task of constructing new schemes than is given to keeping existing schemes working; unless the two

decision-making challenges of targeting new projects where they are most needed and keeping existing water points running can be solved, progress in rural water supply will continue to be slow.

In 2007, a national household survey found that only 40% of rural Tanzanian households had access to clean and safe water, down from 46% seven years earlier; even if funds are available without solving these two problems, access will not improve; unsurprisingly, when rural Tanzanian citizens are asked about their priorities, water supply regularly comes top of the list; the 2008 Afro barometer survey, found that water supply was rural citizens' top priority for government action, and water and sanitation services had lower satisfaction ratings than other key sectors (ibid).

In relation to ADB's evaluation (2010) sustainability of water projects is one of the weakest aspects of ADB's water sector lending; weaknesses contributing to poor sustainability include limited technical and financial sustainability, due mainly to limited operation and maintenance budget and cost recovery; water utilities can be constrained by the prevailing social and political environment, which limits politicians' willingness to allow economic tariffs to be set, while inadequate control and maintenance, and poor institutional arrangements prevent significant reduction in non revenue water.

ADB's evaluation (2010) further explains that for developing member countries, there is need for innovative and realistic business models, which recognize that water resources management is intensely political and requires the articulation of prioritized, sequenced, practical, and patient interventions; these interventions should support reformers and pay explicit attention during design and implementation to the political economy of reform.

As said by Rasheed (2011) political interference has been mentioned as one of the key challenges at the LGAs; Members of Parliament can play key role in either

addressing this problem or worsening it; since Members of Parliament play key role in LGA administration, their actions or inactions can have impact on the development of the local authority area in which their constituencies are located; the decentralisation process will be more effective if the Member of Parliament collaborate with LGAs to address the intractable challenges facing their respective LGAs.

World Bank Report (2015) highlights that at a local level, the allocation of resources to projects in specific rural communities within a district is intended to be based on a combination of need (as demonstrated by current levels of access) and demand (as demonstrated through the bottom up planning process); however, recent evidence suggests that in practice, allocations are targeted at wealthier, more politically connected, less remote and better-served communities; furthermore, though there is no systematic research available, there is widespread anecdotal evidence that investment allocations within urban areas are also targeted at wealthier communities.

#### **2.2.2.4 The Legal Frame Work for Management of Water in Tanzania**

In Tanzania, legislation governing water sector is divided into two systems, first is water resources and second is water supply and sanitation services. Every system has its own act as far as its operation is concern whereby for water resource has governed by the Water Resources Management Act (WRMA) No.11 of 2009 and for the other one has governed by the Water Supply and Sanitation Act No.12 of 2009 were enacted recently to repeal and replace Water Users Associations Cap 331 and Waterworks Act Cap 272, respectively (Kabudi, 2005). The two pieces of Water Legislation are implemented in parallel with other related pieces of legislation in the country, such as Environmental Management Act (EMA) No. 20 of 2004 and EWURA Act No.11 of 2001. The Water Resources Management Act (WRMA) No.11 of 2009 came into operation on 1st August 2009 vide GN. No. 235 published on 10th July 2009 (Kamugisha, 2010).

The objective of WRMA is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled to meet the basic human needs of present and future generations. The issues it addresses include: institutional and legal framework; principles for water resources management; prevention and control of water pollution; establishment of National Water Boards, management of catchments and sub-catchments; and offences and penalties in relation to water resources management. According to Kabudi (2005) introduced that WRMA was enacted as a result of the 2002 National Water Policy (NAWAPO), which emphasizes the principle of involvement of water user organizations and private sector so as to attain equitable, efficient and sustainable water resources management.

As per WRMA and NAWAPO (2002), every Tanzanian has a stake and duty to safeguard and protect water resources; the right to use water from any water source is vested with Minister for Water and the preference for water allocation is given in order of priority to domestic uses; environmental reserve; and socio economic activities depending on the availability of water.

### **2.2.3 Utility Project Performance**

In proportion to EWURA (2015) performance of utility project is considered to be an impact on service level that include an improved quality of water supply, availability and access of clean water, billing or pricing/metering and payment of the water bills.

According to EWURA report (2016) generally, there is a slight improvement in the overall performance of the water utilities, the report reveals major concern on eight key issues, which are inadequacy of water storage capacity, high Non Revenue Water, lack of sewerage systems in most of the Regional WSSAs, decrease of sewerage coverage and blockage of sewerage systems; other key

issues are high account receivable, decreasing collection efficiency, compliance to tariff conditions and payment of EWURA levy.

#### **2.2.3.1 Availability and access of clean Water**

Mutreja (1995) highlights that the world population is growing at an alarming rate, but the rainfall on land is more or less constant, to meet this increasing water needs man has therefore to find out ways and means of utilizing the water which runs off from the land to the fullest extent; it is a curious and surprising conclusion that the exploding population of mankind has its future delicately poised on the mere 36000 km<sup>3</sup> of water which returns to the sea as runoff; methods of assessing hydrology conditions and planning of water control and utilization projects that were satisfactory hitherto in the good old days would not be adequate to meet the present situation, thus in a world of decreasing choices, decisions must be more sharply drawn as cheap water is no longer abundant everywhere consequently projects for the control and use of water are now problems of national or even international concern.

To realize the gravity of the problem for the control and use of water, an idea of the available inland water resources in the world is very important; ninety-seven percent of the total water of about  $1400 * 10^{15} \text{ m}^3$  on the earth is contained in the oceans as saline water (Mutreja, 1995). The fresh water on the earth is distributed as per Table 2.12.



Table 2.12 Distribution of Water on Earth

<b>Location</b>	<b>Water Availability 9%)</b>
Polar ice and glacier	75.00 (approx.)
Sub-soil	24.00 (approx.)
Lakes	0.30
Soil moisture	0.06
Atmosphere	0.035
Rivers	0.03

Source: Mutreja (1995)

Mutreja (1995) further says that a distribution of area is as follows; total land area =  $136 * 10^6 \text{ km}^2$  total sea area  $374 * 10^6 \text{ km}^2$  precipitation on land area = 750 mm/year; evaporation from land area = 545 mm/year; precipitation on sea area = 870 mm/year; and evaporation from sea area = 940 mm/year.

UN (2013) reveals that water scarcity is among the main problems to be faced by many societies and the World in the XXIst century; water use has been growing at more than twice the rate of population increase in the last century, and, although there is no global water scarcity as such, an increasing number of regions are chronically short of water; the purpose of support to water supply and sanitary facilities goes beyond sustainable access: it is intended to reduce the burden of water collection (typically a task of women and girls); improve health; raise school enrolment and attendance; improve livelihoods and ultimately reduce poverty whereby first in the series is this evaluation of the Netherlands-supported rural programmes in Tanzania, Shinyanga Region. The experience built up in Shinyanga Region has served as a reference for the current national Water Sector Development Programme, rural water supply component.

Maghembe (2014) put to lights that Tanzania is endowed with numerous and diverse water resources in the form of rivers, lakes, groundwater aquifers, ponds reservoirs, and wetlands; the country is riparian to some of Africa's largest trans-

boundary freshwater lakes including Lake Victoria, Lake Tanganyika and Lake Nyasa; each of these water bodies exhibits unique characteristics and a complex range of water resources management and development issues and challenges.

With its numerous water bodies, Tanzania is perceived to have abundant surface and groundwater resources for meeting its present consumptive and non-consumptive needs; severe and widespread water shortage exist in many areas both because of climate variability, poor distribution of the resource in time and space, uncoordinated sectoral development plans, inadequate water security infrastructure, diminishing water resources, population growth coupled with increasing social-economic activities, catchment degradation, climate change and water use conflicts; Tanzania's annual renewable water resource is 89 cubic kilometers and the annual average of available water per capital was 2000 cubic meters in 2012; this amount is projected to reduce 30% to amount 1400 cubic meters per capital per year in 2015 as a result of depletion of water resources and increase of population (ibid)

The first and foremost requisite for the planning of water resources development is accurate data of stream flow, or in other words, the surface runoff for a considerable period of time so as to determine the extent and pattern of the available supply of water; the practical objective of hydrologic analyses is to determine the characteristics of the hydrograph that may be expected for a stream draining any particular watershed (Mutreja, 1995).

Generally, average service hours in regional water utilities is still low compared to the service level benchmark of 24 hours, however there is an annual improvement in the average service hours from 15.5 hours attained in FY 2013/2014 to 17.3 hours attained in FY 2015/2016; the number of water service connections has been increasing from 494,573 in FY 2013/2014 to 577,391 in FY 2015/2016 which equivalent to 14% increase; the increase in number of water

connections reflects the water utilities' efforts to increase water service coverage in their respective service areas (EWURA Report, 2016).

As said by EWURA report (2017) over the past three years, there has been a continuous increase in the total number of water connections for Regional WSSAs; the total number of water connections increased by 9% from 528,960 in FY 2014/15 to 577,391 in FY 2015/16 and thereafter increased by 25% to 722,320 in FY 2016/17; during the FY 2016/17, all Regional WSSAs increased their number of water connections; among them, 15 WSSAs increased their water connections by more than 10% of the previous year total connections as summarized in Table 2.13 below; the highest increase in number of water connections was recorded by Dar es Salaam (increased their connections by 68%, which includes 39,068 new water connections and 67,349 activated connections) the increase in the number of water connections reflects WSSAs' efforts in increasing water service coverage in their respective areas of operation.

**Table 2.13: Increase in Number of Water Connections**

<b>Regional WSSAs that increased their water connections by at least 10%.</b>	<b>Regional WSSAs that increased their water connections by LESS than 10%.</b>
Dar es Salaam (106,417) and Kahama (1,453),	Shinyanga (912)

Source: EWURA Report, 2017

Total number of water kiosks for Regional WSSAs increased from 2,536 in 2014/15 to 3,179 in 2016/17, which is equivalent to an increase by 25%. During the FY 2016/17, the number of water kiosks increased significantly (by more than 10%) in seven utilities including Dar es Salaam as detailed in Table 2.14 below.

**Table 2.14: Regional WSSAs with Significant Increase in No. of Kiosks**

Utility Name	Increase number of Water Kiosks	in Clarifications
Dar es Salaam	122	Most of the kiosks were installed in unsurveyed (squatter areas)

Source: EWURA, Report, 2017

Overall average staff per 1000 water and sewerage connections reached 4.5 in FY 2016/17 after continuous improvement from 5.7 and 5.3 in FY 2014/15 and 2015/16 respectively; this implies that, on average, Regional Water Utilities have attained and surpassed the service level benchmark of 5 staff per 1000 connections (EWURA Report, 2017).

During the FY 2016/17, for service level benchmark of 5 or less staff per 1000 water and sewerage connections Kahama, Dar es Salaam and Shinyanga retained or improved on the compliance attained in the previous FY 2015/16 (ibid).

In September 2015, the Ministry of Water and Irrigation (MOWI) reported that 7.9m people had gained access to safe water through 584,473 household connections and 5,836 kiosks and public taps; and 527,000 people were connected to the sewerage system (World Bank Report, 2017). MOWI also reported that 2.8m Dar es Salaam residents also achieved access to safe water supply through 152,000 domestic connections and 203 kiosks/public standpipes; while about 326,130 people were connected to the sewerage network (ibid).

#### **2.2.3.2 Non Revenue Water**

As stated by EWURA Report of 2016, the overall average Non-Revenue Water (NRW) was slightly reduced from 44.2% FY2013/ to FY 2015/2016, generally

the overall weighted Non-Revenue Water (%) it still high compared to the service level benchmark of at most 20%; for three consecutive years, Regional WSSAs have exhibited a slow pace in the reduction of NRW from 44.2% achieved in FY 2013/2014 to 453.1% attained in FY 2015; Kahama and Shinyanga WSSAs were able to achieve the service level benchmark for NRW with values of 13.3% and 16% respectively - both Kahama and Shinyanga WSSA's water production depend largely on bulk water purchase from KASHWASA.

DAWASA is faced with a problem of non revenue water which is currently recorded at 53% against the internationally recommended target of 20%; studies and remedial actions are taken to reduce physical and commercial losses; generally when compared to FY 2014/2015 there is an increase of WSSAs with reliable NRW values from 13 WSSAs to 14 WSSAs in FY 2015/2016; the reliability of NRW values is defined in terms of WSSA having all their customers connected with operating water meters and all water production points have operating bulk meters; Shinyanga and Kahama are among WSSAs with reliable NRW values (ibid).

For three consecutive years, the NRW for Kahama WSSA has been within the service level benchmark for NRW, it was 15.3%, 15% and 13.3% for FY 2013/2014, 2014/2015 and 2015/2016; meanwhile NRW for other three WSSAs including DAWASCO attained the highest decrease in water loss per km per day as compared to other Regional WSSAs (ibid).

As per EWURA report (2016) the overall good performers in NRW were obtained by analyzing good performers in NRW as percentage, NRW per km per day and NRW per connection per day; in terms of good and least performers, during FY 2015/2016, Shinyanga and Kahama were among three WSSAs good performers in NRW management, on the other hand, DAWASCO was among three WSSAs least performers in NRW management for FY 2015/2016; the results of NRW as reported and analyzed for the best and least performing utilities are summarized in Table 2.15 below:

**Tabel 2.15: Non Revenue Water Management Performance (2016)**

Good Performers				Least Performers			
Name	of NRW (%)	NRW (m <sup>3</sup> /km/day)	NRW (m <sup>3</sup> /connection/day)	Name	of NRW (%)	NRW (m <sup>3</sup> /loss/km/day)	NRW (m <sup>3</sup> /loss/connection/day)
Shinyanga	16	3.3	0.10	DAWASC	53.1	57.6	1.0
Kahama	13.3	2.8	0.11	O			

Source: EWURA Performance Report, 2016

In accordance with EWURA Report (2017) the service level benchmark for NRW as percentage of water production is 20%; for three consecutive years, Regional WSSAs have shown a slow pace in the reduction of NRW from 43.6% achieved in FY 2014/15 to 38.4% attained in FY 2016/17; in FY 2016/17, only Kahama WSSA was able to achieve the service level benchmark for NRW with a value of 12.8% because of having a relative new water supply network and focusing more on distribution network as they are purchasing bulk water from KASHWASA.

Number of WSSAs reporting reliable NRW values have decreased from 14 in FY 2015/16 to 13 in FY 2016/17; the reliability of NRW values is defined in terms of WSSA having all their customers connected with operating water meters and all water production points have operating bulk meters; WSSAs with reliable NRW values among others are Shinyanga and Kahama; NRW for Kahama WSSAs was 15%, 13.3% and 12.8% for FY 2014/15, 2015/16 and 2016/17 respectively while DAWASCO was among the least performing utilities in terms of having the highest NRW values of 46% in FY 2016/17 (ibid).

NRW has also been assessed in terms of the amount of water loss in a kilometer length of the pipe network in one day (m<sup>3</sup> /km/day); the indicator shows

deterioration of NRW /km/day value by regional WSSAs from 32.4m<sup>3</sup>/ km/day in FY 2014/15 to 30.6 m<sup>3</sup> /km/day in FY 2015/16 and thereafter decreased to 27.2 m<sup>3</sup> /km/day in FY 2016/17; generally, the indicator presents a fair comparison of water loss depending on the water produced and the size water supply network owned by WSSA; during FY 2016/17 the highest NRW per km per day was recorded by DAWASCO (54.0m<sup>3</sup>/km/day); also Shinyanga experienced high increase in water loss per km per day as compared to other regional WSSAs (EWURA Report, 2017).

NRW in Cubic Meter per Connection per Day is an indicator measures water loss per day in relation to the number of water connections; generally, water loss per connection per day decreased from 0.5 m<sup>3</sup> per connection per day reported in FY 2014/15 and FY 2015/16 to 0.4 m<sup>3</sup> per connection per day in FY 2016/17 (ibid). During FY 2016/17, the lowest amount of water loss per connection per day among Regional WSSAs was attained by Kahama WSSAs (0.19m<sup>3</sup> per connection per day) (ibid). Conversely, DAWASCO recorded the highest amount of water loss per connection per day among Regional WSSAs; the values recorded was 0.59m<sup>3</sup> per connection per day respectively; for three consecutive years, DAWASCO has been a water utility that recorded highest amount of daily water loss per connection among Regional WSSAs (ibid).

The overall good performers in NRW were obtained by analyzing good performers in NRW as percentage, NRW per km per day and NRW per connection per day. In terms of good and least performers, during FY 2016/17, Shinyanga and Kahama were among three WSSAs good performers in NRW management. On the other hand DAWASCO was among three the least performers in NRW management for FY 2016/17.

**Table 2.16: Non Revenue Water Management Performance (2017)**

Good Performer				Least Performer			
Name	of	NRW	NR	NRW	Name of	NRW	NRW
WSSA		(%)	W	(m3 /	WSSA	(%)	(m3
			(m3	connectio			loss/km
			/	n/day)			loss/
			km/d			/day)	connec
			ay)				tion/da
Kahama		12.8	4.8	0.09	DAWSCO	46.0	54.0
Shinyanga		20.1	4.4	0.12			0.6

Source: EWURA Report, 2017

### 2.2.3.3 Quality of Water

Some wastes discarded on the land are washed into streams, together with fertilizers, pesticides, lead and oil from automobiles, and many other industrial chemicals; these material can be a serious threat to the aquatic environment and to those who drink the water; hydrologic factors play a major role in determining the concentration, rate of movement, and final deposition of pollutants (Ray at el. 1988).

Mutreja (1995) is in view that in coastal areas there is a particular problem of contamination of fresh groundwater by the intrusion of salt water creating thereby serious water quality problems; since fresh water is lighter than salt water, the former forms a layer above the underlying salt water; however, this equilibrium gets disturbed when an aquifer is pumped because of salt water replacing the fresh water removed; under equilibrium conditions a drawdown of 1 m in fresh water



corresponds to a rise of about 40 m by salt water, thus wells subjected to salt-water intrusion have limited pumping rates.

UN (2012) has revealed that a total of 748 million people still do not have access to an improved drinking water source and existing indicators do not address the safety and reliability of water supplies; to reach the requirements of the right to access to safe drinking water requires real improvements for several billions of people; in July 2010, the General Assembly adopted a resolution, which “recognized the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights”; the MDG target for sanitation is an even more pressing challenge, with 2.5 billion people currently lacking access to improved sanitation and over one billion still practicing open defecation; at current rates of progress, the sanitation target will be missed by over half a billion people; these global aggregates also mask large disparities between nations and regions, rich and poor, between rural and urban populations, as well as between disadvantaged groups and the general population.

Ray et al. (1988) highlight that groundwater comes from aquifers whose waters have been in contact with the atmosphere as recently as a few hours ago or as long ago as a few centuries; the quality characteristics of groundwater are affected by the downward movement of water in recharge areas (percolation) and the lateral movement through aquifers (underflow); the water quality characteristics of water streams are determined by their inflows to the stream, the amount of turbulence, interactions between water and the channel rocks and soils, and interactions at the air-water interface; the stream channel serves as the meeting place of water from surface runoff, interflow, groundwater, and municipal and industrial discharges

.

According to National Water Sector Development Strategy (2008) of Tanzania, the main known surface water quality concerns in Tanzania are colour, turbidity, fluoride and bacterial contamination>High turbidity values of more than 500 NTU(17 times the Tanzania standard) are common in many surface sources

during the rainy season, particularly in the semi-arid regions. According to WWQM Guidelines (2014) there are two types of water and wastewater quality monitoring, namely Check monitoring and Audit Monitoring. Check monitoring regularly provides information as to whether the water quality complies with the relevant parametric values laid down in the latest Tanzania Standard (TZS 789:2008). Audit monitoring provides information necessary to determine whether or not all the parametric values specified in the latest Tanzania Standard (TZS 789:2008) are complied with.

Water quality laboratories are analyzing an average of 7,660 water samples annually from various water sources, water supply network systems, processing industries as well as meeting demand from construction and irrigation sectors; out of 6,615 water samples analyzed in the reporting period, 709 water samples equivalent to 10.7% did not comply with recommended standards for domestic use (Futakamba, 2016).

A total of 320 monitoring stations have been rehabilitated and new stations were constructed in all 9 basins for surface, groundwater and water quality monitoring; at present there are 410 monitoring stations that are generally fairly operational; operationalization of the stations has improved ability of the Basin Water Boards (BWB) to carry out their mandated tasks of ensuring sustainable water resources management and development; inspection of waste water discharge from mines and industries into water sources are regularly undertaken and water quality and pollution control points and sampling locations have been established (Sayi, 2014)

Water quality sampling and analysis programs are necessary to determine the suitability of water for domestic, industrial, and agricultural uses; data from carefully designed programs can provide understanding of the geochemical and hydrologic relationships in natural systems and the influence of human activities on these systems; samples must be truly representative of the water body, or portion of the water body, which they are intended to portray; successful

representation of the dissolved and suspended matter present in natural waters depends on prudent selection of sample sites, type and frequency of observations, and sampling equipment and procedures (Ray et al., 1988)

According to EWURA (2016) during the FY 2015/2016 all regional WSSAs conducted water quality test and submitted the test results to EWURA. The submitted results were analyzed to ascertain its compliance to TBS (TZS 789:2008). The overall compliance on the tested parameters was: 97% for pH, 97% for turbidity, 94% for E-Coli and 95% for the residual chlorine. During the same FY 2015/2016, EWURA conducted water quality monitoring to all regional WSSAs. A total of 324 samples were collected and analyzed for pH, Turbidity, E-Coli and Residual Chlorine. The monitoring findings revealed that, the overall compliance on the tested parameters was; 98% for turbidity, 88% for E-Coli and 57% for the residual chlorine.

Consistence with EWURA (2017) compliance to water quality requirements was analysed based on four parameters namely E-Coli, Turbidity, Residual Chlorine and pH. According to the EWURA Performance Benchmarking Guidelines for Water Utilities, 2014, the recommended average percentage compliance for the parameters is 98%. In this Section, compliance to water quality monitoring takes into consideration tests done by WSSAs and by EWURA in FY 2014/15 to FY 2016/17. Regulated Water Utilities are required to conduct water quality monitoring in accordance with EWURA, Water and Wastewater Quality Monitoring Guidelines for Utilities, 2014; the most commonly tested parameters are E-Coli, Turbidity, Residual Chlorine and pH. According to the EWURA Performance Benchmarking Guidelines for Water Utilities, 2014 the recommended average percentage compliance for the parameters is 98%.

Mutreja (1995) underlines that to develop the groundwater resource efficiently, care should be taken to maintain an equilibrium between withdrawals and replenishments; the economic, legal political, social and water quality aspects should be given due consideration, the groundwater potential can be assessed

properly by employing the water-budget equation which states that  $\sum I - \sum O = \Delta S$  where  $\sum I$  = total inflow,  $\sum O$  = total outflow and  $\Delta S$  = change in storage: the development of groundwater should be handled with great care because of the finite and exhaustible groundwater resources; in case aquifers are recharged to balance the withdrawals from a basin over a period of time, then there is no problem, otherwise excessive drafts can deplete groundwater supplies to a point where economic development is not feasible; the mining of water will ultimately lead to the complete depletion of the entire supply.

Maghembe (2014) highlights that water quality in Tanzania varies significantly to the vicinity of urban areas water sources are contaminated due to effluents from domestic and industrial wastes and storm water; the quality of groundwater is generally good acceptable for most uses, the main problems are salinity and high fluoride concentrations that may exceed 14mg/l in Pangani Basin.

As said in EWURA Report of 2017 during the FY 2016/17 all Regional WSSAs conducted water quality test and submitted the test results to EWURA; the submitted results were analyzed and ascertain its compliance to TBS (TZS 789:2008); the overall compliance on the tested parameters were; 87% for pH and turbidity, 76% for E-Coli and 85% for the residual chlorine: during the FY 2016/2017, EWURA conducted water quality monitoring to all Regional WSSAs; 343 samples were collected and analyzed for pH, Turbidity, E-Coli and Residual Chlorine; the monitoring findings revealed that, the overall compliance on the tested parameters were 83% for pH, 97% for turbidity, 88% for E-Coli and 43% for the residual chlorine.

#### **2.2.3.4 Rural Water Supply**

As said by Sayi (2014) in February 2014, implementation records indicated the achievement of 28,246 water points, corresponding to an additional 7.1 million people served; by end of June 2014, however, the new targets had even been

surpassed, when a total additional number of 32,846 water points had been achieved benefitting an additional 8.2 million rural people; the cumulative achievement in rural water supply programme by 30 June 2014 is a total of 77,584 functioning water points (including the 2007 baseline number). These water points are now serving a total of 19,396,000 people in rural areas of Tanzania Mainland, equivalent to 51% of the rural population.

During WSDP I, about USD 363 million has been invested into the rural water supply and this has benefitted some 8.2 million additional rural people, this indicates a per capital investment of about USD 44 per beneficiary, which is considered quite appropriate for the service levels provided; the number of water points (WPs) was increased during WSDP I through two major sub-programmes of the Rural Water Supply component: (a) the Quick-Win projects (2007-2013), and (b) the 10-Village Schemes (2012-ongoing); as for the currently still ongoing 10-village scheme programme, 166 LGAs are engaged in implementing these projects so far (ibid).

Under the Initial Quick-Win programme of Component 2, the number of functional water points was increased by about 16,910, augmenting the baseline from 44,738 to a cumulative total of 61,648 water points by June 2013; out of a total of 1,388 planned 10-Village Scheme projects which should serve people in 1,555 villages in all LGAs, by end 2013 only 253 projects had been completed serving just 280 villages (18%); however, by then a next batch of 390 projects in 414 villages had reached advanced stages of progress and completion by the BRN initiative. By July 2014, the number of water points had been further increased with 16,784 additional WPs in about 694 village schemes (ibid).

Futakamba (2016) states that in its efforts to increase provision of water supply coverage in rural areas for the FY 2015/2016, a number of 16,520 water points were planned to be constructed to benefit 4,130,000 people; the achievement by June 2016 was 6,892 water points constructed and 1,295,000 people are benefiting; the low achievement in terms of water points and beneficiaries of FY

2015/2016 was caused by inadequate funds in Quarter I and II of FY 2015/2016 resulting to contractors and consultants to abandon projects due to delays in payments of their raised certificates (ibid). The funding challenges of the service providers prevented them to supply materials on time since they depend on funds from central Government; in February 2016 (Quarter III), funding availability improved and payment were made but contractors took time to mobilize resources to resume with project implementation.

In June 2007 (before WSDP started), the baseline data for water points was 44,738 benefiting 11,607,822 people; the total cumulative achievement is 95,733 water points, serving 22,792,322 people in rural areas of Tanzania Mainland, equivalent to 72% of the 31,623,999 people of rural population, according to 2012 Population and Household Census. The total number of implemented projects up to June, 2016 is 1,210 out of 1,810 projects that were planned to be implemented for provision of water supply services. A total of 374 projects in are at different stages of implementation in the FY 2016/2017 (ibid). There are various reasons which culminated into this drawback, and they can be summarized into financial, procurement, technical and social aspects (ibid).

#### **2.2.3.5 Urban Water Supply**

In line with Futakamba (2016) the aims at strengthening Urban Water Supply and Sanitation Authorities (WSSAs) through improvements in demand forecasting, water sources assessment and planning, control over non-revenue water quality management, network analysis, billing systems, control over operating costs and aging arrears, and the acquisition of investment funding from various sources; there are 130 Regional and Districts which categorized in category A, B and C according to financial capability, currently, there are 15 registered WSSAs in category “A”, they include DAWASA and Kahama District Utility.

Futakamba (2016) further says that in Dar es Salaam City, there are interventions which have been commissioned by Government to provide reliable water services

to be the growing population in the DAWASA/DAWASCO service area; these interventions include construction of transmission main and rehabilitation and expansion of systems, the program planned to increase water production capacity from 300 million litres per day to 756 million litres per day; current demand in Dar es Salaam city is 510 million litres per day; given the construction, rehabilitation and expansion efforts supported by WSDP, which has resulted in 1,383,610 additional people who are making a total of 2,201,625 people served with safe and clean water; there are currently 143,495 water supply domestic connections and 246 kiosks in sub urban areas of Dar es Salaam.

Futakamba (2011) highlights that the overall objective of the Urban Water Supply and Sewerage Component is to improve service provision in a) the DAWASA service area that includes Dar es Salaam, Kibaha, Bagamoyo and some parts of Mkuranga, b) WSSAs that comprise 23 regional headquarters c) 104 District Headquarters and small towns, and d) areas serviced by 8 National Projects; a total of 115 utilities are licensed which include all 23 Regional town utilities which have acquired permanent licenses, and both DAWASA and DAWASCO have a license issued by EWURA. By September 2014, 82 District and Small Towns utilities and the 8 National Projects possess licenses, while several more applications are still under scrutiny.

Since the start of the program in 2007, DAWASCO has been involved in improving service delivery, and as a result an additional 976,770 people in urban areas serviced by DAWASA (which include Kibaha, Bagamoyo, and Dar es Salaam City) have been provided with access to safe and clean water supply through additional 63,918 domestic connections and 90 additional kiosks. There are currently 116,919 water supply connections and 205 kiosks in sub urban areas of Dar es Salaam (data source: Majlis, being verified by EWURA) (ibid).

During WSDP I, about USD 622 million has been invested in to the urban water supply and sanitation Component 3, which also covered various accompanying capacity development activities and project implementation support measures.

The urban Component 3 has benefitted some 2.86 million people, who were provided with water. This gives a per capita investment of about USD 217 per beneficiary, which is a fair investment level for the offered service levels; water services coverage in terms of the proportion of population directly served with water has improved from 57% in FY 2013/2014 to 64% in FY 2015/2016, furthermore over the same period the proportion of population living in the area with water network has increased from 70% to 75%, which indicates that there is still a potential to connect more customers to the water network in order to increase direct access to water supply network (EWURA Report, 2016).

Total amount of water produced by Regional WSSAs has been increasing annually, total water production increased from 234.50 million m<sup>3</sup> in 2014/2015 to 248.50 million m<sup>3</sup> in 2015/2016; generally, the overall increase in water production was due to completion of projects that were financed under WSDP; during 2015/2016 DAWASCO reported 29% increase in their installed water production capacity due to augmentation of Lower Ruvu Water treatment plant and pumping station from 180 m<sup>3</sup>/day to 270 m<sup>3</sup>/day (EWURA, 2016).

As per Futakamba (2016) The component implemented water supply improvement projects in various district towns, small towns and areas serviced by National Projects; currently, 2,281,800 people in these towns have access to water through 130,480 house connections and 3,908 kiosks; moreover, projects implementation is going on in various district towns to improve water supply and sanitation services.

Along with EWURA (2016) during FY 2015/2016, all regional WSSAs increased their number of water connections. Among them, 13 WSSAs increased their water connections by more than 1,000 connections as summarized in Table 2.17 below; the highest increase in number of water connections was recorded by DAWASCO (increased by 13,099 connections), the increase in the number of



water connections reflects WSSAs' efforts in increasing water service coverage in their respective areas of operation.

**Table 2.17: Increase in Number of Water Connections**

<b>Regional WSSAs that increased their water connections by more than 1,000</b>	<b>Regional WSSAs that increased their water connections by less than 1,000</b>
DAWASCO and Kahama	Shinyanga

Source: EWURA Report, 2016

EWURA (2016) states that total number of water kiosks for regional WSSAs increased from 2,342 in 2013/2014 to 2,744 in 2015/2016; the number of water kiosks increased significantly in the utilities of DAWASCO as detailed in Table 2.18 below;

**Table 2.18: Increased in Number of Water Kiosks**

<b>Utility Name</b>	<b>Increase in Number of Water Kiosks</b>	<b>Clarification</b>
DAWASCO	26	These new public standpoints were established by DAWASCO in an effort to increase service coverage

Source: EWURA Report, 2016

EWURA (2017) explains that regional WSSAs were ranked in accordance with the EWURA Performance Benchmarking Guidelines for Water Supply Sanitation Authorities (2014); based on the overall ranking criteria, DAWASCO was the least performer; under the category of utility ranking, which measures WSSAs' efforts to attain performance targets, Shinyanga WSSA was the best performer under the category of utility ranking in water services; under the category of

utility ranking in sewerage services DAWASCO was the least too; the performance of two Regional WSSAs (8%) can be interpreted as excellent, 13 Regional WSSAs (52%) as very good, five Regional WSSAs (20%) as good, four Regional WSSAs (16%) as fair while the remaining one Regional WSSA (4%) had unsatisfactory performance. A comparison of the overall performance of Regional WSSAs from 2014/15 to 2016/17 is illustrated in the Table 2.19 below.

**Table 2.19: Performance Ranking for Regional WSSAs**

<b>Financial Year</b>	<b>2014/2015</b>	<b>2015/2016</b>	<b>2016/2017</b>
Number of Utilities Analyzed	25	25	25
<b>Overall Performance:</b>			
Excellent	4%	45	8%
Very Good	44%	56%	52%
Good	28%	20%	20%
Fair	12%	4%	16
Unsatisfactory	12%	16%	4%

Source: EWURA Report, 2017

EWURA (2017) demonstrates that during FY 2016/17 DAWASCO and Kahama WSSAs had registered high number of connections per kilometer of more than 50, indicating a congested network; the effectiveness and efficiency in revenue collection of WSSAs is explained by analyzing three indicators, namely collection efficiency, accounts receivable turnover, and Overall Efficiency Indicator (OEI); collection efficiency measures the ability of WSSAs to collect the billed amount from water supply and sewerage services during a year; a higher collection efficiency reflects a better performance; in FY 2016/17, regional WSSAs' collection efficiency averaged at 90.0%, which is an improvement from 86.6%, achieved in FY 2015/16.

Shinyanga and Kahama WSSAs reported collection efficiencies of more than 95.0% however the billing software of most utilities cannot separate current year collection and collection from arrears resulting in high collection efficiencies for some of the utilities such as Shinyanga WSSAs; out of 25 Regional WSSAs, only three WSSAs including DAWASCO and Shinyanga WSSAs have software capable of separating arrears from current bill collection using their billing software (ibid).

Accounts receivable turnover indicates the extent of time it takes a utility to collect its average receivables; effective management of accounts receivables is assessed by analyzing the months that water and sewerage billings are outstanding; the best practice is for a utility to have an accounts receivable turnover equivalent to a maximum of two months billing; on average, accounts receivable's turnover slightly improved from 4.3 months in FY 2015/16 to 4.1 months in FY 2016/17 (ibid).

For an efficient utility, best practices require EOI to be above 76%; during FY 2016/17, the OEI for utilities ranged between 42.5% and 84.6% (ibid). On average, in FY 2016/17, the EOI improved to 59.5% compared to 57.3% registered in FY 2015/16; Kahama WSSA (84.6%) and Shinyanga WSSA (79.9%) were among five overall efficient utilities in FY 2016/17 whereas DAWASCO was the least overall efficient utility with an overall efficiency indicator of 42.5% (ibid).

The low overall efficiency performance of DAWASCO is mainly due to a relatively low collection efficiency which declined from 85.0% in FY 2015/16 to 78.6% in FY 2016/17 coupled with a relatively high NRW despite its improvement from 53.1% in FY 2015/16 to 46.0% in FY 2016/17 (ibid). There was an improvement for Kahama, Shinyanga and DAWASCO WSSAs compared to the achievement in FY 2015/16; unless the billed amount is collected, WSSAs will find difficult to become financially stable; a stable and an improved cash

flow from water and sewerage services is vital for each utility's sustainability in service delivery (ibid). In FY 2016/17, total revenue collections increased by 16.3% to TZS 205.7 billion from TZS 176.9 billion registered in 2015/16. Figure 30 presents WSSAs' performance in revenue collection from FY 2014/15 to FY 2016/17 (ibid).

DAWASCO continued to register the highest revenue collection in FY 2016/17 collecting about TZS 73.6 billion; the revenue collected has a direct relationship with the customer base, the applicable tariff and the revenue collection efficiency. The total costs per unit of water produced considers total operating costs exclusive of depreciation; in FY 2016/17, on average, the total costs per unit of water produced increased to TZS 845.50 per cubic metre from TZS 782.20 per cubic metre reported in FY 2015/16. Given, an average tariff in use of TZS 1,097.20 per cubic metre during 2016/17, this implies that most of the regional WSSAs were able to cover at least O&M costs excluding depreciation (ibid).

In FY 2016/17, the WSSAs that reported the lower costs per unit of water production included Kahama (TZS 1,230.7) and Shinyanga (TZS 1,080.5); total costs per unit of water produced increased during FY 2016/17 compared to FY 2015/16 for DAWASCO; energy cost per unit of water produced considers both electricity cost for production and distribution; the amount of energy costs is largely determined by the technology of the water supply system used including the type of water sources utilized, and method of abstraction, production and distribution; moreover, energy costs per unit of water produced is largely influenced by the design, installations and the level of efficiency of the pumping infrastructure (ibid).

Utilities with consistently high energy costs per unit of water produced are those which depend solely on the pumping scheme; in FY 2016/17, the energy costs for utilities ranged from TZS 4.8 to TZS 606.7 per cubic metre. In FY 2016/17, except for DAWASCO and other eleven WSSAs, the energy cost for most

utilities was less than TZS 100 per cubic metre (ibid). The overall average energy costs for all utilities stood at TZS 142.8 per cubic metre of water produced increasing from TZS 120.2 per cubic metre recorded in FY 2015/16 (ibid).

Both Working and Operating Ratios measure the ability of WSSAs to recover their operational cost from their annual revenues; the recommended ratio should be less than 1; on average in FY 2016/17, Working Ratio was 1.02 which is a slight decline in performance compared to 0.97 registered in FY 2015/16 (ibid). In FY 2016/17, on average, the operating ratio deteriorated to 1.26 from 1.20 recorded in FY 2015/16; in FY 2016/17 DAWASCO was among the WSSAs with the Operating Ratio of less than or equal to one; on the other hand, in FY 2016/17 Shinyanga and DAWASCO WSSAs managed to reduce their operating ratios compared to the levels achieved during FY 2015/16 (ibid).

EWURA Report (2017) highlights that Shinyanga WSSA was the best performer under the category of utility while under the category of utility ranking in sewerage services DAWASCO was the least (ibid).

#### **2.2.3.6 Service Hours**

EWURA Report (2016) provides details that overall average service hours for regional WSSAs improved from an average of 15.5 hours in FY 2013/2014 to 17 hours in FY 2015/2016. However, the proportion of population with 24 hours of service decreased from 42.8 in FY 2014/2015 to 69.6% in FY 2015/2016. During FY 2015/2016, the eleven WSSAs including Kahama and Shinyanga reported an availability of water services to their customers for more than 20 hours per day; Utilities with significant increase in service hours are shown in Table 2.20 and Utilities with significant decrease in service hours are described in Table 2.21.

**Table 2.20: Regional WSSAs with Significant Increase in Service Hours**

Utility Name	Increase in average service hours	Reasons
DAWASCO	6.0	Increased water production

Source: EWURA, 2016

**Table 2.21: Regional WSSAs with Significant Decrease in Service Hours**

Utility Name	Decrease in average service hours	Reasons
Shinyanga	2.0	Due to major interruption of water supply caused by breakdown of the transmission mains

Source: EWURA Report, 2016

EWURA Report (2017) illustrates that an average service hours in Regional WSSAs is still low compared to the service level benchmark of 24 hours per day; overall average service hours for Regional WSSAs remained at an average of 17 hours during the FY 2016/17, which is similar to service hours reported in FY 2015/2016.

### **2.2.3.7 Water Tariffs**

EWURA Report (2016) underscores that the service level benchmark for water customer metering is 100%, metering ratio for Regional WSSAs declined from 96% in FY 2013/2014 to 95% in F/Y 2014/2015 and thereafter increased to 99% in FY 2015/2016, the overall attained level of customer metering ratio is good. In addition EWURA Report ( 2017) highlights that there has been a continuous annual increase in overall average tariffs for Regional WSSAs; average water

tariff increased from TZS 833/m<sup>3</sup> in FY 2014/15 to TZS 1,097/m<sup>3</sup> in FY 2016/17; thus improving revenue base of most WSSAs. There has been a continuous annual increase in overall average tariffs for Regional WSSAs; average water tariff increased from TZS 747.5/ m<sup>3</sup> FY 2013/2014 to TZS 977.2/ m<sup>3</sup> in FY 2015/2016; thus improving revenue base of most WSSAs (EWURA Report, 2016).

Furthermore EWURA Report (2017) establishes that there has been a continuous increase in revenue collection from water supply and sewerage services over the past three years, for regional WSSAs, revenue collection increased from TZS 120.94 billion in FY 2013/2014 to TZS 176.87 billion in FY 2015/2016 which is equivalent to a 46.2% increase. There has been a continuous increase in revenue collection from water supply and sewerage services over the past three years; for Regional WSSAs, revenue collection increased from TZS 132.75 billion in FY 2014/15 to TZS 205.74 billion in FY 2016/17 which is equivalent to a 55% increase.

**Table 2.22 Current Water Tariff in some of East African countries**

Country	Type of Service	Current Tariff (in USD)	Source
Kenya	Urban Supply	Water USD 0.6/m <sup>3</sup>	<a href="https://en.wikipedia.org/water supply and sanitation in Kenya">https://en.wikipedia.org/water supply and sanitation in Kenya</a>
Rwanda	Urban Supply	Water USD 0.44/ m <sup>3</sup>	<a href="https://en.wikipedia.org/water supply and sanitation in Rwanda">https://en.wikipedia.org/water supply and sanitation in Rwanda</a>
Uganda	Urban Supply	Water USD 0.64/ m <sup>3</sup>	<a href="https://en.wikipedia.org/water supply and sanitation in Uganda">https://en.wikipedia.org/water supply and sanitation in Uganda</a>

Uganda	Rural Supply pipes)	Water (stand	USD 0.42/ m <sup>3</sup>	<a href="https://en.wikipedia.org/water">https://en.wikipedia.org/water</a> supply and sanitation in Uganda
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
### 2.2.3.8 Sustainability

UN (2012) draws attention that water is at the core of sustainable development and is critical for socio-economic development, healthy ecosystems and for human survival itself. It is vital for reducing the global burden of disease and improving the health, welfare and productivity of populations. It is central to the production and preservation of a host of benefits and services for people, it is also at the heart of adaptation to climate change, serving as the crucial link between the climate system, human society and the environment (ibid). It is a finite and irreplaceable resource that is fundamental to human well-being; it is only renewable if well managed; today, more than 1.7 billion people live in river basins where depletion through use exceeds natural recharge, a trend that will see two-thirds of the world's population living in water-stressed countries by 2025; this can pose a serious challenge to sustainable development but if managed efficiently and equitably, water can play a key enabling role in strengthening the resilience of social, economic and environmental systems in the light of rapid and unpredictable changes.

UN-Water's overarching goal is "Securing Sustainable Water for All" (UN, 2012). The water goal and targets directly address the development aims of societies, promote human dignity and amongst ensure achievements are sustainable over the long term leading to the following development outcomes shown in figure 2.2.below:



Figure 2.2: UN Water Goals

Health people Increased prosperity Equitable societies Protected ecosystems Resilient communities		Through		<ul style="list-style-type: none"><li>• Universal access to safe drinking water, sanitation and hygiene, improving water quality and raising service standards</li><li>• The sustainable use and development of water resources, increasing and sharing the available resources</li><li>• Robust and effective water governance with more effective institutions and administration systems</li><li>• Improved water quality and waste water management taking account of environment limits</li><li>• Reduced risk of water related disasters to protect risk of water related disaster to protect vulnerable groups and minimize economic losses</li></ul>
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Source: UN, 2012

ADB (2010) explains that several factors contribute to sustainability include the following: adequate institutional capacity to operate and maintain project facilities or programs; adequate cost recovery for services; community ownership through participation; and sound management of critical ecological inputs; in the water sector, management of ecological inputs calls for integrated water resources management including effective water allocation mechanisms.

As stated by Futakamba (2016) sustainability of rural water supply schemes remains a significant challenge; most of the completed water supply schemes are motorized; some are serving multiple villages and in some places appropriate arrangements to operate the schemes are lacking; to address that challenge, the Sustainability Strategy has been prepared, the plan was to have 6,408 villages with established CAWSOs by June 2015. However, only 1,752 villages had established COWSOs by June 2015, this low achievement is due to lack of funds from Central Government allocated to LGAs for undertaking processes on formation and registration COWSOs beyond project villages; other notable weaknesses include LGAs not setting aside funds for supporting communities O&M activities from own sources, inadequate monitoring of COWSOs management progress and inadequate training COWSOs leadership.

As per Maghembe (2014) the prevailing situation of declining access to clean and safe water in rural areas is a major challenge facing sustainability of rural water supply service; nationwide, it is estimated that about 37,000 water points built over the last 20 years, out of which more than 40% are not functioning; the non functioning water points are sufficient to serve about more than 5.3 million people in the rural areas; the reasons behind are poor management of funds at community level; inadequate technical oversight and support; inappropriate institutional set up regarding O & M; lack of sustainable supply chains for spare parts; choice of

technology with respect to affordable and sustainable water source; and lack of O & M programs in the designs of rural water supply projects.

Futakamba (2016) states that the sustainability strategy document has been prepared and approved by MoWI Management and the dissemination process is ongoing; to facilitate the process of implementing sustainability strategy, a draft roll-out plan has been prepared and its operationalization started since January, 2016; the draft Trainers' Manual for Community Owned Water Supply Organizations and guidelines to Registrars and COWSOs leaders has been prepared and shared with Registrars, COWSOs leaders and Assistant Administrative Secretaries for water in all regions.

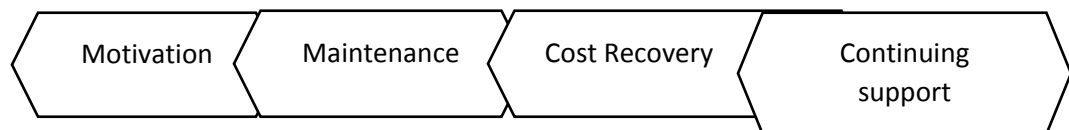
Key strategic interventions in the sustainability strategy are already incorporated in the work plan for FY 2016/2017 as follow: full rolling out of NRWSS; review COWSO formation, registration and operation guidelines and fast tract formation and registration of COWSOs; review tariff setting and application guidelines and rolling out mechanism, modalities to improve collection of revenue to cover O&M cost; adoption and scaling up of management for supporting COWSOs; preparation of COWSO database for reporting and performance monitoring; fine-tune trainers manual for COWSO support services and conduct one round training to all COWSOs; recruitment of extension workers at ward level; and facilitate each LGA to mobilize COWSOs to have offices and adequate working equipment by using local resources (ibid).

Safe and clean drinking water supply is sustainable only if, the water consumed is not overexploited but naturally replenished, facilities maintained in a condition that ensures reliable and adequate portable water supply; the benefits for the water supply should continue to be realized over a prolonged period of time (Brikke, 1995).

Sustainability pertains to multiple aspects of a rural water supply, with institutional, social, technical, environmental and financial dimensions (Water Engineering and Development Centre - WEDC, 1998). This accounts for the fact that understanding and measuring sustainability is so difficult, and why solutions are highly context specific. Sustainable rural water supplies ensure the ongoing provision of a service that is fundamental to improving health, reducing the burden of carrying water long distances, and enabling users to live a life of dignity (Haysom, 2008).

Therefore, in this context, sustainability is best defined pragmatically as “whether or not something continues to work overtime” (Abraham, 1998).

**Figure 2.2: Sustainability Model**



Source: Adapted from Carter et al., (1999)

According to Carter *et al* (1999) to achieve sustainability for rural water supply and sanitation services four things are needed as depicted in Figure 2.1 above; these are motivation, maintenance, cost recovery and continuing support. According to these authors, a motivated community is the one that needs the service more and therefore considers the scheme as its own property. As a result, schemes constructed by community motivation are likely to be sustainable.

Effective Operation and Maintenance is essential for sustainability and village level Operation and Maintenance is one of the ways through which sustainability can be achieved. In cases of scarce government resources, the money collected from cost recovery can be used for capacity building such as sanitation education and village level maintenance training which can play great role in sustaining the

water services in the area. Services can't be always managed by the community alone. For example, at times where village level maintenance trainees are lost from the community new training should be given to the trainees. Village level rural operation and maintenance has limited success if ongoing support is not provided.

Water supply development projects need to extend their scope beyond simply the provision of sustainable water supply infrastructure. The greatest beneficial on the health of the local population is derived from an integrated multidisciplinary approach that works in close collaboration with the local population (Gleitsmann *et al*, 2005). Demand-driven approaches are effective since communities are capable of making decisions, maintaining services, and making their contributions to capital costs, operations and maintenance. In addition, a strong and well-structured information campaign is necessary to empower communities to make an informed choice (UNESCO- WWAP, 2003).

As a word of Livingstone *et al.* (1993) that poor program conceptualization, unimaginative planning, use of inappropriate technologies, and rigid management approaches had contributed to high rates of program failure. Implementation approaches which resulted in non-sustainability of water supply projects should be identified so that they would not be repeated in the future. At the same time implementation approaches, which resulted in sustainability of water supply projects should be identified so that they can be used as a base for future project implementations.

The chances of achieving the Millennium Development Goals by halving the proportion of people without access to safe water by 2015 will be seriously hampered unless levels of sustainability can be greatly improved, (Haysom, 2008). Therefore, it is necessary to follow approaches which can lead to the sustainability of rural water supply and sanitation through full community participation.

Based on Thomas, (2003) the study of water resources is a fascinating, but too often frustrating, process. It is fascinating because involves a wide range of disciplines such as mathematics, science, geography, geology, biology, political science, meteorology, and even psychology. Water resources management includes the construction of physical features, such as dams and other storage projects, to conserve water during wet period for later use. It can take the form of cooperative legal agreements, negotiated over many years, between neighbours, states, or countries to share scarce water resources. Water management even involves volunteer community groups the inventory a watershed to protect a local drinking water supply

Over a billion people in the world lack access to safe water supply. The operational mistakes of the 1960s and 1970s have now long been recognized and there has been a significant paradigm shift which puts more responsibility for implementing, managing and paying for their water supply in the hands of communities. The belief is that by instilling a sense of ownership, promoting participation and sharing costs, the water supply services will be sustainable. Hard evidence to support the success of this new paradigm on a large scale is difficult to find. There are numerous small-scale models of successful sustainable community managed water supply projects, but most remain models, and are not scaled up. Two huge challenges now confront the sector.

The first is ensuring community projects are sustainable and that adequate institutional arrangements are put in place to support community participation in the long term. The second is finding ways to increase coverage from the current islands of success to larger areas, reaching entire populations. The reason these challenges are so large, is because experience has shown that it is precisely the things that make a project more sustainable that also make it more difficult to scale up.

### **2.2.3.9 Economic Development**

As per UN-Water (2014) water has always played a central role in human societies, it is a key driver of sustainable growth and poverty alleviation as an input to almost all production, in agriculture, industry, energy, transport, by healthy people in healthy ecosystems; it can be a force for destruction, catastrophically through drought, flood, landslides and epidemic, as well as progressively through erosion, inundation, desertification, contamination and disease; it is quite literally a source of life and prosperity and a cause of death and devastation.

This destructive aspect of water, as a consequence of its extraordinary power, mobility, indispensability and unpredictability, is arguably unique (Irrigation and Water Resources Ministers, 2005). Apart from that UN report water as fundamental to the three dimensions of sustainable development, including social needs, economic development and environmental limits, and a cross-cutting driver. Moving from a sectoral approach towards a holistic one, which captures interconnections between food, energy, health, trade, the environment and water is necessary (UN-Water, 2014).

## **2.3 Empirical Literature Review**

According to Kelly (2009) hundreds of millions of dollars have been wasted on clean water projects in rural Africa; up to US\$360m has been spent on building boreholes and wells that then become useless because they are not maintained or fixed when they break down, as a result, 50,000 water supply points are not functioning across rural Africa; only one third of water points built by NGOs in Senegal's Kaolack region are working and 58% of water points in northern Ghana

are in disrepair; water points are often built by donors, governments and NGOs without fully consulting local people and finding out just how much it will cost to keep the boreholes clean and functioning over a sustained period of time.

The Millennium Development Goals (MDGs), agreed in 2000, aim to halve the proportion of people without sustainable access to safe drinking water and basic sanitation between 1990 and 2015 (UN, 2012). Agriculture is by far the thirstiest consumer of water globally, accounting for 70% of water withdrawals worldwide, although this figure varies considerably across countries; industry and energy together account for 20% of water demand, more-developed countries have a much larger proportion of freshwater withdrawals for industry than less-developed countries, where agriculture dominates; domestic sector accounts for 10% of total water use; and yet, worldwide, an estimated 748 million people remain without access to an improved source of water and 2.5 billion remain without access to improved sanitation (ibid).

Over 1.7 billion people are currently living in river basins where water use exceeds recharge, leading to the desiccation of rivers, depletion of groundwater and the degradation of ecosystems and the services they provide (ibid). As countries develop and populations grow, global water demand (in terms of withdrawals) is projected to increase by 55% by 2050; already by 2025, two thirds of the world's population could be living in water-stressed countries if current consumption patterns continue (ibid). The economic loss from the inadequate delivery of water and sanitation was estimated to amount to 1.5 % of gross domestic product of the countries included in a WHO study on meeting the MDGs; according to some estimates, over 80% of wastewater is discharged without treatment (ibid).

UN (2013) highlights the following: around 700 million people in 43 countries suffer today from water scarcity; by 2025 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world's



population could be living under water stressed conditions. Also with the existing climate change scenario, almost half the world's population will be living in areas of high water stress by 2030, including between 75 million and 250 million people in Africa (ibid). In addition, water scarcity in some arid and semi-arid places will displace between 24 million and 700 million people; Sub-Saharan Africa has the largest number of water-stressed countries of any region (ibid).

Water scarcity is both a natural and a human-made phenomenon; there is enough freshwater on the planet for seven billion people but it is distributed unevenly and too much of it is wasted, polluted and unsustainably managed; water scarcity already affects every continent; around 1.2 billion people, or almost one-fifth of the world's population, live in areas of physical scarcity, and 500 million people are approaching this situation; another 1.6 billion people, or almost one quarter of the world's population, face economic water shortage - where countries lack the necessary infrastructure to take water from rivers and aquifers (ibid).

As said by Mohamed et al. (2017) water mains rehabilitation projects' budget allocation is considered the most important challenge that faces the engineers and the decision maker in governments and municipalities, especially when it is limited; the study presents a methodology for water mains rehabilitation projects' budget allocation; the proposed methodology consists of two models: the grade classification model; and the project ranking model; the grade classification model uses significant sustainability development criteria such as: economic; social; and environmental criteria, the main function of the grade classification model is to classify the projects into five grade level (lowest, low, medium, high, and very high), whereas, the main function of the project ranking model is to rank the projects at the same level in descending order according to their weighted scoring value; a factor's numerical grade scales have been established to adjust the factor's scoring in the project ranking model; Simos' procedure is integrated with the scoring factors model to develop the grade classification model.

In relation to World Bank Report (2017) community water schemes constructed in Sri Lanka are generally reliable, but there are some challenges; at completion of the project, the household survey, based on a small sample of 100 subprojects, indicated that about 46 percent of the schemes provided continuous water supply, and 78 percent of households received piped water every day. Seven years after project closing, none of the Community-Based Organisation (CBO) visited by the Project Performance Assessment Report (PPAR) mission provided a 24-hour supply; for example, CBOs in Werapitiya and Serunuwara provide water for a prearranged number of hours per day, while Pallekotuwa supplies water only once in two days, and it was reported that four households had disconnected due to unreliable supply and frequent failures in the water supply scheme, however CBO leadership reports that scheduling supply helps to ensure equitable distribution when water is limited (ibid). Other reasons for scheduling include the manpower needed to operate the pumps, the cost of electricity, and the need to prevent wastage due to overflows; in general, households are aware of the supply schedule and have water storage facilities to hold sufficient water for use until the next scheduled (ibid).

Lack of continuity in M&E and its utilization by an implementing agency beyond project completion undermines sustainability of development outcomes, in this project, the monitoring function for rural water schemes weakened after project completion (ibid). Currently, the Rural Water Supply Division of the NWSDB maintains a rural water schemes database, however, there is no clear evidence that this data is shared with relevant institutions or used to identify and prioritize critical support needs for CBOs managing water supply schemes (ibid). Technical soundness of initial design and quality of construction affect performance of CBOs; in this project, poor CBO performance in sampled cases could be traced to poor technical design, resulting from several factors which include the following: insufficient time and resources spent on identifying a suitable water source; lack of local knowledge or capacity of consulting firms;

and insufficient oversight by technical experts such as NWSDB staff (ibid). These factors often led to water source depletion, water quality problems and frequent repair needs (ibid).

Strong and consistent institutional and technical support is needed to achieve sustainable service delivery in CBO schemes, in this project, CBOs were expected to be fully in charge of construction and management of rural water supply schemes, however, technical aspects regarding operation and maintenance and financial supervision were often beyond the capacity of the CBO members (ibid). While units of the Rural Water Supply Division of the NWSDB and Pradeshiya Sabhas are providing support in this regard, there appears to be great variation in the capacity and interest among these units to carry out this function, depriving needy CBOs of timely support in some cases, and affecting their performance (ibid).

Proactive and adaptive project supervision in response to exogenous events can help safeguard project efficacy, in this project, there are positive and negative examples; on the one hand, the task team responded nimbly to the tsunami by taking actions, including reallocating some of the funds to an emergency project and changing some project locations; on the other hand, the response was less nimble in taking steps to adjust the project targets to the decrease in available funds and an inflation surge, which affected project outcome supply period, most households with about five members use 500-litre overhead tanks, and thus ensure uninterrupted water from taps. Smaller and poorer households store water in large containers placed near the water taps (ibid).

World Bank Report (2016) states that the financial viability of utilities in Zambia which are supported by the World Bank project faces pressure from reduced availability and increased cost of energy (with the crisis in hydropower), thus adding to the effects of shortcomings in operational and technical efficiency and a reduction in annual budget allocation for utility operation, maintenance,

rehabilitation and expansion, making it difficult to maintain the quality of water and sanitation service delivery.

Implementing agencies performance is rated moderately unsatisfactory (ibid). Both implementing agencies (LWSC and MLGH) exhibited procurement, financial management capacity and implementation constraints during implementation (ibid). There was a decline in both operational and financial performance of LWSC, challenges during implementation included weak coordination between technical and procurement staff as well as weak contract management capacity and inability to maintain sufficient staff throughout the life of the project; despite these challenges, the implementing agencies displayed committed to the project and to achieving the project objectives (ibid). The Lusaka utility embraced and implemented the DFAPE instrument and brought about improved performance, both technical and financial (ibid). With regard to the sector ministry, the high turn-over of higher management staff had a negative impact on implementation of the capacity development activities to the extent that the consultancy to draft a comprehensive sector policy could be completed only partially during the project implementation period (ibid). As project implementation advanced and the implementation agencies gained experience with Bank procedures, the agencies performances improved enabling an improvement in implementation, nearly full disbursement of the loan, and substantial achievement of the objectives (ibid).

As a word of Peter et al (2011) tariffs can provide an important source of revenues, although the potential for raising tariffs depends on affordability constraints, apart from a few exceptions, in OECD countries, operating costs are by and large covered by tariffs but the coverage of capital costs varies substantially. WSS tariffs represent only a small share of average household incomes in OECD countries (ranging from 0.2% in Korea to 1.2% in Poland) although these average figures hide substantial variations, with areas of significant “water poverty” (ibid). In developing countries, cost covering tariffs

are much less prevalent, despite the fact that there are many cases where consumers could afford to pay much more, for example, in Egypt the average user charges for WSS represent less than 1% in household expenditure (ibid). However, there are also many places where serious household affordability issues prevent further increases, unless social protection measures are being introduced (ibid).

In particular, several developing countries only allocate a small portion of their GDP to the water and sanitation sector (ibid). Amongst the countries that had responded, Burkina Faso was the country that spent most on water and sanitation combined as a percentage of its GDP (with an estimated 3% of GDP), whilst countries with the lowest expenditure on the sector as a percentage of their GDP included South Sudan, Côte d'Ivoire but also the Philippines (ibid). In the context of the economic crisis, tax transfers are only likely to surge where stimulus packages target the water sector (ibid).

Peter et al (2011) further states that a recent comprehensive review on the state of infrastructure in Sub-Saharan Africa was carried out by the Africa Infrastructure Country Diagnostic project, a multi-donor initiative led by the World Bank, for the water and sanitation sector, the study evaluated the financing gap to reach the MDG target and how such gap could be filled from existing or future sources. Existing spending on water supply and sanitation in Sub-Saharan Africa is USD 7.9 billion, household contribution to on-site sanitation facilities was higher than public spending either from public budget or ODA sources (0.3% of GDP spent by households on building latrines every year as opposed to 0.2% allocated by governments and 0.2% coming from ODA respectively) (ibid). As such, households contributed to almost half of total capital investments in the sector, contributions from private sector operators were found to be negligible, with local capital markets contributing next to nothing to the WSS sector in Sub-Saharan Africa and little prospect for doing more (ibid).

It was estimated that the price tag for reaching the MDGs for both water and sanitation in Sub-Saharan Africa would reach USD 22.6bn per year, or 3.5% of these countries GDP, for improved water alone, it would be USD 17 billion a year (ibid). It is estimated that capital investment needs for new infrastructure and rehabilitation of existing ones would account for over two thirds of total investment needs in some countries (ibid). For example, the report estimated that losses associated with tariffs set below cost-recovery levels amounted to USD 2.7 billion a year in Sub-Saharan Africa and impeded service expansion (ibid). Improving cost recovery of water utilities could reduce the gap by USD 1.4 billion a year, and addressing operating inefficiencies would bring an additional USD 1.2 billion a year (ibid).

However, it was concluded that even if major sources of inefficiencies were eliminated, the remaining funding gap would still be large, particularly in low-income countries (ibid). The report estimated that there was limited scope for increasing existing sources of finance, particularly domestic public finance and self-financing by households, which were both likely to be affected by the ongoing economic and financial crisis (ibid). Thus two realistic options to meet the targets would be to either defer the attainment of the infrastructure targets or to try and achieve them by using lower-cost technologies (ibid).

According to Pittman (2008) in Uganda, the government has developed and implemented policies and an institutional framework that provides clarity and separation of functional roles and responsibilities with minimum overlap, gaps and duplication; service provision and management is undertaken at the lowest appropriate level and procurement has been devolved to district levels, accompanied by regular audit, capacity building, follow-up monitoring and enforcement of findings, and feedback for learning lessons. Monitoring and evaluation has become an essential tool not only for good water governance, but also for sector development and environmental sustainability.

Nevertheless, the calibre of water sector M&E systems across the African continent is generally recognized to be at an early stage of development. Public private partnerships and alternative service providers are shown to play a significant role in the water sector in Africa and that further investment from the private sector will be required to meet the MDGs ; nevertheless, there is no clear blue print solution for private sector participation in water sector reforms (ibid).

Yet if the realities of their situation are understood, the poor can stand to benefit from it. Recent studies have demonstrated that there is a direct correlation between the countries most lacking water services and those with the weakest governance; improving governance in the water sector is therefore not only about government systems and services delivery; it encompasses a much broader range of factors, including engaging civil society, non-state agents and their relationship to government (ibid).

In line with Tremolet *et al.* (2006) the regulator that is often considered most desirable is the independent or autonomous regulatory authority. The advantage this model has is that the regulator is independent from the political arena in its decision-making and is able to satisfy the three criteria stipulated for infrastructure regulatory systems. Malawi is attempting to decentralize its water sector but is facing many difficulties; beginning with a lack of clarity in and support for decentralization from the Ministry of Local Government, decentralization of the sector has been handicapped by a chronic lack of capacity especially at district levels that has resulted in de-concentration rather than devolution.

As said by Delmon (2014) that water authorities in developing countries face the daunting challenges of meeting water service delivery obligations to remote rural, peri-urban, and small town communities. Cardone *et al.* (2009) suggests that one way forward to improve performance of water utilities might be to link utility reform with improved access to much needed capital funds from domestic

financial markets; while domestic finance has a key role to play in enhancing sustainable service delivery, investment in water supply and sanitation can also help strengthen domestic financial markets, which suggests there is scope for mutually beneficial relationships.

As per ADB (2016) water supply in coverage in Philippines has not kept pace with the growing population in the last few decades; many water utilities face financial difficulties because tariffs are too low to recover costs and systems are too small to work efficiently; persistent problems in water supply include institutional fragmentation; weak sector planning and monitoring due to lack of sector information; poor performance of many water utilities; low public and private sector investment and limited access to financing for service expansion; and inadequate support for poor urban communities and rural water utilities.

Sanitation remains a big challenge especially outside Metro Manila where there are no significant sewerage systems and most septic tank effluents are discharged without treatment, exposing millions to water-related diseases, acute watery diarrhea is a leading cause of morbidity in the country; in 2015, the WHO/UNICEF Joint Monitoring Programme (JMP) reported that the Millennium Development Goal target of 92% coverage had been met for drinking water, with 94% coverage in urban areas and 90% in rural areas. Further, the JMP noted a large difference in the sources of drinking water used in urban and rural areas, in urban areas 59% was piped onto premises, and 35% came from other improved sources for rural (ibid).

ADB (2016) further maintains that implementation of Dhaka Water Supply Sector Development Project (DWSSDP) in Bangladesh has positive and negative issues. Positive issues include increased cooperation and coordination between physical and resettlement works plan and implementation; and nearer to complete physical work of the project. Negative issues are water supply quantity and quality



hampered during physical work in some places; and communication in the localities hampered during physical work.

There is a substantial gap between what was planned and actually implemented in integrated water resources management, which shows difficulties in implementation and at the same time indicates that past experience and lessons did not influence the design of subsequent projects (ADB's evaluation study, 2010); capacity development, government commitment, strong leadership, community participation, monitoring, and good coordination are important requisites of successful water projects.

Cost recovery and financing of operation and maintenance have direct implications for the financial sustainability of water sector operations. Where cost recovery is ensured, particularly in hydropower and water supply projects, sustainability is likely; completed projects in subsectors like irrigation, drainage and flood protection; water-based natural resources; and multi components had a sustainability rating of less likely at completion; however, follow-up actions were weak or nonexistent and lessons were not always incorporated in the design of new projects; as to ongoing projects, implementation delays had been pervasive, and contract awards and disbursements were slow; the situation calls for both better design and implementation arrangements for new projects and closer supervision of implementation for ongoing projects (ibid).

Several new issues have emerged or become accentuated in recent years; integrated water resources management is a difficult and complex activity, and in the institutional environment of many developing member countries, it has proved difficult to implement at a high level; institutional change is slow and ongoing capacity development is needed; there is a need for effective demand management, water conservation, reduction in non revenue water, water allocation, and water pricing (including block tariffs, where appropriate); there should be inter basin transfers for both hydropower (with potential negative

impacts on donating and receiving rivers) and water for domestic or irrigation use; and there are issues of increasing use of groundwater and/or declining water tables (for example in northern India), and arsenic problems in some areas, notably in Bangladesh (ibid).

ADB's evaluation study (2010) identified a number of significant issues relating to activities in the water sector; despite good reported progress in meeting the sanitation MDGs, the provision of improved water supply to rural people has worsened over 1990–2008; reforms in the sector, supported by international development partners, have made only limited progress; Uzbekistan remains a country in transition from central planning; the centralized bureaucratic system has restrictive implications for project design, with a need for higher level government decrees to approve project designs and changes; key issues in the water sector include (a) high rates of nonrevenue water (NRW), (b) low water fee collection rates, (c) low water tariffs and difficulty in raising them to viable levels; and (d) inability of most water companies to meet operation, maintenance, and capital repayment costs (ibid).

A number of issues relating to activities in the water sector were identified in ADB's evaluation study (2010) during the field study in Viet Nam, the most important include the following; despite good progress toward meeting the MDGs, major investments are needed for urban sewerage and rural piped water supply; private sector investment has been limited; the termination of ISFs has slowed down progress toward participatory irrigation management; integrated water resources management; integrated water resources management has proved difficult to date because of the hierarchical nature of the bureaucracy and lack of demand at the main basin level; and the major regional issue facing Viet Nam relates to the Mekong and particularly the current and planned construction of main rivers and major tributary dams, these may reduce sediment transport to the delta, and in concert with sea level rise, lead to erosion (ibid).

Sustainability is one of the weakest aspects of ADB's water sector lending (ibid). Only around 44% of completed projects (92) approved since 1992 were rated likely or most likely sustainable, with less than 10% in the latter category; they fall under large hydropower and water supply and sanitation. Less likely sustainable projects are in irrigation, water-based natural resources, and multi component subsectors (ibid).

As indicated by ADB's evaluation study (2010) most water utilities in developing member countries are publicly owned and operated and are often associated with inefficiencies, poor service, and inability to meet rising demand; these outcomes are often attributed to a tradition of below-cost pricing due to populist pressures and owner-regulator conflicts of interest. Below cost pricing in turn drives the vicious cycle problem of low tariff, poor collection, poor service leading to further drop in collection, and service deterioration; these problems are further compounded by the lack of financial and commercial autonomy by the water utility, non credible threat of bankruptcy, rigidities, and principal-agent problems (ibid). This case study reports how Phnom Penh Water Supply Authority (PPWSA) in Cambodia solved those problems and became a role model for many other public water utilities in developing member countries (ibid). Leadership played an important role in this process by contributing 40% of its success; the other 60% was facilitated by tariff and corporate governance reforms, and ADB mission-driven leadership in bringing about these reforms (ibid).

ADB's evaluation study (2010) also adds the following: community participation has been a promoted strategy for rural water sector projects funded by Multilateral Development Banks; community ownership is the key to success in small towns and rural water supply; and substantial, structured, and well-defined community participation positively correlates with the project's effectiveness. The case study of ADB-funded water and sanitation projects in Punjab, Pakistan, is presented to identify the key factors in a successful rural water sector project and further innovations to gauge the achievements (ibid). The study also looked at the role of

the ADB water policy in the success of the project, general contributions this project makes to the water policy discourse, and the role of ADB in the strategic implementation of a community-based approach in various sectors of water management and sanitation (ibid). Lessons learned from this case study highlight the two dimensions of water and sanitation as means to an end, they are; political reform and cultural reform (ibid). The case shows that community participation has the potential to support reforms beyond the local level (ibid).

Pakistan is becoming an increasingly a water shortage country; the per capita availability soon after Partition was 5300 cu.meters, which fell to 2700 cu.meters by 1971, 1600 cu.meters by 1991 and is currently at about 1000 cu.meters (Aisha et al, 2010). The main contributing factor has, of course, been the growth in population, household and industrial consumption of water accounts for about 6 per cent of total water availability (ibid). As pressure on water resources increases, water sources for cities and towns are likely to be at greater distances thereby raising the marginal cost of the additional supplies; also, pumping of water is likely to require more power, leading to an increase in energy costs (ibid).

Poor quality levels of drinking water are to be found in and around the big cities due to the presence of toxic synthetic organic chemicals, heavy metals, municipal wastes and untreated sewage (ibid). The arsenic contamination in different parts of Punjab is as follows: more than 30 percent of total water sources in 147 villages/bastis of Rahim Yar Khan have arsenic above 50ppb; more than 30 percent water sources in 3 villages/bastis of Bahawalpur have arsenic above 50ppb; more than 30 percent water sources in 33 villages/bastis of Sheikupura have arsenic above 50ppb; 92,549 people in Kasur are drinking contaminated water with arsenic above 50ppb; 7 percent the contamination in of the water sources tested in Punjab is above the Maximum Permissible Limit (MPL) (ibid). There are 10 districts where fluoride (MPL=1.5 mg/l) contamination is higher than 10 percent (ibid). The highest figures are in the following districts: Chakwal

(46 percent), Bhakkar (36 percent), Khushab (33 percent) and Sargodha (27 percent) (ibid).

Pasha et al (2010) reveals that only about half the households in the urban areas of Punjab have access to tap water, there is wide variation in coverage among the various cities and towns of the province; Lahore has the highest coverage of households at 94 percent, followed by Islamabad at 85 percent and Rawalpindi at 83 percent; other large cities have relatively low levels of coverage, at 36 percent in Faisalabad, 19 percent in Gujranwala and 27 percent in Multan; access to tap water is extremely low in some of the more backward districts of Punjab with relatively small towns at the rural-urban inter-face; for example, the extent of coverage is only 3 percent in the urban area of Hafizabad district, 6 percent in Jhang, 9 percent in Khanewal, 4 percent in Muzaffargarh and so on.

The World Bank (2009) was requested by the Palestinian Authority to make assessment of restriction on Palestinian Water Sector Development with the goal developing a balanced analysis and create awareness of the factors restricting Palestinian water sector development as well as of the economic, social, and environmental impacts of these restrictions. The assessment addressed factors such as sector governance, and movement and access restrictions beyond the control of the Palestinian Authority, as well as internal contributing factors, notably governance and capacity weaknesses of Palestinian institutions. A preliminary institutional analysis indicated that, while Palestinian Water Authority had internal challenges of improving its performance in its role of resource manager and regulator of service provision, an undocumented aspect was the “exogenous” constraints it faced because of the unique nature of Palestinian access to shared water resources with Israel; constraints to improved performance were therefore at three levels as shown below: Level I Palestinian Authority Access to shared water resources; Level II Palestinian Water Authority Functions of resource management and regulation; and Level III Palestinian water users’ access to reliable, safe and affordable water services. While the “exogenous”

constraints appeared to directly impact Level I, and indirectly impact Levels II and III, there had been no systematic documentation of the consequences on the Palestinian economy and population. The Bank agreed to conduct an objective awareness-raising assessment that would document impacts on project delays; decision-making over access to and control over water sources, wastewater management and infrastructure; livelihoods and coping mechanisms of service providers and consumers; environmental issues; donor activities; and sector dialogue between Palestinian and Israeli authorities and donor community. The study was a complementary to other studies and technical assistance that the Bank as well as other donors is engaged in with the objective of building capacity in Palestinian water institutions to serve their constituents with reliable and safe water services.

In keeping with SIDA (2016) Sweden and Finland support jointly a water programme valued at USD 2.2 million for basic drinking, water supply and basic sanitation in Kenya. Release of funds is ultimately intended to benefit the marginalized women and men in rural Kenya through improved and equitable access to water and sanitation such as constructing new boreholes; rehabilitation of non-functional pumps; and constructing sanitation facilities in schools - and also improved water resources management such as constructing sand dams for water storage or strengthened enforcement of regulations; the report further states in order to achieve the goal of changing Kenyan context of devolved responsibility for delivering water and sanitation services, it is necessary for Water Services Trust Fund to adopt a new approach based on cooperation with and support to new partners at the county level (ibid). Moreover, in order to draw lessons from previous rural water projects there is need to revise the project cycles for water and sanitation and for water resource management, which constitute the two main work methods of Water Services Trust Fund work at the local level.

As a word of Maïke et al (2012) obstacles and bottlenecks to improving low budget execution rates in Sub-Saharan countries occur all along the budget execution chain and are to some extent outside the control of water sector professionals; low execution is caused partly by overambitious plans and budgets; several Public Expenditure Reviews (PERs) noted that line ministries are not adequately involved in the budgeting process, as a result, line ministries are not interested in budget preparation work, which they view as an exercise involving the ministry of finance only.

Maïke et al (2012) further explains that the volatility of Water Supply and Sanitation (WSS) budgets forms a major obstacle for efficient budget execution as the unspent budget of one year cannot typically be carried over into the next year; delays in budget processes exacerbate this problem, as contract bid invitations cannot be issued until the budget is approved, and spending authorization may not happen until months into the fiscal year; further downstream, another systemic obstacle to budget execution is the lack of capacity, mainly project management and contracting capacity in the government and its partners; spending public budgets is slowed by unclear responsibilities due to unfinished implementation and enforcement of water sector reforms.

While most countries have officially decentralized all or part of WSS service delivery, the devolution of responsibilities to local, regional, and district authorities has not come with the requisite authority, budget, staff, and operational support to implement them; WSS budgets were almost never transferred to local authorities, with the notable exception of Tanzania; in rural areas in particular, incomplete decentralization has created a dangerous institutional vacuum, where neither national nor local governments have taken responsibility for the safe provision of water; water supply in urban areas has been less disrupted, if only because national utilities continue to provide water in two-thirds of the countries reviewed; Central governments sometimes use the insufficient management

capacity of lower levels of government to rationalize their reticence to give up power, budgets, and staff (ibid).

No countries have managed to increase access without a substantial increase in public expenditure; in other words, increasing public expenditure on WSS is a necessary but insufficient tool for improving services; for instance, successful programs to improve access to water supply in Senegal, Burkina Faso, and Niger all included large public investment programs; similarly, progress in rural water supply access in Benin and Mali has followed increases in public expenditure; overall, however, no relationship between levels of spending and levels of access to water supply and sanitation were found; all public expenditure reviews faced serious limitations with respect to data definitions, classifications, and coverage; it was found that incomplete or contradictory data in many countries, compounded by the fact that “water and sanitation” is not a distinct stand-alone sector that would enable international comparison of government finance; additionally, a large part of donor resources are off budget, leaving sizeable holes in the bigger picture of public expenditure for WSS (ibid).

Additionally Maïke et al. (2012) say that public spending patterns do not fully reflect the long asset life of WSS infrastructure, as the upkeep of existing WSS facilities appears to be underfunded; low water tariffs undermine the rationale that governments pre finance capital investments that will be recovered from consumers over time; spending patterns in WSS are in line with cross-country evidence that clientelism significantly influences the provision of public services. The tendency for political patrons to provide private rewards to clients can help explain the disproportionate spending in capital cities. Public money is often spent where the politically powerful reside; this is where elections are won, or at least where potential social discontent has to be controlled; political patronage might also explain low revenue collection caused by uncollected bills and malfunctioning meters; a political economy perspective on public service delivery suggests that choices in capital spending may be driven by the corruption,



employment, and profit opportunities that construction provides; utility management decisions are often driven by the interests of their employees or organized labor; politicians and central bureaucrats have been allowed to keep public budgets concentrated in national administrations, stalling decentralization and leading to a dangerous institutional vacuum in the rural provision of water supply with neither national nor local government fully taking responsibility; this might be convenient for all—except rural people without water.

Politicians' refusal to raise tariffs makes for good political pro poor rhetoric but in practice mainly benefits the middle and upper classes that are connected to the public water network; recovering full costs from existing customers and using the resulting cash flow to accelerate access expansion for the poor would substantially increase equity, although it is a hard political sell; looking at political dynamics also helps explain why sanitation is an orphan sector, suffering from slow technology change; low household demand for sanitation results in politicians not seeing sanitation as a vote winner, and therefore allocating scarce resources to sectors with higher perceived political rewards; but sanitation is a cheap lifesaver, and as such might merit higher public spending; mistrust of cheaper service levels and other cultural norms within the engineering profession form the background of the strong barriers to technological innovations; global debates are influencing local decision making; the sometimes heated debate on privatization led to blanket opposition to cost-recovery by some politicians and activists (ibid).

But the global environmental debate drove a push for higher levels of sanitation services, and the recent global movement for basic sanitation has further rebalanced the debate; the observed gaps between policies and practice can partly be traced back to policy prescriptions from donors, which have been adopted superficially but have not been followed through because of local political resistance; in this respect, it is interesting to note that the call for more direct accountability of service providers by increasing the client's power has not really

taken hold in the sample of countries yet; there are compelling arguments to increase public spending for WSS; redistributive arguments and market failures call for public intervention; the investment needs are huge, but this review found that current spending patterns are inefficient and ineffective and do not match the public spending rationale (ibid).

Furthermore Maïke et al (2012) highlights that increasing the volume of public expenditure without changing the targeting and execution will not have a large impact; the findings of this review point to a strong need for better budget execution; a major focus should be on solving institutional bottlenecks in WSS public expenditure both within and without the control of sector professionals; a review of PERs reveals huge gaps between policy and practice, PERs can be a useful tool to hold governments accountable for the implementation of their own policies and promises; at the sector level, it was found that while nearly all countries have elaborated comprehensive water sector policies and strategies, implementation and enforcement of sector reform strategies remain incomplete, and efforts are needed in terms of capacity building, general public awareness campaigns, and further development of the legal framework that would facilitate implementation of policies and strategies.

It was also found that, rather than streamline the process, reforms had, in many cases, led to the creation of new institutions with overlapping mandates; furthermore, decentralization has stalled, with little or no progress in devolving financial resources to local government; this has created a dangerous institutional vacuum in the provision of water supply, particularly in rural areas, as neither national nor local governments are fully taking responsibility; a second implementation gap is seen in donor financing, which is often badly targeted and unpredictable, resulting in execution rates that are lower than those of internal resources; a significant opportunity is available for more pro-poor-targeted donor financing by shifting resources to the areas with the largest WSS needs; we found that the WSS sector in most countries was characterized by a large number of

donors operating on terms and conditions specific to their individual projects; thus, donor funding is unpredictable, and donor planning and monitoring is not necessarily linked to the government budget calendar. Transaction costs for governments are high; donors should consider rethinking extending their financing to not only cover “development” expenditures, but also maintenance especially in rural areas (ibid).

Jiménez et. al. (2010) made an identification and analysis of key issues that impact the governance of rural water services in sub-Saharan Africa, Tanzania was selected as a representative case study a number of weaknesses that continue undermining strategies for poverty eradication were identified at different administrative levels (from local to national) (ibid): low quality of water services; lack of sustainability of constructed infrastructure; difficulties for targeting the poor; and inadequate internal information systems; some initiatives to overcome these challenges were piloted and implemented at the district level, they include policy recommendations which entail new paradigms for the provision of rural water supply: adoption of water supply as a service that is monitored and supported by the government; needs-based allocation of projects at community level; and improving guidance for local government decision making are proposed.

In 2016 Bangladesh, the analysis finds that most districts perform well in serving the richest 60 percent of the population, meaning that people who belong to the richest three wealth quintiles have relatively high access to water sources that go beyond “improved,” which include elements of safely managed water such as being free of *E. coli* and being on premises; however, only four of the 64 districts can be classified as high performing when considering these attributes of access among the poorest 40 percent; the research team is working on understanding the determinants of this inequality (World Bank, 2016).

In Indonesia, the study team took advantage of a unique dataset that includes information on WASH, child height for age, and cognitive development (ibid). Preliminary analysis shows significant effects of children's height for age and the relationship with the level of open defecation in a community. The team is exploring whether these effects translate into a child's cognitive development later in life (ibid).

In 2016 Nigeria, preliminary research is starting to shed light on the functionality of different water schemes, highlighting that up to 30 percent of water points fail within the first year of construction; analysis on the survival rate of water points indicates that location within the country, proper maintenance, type of technology, and who is promoting the technology are determinants of functionality.

Qualitative research of 2016 in Tajikistan shows that quantitative data collected through existing household surveys masks two facts around access to a piped source; first, there are problems with the continuity and quality of the household's main water supply, and second, as a consequence, many households rely on additional water sources, which are not captured in the available quantitative survey data; the majority of focus group participants who were connected to a centralized piped system stated that they also rely significantly on other sources for drinking and domestic water because their piped water source is unreliable. In rural areas, the qualitative research found that households typically have three drinking water sources to cope with lack of availability throughout the year (ibid).

According to Triche (2012) DAWASA's and DAWASCO's financial performance was undermined by several factors, most prominently DAWASCO's failure to achieve billing and collection targets. In every year since DAWASCO began operating, collected tariff revenues have been inadequate to cover its expenses.

In line with Taylor & Carlit (2014) over half of all Tanzanians (54%) obtain their drinking water from an 'improved' source; the figure for rural citizens is even lower at just 42%. These findings become even more striking when put in the context of recent investments (ibid). Tanzania's current level of access is similar to that of 20 years ago, despite a lot of money having been spent.

As said by Paul *et. al.* (2010) sustainability of rural water supply in Tanzania is a challenge. A recurrent problem in rural water supply systems is the lack of technical or financial capacity to maintain assets. This leads to deterioration of rural water points to where they no longer provide the intended service. Inadequate maintenance of rural water systems reflects both institutional weaknesses and inappropriate technology choice; under-maintenance is worsened by inadequate attention to technology choice, low pump density, restrictive maintenance systems, and lack of a supply chain to adequately maintain complex machinery.

As stated by World Bank report (2015) WSDP is financed by the World Bank and other development partners is helping the Tanzania government reach its goal to increase water access to its urban residents, since the project began in 2007, more than 230,000 homes and 2.7 million urban residents now have access to water throughout the day; Ngudu High School also has access to water, which helps to attract qualified teachers and keeps students from missing lessons to fetch water.

Funds of WSDP are not spent efficiently, this inefficiency is contributed by very little monitoring of funds from the Central Government down to the district level, such lack of monitoring relates to a challenge of coordination of the over 300 government agencies involved in implementing the WSDP (Taylor et al.. 2014)

Along with Theodory et al. (2009) problems of water shortage are experienced in cities in particular, as many local governments fail to provide their people with this basic need; the problem is much bigger in developing countries than in the developed world due to inadequate income, rapid growth of the urban population,

unplanned urban growth which leads to stressing existing services as well as infrastructure which are increasingly in breakdown or decay.

On the word of Taylor & Carlit (2014) the biggest single problem appears to be implementation of the “10-Village Schemes” in Tanzania which was funded by WSDP where design and construction of the projects was contracted out to private consultants who were to visit the villages selected and consult with community members in order to come up with suitable designs; through a combination of poor coordination and procurement bottlenecks, the design process proved to be extremely time-consuming, expensive much costlier technologies than anticipated as a result in most districts only two or three WSDP projects have been implemented to date, out of the 10 originally planned.

Based on findings of Victor et al (2009), on average customers receive water for 8 hours per day in Korogwe and 5 hours per day in Muheza town; water supplied by the respective utilities in the two districts is far below the total demand especially in the dry season; more than 80% of customer complaints in both towns were on water quality water and shortage; about 50% the complaints were about customer-operator relations; also poor billing practices and old infrastructure has resulted in high UfW of 41% in Korogwe and 47% in Muheza town; it was concluded that the customers are not satisfied with quality of services and that the UfW is higher than the generally accepted value of 25% .

Chumbula (2016) conducted a study to examine the factors for sustainability of water projects in Iringa district, Tanzania; it was was selected as the area of study because in spite of many water projects invested at the area, the accessibility of clean water is only 40.7%; the study specifically ought to determine water sources protection strategies adopted at the study area, to assess participation of stakeholders in different stages of water projects development, to analyze the institutional arrangement for water project management and socio-economic and environmental factors influencing sustainability of water projects; from the results

it shows only two independent variables which are project maintenance per annum and meetings conducted per annum were found to be significant at  $p \leq 0.001$  and  $p \leq 0.010$ , respectively.

The increasing rate of water project failure especially in the rural areas should be addressed in order to achieve reliable supply of safe and clean water to the rural populations; Local governments, donors and communities should make sure that both technical aspects and regular follow-ups, capacity buildings to the community and water user association members become a sustainable process for the attainment of water project sustainability (ibid).

Consistence with Kayaga (2015) the most applied M&E practices in water projects in Bagamoyo District is field visit and meetings; other methods are Annual Project Report, Logical Framework Approach, and Participatory Rural (Rapid) Appraisal but they are not effectively applied. It was also found that, most of established water projects lack sustainability, and the major reason among others is ineffective M&E systems; challenges faced while implementing M&E included low budgetary allocation for M&E activities, use of unqualified staff for M&E, poor support from the Central Government, ineffective project reporting, weak information systems as well as poor community participation. There is also absence of an independent M&E unit in the District Water Department which adversely affects the M&E process.

The study proposed the use of best approaches to improve M&E systems which include an intensive capacity building, changing of the current National policies and plans from Infrastructure to service oriented approach, establish an Independent M&E unit in each district water department and adoption participatory approach (ibid).

Based on the study findings by Mdende (2009) the target to ensure access within 400 metres to domestic water sources by the majority of population is yet to be

achieved in Kilolo District Council, where by only 37.5% of the interviewed households are located within 400 metres to domestic water sources; the study also revealed that one of the consequences of limited access to domestic water is the relatively more time spent in fetching water than in income generating activities, this problem is more serious for women and girls particularly during dry season; limited access to domestic water supply has direct impact on household incomes, households located within easy access to domestic water have relatively high incomes - high household income is one indicator of reduced poverty. Limited access to domestic water is mainly a result of lack of improved water supply systems in the villages and limited use of rain water harvesting technologies.

As maintained by the World Bank (2017) in 2015/2016, the Dar es Salaam city's non-revenue water – water that is produced but is somehow lost in the system rate reached a high of 53%, against a water service coverage of about 55%; “many citizens, including women and young girls, still spend considerable time collecting water, which takes time away from education and the productive activities so necessary for strengthening their livelihoods,” said Bella Bird, WB Country Director for Tanzania, Burundi, Malawi and Somalia.

As per EWURA Report (2017) 25 Regional WSSAs (including Kahama and DAWASCO) and eight National project WSSAs have continued to register remarkable improvements in provision of water supply and sanitation services in terms of coverage, number of water service connections, staff productivity and revenue collection. Generally, over the past three years, the water produced has been lower than the available water production capacity; regional WSSAs were not able to utilize the available installed production capacity due to limited water supply networks; on the other hand, the water produced during the past three years was not sufficient to meet the required demand; however, in totality, there has been improvements in water production and installed water production capacity; and an increase in water demand equivalent to an increase by 17%, 24%



and 5% for water production, installed capacity and water demand respectively from FY 2014/15 to FY 2016/17.

There has been an improvement in the water service coverage in terms of population directly served with water and the population living in areas with water network; the population directly served with water improved from 57% in FY 2014/15 to 71% in FY 2016/17 and then again, the population living in area with water supply network improved from 72% to 79% during the same period; the service level benchmark for water customer metering requires WSSAs to meter all their customers; the metering ratio improved from 95% in FY 2014/15 to 99% in FY 2015/16 and then experienced a slight drop to 97%, generally, the overall attained level of customer metering ratio is good (ibid). Additionally, the Non- Revenue Water is still above the required best practice value of below 20%; the overall average Non- Revenue Water decreased slightly from 43.6% in FY 2014/15 to 38.4% in FY 2016/17.

Number of water service connections has been increasing from 528,960 in FY 2014/15 to 722,320 in FY 2016/17, which is equivalent to 37% increase; the increase in number of water connections reflects the water utilities' efforts to increase water service coverage in their respective service area; over the past three years, there have been fluctuations in number of sewerage connections among the 11 Regional WSSAs that provide sewerage disposal services through sewerage network; the total number of sewerage connections increased from 46,263 connections in FY 2014/15 to 47,382 connections recorded in FY 2015/16 and decreased to 46,432 connections recorded in FY 2016/17; the decrease in FY 2016/17 is due to data clean up following customer survey done by DAWASCO (ibid).

There has been an annual improvement in staff productivity in terms of staff per 1000 water and sewerage connections (ibid); the overall performance for Regional WSSAs on the staff productivity in FY 2016/17 is within the service level

benchmark of 5 staff per 1000 connections; the attainment of staff per 1000 connections was 5.7, 5.3 and 4.5 for FY 2014/15, 2015/16 and 2016/17 respectively (ibid).

During the year under review, Regional WSSAs had to comply with 84 conditions in total; some of the conditions are those that were issued in the previous years but had to be fulfilled in the FY 2016/17 (ibid). On average, the overall compliance with the tariff conditions was 69%; previously, in FY 2015/16, Regional WSSAs were to fulfill 99 conditions to which they achieved 62% compliance; therefore, the performance during the reporting period has increased by 7% (ibid).

EWURA Report (2017) further establishes that the best performers in MajIs monthly report submission among thirteen utilities were Kahama and DAWASCO; on the submission of Annual MajIs reports, 12 WSSAs submitted their report on time while the rest 13 did not comply; on the submission of the hard copies, 19 out of 25 Regional WSSAs submitted their annual technical and financial reports on time.

Metering ratio for Regional WSSAs improved from 95.4% in 2014/15 to 99.1% in 2015/16 and thereafter declined to 97.4% in 2016/17; during the FY 2016/17, the number of Regional Water Utilities with 100 metering ratio remained to be 19, similar to the number reported in the previous year 2015/16; the utilities among nineteen are DAWASCO, Kahama and Shinyanga (ibid).

The total number of complaints received by Regional WSSAs during 2016/17 was 160,863. Generally, most of the complaints were on billing (51,299) followed by leakage (40,864), meter reading (22,361) and lack of water or low water pressure (19,388); generally, during FY 2016/17 most of the complaints received by Regional Water Utilities were on billing followed by leakages and meter reading respectively (ibid)

During FY 2016/17, the total revenue generated by WSSAs improved to a reported revenue of TZS 243.7 billion increasing from TZS 192.6 billion generated in FY 2015/16; water services continued to be the main revenue generating activity contributing 85% of the total revenue with sewerage services maintaining a 7% contribution to total revenue; other revenues accounted for only 8%; the increased revenue is mainly due to increases in revenue from DAWASCO, Mwanza, Arusha and Dodoma WSSAs (ibid). In addition, Sumbawanga, DAWASCO, Bukoba and Arusha recorded more than 30% increase in revenues; the improved performance is attributable to an overall tariff review, increase in customer base, increase in the water production and reduction of NRW (ibid).

During FY 2016/17, chemical costs for utilities ranged from TZS 0.3 to TZS 130.2 per cubic metre; in FY 2016/17, on average, chemical costs for utilities decreased slightly to TZS 26.2 per cubic metre from TZS 26.9 per cubic metre recorded in FY 2015/16; in FY 2016/17, DAWASCO registered higher chemical costs per cubic metre while Kahama WSSAs registered lower chemical costs per cubic metre (ibid).

During FY 2016/17, administration costs for all utilities for every cubic metre ranged between TZS 105.5 and TZS 369.6; in FY 2016/17, on average, administration costs per unit of water production for all utilities decreased to TZS 159.4 per cubic metre compared to TZS 161.0 per cubic metre recorded in FY 2015/16; the higher administration cost per unit of water production was registered by DAWASCO WSSA (TZS 333.8) (ibid).

In FY 2016/17, the average tariff for WSSAs increased to an average of TZS 1,097.2 per cubic metre compared to TZS 1,037.4 per cubic metre recorded in FY 2015/16; in 2015/16, DAWASCO had the highest average tariff of about TZS 1,663.0 per cubic metre with Sumbawanga WSSA having the least tariff at TZS

606.1 per m<sup>3</sup>; the variations in tariff were mostly due to the variations in methods employed in water abstraction, treatment and distribution (ibid). The average monthly bill per domestic connection for Regional Water Utilities was TZS 13,275.2 per month during FY 2016/17 increasing from TZS 11,682.7 per month recorded during FY 2015/16; in FY 2016/17, DAWASCO provided the most expensive water services with an average bill of TZS 23,434.7 per month per domestic connection among the regional water authorities (ibid).

As said by Kessy & Mahali (2016) it is evident that over the past two decades, access to safe and clean water in rural areas of Tanzania has not shown significant improvement; the share of rural households with access to safe and clean water has only changed from 45% in 2004/05 to barely 57% in 2012; during the same period, deterioration has been observed in urban areas (a decline from 79% to 77%); trends in household access to basic sanitation have slipped from 93% in 2007 to 88% in 2011; access to basic school sanitation has also remained far below the standards set out by the ministry responsible for education; also, 86% of households do not have places for hand-washing with soap and water; challenges facing the sector include the drying off of water sources as a result of droughts, the malfunction of water points a few years after installation, inequitable budget allocations, and late disbursement of funds or no disbursement at all; further, the lack of a national policy that stipulates the roles of various stakeholders affects the delivery of sanitation and hygiene services.

Kessy and Mahali (2016) further maintains that although over this period the government has substantially changed its approach to delivering water to rural areas through the NAWAPO and the WSDP, which devolves the control and management of water resources and distribution to local communities, access to WASH services by poor households is still facing several challenges; this is partly attributable to inequitable structures and institutions at all levels, but also to inequitable budget allocations for both water and sanitation interventions, late disbursement of funds, or no disbursement at all, especially for sanitation and

hygiene interventions; for example, the total funding commitment for sanitation and hygiene under WSDP Phase I (2011–2014/15) was US\$24.2 million, but as of June 2014 only US\$8.5 million (35%) of the funds had been released for sanitation and hygiene (ibid). Drying off of water sources as a result of droughts and the malfunction of water points a few years after installation are other challenges, as well as the lack of an institutional home and national policy for sanitation and hygiene which stipulates the roles of various stakeholders affecting the delivery of sanitation and hygiene services.

Additionally Kessy and Mahali (2016) emphasizes that overall access to clean and safe water increased from 52% in 2007 to 61% in 2011/12; access to safe and clean water in rural areas increased by 12 percentage points from 40% to 53% in 2011/12, indicating that the Water Sector Development Programme, which commenced in 2007, is yielding some results. Nevertheless, access in urban areas decreased from 81% to 77% within the same period an overall decline in access from 61% to 57% in 2012; thus, the MKUKUTA targets of increasing access to 95% and 65% by 2015 for urban and rural populations respectively have not been reached; the decline in access could be due to the drying off of water sources as a result of droughts, but the major challenge noted in the Water Point Mapping surveys is the dysfunction of water points; only two years after installation, close to 40% of rural water points are not functioning; throughout Tanzania there were 64,704 existing water points, of which 45,754 (62%) were functioning; efforts have been directed towards installing more water points; by June 2014 a total of 32,846 water points had been built during WSDP phase I (July 2007–June 2014), serving a total of 8,211,500 additional people in rural areas.

Through the impetus of Big Results Now (BRN) there is an increased focus on rural water supply, and as a result 16,784 water points serving a total of 4,196,000 new beneficiaries were installed in just one year (July 2013–June 2014); the total cumulative achievement by June 30 2014 was 77,584 water points, serving 19,396,000 people in rural areas of mainland Tanzania – the equivalent of 51% of

the rural population; although the increase in access to water supply in rural areas may be attributed to the implementation of quick-win projects, progress was not fast enough to achieve the 2015 MKUKUTA targets of 65% for rural areas and 95% for urban areas. The following are two examples of Quick Win projects (ibid).

The government continues to implement the water project in 100 villages around the existing main water pipeline from Lake Victoria to Kahama Town and Shinyanga Municipality; the project's initial phase involves the improvement of water supply services to 40 villages in Misungwi, Kwimba, Shinyanga, and Msalala district councils; the implementation of this project has already started, and by April 2015 surveying and architecture was completed in 31 out of the 40 envisaged villages in these councils; implementation for the remaining nine villages started in the 2015/2016 financial year (ibid).

The proportion of the urban population with access to improved sources of water within 30 minutes increased from 68% in 2007 to about 73% in 2010, while the proportion of the rural population with access within 30 minutes increased from 28% in 2007 to 47% in 2010; overall, 52% of the entire population had access within 30 minutes as compared to 39% in 2007; about 47% of households in mainland Tanzania fetched water from sources located less than 500m away from their houses during the rainy season; this proportion declined to 45% during the dry season in 2011/12, as some households were forced to travel further away from their households in search of alternative sources, however, households in Dar es Salaam and other urban areas did not suffer much in terms of fetching water from distant sources in either season; the effect of seasonality is more pronounced in rural areas. The proportion of households fetching water from a distance between 2km and 5km doubled in rural areas, from 5.7% in the rainy season to 11.5% in the dry season; generally, about 29% of households in mainland Tanzania fetched water from a distance greater than 1km during the dry season. The assessment of government performance on water was lower; less

than 50% had positive views of government performance in this sector; although an assessment of government performance in the water sector was relatively low in the first half of the last decade, it was still higher suggesting that government performance in social services in general may be declining over time (ibid).

## **2.4 Research Gaps**

Theobald and Nduguru (2009) did research on domestic water shortage and household coping mechanism in Dar es Salaam but they neither did such a research in Shinyanga nor a research on how public financing affects performance of utility projects. Moreover Ross (2015) carried out a formative evaluation of Tanzania's WSDP but not on effect of public financing on WSDP, his study provided an assessment of key areas that would require strengthening, and advised on the design of phase II of the Programme. Paul et. al. (2010) made appraisal on rural water supply and sanitation program and found that there is a problem with sustainability of rural water projects in Tanzania which include "10 village project" of WSDP but he did not conduct a study on public financing efficiency on utility project.

Taylor and Carlitz (2014) through the Tanzanian NGO Twaweza released a research brief detailing the ongoing challenge of access to clean water in the country. The brief showed that just over half of all Tanzanians (54%) obtain their drinking water from an 'improved' source; the figure for rural citizens is even lower at just 42%. These findings become even more striking when put in the context of recent investments through utility project (WSDP). Finding shows that Tanzania's current level of access to clean water is similar to that of 20 years ago, despite a lot of money having been spent. Nevertheless, their study did not cover relationship of public financing efficiency.

Whilst substantial amount of public funds from both development partners and the Government of Tanzania has been invested in WSDP, stakeholders are interested to get knowledge about the efficiency and effectiveness of such

funding. Although various studies have been conducted on water problems in Tanzania, sustainability of rural water projects as well as an evaluation of WSDP in Tanzania but no study has been conducted to find out how the public financing efficiency affects performance of WSDP in Tanzania. Findings from previous studies such as Theobald et al. (2009), Ross (2015), Paul et al. (2010) and Ben Taylor et al. (2014) show that there are still challenges associated with performance of the WSDP and sustainability of utility projects in Tanzania.

In such studies neither data were collected from development partners of utility project nor data were collected to find out how and how much can community contribute for sustainability of utility projects. In this study data will be collected from external donors to find out the reasons for delay in release of funds into utility projects, also data will be collected from community to see how much is the community willing to contribute for sustainability of the utility project as suggested in the Water Policy of Tanzania.

By doing an assessment on how public financing efficiency or inefficiency affects performance of the utility project of WSDP in Tanzania will help to improve performance of utility projects as recommended by other researchers, also findings from this study will also stimulate injection of more public financing into the programme as it will disseminate vital information to development partners. After conducting the above empirical study/related review there was no any study found on public financing efficiency on utility performance in Shinyanga and Dar es Salaam region, Tanzania therefore this study will fill this gap.

Cross section study conducted by Joseph et al (2017) has found that good sanitation and clean water are basic human rights yet they remain elusive to many rural communities in Sub-Saharan Africa, it was to examine the impact of a four-year intervention aimed at improving access to water and sanitation and reducing waterborne disease, especially diarrhea in children under five years old; this was



carried out in April and May 2015 in Busangi, Chela and Ntobo wards of Kahama District of Tanzania; the interventions included education campaigns and improved water supply, and sanitation; the percentage of households with access to water within 30 min increased from 19.2 to 48.9 and 17.6 to 27.3 in the wet and dry seasons respectively; the percentage of households with hand washing facilities at the latrine increased from 0% to 13.2%, however, the incidence of diarrhea among children under five years increased over the intervention period, RR 2.91 95% CI 2.71–3.11,  $p < 0.0001$ ; availability of water alone may not influence the incidence of waterborne diseases; factors such as water storage and usage, safe excreta disposal and other hygiene practices are critical for interventions negating the spread of water borne diseases .

Joseph et al. (2017) also put out that the major repairs or routine maintenance of boreholes was likely to be a challenge due to limited technical skills and finance, however, there was a willingness to maintain the water sources if sufficient community members were trained; most importantly, skills as well as constant technical, coaching or mentoring support are critical to successful rural water, sanitation and hygiene interventions; it was found that 18 water user groups had been established and trained, however, the training was insufficient to solve mechanical problems associated with boreholes and the water user groups did not have the tools for the task; conversely, the water user groups collect funds from households and earmark the funds for maintenance purposes; households were required to pay TShs 10,000/=, user fees per year; nonetheless, some households did not pay this amount at all or pay regularly due to non affordability, the community resolved that every member should pay the user fees but there was no clear course of action to recover money from defaulters; remarkably, the study found out that there was gender awareness in the water source governance, women were represented on the water user groups committees, but their participation in the decisions regarding the water source governance was not assessed.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter contains research design, target population, sample size sampling procedure, data collection, validity and reliability of study. Data analysis techniques as well as ethical consideration are covered.

#### **3.1 Research Paradigm**

This research is guided by positivism research philosophy as the role of the researcher in analyzing data was limited to data collection and interpretations in an objective way by depending on quantifiable observations that led to statistical analyses. It has been noted that “as a philosophy, positivism is in accordance with the empiricist view that knowledge stems from human experience (Dudovskiy, 2018).

Dudovskiy (2018) further states that as a philosophy, positivism adheres to the view that only “factual” knowledge gained through observation (the senses), including measurement, is trustworthy; positivism often involves the use of existing theory to develop hypotheses to be tested during the research process; science can be specified as a cornerstone in positivism research philosophy; scientific approach is based on assumption that X causes Y under certain circumstances; the role of research when following the scientific approach is to discover specific nature of cause and effect relationships.

According to Crowther & Lancaster (2008) the positivist approach begins with a hypothesis or assumption, which is tested using quantitative forms of data gathering such as survey and experiments; chapter three uses a positivist (or deductive) approach, which tests a number of hypotheses that are derived from theory.

### **3.2 Research Design**

This research adopted a mix of quantitative and qualitative approaches. Descriptive research design was used in this study; this was concerned with describing the characteristics of water utility project. Studies concerned with specific predictions, with narration of facts and characteristic concerning individual group or situation are all examples of descriptive research studies (Kothari, 2004).

As said by Lani (2019) qualitative research seeks to tell the story of a particular group's experiences in their own words, and is therefore focused on narrative (while quantitative research focuses on numbers); unlike quantitative research, in which researchers state specific hypotheses and then collect data to empirically test them, most qualitative research employs an inductive approach in which the researcher first collects data and then attempts to derive explanations from those data.

As such, qualitative research tends to be more exploratory in nature, seeking to provide insight into how individuals (or organizations, groups, etc.) understand aspects of their worlds; focus group interviews are an excellent tool for uncovering how groups of similar individuals understand a particular phenomenon; a well-conducted focus group provides the opportunity for individuals to interact with one another and with the moderator to produce a shared narrative of the phenomenon of interest (ibid).

### **3.3 Target Population**

The total population of water users in the study area is 6,574,155 (National Bureau of Statistics, 2016); they include 1,709,848 from Shinyanga and 4,864,307 from Dar es Salaam. The target population was the total population which include water users of '10-village project' from Shinyanga and Dar es Salaam.

### 3.4 Sampling Procedure

Cluster sampling as well as random sampling was used to obtain sample size by aid of Nassiuma Formula. According to Kothari (1984) random sampling may also be known as chance sampling or probability sampling. Under random sampling each and every item of the universe has an equal chance of inclusion in the sample. The sample size was 400 from water users plus additional 30 Government officers who were selected randomly from each office. Hence the total sample size was 430 respondents.

**Nassiuma Formula used to calculate sample size is given as follows:**

$$\text{Sample Size (n)} = N \cdot C^2 / e^2 \times (N-1) + C^2$$

Where:

N = Population

C = Coefficient of variation

E = Standard error

n = Sample size

**Table 3.1: Nassiuma's Formula Template**

Population	N	6,572,155
Coefficient of Variation	C	0.2
CSquare	C <sup>2</sup>	0.04
NC Square	NxC <sup>2</sup>	262,886.2

Standard Deviation	E	0.01
N-1	N-1	6,572,154
(N – 1)e.Square	(N-1)xe <sup>2</sup>	657.2154
(Square + (N – 1).eSquare	C <sup>2</sup> +(N-1)xe <sup>2</sup>	657.2554
Sample Size	N	400

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Source: Researcher, 2018

The following tables provide a summary of sampling procedure:

**Table 3.2: Respondents of Water Users**

	<b>Area</b>	<b>Total Population</b>	<b>Respondent</b>
1.	Ilala District – Dar es Salaam	1,359,819	83
2.	Temeke District – Dar es Salaam	1,524,999	93
3.	Kinondoni District – Dar es Salaam	1,977,489	120
4.	Shinyanga MC – Shinyanga	179,798	11
5.	Shinyanga DC – Shinyanga	372,556	23
6.	Kishapu – Shinyanga	304,124	19
7.	Kahama Town – Shinyanga	269,831	16
8.	Kahama DC – Shinyanga	583,539	35
	<b>Total for Tanzania</b>	<b>6,572,155</b>	<b>400</b>

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Source: Beaural of Statistics Tanzania (2016)

**Table 3.3: Respondents from different offices**

S/N	Type Respondents	Number of Respondents
1.	District Water Engineer	5
2.	Water Utilities	2
3.	Regulator	1
4.	Executive District Director	5
5.	Ministry of Water	2
6.	Ministry of Finance	2
7.	Development Partners	13
	<b>Total</b>	<b>30</b>

Source: Researcher, 2018

Development Partners' offices visited in Tanzania included the World Bank, African Development Bank, JICA, BADEA, OPEC, and various Countries' Representative which include German, Holland, Norway, Sweden, England, China, Korea and Australia.

### **3.5 Data Collection Methods**

Data was collected using primary methods which are questionnaire and focus group discussion; questionnaire was chosen in order to tackle research objectives which are based on researcher's opinions or views; focus group discussion was made to water village committee, this has open questions so they help to get additional data based on opinion of the community. Sources of data include publications, budget books, annual performance reports, management letters and audited financial statements were used. Variety of tools was used to supplement and support data collected from other tools. Combination of data from various publications; budget books and audited final accounts, annual performance reports

were used to collect data on release of funds, expenditure, planning, budgeting, reporting and performance of water utility projects.

Parts of questionnaire were as follows; part A covered field demographic information; part B to F covered independent variables; part G covered dependent variable. Also part H covered guiding questions for the focus group discussion. Also an interview was conducted to unanswered questionnaires.

### **3.6 Validity**

Before data collection instruments were distributed to respondents, they were firstly sent to supervisors for checking and reviewing their content and face validity in order to find out whether they meet the objectives of the study.

### **3.7 Reliability**

To test for reliability, test retest approach was adopted. In this case ten questionnaires were given to ten water users in Dar es Salaam before actual collection of data is conducted. The same procedure was repeated after the period of two weeks and correlation was more than 0.65 so the instrument was reliable. Cronbach alfa was also be used to test for reliability (in SPSS) before going to the field. The significance level is 0'00 at cronbach alfa value of 0.845 which is more than 0.65 as shown in table 3.6 below. To test for validity, questionnaire was taken to expert and supervisor to check on the content and whether they reflected the research objectives.

**Table 3. 4: Reliability Statistics**

Cronbach's Alpha	Number of Items
0.845	6

Source: Researcher, 2018

The value of Cronbach's Alpha is 0.845 in reliability test for six variables as shown in table 3.04 above. This indicated that the questionnaire has provided the needed information of about 84.5%

The five (5) constructs representing the independent variables which recorded a Cronbach's alpha statistics of more than 0.7. The reliability statistics are presented in Table 3.05 below

**Table 3.5: Reliability**

<b>Independent variables</b>	<b>Cronbach's Alpha if Item Deleted</b>
Level Expenditure	0.989
Financial Planning	0.989
Financial Budgeting	0.987
Financial Reporting	0.988
Financial Release	0.990

Source: Researcher, 2018

### **3.8 Data Gathering Procedure**

Before data collection researcher obtained a letter from Director of Postgraduate studies at Kampala International University for permission. Focus group discussion with Government officials in the ministry of water and ministry of finance was conducted before data was collected from water users through questionnaire. After collecting data from water user, focus group discussion was conducted with Government officials at the Local Government which is directly



related to actual implementation of the utility projects. Then questionnaire was collected, classified, coded and analysed.

### **3.9 Data Analysis**

Multiple linear regression model was used to analyze data. A model which incorporates several independent variables is known as multiple regression model (Lucey, 1996).

As said by Kenton (2017) multiple linear regression is a statistical technique that uses several explanatory variables to predict the outcome of a response variable; the goal of multiple linear regression is to model the relationship between the explanatory and response variables.

Analysis of data is shown below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Where:

Y is the dependent variable (performance),  $\beta_0$  is the regression coefficient/constant/Y-intercept,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$  are the slopes of the regression equation,  $X_1$  is the Financial\_ Planning,  $X_2$  is the Financial\_ Budgeting,  $X_3$  is the Financial\_ Reporting,  $X_4$  is the Financial\_ Release,

$X_5$  is the Level\_ Expenditure and  $e$  is an error term at 95% confidence level.

Data on willingness to make contributions were analyzed by use of Chi-square model to find out relationship between employment or gender and willingness to make voluntary contribution. Lani (2009) states that the task of the chi square tests is to test the statistical significance of the observed relationship with respect

to the expected relationship; the chi square statistic is used by the researcher for determining whether or not a relationship exists.

Also data were analyzed by Pearson Correlation, tables, bar charts, graphs, frequencies, mean and standard deviation were used in data analysis. Data were analyzed by the aid of SPSS.

### **3.10 Ethical Consideration**

Respondents were assured that any information collected from them were treated confidential and purposely for academic only. Researcher made a self introduction and also provided a proper identification to respondents in order to assure confidentiality.

### **3.11 Limitations of the Study**

Limitation of study included language, fear of people and limited access of primary data from EWURA office. To overcome language barrier, data collection tools was translated by researcher into Swahili which is the language of local people. In order to overcome fear of people, researcher tried as much to convince them that this work is for academic purposes. To overcome bureaucracy in EWURA office in accessing primary data, researcher used secondary data published annually by EWURA on evaluation of performance of water utility projects in Tanzania.

## **CHAPTER FOUR**

### **FINDINGS**

#### **4.0 Introduction**

This chapter presents the findings of this study and it is divided into two parts. The first part (part A) is for urban areas and the second part (part B) is for rural areas. The urban areas include water users of water utilities (authorities) which are DAWASCO and DAWASA that are found in Dar es Salaam, and Shinyanga water utilities includes KUWASA, SHUWASA and KASHWASA. Urban areas also include Mkombozi Maji Project Changanyikeni in Kinondoni District which serves peripheral areas but it is not connected to water supplied by DAWASA/DAWASCO. Rural areas include water users of 10 village scheme projects available in Shinyanga.

#### **4.1 Test for Assumptions**

This part covers for test for the following; normality, financial planning, financial budgeting, financial reporting, financial release, level of expenditure, independence of observation errors, homogeneity of variances and multi collianearity.

##### **4.1.1 Test for normality**

$H_0$ : The data are not normally distributed

$H_a$ : The data are normally distributed

The Shapiro-Wilk (for small data sets) test was applied and the decision rule was to reject the null hypothesis when the p value is less than the used level of significance (0.05).

#### 4.1.2 Test For financial planning

**Table 4.55 Tests of Normality – Financial Planning**

Financial planning		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Performance	Strongly Disagreed	.434	116	.000	.659	116	.000
	Disagreed	.355	180	.000	.737	180	.000
	Agreed	.426	67	.000	.650	67	.000
	Strongly Agreed	.402	77	.000	.719	77	.000

a. Lilliefors Significance Correction

Source: Researcher, 2018

From the table above show that P value (0.000) is less than 0.05 hence we reject the null hypothesis there for data are normal distributed.

#### 4.1.3 Test for Financial Budgeting

**Table 4.56 Tests of Normality - Budgeting**

Financial budgeting		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Performance	Strongly Disagreed	.439	163	.000	.636	163	.000
	Disagreed	.355	148	.000	.739	148	.000
	Agreed	.392	93	.000	.735	93	.000
	Strongly Agreed	.327	36	.000	.796	36	.000

a. Lilliefors Significance Correction

Source: Researcher, 2018

From the table above shows that Shapiro wilk test value is less than 0.05 hence we reject the null hypothesis therefore data are normal distributed.

#### 4.1.4 Test for Financial reporting

**Table 4.57 Tests of Normality – Financial Reporting**

	Financial reporting	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Performance	Strongly Disagreed	.445	378	.000	.631	378	.000
	Disagreed	.301	58	.000	.674	58	.000
	Agreed	.307	4	.	.729	4	.024

a. Lilliefors Significance Correction

Source: Researcher, 2018

From the table above also show that in Shapiro wilk test p value are less than 0.05, there for we reject the null hypothesis for that case data are normal distributed.

#### 4.1.5 Test for Financial release

**Table 4.58 Tests of Normality<sup>b</sup> - Release**

	Financial release funds	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Performance	Strongly Disagreed	.449	373	.000	.613	373	.000
	Disagreed	.225	63	.000	.745	63	.000

Source: Researcher, 2018

From the table above also show that in Shapiro wilk test p value are less than 0.05, there for we reject the null hypothesis for that case data are normal distributed.

#### 4.1.6 Test for Level of expenditure

**Table 4.59 Tests of Normality – Level of Expenditure**

	Level of expenditure	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Performance	Strongly Disagreed	.482	94	.000	.521	94	.000
	Disagreed	.376	218	.000	.712	218	.000
	Agreed	.487	20	.000	.495	20	.000
	Strongly Agreed	.330	108	.000	.818	108	.000

Source: Researcher, 2018

From the table above also show that in Shapiro wilk test p value are less than 0.05, there for we reject the null hypothesis for that case data are normal distributed.

#### 4.1.7 Test for Independence of Observation Errors

Durbin-Watson test is used to test for independence of errors and is based on the assumption that the errors in the regression model are generated by a first-order autoregressive process observed at equally spaced time periods. From the table below the value of Durbin Watsonis between 1.5 and 2.5 therefore there is independence of observations.

**Table 4.60 Model Summary<sup>b</sup>**

Model R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson
1	.487 <sup>a</sup>	.237	.229	.623

a. Predictors: (Constant), Financial Release, Financial Reporting, Financial Planning, Financial Expenditures, Financial Budgeting

b. Dependent Variable: Performance

Source: Researcher, 2018

#### **4.1.8 Testing for homogeneity of variances (run from Anova)**

To test the assumption of homogeneity of variance, Levine's test is used. Levine's test is used to assess if the groups have equal variances. This test should not be significant to meet the assumption of equality of variances.

Test of hypothesis

H0: Equal variance are assumed

H1: Equal variance are not assumed

Reject H0 if p value < 0.05

#### **4.1.9 Test of Homogeneity of Variances**

Table 3.61 Test of Homogeneity of Variance - Performance

Levene Statistic	df1	df2	Sig.
12.778	30	404	.06

Source: Researcher, 2018

Therefore we do not reject null hypothesis then equal variance are assumed.

#### 4.1.10 Test for Multicollinearity (run from regression-co linearity diagnostics)

Multicollinearity occurs when two or more explanatory variables in a linear regression model are highly correlated. In other words, there exists linear dependence among the explanatory variables. This is a problem because OLS regression presumes there is no significant linear relationship among explanatory variables and they only predict the outcome variable with a high degree of not each other. If they are correlated, they predict the “same part” of the outcome variable, leading to redundancy. Measures such as variance inflation factor if  $(VIF) > 5$  and tolerance  $(TOL) < 0.02$  are then we will have multicollinearity.

The table below shows that all variable the measure of variance inflation factor are less than 5 therefore there is no presence of multicollinearity

**Table 4.62 Coefficients<sup>a</sup>**

Model	Unstandardized		Sig.	Collinearity	
	Coefficients			Statistics	
	B	Std. Error		Tolerance	VIF
(Constant)	3.152	.129	.000		
Financial Planning	.399	.113	.000	.07	2.974
Financial Budgeting	.155	.124	.211	.063	4.804
1 Financial Reporting	-1.184	.129	.000	.341	2.935
Financial Expenditures	-.419	.076	.000	.234	4.266
Financial Release	.476	.069	.000	.442	2.263

a. Dependent Variable: Performance

Source: Researcher, 2018



## 4.2 Findings from Urban Areas

Findings from Urban are grouped into demographics characteristics, descriptive statistics and inferential statistics.

### 4.2.1 Demographics Characteristics

This subsection summarizes findings of characteristics of respondents. Interview has previously compiled a great deal of information on the demographic characteristics of its panel members. Demographic characteristics normally include gender, generation, race and ethnicity, education, geographic location, and marital status. In this research the main focus is on geographical location, gender, and employment status to in order to answer research questions effectively.

**Table 4.1: Response Rate**

<b>Gende r</b>	<b>Questionnair e Distributed</b>	<b>Returned Questionnair e</b>	<b>Unreturned Questionnair e</b>	<b>Proportion of Un-returned: Distributed Questionnair e (Percent)</b>	<b>Respons e Rate (Percent)</b>
Male	210	188	22	10.5	90
Female	183	175	8	4.4	96
<b>Total</b>	<b>393</b>	<b>363</b>	<b>30</b>		

Source: Researcher, 2018

Table 4.1 above indicates the response rate which is 90% and 96% for male and female respectively; the average total response for all respondents is 92%. Men carry higher weight than women with regard to the ratio of un-returned questionnaires. This shows that women are more responsive than men.

**Table 4.2 Gender of Respondents**

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	188	51.8
Female	175	48.2
Total	363	100.0

Source: Researcher, 2018

Table 4.2 above presents gender of the respondents in terms of the interview conducted, majority were males consist of 51.9% compared to a number of females who were 48.1%. This implies that more data was obtained from men compared to women.

**Table 4.3: Employment Status**

<b>Employment Status</b>	<b>Frequency</b>	<b>Percent</b>
Employed	344	94.8
Not employed	19	5.2
Total	363	100.0

Source: Researcher, 2018

Table 4.3 above confirms that majority of respondents were employed at the percentage of 94.8 compared to that who were not employed with percentage of 5.2%. This gives high possibility paying water bills as well as in making contribution for construction of water infrastructure.

## 4.2.2 Descriptive Statistics

### 4.2.2.1 Objective One: To examine effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

**Table 4.6: Effect of Financial Planning**

Descriptive Statistics	Std.	
	Mean	Deviation
Community is effectively involved during planning stage in deciding the location or design or type of project/technology of water project such as water pump/wells in a 10 - Village scheme	2.52	1.135
Financial planning for utility projects is well backed by research where needs assessment of community are well reflected during planning	2.44	.988
There is Down Up planning where people at lower level such as villagers are highly involved in planning process in water projects	2.26	1.006
Planning is not mostly done by Government officials and politicians but it is done with high participatory of other stakeholders including water users	2.41	1.210
Effective planning has positively affected completion of WSDP's activities and economic development of citizens	2.60	.990
Effective financial planning has positively affected pricing of water and water billing	2.41	1.074
There is efficient financial planning which has led to sustainability of utility projects and people are involved in making contributions to make utility project sustainable	2.52	1.155
There is efficient financial planning which has positively affected regular water supply	2.58	1.033

Financial planning has positively affected economic development as government and donors are not wasting funds for utility projects which are not sustainable	2.63	1.161
There is efficient financial planning and has effectively assisted level of compliance of water utilities to water quality standards	2.60	1.058
Political influence in financial planning has not affected performance of WSDP in some districts and funds were fairly distributed between regions/districts	2.39	1.237
Setting of un researched ceiling by treasury during planning has no negative effects on release of funds and performance of water utility projects	2.70	1.244

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Source: Researcher, 2018

Table 4.6 highlights effect of financial planning on performance of utility project, on average majority of respondents disagree on all the items; mean ranges from 2.26 to 2.63 which is supported by standard deviation from 0.988 to 1.210. The highest weight 2.70 with an indication that setting of un researched ceiling by Treasury has negatively affected release of funds and performance of water utility projects; the least weight is 2.26 to demonstrate that there is no effective down up planning where people at the lower level such as villagers are poorly involved during financial planning. The second weight is 2.63 which indicates that financial planning has negatively affected economic development as government is wasting funds for water utility projects which are not sustainable; 2.60 is the 3th weight and is for two factors, one is that there is no effective planning which has positively affected completion of WSDP activities and economic development of citizen and the other factor is that there is inefficient financial planning which has not assisted the level of compliance of water utilities to water quality standards; 2.58 is the fourth weight which points out that there is inefficient financial planning which has negatively affected regular supply of water; 2.52

carries the fifth weight and it is for two factors, one signify that community is not effectively involved during planning stage in deciding location or design or type of project/technology of water project such as such as water pump or wells in a 10 - Village scheme, the other factor implies that there is inefficient financial planning which has led to lack of sustainability of water utility projects and also people are not involved in making contributions to make water utility projects sustainable; the sixth weight is 2.44 which suggest that financial planning for water utility projects is not well backed by research also needs assessment of community are not well reflected during planning; the seventh weight is 2.41 which carries two factors one denotes that there is ineffective financial planning which has negatively affected pricing of water and water billing, the other factor reveals that financial planning is mostly done by government officials and politicians with low participation of other stakeholders including water users. 2.39 carries eighth weight implying that political influence in financial planning has affected performance of WSDP in some districts or regions in which funds were not fairly distributed between regions and districts.

**Table 4.7: Effect of Political Influence on Planning when Implementing Water Utility Projects**

Reasons	Frequency	Percent
Sidetrack the main professional purpose	22	6.1
Planning is accordance to the interest of politicians and not users	105	28.9
Termination of trained staffs	116	32.0
Additional of unplanned villages to the project	21	5.8
Delay to complete project for campaign purposes	31	8.5
Minister can dictate to have more projects in his Constituency	45	12.4
Use of poor/substandard material and design	8	2.2
To Prevent people to make contributions	11	3.0

Concentrate on unproductive activities	4	1.1
<b>Total</b>	<b>363</b>	<b>100.0</b>

Source: Researcher, 2018

Table 4.7 demonstrates effects of political influence on financial planning. Termination of trained staff was supported by 116 respondents, which is the highest weight with 32%; concentration on unproductive activities had the lowest weight with 1.1%, number of supporters was 4. Other effects of political influence are here under shown with their percent, their number of supporters is in brackets; sidetrack the main professional purpose 6.1% (22); planning is done in accordance to the interest of politicians and not water users 28.9% (105); additional of unplanned villages to the project 5.8% (21); delay to complete project for campaign purposes 8.5% (31); Minister to dictate to have more projects in his Constituency 12.4% (45); Use of poor/substandard material and design 2.2% (98); and prevention of people to make contributions 3.0% (11);

#### **4.2.2.1 Objective Two: To investigate the influence of financial budget on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.8: Financial Budgeting**

<b>Descriptive Statistics</b>	<b>Mean</b>	<b>Std. Deviation</b>
Budgeting for WSDP activities is realistic, taking into account prices during actual procurement	2.56	1.149
Un realistic budgeting is no one of causes for under performance of WSDP for implementing few projects as originally planned/budgeted due changes in prices	2.47	1.014

The costing of activities and costing base is realistic and is not one of causes for various budget reallocations and variance during actual implementation	2.31	1.021
Budgeting is efficient and not affected audit report (audit opinion) because of significant variance between approved budget and actual implementation	2.40	1.169
There is efficient budgeting which has not affected release of funds from donors/Government which did not affect negatively performance of utility of projects	2.64	1.004
There is efficient budgeting which has not affected expenditure and monitoring of funds in utility projects and not caused funds to be spent in other activities outside intended ones and hence affected performance	2.43	1.081
There is efficient budgeting which has not caused poor regular supply of water	2.53	1.145
The system of budgeting through ceiling has not affected negatively completion of utility projects and economic development	2.60	1.037
There is efficient budgeting which has not affected negatively quality of water , also costing in budgeting process is well researched	2.63	1.158
Political influence in financial budgeting has not negatively affected performance of utility project by favoring some regions/districts also scientific methods were used during budgeting	2.60	1.063

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Source: Researcher, 2018

Table 4.8 identifies the influence of financial budgeting on utility project performance, on average majority of respondents disagree on the every part of financial budgeting, the mean ranges from 2.31 to 2.64 supported by standard deviation from 1.004 to 1.158. The highest weight went to the effect of budgeting

in releasing funds with a mean of 2.64 supported by the lowest standard deviation of 1.004. The lowest weight was for “realistic in costing of activities and costing base” with a mean of 2.31. Other influence of budgeting and their mean in bracket are as follows; realistic of budgeting for WSDP activities taking into account prices during actual procurement (2.56); Un realistic budgeting is one of causes for under performance of WSDP, as it causes negative variance as compared to approved plans/budget (2.47); efficiency of budgeting in affecting audit report (audit opinion) because of significant variance between approved budget and actual implementation (2.40); efficiency of budgeting in affecting expenditure and monitoring of funds in utility projects as it a cause for diverting fund to unplanned activities (2.43); efficiency of budgeting in relation to poor regular supply of water (2.53); effect of budgeting through Treasury Ceiling in completion of utility projects and economic development (2.60); effect of budgeting by using un-researched costing system in quality of water (2.63); and effect of political influence during financial budgeting in performance of utility project by favoring some regions/districts and use of unscientific methods (2.60).

**4.2.2.3 Objective Three: To evaluate the effect of financial reporting on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.9: Financial Reporting**

<b>Descriptive Statistics</b>	<b>Std.</b>	
	<b>Mean</b>	<b>Deviation</b>
There is no problem of poor quality of reports including audit report and has not negatively affected release of funds to utility project	2.55	1.125
Quality of reporting has not negatively affected financial planning of utility projects	2.46	0.998



Quality of reporting has not affected financial budgeting and not contribute to poor performance of utility projects	2.30	1.032
Quality of reporting has not affected expenditure and monitoring of funds neither discouraged development partners in releasing funds	2.37	1.172
Financial reporting has not negatively affected regular supply of water	2.64	1.024
Financial reporting has no bad impact on compliance of water utilities and quality of water	2.43	1.093
Quality of financial reporting has not negatively affected sustainability of utility projects	2.52	1.159
Financial reporting has not affected completion of water projects as well as economic development	2.59	1.029
Quality of financial reporting has not contributed to poor monitoring of funds and expenditure	2.61	1.147
Quality of financial reporting has not mislead decisions making in many levels not has not contributed to poor performance of utility projects	2.60	1.060
Level of expenditure is well reported to stakeholders	3.37	1.720

---

Source: Researcher, 2018

Table 4.9 points out the effect of financial reporting on utility project performance. On average majority of respondents are in disagreement with every part of financing reporting; mean ranges from 2.30 to 3.37 which is supported by standard deviation from 0.998 to 1.720. Despite the fact that the item “level of expenditure is well reported to stakeholders” has the mean above 3 which is 3.37 to indicate some agreements with the statement, it has the highest standard deviation of 1.72 which indicates a deviation of majority in agreeing to the statement. Quality of reporting in affecting financial budgeting and contributing to poor performance of utility projects has the lowest weight with a mean of 2.30 and a standard deviation of 1.032. Quality of reporting in affecting financial

planning of utility projects has a mean of 2.46 and the highest standard deviation of 0.998, this means that many respondents were in agreement of negative effect of quality of reporting in financial planning. “Financial reporting in affecting regular supply of water” has the second highest mean of 2.64 and supported by the second lowest standard deviation of 1.024, which means that majority were in agreement of negative effect of financial reporting on regular supply of water. Other items with their mean in brackets include the following; “problem of poor quality of reports (including audit) in affecting release of funds to utility project” (2.55); quality of reporting in affecting expenditure and monitoring of funds which also discourage development partners in releasing funds (2.37); impact of financial reporting on compliance of water utilities with regard to quality of water (2.43); quality of financial reporting in affecting sustainability of utility projects (2.52); financial reporting in affecting completion of water projects as well as economic development (2.59); quality of financial reporting in contributing to poor monitoring of funds and expenditure (2.61); and quality of financial reporting in misleading decisions making in many levels and contributing to poor performance of utility projects (2.60);

#### **4.2.2.4 Objective Four: To evaluate the influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.10: Financial releasing**

<b>Descriptive Statistics</b>	<b>Std.</b>	
	<b>Mean</b>	<b>Deviation</b>
Release funds to water utility was not affected by quality audit reports and also not affected performance of WSDP because funds were released on time	2.51	1.118

Release funds to water utility was not affected by release of physical reports to stakeholders including development partners as funds were released on time	2.46	1.008
Releasing of funds did not affect quality of audit reports and performance of utility projects	2.26	1.029
Release of funds did not affect quality of water	2.33	1.166
Problem of untimely release of funds has not negatively affected regular supply of water because infrastructure were constructed and maintained on time	2.60	1.023
Delay to release funds has not affected economic development due to poor performance of utility projects	2.37	1.084
Un reliable release of funds into utility projects has not negatively affected sustainability of utility projects	2.44	1.124
Delay of financial release/dispensing of funds had no negative impact on completion of WSDP activities, this has not de-motivated development partners to inject funds	2.50	0.987
Funds for water projects were released with timely instruction	2.50	1.106
Untimely dispensing of funds to utility projects is not one of causes for diverting funds into other activities and this has not worsen the performance of utility projects	2.54	1.033
Funds for utility projects were released with timely instruction and so they were not spent into different activities and thereafter no negative effect on performance of utility projects	2.07	0.483

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Source: Researcher, 2018

Table 4.10 above portrays the influence of financial release/dispensing on utility project performance, on average majority of respondents disagree on every part of financing release/dispensing. Mean ranges from 2.07 to 2.60 supported by standard deviation from 0.483 to 1.166. “Problem of untimely release of funds in

affecting regular supply of water due to effectiveness in construction and maintenance of water infrastructure” carries the highest weight with a mean of 2.60 supported by a standard deviation of 1.023. “Funds for utility projects were released with timely instruction and so they were not spent into different activities and thereafter no negative effect on performance of utility projects” has the lowest weight with a mean of 2.07 and the lowest standard deviation of 0.483 which means that despite its lowest mean majority did not deviate in disagreement with the statement. “Release of funds did not affect quality of water” has a mean of 2.33 with the highest standard deviation of 1.166 to indicate deviation of majority.

“Untimely dispensing of funds to utility projects being one of causes for diverting funds into other activities and later worsening performance of utility projects” has the second highest weight of 2.54 and standard deviation of 1.033 this means that majority are also highly concerned with the view of the statement. Other items of financial release with their mean in brackets are: Timely release funds to water utility in affecting quality audit reports and performance of WSDP (2.51); effect of physical reports in affecting release funds to water utility” (2.46); “Releasing of funds did not affect quality of audit reports and performance of utility projects” (2.26); “delay to release funds in affecting economic development due to poor performance of utility projects” (2.37); ‘effect of un reliable release of funds to utility projects on sustainability of utility projects (2.44); and lastly is “delay of financial release/dispensing of funds in affecting completion of WSDP activities and later de-motivation to development partners to inject funds’ (2.50).

**4.2.2.5 Objective Five: To investigate the effect of level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.11: Level of Expenditure**

<b>Descriptive Statistics</b>	<b>Std.</b>	
	<b>Mean</b>	<b>Deviation</b>
Funds of WSDP were not diverted from planned activities, to other activities	2.46	1.080
There is not poor coordination for WSDP funds (and expenditure) between PMOLG, Ministry of Water, LGAS (TAMISEMI) and implementing Agencies (Water Authorities)	2.40	.957
Poor monitoring of funds is not contributed to the ministry responsible for water not to take charge of supervising other entities related to water management and water supply	2.25	.992
Existing Laws and Regulations on water do provide room for poor coordination of funds and expenditure of water projects	2.35	1.150
Actions taken towards poor spending of funds is tough enough to stop the problem	2.64	1.029
Level of expenditure is not highly affected by unfair distribution of funds between districts	2.43	1.096
There is good correlation between approved budget and actual expenditure and has not negative effect on performance of water projects	2.55	1.184
There is efficient expenditure which has positively affected compliance of utility projects to water quality standards and hence quality of water	2.60	1.039
There is effective expenditure and monitoring of expenditure and has positively affected timely completion of water projects, regular supply of water and billing of water to water users	2.60	1.150
Economic development of people is not affected due to misspending of funds allocated for utility projects in this case people spend little of their time looking for water	2.57	1.037

There is effective expenditure which has positively affected maintenance of water infrastructure and sustainability of utility projects	1.60	.779
Regulators responsible for financial reporting of Government expenditure like National Board of Accountants and Auditors has done enough to make sure that expenditure is complying fully to international standards and Public Finance Act	1.85	.734
Expenditure of WSDP funds is well researched to focus and base on public needs and it is not allocated basing on political pressure and has not caused under performance of utility projects	1.88	1.155

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Source: Researcher, 2018

Table 4.11 communicates the effect of level of expenditure on utility project performance; on average majority of respondents disagree on the every part of financing expenditure. Mean ranges from 1.60 to 2.64 supported by standard deviation from 0.734 to 1.184. “Actions taken towards poor spending of funds is tough enough to stop the problem” carries the highest weight with a mean of 2.64 supported by a standard deviation of 1.029. “Although a statement which says that “there is effective expenditure which has positively affected maintenance of water infrastructure and sustainability of utility projects” carries the lowest mean of 1.60, it is supported by the lowest standard deviation of 0.779. Two items, which are; “there is efficient expenditure which has positively affected compliance of utility projects to water quality standards and hence quality of water” and “there is effective expenditure and monitoring of expenditure and has positively affected timely completion of water projects, regular supply of water and billing of water to water users” have both the second highest mean of 2.60 with standard deviation of 1.150 and 1.039 respectively. “Economic development of people is not affected due to misspending of funds allocated for utility projects in this case people spend little of their time looking for water” carries the third highest mean of 2.57 supported by standard deviation of 1.037.

Other measures of expenditures where respondents were in disagreement with are as follows (mean is in bracket); “there is not poor coordination for WSDP funds (and expenditure) between PMOLG, Ministry of Water, LGAS (TAMISEMI) and implementing Agencies (2.40); “poor monitoring of funds is not contributed to the ministry responsible for water not to take charge of supervising other entities related to water management and water supply” (2.25); “existing Laws and Regulations on water do provide room for poor coordination of funds and expenditure of water projects” (2.35); :level of expenditure is not highly affected by unfair distribution of funds between districts” (2.43); “there is good correlation between approved budget and actual expenditure and has not negative effect on performance of water projects” (2.55); “regulators responsible for financial reporting of Government expenditure like National Board of Accountants and Auditors has done enough to make sure that expenditure is complying fully to international standards and Public Finance Act” (1.85); and “expenditure of WSDP funds is well researched to focus and base on public needs and it is not allocated basing on political pressure and has not caused under performance of utility projects” (1.88).

#### 4.2.2.6 Performance of Water Utilities

**Table 4.12: Level of Performance**

<b>Descriptive Statistics</b>	<b>Std.</b>	
	<b>Mean</b>	<b>Deviation</b>
Water utilities effectively comply to water quality standards	3.36	.731
Quality of water has improved after introduction of WSDP	3.49	.670
There is improvement in water availability (water supply) after introduction of WSDP	3.36	.731
Availability of clean water to water users is satisfactory	3.49	.670

Water projects are sustainable also there is no problem with maintenance of infrastructure	3.36	.731
Water users are willingly to make voluntary contributions (donation) in order to facilitate construction of water infrastructure and supply of clean water.	3.49	.670
There is improvement in quality and supply of clean water which has positively affected economic growth	3.49	.670
There is an improvement in water billing, also the water bills do reflect the real consumption water	2.92	.344
There is no problem of sustainability of water projects due to lack of funds	3.12	.404
There are enough measures taken to sensitize public to contribute voluntarily to make water projects sustainable	3.57	.474
Sustainability of water projects is not affected by unequal distribution of funds between districts.	3.12	.404

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Source: Researcher, 2018

In table 4.12 above provides the performance of water utility projects, on average majority of respondents agreed on majority of the items with regard to improvement of performance of water utilities. The mean ranges from 3.12 to 3.57 supported by standard deviation from 0.344 to 0.731. “There are enough measures taken to sensitize public to contribute voluntarily to make water projects sustainable” carries the highest weight with a mean of 3.57 supported with a standard deviation of 0.404. ‘There is an improvement in water billing, also the water bills do reflect the real consumption water’ carries the lowest weight with a mean of 2.92 with the lowest standard deviation of 0.344 which indicates that majority were in disagreement with the statement, this articulates that there is less improvement in water billing, also water bills do not reflect the real consumption of water. The following have the second highest weight with a mean of 3.49 and a standard deviation of 0.670; “quality of water has improved after introduction of WSDP”; availability of clean water to water users is satisfactory” ‘water users



are willingly to make voluntary contributions (donation) in order to facilitate construction of water infrastructure and supply of clean water”; and “water users are willingly to make voluntary contributions (donation) in order to facilitate construction of water infrastructure and supply of clean water”.

The third highest weight goes to three items with a mean of 3.36 and standard deviation of 0.731, they include the following; “Water utilities effectively comply to water quality standards”; “there is improvement in water availability (water supply) after introduction of WSDP”; and “water projects are sustainable also there is no problem with maintenance of infrastructure”.

Other two items which carries the second but last weight with a mean of 3.12 and a standard deviation of 0.404 are; “there is no problem of sustainability of water projects due to lack of funds”; and “sustainability of water projects is not affected by unequal distribution of funds between districts”.

**Table 4.13: Cross tabulation between Location and Level of Satisfaction**

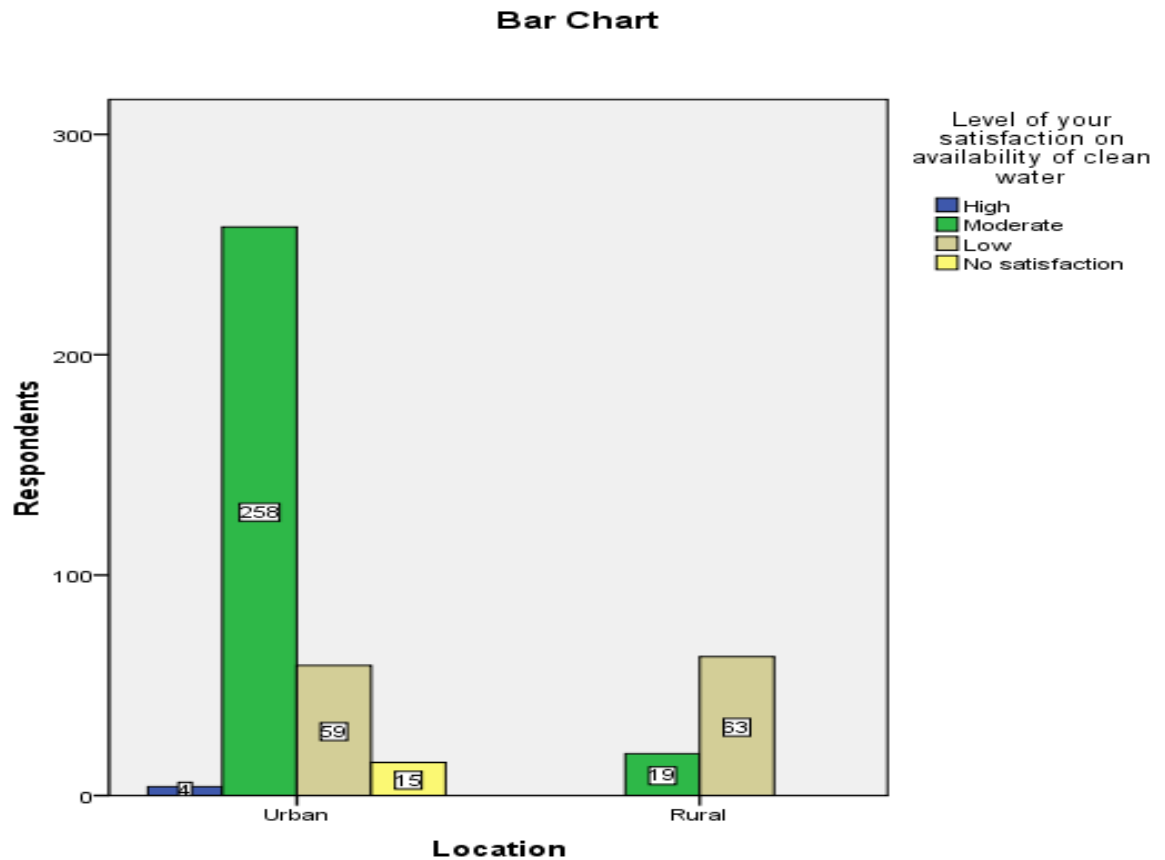
<b>Location * Level of your satisfaction on availability of clean water</b>		<b>Level of your satisfaction on availability of clean water</b>				
		High	Moderate	Low	No satisfaction	Total
Location	Urban	4	258	59	15	336
	Rural	0	19	63	0	82
Total		4	277	122	15	418

Source: Researcher, 2018

Results presented in Table 4.13 above prove that majority of respondents about 258 at urban areas has the moderate level of satisfaction of clean water compared

to the 19 respondents from rural areas. Also, majority of respondents about 63 at rural areas has the low level of satisfaction of clean water compared to the 59 respondents at urban areas. Then, at rural areas there is no any response on both high level of satisfaction and no satisfaction.

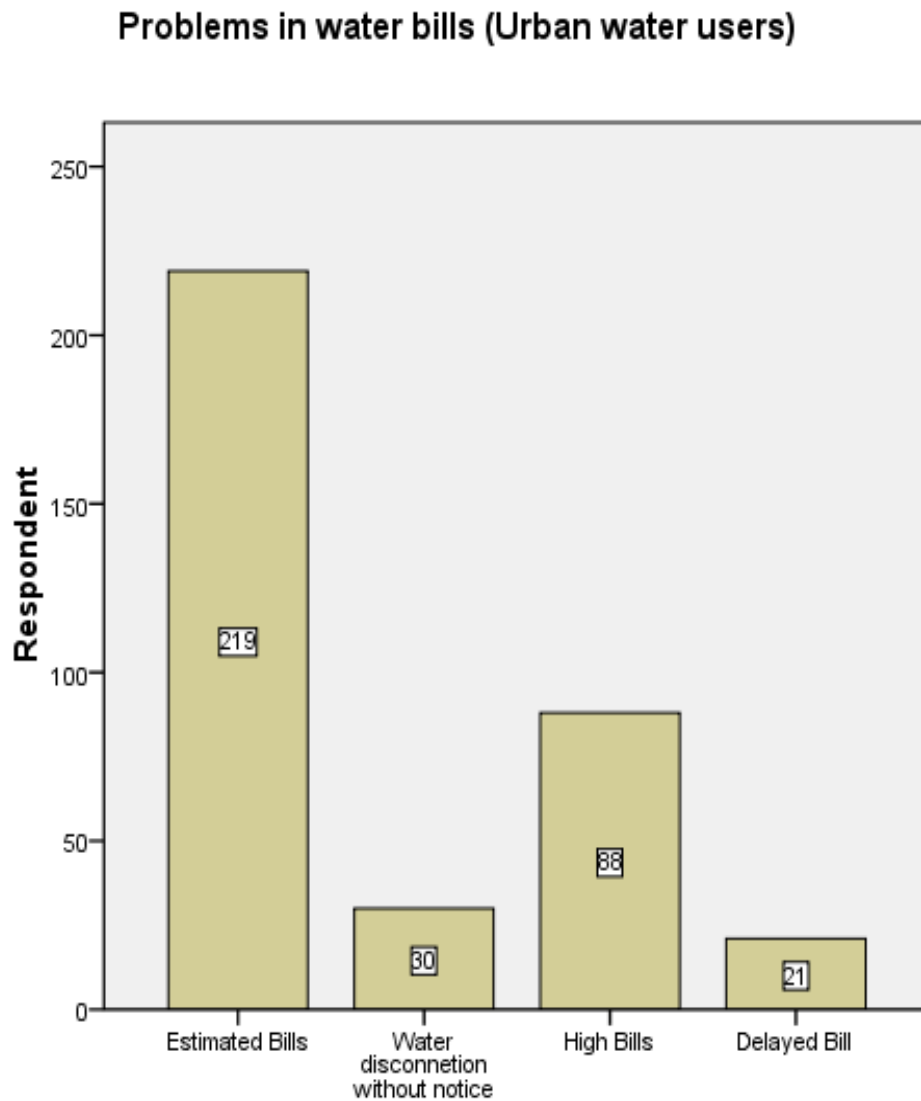
**Figure 4.1: Level of satisfaction**



Source: Researcher, 2018

Figure 4.1 above reveals level of satisfaction on availability of clean water in urban areas. Whilst 258 respondents are highly satisfied, 59 have low satisfaction and 15 are completely not satisfied. The level of satisfaction of urban areas is higher than that of rural areas.

**Figure 4.2: Challenges in Water billing (Urban users)**

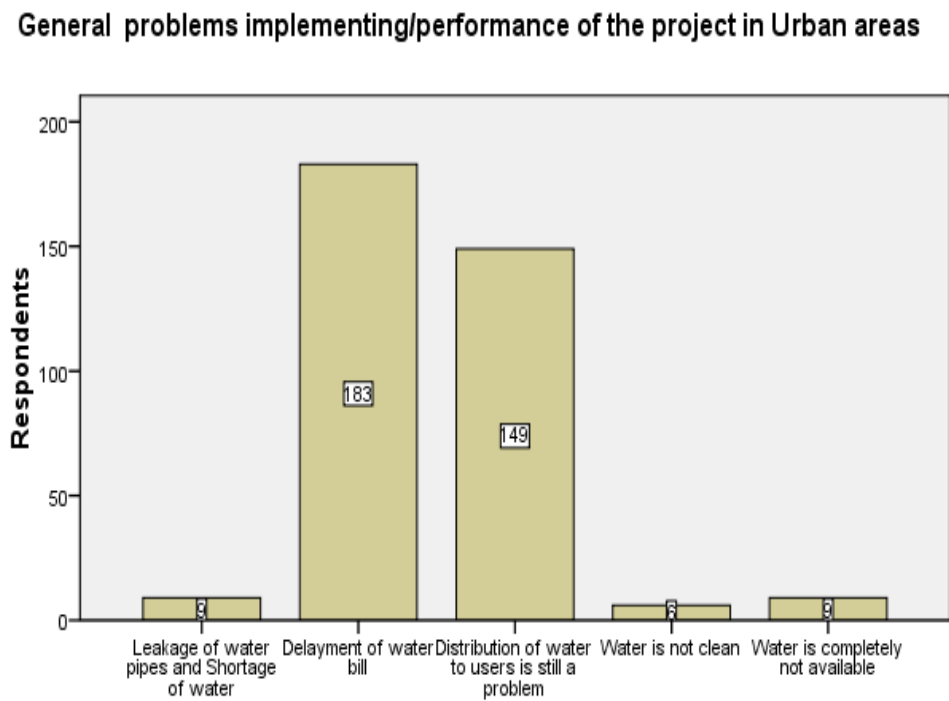


Source: Researcher, 2018

Problems in water bills as indicated in figure 4.2 include challenges associated with estimation of bills as supported by 219 respondents, this also carries the highest weight followed by high bills which was noted by 38 respondents; water

disconnection without notice was supported by 30 respondents; and lastly delayed bills as pointed out by the minority number which is 21.

**Figure 4.3: General Problems Facing Water Utilities**



Source: Researcher, 2018

Problems facing performance of water utilities in urban areas as indicated in figure 4.3 above, are here highlighted (number of respondents is in bracket); delay of water bills was found to be the most of factors affecting performance of the water utilities in urban areas as indicated in figure 4.03 above by majority of 183 respondents; un clean water was supported by the minority (6); leakage of water pipes and shortage of water (9); and water is completely unavailable (9).

**Table 4.14: Cross Tabulation for Contribution According to Gender**

Contribution for water projects Gender wise (in TShs)						
		0-20,000	20,001-100,000	100,001-200,000	200,001-400,000	Total
Gender	Male	52	112	8	4	176
	Female	72	75	13	0	160
Total		124	187	21	4	336

Source: Researcher, 2018

Results highlighted in Table 4.14 put on view that majority of respondents are willing to contribute between TShs 20,000 to TShs 100,000 per year in order to assist water project and improve quality and access of clean water where female were 75 which was lower number compared to male which was 112. The maximum amount that respondents are willing to contribute was TShs 400,000 whereby all of the 4 responses were of men.

**Table 4.15: Cross Tabulation for Contribution According to Employment Status for Men**

Employment Status * Contribution for water projects (in TShs)						
		0-20,000	20,001-100,000	100,001-200,000	200,001-400,000	Total
Male - Urban	Employed	10	78	7	4	99
	Not employed	42	34	1	0	77
Total		52	112	8	4	176

Source: Researcher, 2018

Results exhibited in Table 4.15 confirm that majority of respondents are willing to make a contribution between TShs 20,001 and TShs 100,000 per year for water

projects, in this category men who were not employed are 34 which is lowest number compared to those who are employed their number is 78. Maximum amount that respondents are willing to contribute was between TShs 400,000 whereby all of the 4 responses come from respondents with employment.

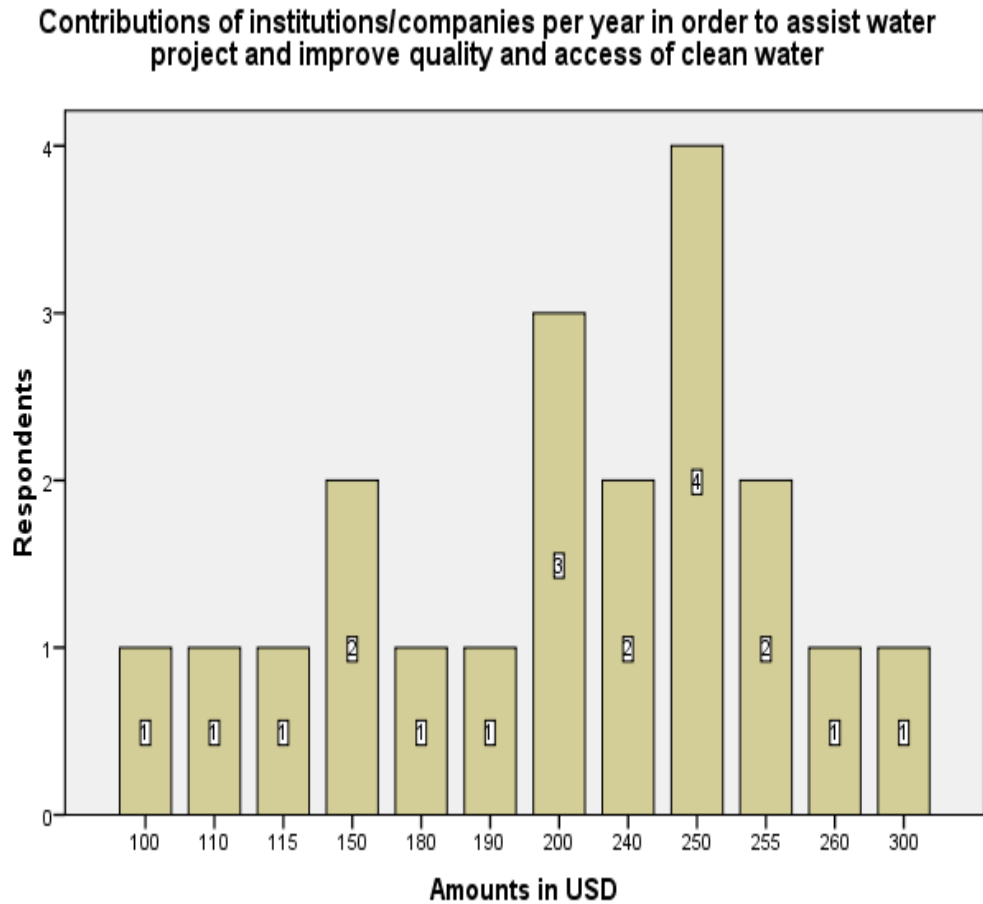
**Table 4.16: Cross Tabulation for Contribution According to Employment Status – Women**

Employment Status * Contribution for water projects (in TShs)					
		0- 20,000	20,001- 100,000	100,001- 200,000	Total
Female – Urban Employment Status	Employed	3	64	13	80
	Not employed	69	11	2	82
	Total	72	75	15	162

Source: Researcher, 2018

Table 4.16 above exhibits the willingness of both employed and unemployed women to make voluntary contributions for water projects. Majority of respondents were willing to contribute between TShs 20,001 and TShs 100,000 per year whereby those who were not employed were 11 and employed ones were 64. The maximum amount that respondents were willing to contribute was between TShs 100,001 and TShs 200,000 whereby 13 responses were for employed ones and 2 of them were for unemployed. Whist majority of employed women are willing to make an annual contribution between TShs 20,001 and TShs 100,000, majority of unemployed women are willing to make such annual contribution of not more than TShs 20,000.

**Figure 4.4: Contributions of Institutions and Companies**



Source: Researcher, 2018

Results presented in Figure 4.4 narrate that majority of institutions/companies are willing to contribute amount of USD 250 (TShs 557,500) per year in order to assist water project and improve quality and access of clean water. Whist the maximum amount that institutions/companies willing to contribute was USD 300 (TShs 669,000) the minimum amount is USD 100 (TShs 223,000).

**Table 4.17: No. of Days in which Water is not available per Month in Urban Areas**

<b>Days</b>	<b>Frequency</b>	<b>Percent</b>
0	2	1.1
1	4	2.2
2	121	67.2
3	4	2.2
4	11	6.1
5	1	0.6
7	1	0.6
8	6	3.3
10	12	6.7
11	3	1.7
12	2	1.1
15	2	1.1
20	4	2.2
22	1	0.6
30	6	3.3
Total	180	100

Source: Researcher, 2018

Results presented in Table 4.17 make evident that majority of respondents about 121 which contain 67.2% of the total respondents said that number of days in which water is not available per month was 2 days. On the other hand only 2 respondents which contain 1.1% of the total respondents said none of the day in which water is available per month.



**Table 4.18: Reasons for any Non-Compliance of Water Utilities to Water Quality Standards**

<b>Reasons</b>	<b>Frequency</b>	<b>Percent</b>
High cost of chemicals for treatment	9	16.67
Lack of tools & equipment for test & monitoring	12	22.22
Inadequate funds	25	46.3
Lack of qualified staff	8	14.81
<b>Total</b>	<b>54</b>	<b>100.0</b>

Source: Researcher, 2018

Results revealed in Table 4.18 determine that about 25 respondents which is 46.3% mentioned that inadequate funds is the huge reason for non-compliance of water utilities to water quality standards. On the other hand lack of qualified staff seem to have a low rating about only 8 respondents which is 14.817%

**Table 4.19 Price per Unit (in TShs) shown in Water Bill**

<b>TShs</b>	<b>Frequency</b>	<b>Percent</b>
1,070	11	6.1
1,160	10	5.6
1,227	4	2.2
1,561	28	15.6
1,784	127	70.5
<b>Total</b>	<b>180</b>	<b>100</b>

Source: Researcher, 2018

Table 4.19 makes plain that 70.5% of respondents pays TShs 1,784 per unit, this carries the highest weight; 2.2% pays TShs 1,227 which is the lowest weight. Others are 6.1% which pays TShs 1,070, 5.6% pays TShs 1,160; and 15.6% pays TShs 1,561

### 4.2.3 Inferential Statistics

#### 4.2.3.1 To examine the effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

Data were analyzed using Pearson Correlation; multiple linear regression model; and Chi- Square Test

**Table 4.20: Pearson Correlation P(r) between Performance and Financial Planning**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Financial Planning	0.960	0.000**
Source: Researcher, 2018		

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results presented by table 4.20 make obvious that there is positive relationship between performance and financial planning. This means that the proper financial planning of WSDP in urban areas will leads to the higher performance. On the other hand, if there is improper financial planning of WSDP in the urban areas, it will cause the poor performances of the water utility projects. Also, the intensity of relationship is very strong and it is statistically significance, since the value of coefficient of Pearson correlation was 0.960 at 0.05 level of significance

**4.2.3.2 To compare the influence of financial budget on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.21: Pearson Correlation between Performance and Financial Budgeting**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Financial Budget	0.976	0.000**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results in by table 4.21 make evident about the positive relationship between performance and financial planning. This means that the proper financial budgeting of WSDP in urban areas will leads to the higher performance. On the other hand, if there is improper financial budgeting of WSDP in the urban areas, it will cause the poor performances of the project. Also, the intensity of relationship is very strong and it is statistically significance, since the value of coefficient of Pearson correlation was 0.960 at 0.05 level of significance.

#### 4.2.3.3 To evaluate the effect of financial reporting on utility performance in Shinyanga and Dar es Salaam region, Tanzania

**Table 4.22: Pearson Correlation between Performance and Financial Reporting**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Financial reporting	0.961	0.000**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results illustrated by table 4.22 confirm that there is positive relationship between financial reporting and performance of utilities project. This means that the proper financial planning of WSDP in urban areas will leads to the higher performance. On the other hand, if there is improper financial reporting of WSDP in the urban areas, it will cause the poor performances of the project. Also, the intensity of relationship is very strong and it is statistically significance, since the value of coefficient of Pearson correlation was 0.961 at 0.05 level of significance.

#### 4.2.3.4 To examine the influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania

**Table 4.23: Pearson Correlation between Performance and Financial Releasing**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Financial release	0.936	0.000**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results in table 4.23 convey that there is positive relationship between performance and financial releasing. This means that the proper financial planning of WSDP in urban areas will leads to the higher performance. On the other hand, if there is improper financial releasing of WSDP in the urban areas, it will cause the poor performances of the project. Also, the intensity of relationship is very strong and it is statistically significance, since the value of coefficient of Pearson correlation was 0.936 at 0.05 level of significance.

#### 4.2.3.5 To investigate the level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

**Table 4.24: Pearson correlation between Performance and Level of Expenditure**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Level of expenditure	0.955	0.000**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results in table 4.24 articulate that there is positive relationship between performance and level of expenditure. This means that the proper financial planning of WSDP in urban areas will leads to the higher performance. On the other hand, if there is improper level of financial expenditure of WSDP in the urban areas, it will cause the poor performances of the project. Also, the intensity of relationship is very strong and it is statistically significance, since the value of coefficient of Pearson correlation was 0.955 at 0.05 level of significance.

#### 4.2.3.6 Multiple linear regression analysis

Study conducted a multiple regression analysis to determine the relationship between independent variables and the dependent variable as shown in table 4.26 below:

**Table 4.25: Model Summary**

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.979	0.959	0.958	0.178

Source: Researcher, 2018

#### **4.2.3.7 Coefficient of determination $R^2$**

Coefficient of determination usually clarifies the extent to which changes in the dependent variable can be explained by the change in the independent variables. The five independent variables that were studied (Financial Planning, Financial Budgeting, Financial Reporting, Financial Release and Level of Expenditure), explain 0.958% of the performance as represented by the Adjusted R square.

The regression model was as follows:  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$

Where:

Y is the dependent variable (performance),  $\beta_0$  is the regression coefficient/constant/Y-intercept,

$\beta_1, \beta_2, \beta_3, \beta_4$  are the slopes of the regression equation,  $X_1$  is the Financial\_Planning,  $X_2$  is the Financial\_Budgeting,  $X_3$  is the Financial\_Reporting,  $X_4$  is the Financial\_Release,

$X_5$  is the Level\_Expenditure and  $e$  is an error term at 95% confidence level.

**Table 4.26: Coefficients of Regression Analysis**

Model	Un-standardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	.055	.050	1.111	.268
Financial Planning	.227	.041	5.585	.000
Financial Budgeting	.478	.065	7.346	.000
Financial Reporting	.120	.065	1.852	.065
Financial Release	-.004	.044	-.097	.923
Level of Expenditure	.132	.050	2.648	.008

Source: Researcher, 2018

Dependent Variable: Performance

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

$$Y = 0.055 + 0.227X_1 + 0.478X_2 + 0.120X_3 - 0.004X_4 + 0.132X_5$$

The above equation established that taking all factors into account (Financial Planning, Financial Budgeting, Financial Reporting, Financial Release and Level of Expenditure) constant at zero, performance would be 0.055. The findings of the study further show that taking all other independent variables constant, a unit increase in financial planning will lead to a 0.227 increase in performance. The p-value was 0.000 which is less than 0.05 and thus the relationship was significant. It was also indicated in the study's findings that a unit increase in financial budgeting will lead to a 0.478 increase in performance. The p-value was 0.000 and thus the relationship between two was significant. The result from the study indicates that financial budgeting in the urban area contributed most to the performance of the project. The study conducted a multiple regression analysis so as to determine the influence of the independent variables on performance. The significance level of Financial Planning, Financial Budgeting and Level of Expenditure were 0.000, 0.00 and 0.008 respectively ( $p < 0.05$ ). These three



factors were the most related factors for influencing performance. Financing reporting with  $p = 0.065$  and financing releasing with  $p = 0.923$  were show the least related factors in influencing performance. A change of one standard deviation in the predictor (independent variable) will result in a change of (P Value) standard deviation in criterion variable (dependent).

#### 4.2.3.8 Chi – Square Test on Contribution

**Table 4.27: Contribution per Year in Order to assist Water Utility Project and improve Quality and access of Clean Water**

Urban	Frequency	Percent
None	13	3.6
Between TShs 1/= to TShs 5,000/=	54	14.9
Between TShs 5,001/= to TShs 10,000/=	68	18.7
Between TShs 10,001/= to TShs 20,000/=	75	20.7
Between TShs 20,001/= to TShs 50,000/=	77	21.2
Between TShs 50,001/= to TShs 100,000/=	53	14.6
Over TShs 100,001/=	23	6.3
<b>Total</b>	<b>363</b>	<b>100.0</b>

Source: Researcher, 2018

**Table 4.28: Cross Tabulation between Willingness to Contribute and Gender**

<b>Contribute per year in order to assist water project and improve quality and access of clean water</b>	<b>Gender</b>		<b>Total</b>
	<b>Male</b>	<b>Female</b>	
None	6	7	13
Between TShs 1/= to TShs 5,000/=	23	31	54
Between TShs 5,001/= to TShs 10,000/=	39	29	68
Between TShs 10,001/= to TShs 20,000/=	32	51	83
Between TShs 20,001/= to TShs 50,000/=	36	31	71
Between TShs 50,001/= to TShs 100,000/=	40	23	59
Over TShs 100,001/=	12	3	15
<b>Total</b>	<b>188</b>	<b>175</b>	<b>363</b>

Source: Researcher, 2018

**Table 4.29: Chi-Square Tests**

	Value	Degree of Freedom	Sig. (2-sided)
Pearson Chi-Square	14.761	3	0.002

Source: Researcher , 2018

From table 4.29 reveals that there statistically significance an association between willingness to make contribution and gender of the respondents. Since, the significance value (p-value) was 0.002 which is less than 0.05 level of significance; p-value is less than significance level.

**Table 4.30: Cross Tabulation between Willingness to Contribute and Employment Status**

Contribute per year in order to assist water project and improve quality and access of clean water	Employment Status		
	Employed	Not employed	Total
None	7	6	13
Between TShs 1/= to TShs 5,000/=	48	6	54
Between TShs 5,001/= to TShs 10,000/=	58	10	68
Between TShs 10,001/= to TShs 20,000/=	64	11	75
Between TShs 20,001/= to TShs 50,000/=	65	12	77
Between TShs 50,001/= to TShs 100,000/=	43	10	53
Over TShs 100,001/=	14	9	23
<b>Total</b>	<b>299</b>	<b>64</b>	<b>363</b>

Source: Researcher, 2018

Table 4.30 conforms that majority of both employed and un employed respondents are willing to make contributions of the range between TShs 20,001/= and TShs 50,000/=. Those who are not willing to contribute anything are 7 and 6 for employed and not employed respectively.

**Table 4.31: Chi-Square Tests**

	Value	Degree of Freedom	Sig. (2-sided)
Chi-Square	17.316	6	0.008

Source: Researcher, 2018

Table 4.31 proves that there is statistically significance an association between willingness to make voluntary contributions and employment status. Since, the significance value (p-value) was 0.008 which is less than 0.05 level of significance.

#### 4.2.4 Analysis of Data from Focus Group Discussion

This part analyses data from focus group discussion with Water Project Committee at Mkombozi Maji Project at Changanyikeni, Kinondoni District

**Table 4.32: Analysis of Data from Focus Group Discussion**

Description	Data
Availability of water per week	Acceptable
Quality of Water	A bit salty
Price of Water per 20 litres	50/=
Non Revenue Water	None
Political Influence	None
Quality of Water pipes	Standard
Distribution of Points	Low
Sustainability	Low due to competition with DAWASCO

**Source: Researcher, 2018**

Table 4.32 above depicts results from focus group discussion which shows good performance of project in terms of water availability, non revenue water, political influence and quality of water. Mean while performance is not good in terms of price of water, distribution points, quality of water and sustainability issues.

#### 4.2.5 Discussion of Results for Urban Areas

This part is focusing on discussion of results of urban areas, which includes a discussion of each independent variable in relation to dependent variable and sub variables of the dependent variable.

##### **4.2.5.1 Objective One: To examine the effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

Results presented in Table 4.20 indicate a positive relationship between financial planning and performance of water utilities. Table 4.06 highlights how financial planning affects the dependent variable; during planning stage community is not effectively involved in deciding the design or type of project/technology or location of water project such as water pumps or wells in a 10 – village scheme, which is a non compliance to the Water Policy (2002) which requires effective involvement of community (water users) in decision making especially a choice of technology or design of the project. Financial planning is not well backed by research to find out the need assessment. Planning is mostly done Government official and politicians thus participatory planning is very ineffective. There is political influence during financial planning of WSDP funds which leads to unfair distribution between regions or districts. Inefficient financial planning has negatively affected completion of WSDP's activities; pricing of water or water billing; sustainability of water utilities; regular water supply, level of compliance of water utilities to water quality standards; and sustainability of water utilities of both urban and rural areas. This relates to studies by Kelly (2009) and Taylor et al. (2014) in constructing water projects across rural Africa and Tanzania respectively without fully consulting local people.

It also relates to study of ADB (2016) on weak sector planning and monitoring in Philippines and also evaluation study ADB (2010) in Bangladesh regarding gap between what was planned and actually implemented.

Table 4.7 explains how financial planning has been affected by political influence, the effects include the following; to sidetrack the main professional purpose; planning to be in accordance with politicians and not users; terminating trained staffs; adding unplanned activities to ongoing project, delaying to complete project for campaign purposes; the Minister to dictate to have more projects in his/her constituency; use of poor or substandard material and design; to prevent people to make contributions in order to gain popularity; and to concentrate on unproductive activities. This relates to study by Maike et al.

(2012) on Sub Saharan countries and found out how politicians and central bureaucrats have been allowed to keep public budgets concentrated in national administrations, stalling decentralization and leading to a dangerous institutional vacuum in the rural provision of water supply with neither national or local governments fully taking responsibility; and also politicians' refusal to raise tariffs in order to make good political pro poor rhetoric; and Rasheed on planning and budgeting process in United Republic of Tanzania.

**4.2.5.2 Objective Two: To investigate the influence of financial budget on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

Table 4.21 regarding Pearson correlation imply that there is positive relationship between financial budget and performance of water utilities for urban areas. This means that ineffective financial budgeting in public sector results into poor performance of the utilities. Table 4.08 explain how financial budget has affected the performance of water utilities in various ways as follows; budgeting for WSDP is not realistic in terms of prices during procurement, costing of activities and costing base; the system of budgeting through ceiling set by Treasury has negatively affected completion of utility projects and economic development; there is ineffective budgeting which is also the cause for unfavorable variance between budget and actual implementation; and there is political influence during financial budgeting which has led to more favoring some of the districts or regions than others. Ineffective financial budget for WDSP in one of the caused for unnecessary budget reallocations during implementation of activities, this not only increases cost of activities but also wastes time of production. Other negative effects of ineffective financial budget include the following; under performance of water utilities; poor quality of reports especially audit opinion due to significant variance between budget and actual; untimely release of funds to water utilities; ineffective expenditure and monitoring of funds; poor regular supply of water; and poor quality of water. These results relates to findings by

Maike et al. (2012) in Sub Saharan countries regarding obstacles and bottlenecks to improving budget execution rates; and Flora et al. (2016) on challenges on budget allocation for water, Sanitation and Hygiene services.

**4.2.5.3 Objective Three: To evaluate the effect of financial reporting on utility performance in Shinyanga and Dar es Salaam region, Tanzania.**

Results presented in table 4.22 put on view that there is a positive relationship between financial reporting and performance of water utilities which confirms that poor financial reporting has contributed to poor performance of the water utility projects financed by WSDP. Table 4.09 highlights various ways in which financial reporting has been part of the cause for negative performance of water utilities for urban rural areas, the effects are hereby described; weak quality of reports including audit reports (opinion) has negatively affected release of funds to water utility projects; negative effect to financial planning and financial budget; contribution to ineffective expenditure and monitoring of funds which later discourage donors to continue financing the water utility projects; negative impact on compliance of water utilities and water quality standards; slow down completion of utility projects; hampers sustainability of water utility projects; misled decision making in many levels; level of expenditure is not well reported, which is a non compliance to various Laws and Regulations including Public Finance Act, 2001 (as revised 2004) and International Public Sector Accounting Standards (IPSAS). These results relate to findings by Jiménez et. al. (2010) in Sub Saharan Africa, where Tanzania was selected as a representative case study whereby a number of weaknesses was revealed to continue undermining strategies as poverty eradication among others was inadequate internal information system. Also WSSR (2016), WSSR (2014) and EWURA Report (2016) which highlights weaknesses with regard to reporting of water utility projects financed by WSDP.

#### **4.2.5.4 Objective Four: To examine the influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

Findings in table 4.23 demonstrates a small impact of release on performance of water utility projects in urban areas, which means that non release of funds from Treasury creates smaller impact on performance of water utilities. This is evidenced by performance reports of water utilities where water utilities in urban areas have access to other sources of finance apart from funds released from Treasury; the sources include increase in water tariffs and loan from loan from other institutions.

Table 4.9 brings to light how financial release has affected performance of water utility project; its impacts are as follows; funds were released from Treasury without proper and timely instructions regarding its use which gave room for Local Government to diverge it into other activities; and negative effects to completions of water projects quality, water, quantity/supply of water and sustainability of water utility projects.

Some of reasons that were found as causes for delay or non release of funds to water utilities projects were un-researched ceiling by Treasury and Government position problem. When Development Partners release funds from basket Fund into Consolidated Fund/ account for implementation of water utility projects, such funds are normally mixed up with the normal public funds into the Consolidated Fund, and thereafter follow the normal channel of financial release to implementing agents.

These findings relate to study by Taylor et al. (2014), WSSR (2014) and WSSR (2011) with regard to untimely or non release of funds to finance WSDP's activities. It also relate to finding in SIDA report (2016 where Sweden and



Finland support jointly release funds to a water programme in Kenya to benefit the marginalized women and men.

**4.2.5.5 Objective Five: To investigate the influence of the level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania**

Results presented in table 2.24 confirmed that there is a positive relationship between level of expenditure and performance of water utility project for urban areas, thus ineffective expenditure leads to poor performance of water utility project. Table 4.11 reveals how level of expenditure has affected performance of water utility projects in the following ways; diversion of funds of WSDP from planned activities, the diversion was material which negatively affected performance of WSDP's activities poor coordination for WSDP's funds and expenditure between PMOLG, Ministry of Water, LGAs and implementing agencies including Water Authorities; poor monitoring of funds which was contributed by the Ministry of water not to take charge of supervisory roles; existing Laws and Regulations on water do not provide room for proper coordination of funds and expenditure of water projects; actions taken towards poor spending of funds are not tough enough to stop existing problems; level of expenditure is highly affected by unfair distribution of funds between districts; there is no correlation between approved budget and actual expenditure which has affected negatively performance of water projects; there is inefficient expenditure that has affected compliance of water utility projects to water quality standards; there is ineffective expenditure and poor monitoring of expenditure that has affected timely completion of water projects, regular supply of water and billing of water to water users; economic development of people is affected due to misspending of funds allocated for utility projects in this case people spend a lot of their time looking for water; there is ineffective expenditure that has negatively affected maintenance of water infrastructure and sustainability of water utilities; regulators responsible for financial reporting of government expenditure has not

done enough to make sure there is full compliance with regard to government expenditure; and expenditure is not well researched to focus needs of water users.

Basing on finding of this study reasons for poor coordination of funds and spending of WSDP were: focal stakeholder (Ministry of Water) has no mandate on funds released to POLGRA and also there low skills of experts and unethical behaviors. Reasons for diverting funds were; presence of unbudgeted activities at LGS as well as poor type of management.

Findings from this study relates to study by Taylor et al. (2014) on coordination and procurement bottlenecks; diversion of funds and efficiency in spending of funds of WSDP. Also WSSR (2016) explains an underperformance with regard to procurement of contracts; CAG report of 2016 highlights anomalies in the procurement of contracts, non compliance to PPR (2013 and also the diversion of funds as well as delay in delivery of goods.

Maikde et al finding shows how public money is spent where the politically powerful reside; the findings also highlight the increasing volume of public expenditure without changing the targeting and execution.

#### **4.2.5.6 Model Summary**

Results in table 4.26 and 4.25 shows that there is relationship between dependent variable (performance of water utilities) and independent variables (financial planning, financial budgeting, financial reporting and level of expenditure). Moreover the most three factors that influence performance of water utilities at urban areas are financial planning, financial budgeting and level of expenditure, where as financial release had no significant impact on the performance of water utilities. In addition, the annual performance reports by EWURA and final accounts of water utilities at the urban areas indicate the presence of opportunities of the said utilities in accessing other sources of financing a part from release of

funds from Treasury; these sources to mention a few are increase in water tariffs as well as access to loans from other financial institutions. These also relates to study of Treiche (2012) on financial performance of DAWASA and DAWASCO.

#### **4.2.5.7 Performance of Water Utility Project**

Table 4.12 demonstrates the general performance of water utility projects after introduction of WSDP, whereby the performance in urban areas is more improved. The improvement is on compliance to water quality standards; quality of water; availability of water; and sustainability of water utility projects. However it was observed that there is no improvement in water billing; also water bills do not reflect the real consumption of water in urban areas; also majority of water users in urban are willing to make voluntary contribution for development of water infrastructure and sustainability of water utility projects.

Table 4.13 and figure 4.01 confirm on the level of satisfaction whereby in urban areas majority of water users have a moderate satisfaction, and very few of them have either high or none of satisfaction. Table 4.17 make evident on availability of water; in urban areas where majority of water users do not have access to water on average of two days in a month, which indicates the availability of water is 28 days in a month. Table 4.18 displays reasons for non compliance of water utilities to water quality standards in urban areas as follows; high cost of chemicals for treatment; lack of tools and equipment for test and monitoring; inadequate funds; and lack of qualified staff. Figure 4.02 make obvious on challenges associated with water billing in urban areas, they include estimated bills which are very high; water disconnection without notice; high bills and delayed bills.

Challenges established in figure 4.3 that hinder performance of water utility projects in urban areas are here under outlined; leakage of water pipes and shortage of water; delay in receiving water bills; distribution of water to users is

still problematic; water is not clean; and water completely not available for some areas. Table 4.14 and 4.16 validate the willingness of water users to make voluntary contribution in urban areas. Majority of both men and women are willing to contribute between TShs 20,000 and TShs 100,000 per year, likewise majority of employed are willing to contribute between TShs 20,000 and TShs 100,000 per year. Conversely majority of un employed are willing to contribute below TShs 10,000 per year. Furthermore other water users in category of institutions are willing to contribute between TShs 200,000 TShs 600,000 per year as articulated in figure 4.4. Table 4.27, 4.28 and 4.29 make plain that there is statistically significance an association between willingness to make contribution and gender significance level (p-value) was 0.002 which is less than 0.05 level of significance. Yet table 4.30 and 4.31 prove that there is statistical significance association between willingness to make contribution and employment status, significance value (p-value) was 0.008 which is less than 0.05 level of significance. In spite of this result on willingness to make contributions, table 4.12 makes evident of low level of sensitizing people to make voluntary contributions towards development of infrastructure for improvement of water supply.

Results in table 4.32 highlight that water services from a standalone projects are less sustainable, low quality and high prices compared to services rendered by Regional Water Utilities which were DAWASA and DAWASCO.

Findings on performance of water utility projects relate to findings by the following; Kelly (2009) on sustainability of water projects across rural Africa; UN (2013) on countries without access to water; World Bank Report (2017) in Sri Lanka on sustainability; Peter et al. (2011) on tariff as a source of revenue but can cause affordability problem; Delmon (2014) on challenge of water utilities to comply to water quality standards; ADB Report (2016) in Bangladesh on negative issues for water supply and quality; ADB Report (2010) on weakest aspect on water sector lending and sustainability; Aisha et al. (2010) in Pakistan on

becoming an increasing water short country and poor quality levels of drinking water; World Bank (2009) study on Palestinian Authority to access water; World Bank (2016) in Nigeria on lack of sustainability up to 30% of water points; Taylor et al. (2014) in Tanzania on challenges to obtain drinking water; Paul et al (2010) on challenges for sustainable rural water supply in Tanzania; Chumbula (2011) on sustainability of water projects in Iringa District, Tanzania; Mdende (2009) on access within 400 meters in Kilolo District, Tanzania ; World Bank Report (2017) on non revenue water and wastage of time in searching for water; EWURA Report (2017) on water utilities performance review report for the FY 2016/2017 – regional and National project water utilities; and EWURA Report (2016) on water utilities performance review report for the FY 2015/2016 – regional and National project water utilities;

### **4.3 Findings from Rural Areas**

This section presents the findings from rural areas. The villages visited are among The 10 Village Water Project which are Didia village in Shinyanga District Council; Bulige village in Kahama/Msalala District Council; Mwagala village in Shinyanga Town Council; and Mwamashimba village in Kishapu District Council. Findings are grouped into demographics characteristics, descriptive statistics and inferential statistics.

#### **4.3.1 Demographics Characteristics**

This subsection summarizes findings of characteristics of respondents in terms of education, geographic location, gender, age and employment status.

**Table 4.33: Response Rate**

Gender	Questionnaire Distributed	Questionnaire Returned	Questionnaire Not Returned	Response Rate
Male	37	37	0	100%
Female	40	40	0	100%
Total	77	77	0	100%

Source: Researcher, 2018

Table 4.33 above gives the response rate which is 100% for both male and female. More women were interviewed than men, the difference being 3.9%. Due to current security threat posed to some researchers by people at the rural areas in Tanzania such as an incidence happened in Dodoma region where by researchers were killed by villagers due to wrong beliefs; the researcher had to get proper introduction and cooperation from the office of Regional Water Engineer, District Water Engineer and Village leaders to villagers regarding the work to be done. This played a great role in responding to questionnaire.

**Table 4.34 Gender of the Respondents**

Gender	Frequency	Percent
Male	37	48.1
Female	40	51.9
Total	77	100.0

Source: Researcher, 2018

Table 4.34 above demonstrates that majority of the respondents were females with 51.9% compared to that of males who were contained 48.1%.

**Table 4.35: Employment Status**

<b>Employment Status</b>	<b>Frequency</b>	<b>Percent</b>
Employed	6	7.8
Not employed	71	92.2
Total	77	100.0

Source: Researcher, 2018

In table 4.35 above there was few respondents who were employed while majority were not employed. Percentage of unemployment is 92.2% compared to 7.8% of that who were employed.

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### **4.3.2 Descriptive Statistics**

#### **4.3.2.1 Objective One: To examine the effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.38: Effect of Financial Planning**

<b>Descriptive Statistics</b>	<b>Mean</b>	<b>Std. Deviation</b>
Community is effectively involved during planning stage in deciding the design or type of project/technology or location of water project e.g. water pump/wells in a 10 - Village scheme	1.95	.223
Financial planning for utility projects is well backed by research where needs assessment of community are well reflected during planning	1.66	.476
There is Down Up planning where people at lower level i.e. (village) are highly involved in planning process in water projects	1.90	.447

Planning is not mostly done by Government officials and politicians but it is done with high participatory of other stakeholders including water users	2.01	.444
There is effective planning has affected positively completion of WSDP's activities and economic development of citizens	1.73	.553
Effective financial planning has positively affected pricing of water and water bills	1.91	.492
There is efficient financial planning which has led to sustainability of utility projects and people are involved in making contributions to make utility project sustainable	1.86	.506
There is efficient financial planning which has positively affected regular water supply	1.91	.464
Financial planning has positively affected economic development as government is not wasting money for utility projects which are not sustainable	1.87	.496
Efficient financial planning has positively affected level of compliance of water utilities to water quality standards	1.92	.480
Political influence in financial planning has not affected performance of WSDP in some districts and funds were fairly distributed between regions/districts	1.84	.461

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Source: Researcher, 2018

Table 4.38 above presents effects of financial planning on utility project performance, on average majority of respondents disagree on every part of financial planning. Mean ranges from 1.66 to 1.95 supported by standard deviation from 0.223 to 0.553. It provides data that, currently the community is not effectively involved during planning stage in deciding the design or type of project/technology or location of water project will perform well. With a mean of 2.01, there is an indication that planning is mostly done by Government officials and politicians. At a mean of 1.92, it means that there is no efficient financial



planning, which has also affected level of compliance of water projects to water quality standards.

Also there is no efficient financial planning which has positively affected regular water supply as the mean is 1.91. Lack of high participatory of other stakeholders in planning carries high weight i.e. with a mean of 2.01 while financial planning backed by research carries less weight with a mean of 1.66. With a standard deviation averaging 0.4 for most of the results, it indicates that there was a moderate variability among the respondents as to the extent of effect of financial planning on the financial performance of the project.

**4.3.2.2 Objective two: To investigate the influence of financial budget on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.39: Effects of Financial Budgeting**

Descriptive Statistics	Std.	
	Mean	Deviation
Budgeting for WSDP activities is realistic, taking into account prices during actual procurement	1.97	.362
Un realistic budgeting is not one of causes for under performance of WSDP for implementing few projects as originally planned/budgeted due changes in prices	1.83	.497
The costing of activities and costing base is realistic and is not one of causes for various budget reallocations and variance during actual implementation	1.90	.502
Budgeting is efficient and not affected audit report (audit opinion) because of significant variance between approved budget and actual implementation	1.87	.522

There is efficient budgeting which has not affected release of funds from donors/Government which did not affect negatively performance of utility of projects	1.83	.441
There is efficient budgeting which has not affected expenditure and monitoring of funds in utility projects and not caused funds to be spent in other activities outside intended ones and hence affected performance	1.83	.497
There is efficient budgeting which has not caused poor regular supply of water	1.81	.514
The system of budgeting through ceiling has not affected negatively completion of utility projects and economic development	1.84	.431
There is efficient budgeting which has not affected negatively quality of water , also costing in budgeting process is well researched	1.79	.468
Political influence in financial budgeting has not negatively affected performance of utility project by favoring some regions/districts also scientific methods were used during budgeting	1.88	.396

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Source: Researcher, 2018

Table 4.39 displays an influence of financial budgeting, on average there is disagreement with all of the items; Mean ranges between 1.79 and 1.97 supported by standard deviation from 0.362 to 0.522. Unrealistic in budgeting carries the highest weigh with a mean of 1.97 while effect of budgeting in quality of water carries the lowest weight with a mean of 1.79. With a standard deviation averaging 0.4 for most of the results, it indicates that there was a moderate variability among the respondents as to the extent of effect of financial budgeting on the financial performance of the project.

#### 4.3.2.3 To evaluate the effect of financial reporting on utility performance in Shinyanga and Dar es Salaam region, Tanzania

**Table 4.40: Effects of Financial Reporting**

<b>Descriptive Statistics</b>	<b>Mean</b>	<b>Std. Deviation</b>
There is no problem of poor quality of reports including audit report and has not negatively affected release of funds to utility project	1.82	.479
Quality of reporting has not negatively affected financial planning of utility projects	1.87	.440
Quality of reporting has not affected financial budgeting and not contribute to poor performance of utility projects	1.84	.461
Quality of reporting has not affected expenditure and monitoring of funds neither discouraged development partners in releasing funds	1.82	.531
Financial reporting has not negatively affected regular supply of water	1.86	.479
Financial reporting has no bad impact on compliance of water utilities and quality of water	1.90	.447
Quality of financial reporting has not negatively affected sustainability of utility projects	1.86	.420
Financial reporting has not affected completion of water projects as well as economic development	1.91	.435
Quality of financial reporting has not contributed to poor monitoring of funds and expenditure	1.92	.422
Quality of financial reporting has not mislead decisions making in many levels not has not contributed to poor performance of utility projects	1.91	.435
Level of expenditure is well reported to stakeholders	1.95	.394

Source: Researcher, 2018

Table 4.40 demonstrates the effects of financial reporting, respondents are in disagreement with all of the items; mean ranges from 1.82 to 1.95 supported by standard deviation from 0.394 to 0.531. ‘The level of expenditure is well reported to stakeholders’ carries the highest weight with a mean of 1.95 while two items carry the lowest weight of a mean of 1.82, they are effect of poor quality of reports on release of funds and effect of quality of reporting on expenditure and monitoring. Financial reporting has influence on project performance; reporting the level of expenditure carries the highest of 1.95 at a standard deviation of 0.394 followed by quality of financial reporting in monitoring of funds with the mean of 1.92 at a standard deviation of 0.422. Meanwhile poor quality of reports including audit reports in affecting release of funds carries the lowest mean of 1.82 at a standard deviation of 0.479. With a standard deviation averaging 0.4 for most of the results, it indicates that there was a moderate variability among the respondents as to the extent of effect of financial budgeting on the financial performance of the project

#### **4.3.2.4 Objective Four: To examine the influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.41: Influence of Financial Releasing**

<b>Descriptive Statistics</b>	<b>Mean</b>	<b>Std. Deviation</b>
Release funds to water utility was not affected by quality audit reports and also not affected performance of WSDP because funds were released on time	1.92	.422
Release funds to water utility was not affected by release of physical reports to stakeholders including development partners as funds were released on time	1.86	.352

Releasing of funds did not affect quality of audit reports and performance of utility projects	1.91	.289
Release of funds did not affect quality of water	1.87	.338
Problem of untimely release of funds has not negatively affected regular supply of water because infrastructure were constructed and maintained on time	1.91	.289
Delay to release funds has not affected economic development due to poor performance of utility projects	1.83	.377
Un reliable release of funds into utility projects has not negatively affected sustainability of utility projects	1.92	.270
Delay of financial release/dispensing of funds had no negative impact on completion of WSDP activities, this also has not de-motivated development partners to inject funds	1.92	.270
Funds for water projects were released with timely instruction	1.91	.289
Untimely dispensing of funds to utility projects is not one of causes for diverting funds into other activities and this has not worsen the performance of utility projects	1.91	.289
Funds for utility projects were released with timely instruction and so they were not spent into different activities and thereafter no negative effect on performance of utility projects	1.91	.289
Explain the reasons for delay or non-release of funds to water projects	1.87	.338

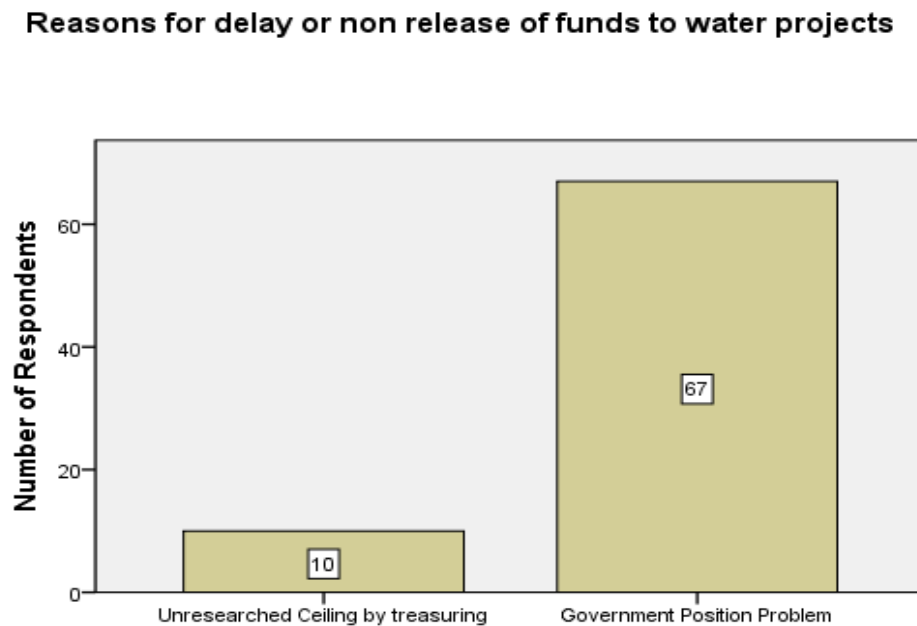
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Source: Researcher, 2018

The table 4.41 illustrates an influence of financial releases whereby respondents disagree with all the items; mean ranges between 1.83 and 1.92 supported by standard deviation from 0.270 to 0.422. Three items carry the highest weight of a mean of 1.92, they include quality of audit reports, effect of none releasing in sustainability of utility projects and effect of delay of release of funds in de-

motivating development partners. Meanwhile effect of delay to release funds on economic development carries the lowest weight with a mean of 1.83. The rest are having means performance below 1.9 with a standard deviation averaging 0.3 for most of the results, it indicates that there was a moderate variability among the respondents as to the extent of effect of financial budgeting on the financial performance of the project.

**Figure 4.5: Reasons for Delaying or Non-Releasing funds to Water Utility Projects in Rural Areas**



Source: Researcher, 2018

Figure 4.5 presents reasons for delay or non releasing of funds from Treasury, they include un researched ceiling by Treasury pointed out by 10 respondents and government position mentioned by 67 respondents.

**4.3.2.5 Objective Five: To investigate the effect of level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania**

**Table 4.42: Effect of Level of Expenditure**

Descriptive Statistics	Std.	
	Mean	Deviation
Funds of WSDP were not diverted from planned activities, to other activities	1.91	.289
There is no poor coordination for WSDP funds (and expenditure) between PMOLG, Ministry of Water, LGAS (TAMISEMI) and implementing Agencies (Water Authorities)	1.95	.320
Poor monitoring of funds was not contributed by the ministry responsible for water not to take charge of supervising other entities related to water management and water supply	1.96	.378
Existing Laws and Regulations on water do not provide room for poor coordination of funds and expenditure of water projects	1.92	.422
Actions taken towards poor spending of funds is tough enough to stop the problem	1.96	.378
Level of expenditure is not highly affected by unfair distribution of funds between districts	1.94	.408
There is good correlation between approved budget and actual expenditure and no negative effect on performance of water projects	1.88	.458
There is efficient expenditure which has positively affected compliance of utility projects to water quality standards and hence quality of water	1.87	.469

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There is effective expenditure and monitoring of expenditure and has positively affected timely completion of water projects, regular supply of water and billing of water to water users	1.86	.479
Economic development of people is not affected due to misspending of funds allocated for utility projects in this case people spend little of their time looking for water	1.82	.388
There is effective expenditure which has positively affected maintenance of water infrastructure and sustainability of utility projects	1.79	.408
Regulators responsible for financial reporting of Government expenditure like National Board of Accountants and Auditors has done enough to make sure expenditure is complying fully to international standards and Public Finance Act	1.79	.408
Expenditure of WSDP funds is well researched to focus and base on public needs and it is not allocated basing on political pressure and has not caused under performance of utility projects	1.81	.399

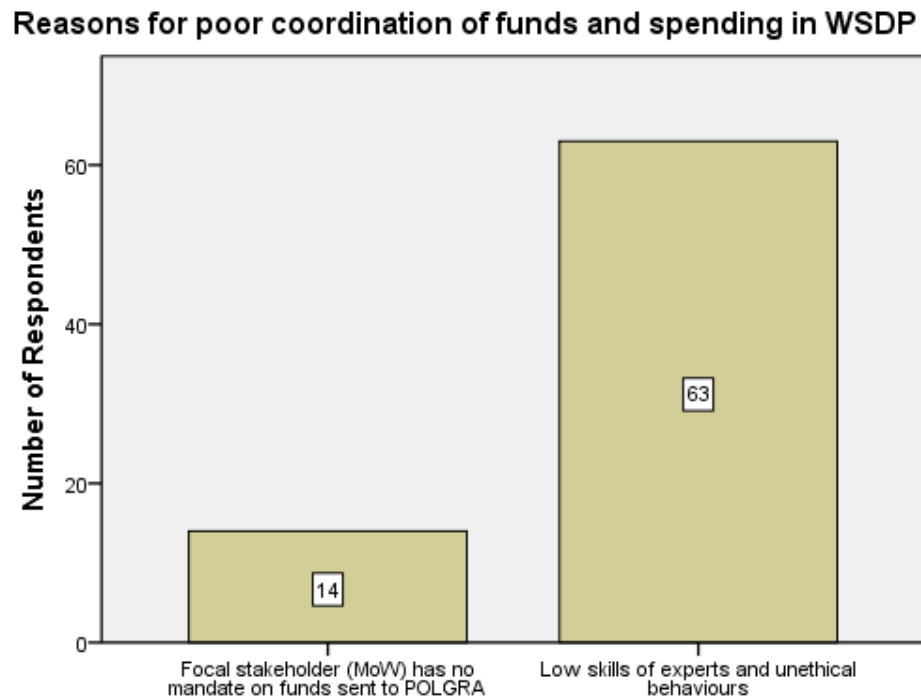
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Source: Researcher, 2018

Table 4.42 explains the effects of the level of expenditure, in general majority of respondents are in disagreement with all of the items, mean ranges from 1.79 to 1.96 supported by standard deviation from 0.289 to 0.479. Whilst the highest weight goes to poor monitoring of funds and action taken towards poor spending of funds with a mean of 1.96 the lowest weight goes to effectiveness in expenditure and responsibility of regulators with a mean of 1.79.



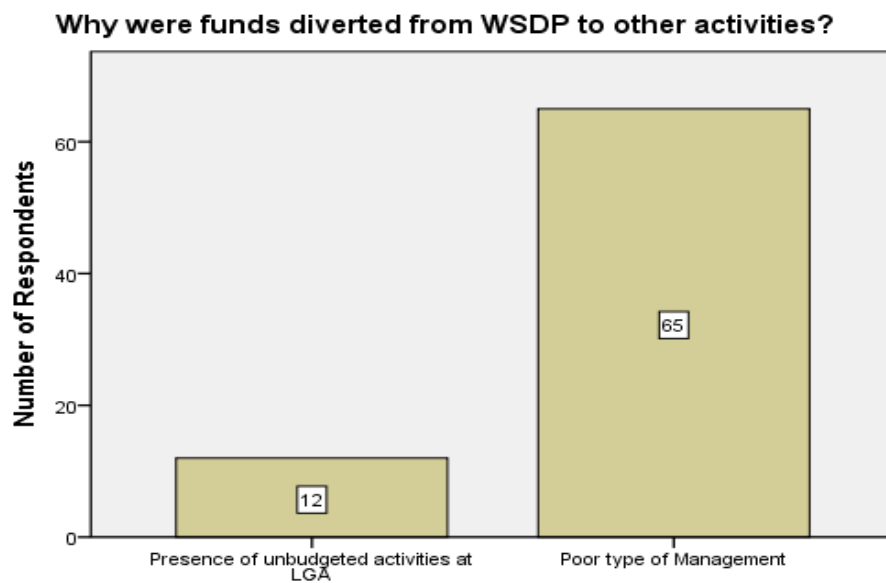
**Figure 4.6: Reasons for Poor Coordination of funds and Spending – Rural water Projects**



Source: Researcher, 2018

Figure 4.6 portrays reasons for poor coordination of funds and spending which are: focal stakeholder (MoW) has no mandate on funds sent to POLGRA pointed out by 14 respondents; and low skill of experts and unethical behaviors mentioned by 63 respondents.

**Figure 4.7: Reasons for diverting funds**



Source: Researcher, 2018

There are two reasons for diverting funds into activities as evidenced in figure 4.7; one is presence of unbudgeted activities at LGA illustrated by 12 respondents; and another one is poor type of management indicated by 65 respondents

#### 4.3.2.6 Performance of Water Utilities

**Table4.43: Descriptive Statistics of Performance of Water Utility Projects in Rural Areas**

Descriptive Statistics	Std.	
	Mean	Deviation
Water utilities effectively comply to water quality standards	1.44	0.50
Quality of water has improved after introduction of WSDP	1.31	0.47
There is improvement in water availability (water supply) after introduction of WSDP	1.18	0.39
Availability of clean water to water users is satisfactory	1.19	0.40
Water projects are sustainable also there is no problem with maintenance of infrastructure	1.21	0.41
Water users are willingly to make voluntary contributions (donation) in order to facilitate construction of water infrastructure and supply of clean water.	3.38	0.63
There is improvement in quality and supply of clean water which has positively affected economic growth	1.40	0.94
There is an improvement in water billing, also the water bills do reflect the real consumption water	1.49	1.02
There is no problem of sustainability of water projects due to lack of funds	1.29	0.72
There is enough measures taken to sensitize public to contribute voluntarily to make water projects sustainable	1.27	0.45

Sustainability of water projects is not affected by unequal distribution of funds between districts. 1.27 0.82

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Source: Researcher, 2018

Table 4.43 shows that majority of respondents are in disagreement improvement in performance of water utilities but they agree to make contributions for improvement and sustainability of water utilities projects.

**Table 4.44: Cross Tabulation between Location and Level of Satisfaction**

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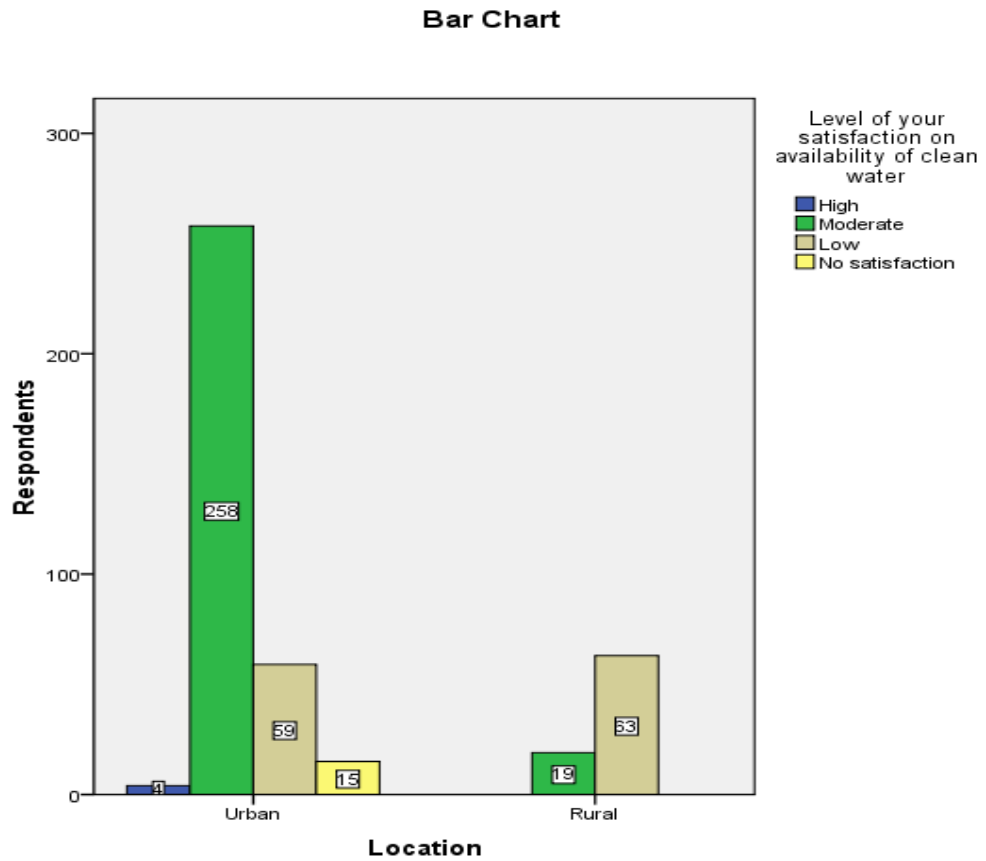
<b>Location * Level of your satisfaction on availability of clean water</b>		<b>Level of your satisfaction on availability of clean water</b>				
		High	Moderate	Low	No satisfaction	Total
Location	Urban	4	258	59	15	336
	Rural	0	19	63	0	82
Total		4	277	122	15	418

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Source: Researcher, 2018

Table 4.44 put on view the level of satisfaction on performance of water utility projects in rural areas; nobody is highly satisfied; 23% are moderately satisfied; and 77% have low satisfactions.

**Figure 4.8: Level of satisfaction**

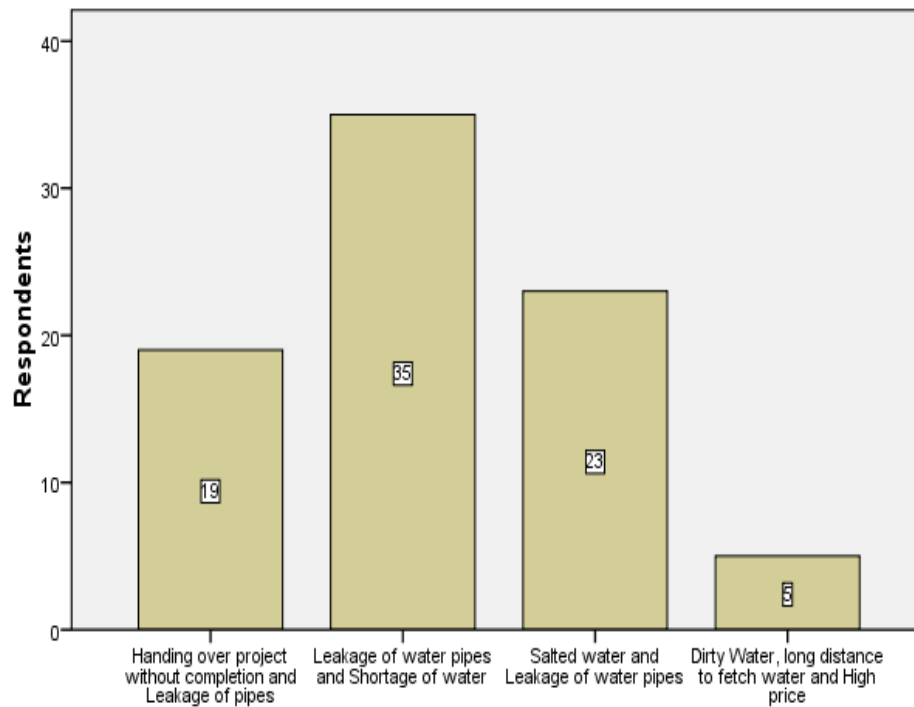


Source: Researcher, 2018

Figure 4.8 reveals the level of satisfaction whereby 63 respondents (77%) have low satisfaction with regard to performance of rural water utility projects; 19 respondents (23%) are moderately satisfied; there none who is either highly satisfied or without any satisfaction.

**Figure 4.9: Challenges in Implementing Water Utility Project in Rural Areas**

**General problems implementing/performance of the project in Rural areas**



Source: Researcher, 2018

Challenges associated with implementation of water utility projects in rural areas as outlined in Figure 4.9 comprise the following (number of respondents is indicated in bracket); handling over the project without its completion and leakage of pipes (19); leakage of water pipes and shortage of water (35); salted water and leakage of water pipes (23); and dirty water, long distance to fetch water and high prices of water (5).

**Table 4.45: Contributions for Sustainability of Water Utility Projects**

Gender * Contribution per year in order to assist water project and improve quality and access of clean water (in TShs)					
Rural		0 – 20,000	20,001 – 100,000	100,001 – 200,000	Total
Gender	Male	23	13	4	40
	Female	25	17	0	42
Total		48	30	4	82

Source: Researcher, 2018

Results presented in Table 4.45 exhibits that majority of respondents were willing to contribute between TShs 0 and TShs 20,000 per year in order to assist water project and improve quality and access of clean water, out of this female were 25 and male were 23; between TShs 20,001 and TShs 100,000 female were 17 and male were 13. Also between TShs 100,001 and TShs 200,000 female were zero while male were 4. The maximum amount that respondents are willing to contribute was between TShs 100,001 and TShs 200,000 which is comprised of male only.

**Table 4.46: Days per Month for Non Availability of Water**

<b>Number of Days</b>	<b>Frequency</b>	<b>Percent</b>
0	5	6.1
1	2	2.4
2	4	4.9
3	5	6.1
4	7	8.5
5	8	9.8
6	6	7.3
7	4	4.9
8	3	3.7
10	5	6.1
15	5	6.1
16	3	3.7
20	20	24.4
30	5	6.1
<b>Total</b>	<b>82</b>	<b>100.0</b>

Source: Researcher, 2018

Results presented in Table 4.46 illustrate availability of water; majority of respondents exclaim that water is available on an average of 20 days in a month, which indicates non availability of water is 2 days per week.

**Table 4.47: Price of Bucket of 20 Litres**

<b>TShs</b>	<b>Frequency</b>	<b>Percent</b>
25	35	42.7
50	41	50.0
100	6	7.3
<b>Total</b>	<b>82</b>	<b>100.0</b>

Source: Researcher, 2018

Table 4.47 shows that at the rural area water users pay 50.0% pay TShs 50 for a bucket of 20 litres while 42.7% pays TShs 25 and 7.3% pays TShs 100



### 4.3.3 Inferential Statistics

#### 4.3.3.1 To examine the effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

**Table 4.48: Pearson Correlation between Performance and Financial Planning**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Financial Planning	0.639	0.000**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Findings presented by Table 4.48 display that there is positive relationship between financial planning and performance. This means that the proper financial planning of WSDP in rural areas will leads to the higher performance. On the other hand, if there is improper financial planning of WSDP in the rural areas, it will cause the poor performances of the project. Also, the intensity of relationship is strong and it is statistically significance, since the value of coefficient of Pearson correlation was 0.639 at 0.05 level of significance.

#### 4.3.3.2 To investigate the influence of financial budget on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.

**Table 4.49: Pearson correlation between Performance and Financial Budgeting**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Financial Budgeting	0.882	0.05**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results presented by Table 4.49 shows that there is positive value of coefficient of Pearson correlation which was 0.882 at 0.05 level of significance on relationship between performance and financial budgeting. This means that the proper financial budgeting of the different activities in WSDP at rural areas will leads to the higher performance. On the other hand, if there was improper financial budgeting of WSDP in the rural areas, it will cause the underperformed activities that will leads to the poor performances of the whole project. Also, the intensity of relationship is strong and it is statistically significance, since the value of coefficient of Pearson correlation was 0.882 at 0.05 level of significance.

**4.3.3.3 To evaluate the effect of financial reporting on utility performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.50: Pearson correlation between Performance and Financial Reporting**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Financial Reporting	0.852	0.000**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results presented by Table 4.50 shows that there is positive relationship between performance and financial reporting. This means that the process of financial reporting of the progress for WSDP in rural areas will reflect the actual performance of the project. Therefore, the actual amount of funds which reported in financial reports should relate to the performance of the project. Also, the intensity of relationship is moderate and it is statistically significance, since the value of coefficient of Pearson correlation was 0.852 at 0.05 level of significance.

**4.3.3.4 To examine the influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.51: Pearson correlation between Performance and Financial Releasing**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Financial Releasing	0.869	0.000**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results in Table 4.51 demonstrate that there is positive relationship between performance and financial releasing. This means that the proper financial releasing of funds from the government through MoF to the WSDP in rural areas will leads to the higher performance. On the other hand, if there was improper financial releasing of WSDP in the rural areas, it will cause the poor performances of the project. Since, financial releasing is the key factors on cause the effects of the project because when the funds released on time, the performance of the activities on the project will be on time the project will be implemented on time. Otherwise, it will cause the delaying on the performing activities as the results the whole project delaying. Also, the intensity of relationship is strong and it is statistically significance, since the value of coefficient of Pearson correlation was 0.639 at 0.05 level of significance.

**4.3.3.5 To investigate effect of the level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

**Table 4.52: Pearson Correlation between Performance and Level of Expenditure**

Dependent variable: Performance		
Explanatory variable	Statistics	
	Coefficient	Significance
Level of Expenditure	0.879	0.000**

Source: Researcher, 2018

Note: Significance levels of 1%, 5%, and 10% are indicated by \*\*\*, \*\*, and \* respectively

Results presented by Table 4.52 demonstrate that there is positive relationship between performance and level of expenditure of the funds in the WSDP. This means that the proper financial expenditure of funds in rural areas will leads to the higher performance. On the other hand, if there was improper level of financial expenditure of funds for WSDP in the rural areas, it will cause the poor performances of the project. Also, the intensity of relationship is strong since the value of coefficient of Pearson correlation was 0.879 and it is statistically significance (p-value) of 0.000 at 0.05 level of significance.

**4.3.3.6 Multiple Linear Regression Analysis (Test of Hypothesis)**

**Table 4.53: Model Summary**

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
0.956	0.914	0.908	0.117

Source: Researcher, 2018

The study conducted a multiple regression analysis to determine the relationship between independent variables and the dependent variable. Table 4.53 above, the R is termed as multiple correlation coefficients and measures the relationship between the observed and predicted values of the dependent variable. Larger values of R indicate stronger relationships and vice versa. Also, the adjusted R square, also known as the coefficient of multiple determinations, is the percent of the variance in the dependent variable explained uniquely or jointly by the independent variables. From model which had an adjusted R square of 90.8% R square of 91.4% and R figure of 95.6%. This indicated that 90.8 % of the variation in performance is explained by independent variables which are financial budgeting, financial planning, expenditure, releasing, reporting and utilizing. The coefficient of determination usually clarifies the extent to which changes in the dependent variable can be explained by the change in the independent variables. The five independent variables that were studied (Financial Planning, Financial Budgeting, Financial Reporting, Financial Release and Level of Expenditure), explain 95.8% of the performance as represented by the Adjusted R square

**Table 4.54: Coefficients of Regression Analysis**

Model	Un-standardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	.058	.066	.875	.384
Financial Planning	.121	.048	2.499	.015
Financial Budgeting	.244	.074	3.308	.001
Financial Reporting	.274	.063	4.363	.000
Financial Release	.324	.063	5.115	.000
Level of Expenditure	.247	.065	3.836	.000

Source: Researcher, 2018

Table 4.54 above, the coefficient of intercept C has a value (0.058) though it is insignificant at 95% confidence level that was applied in the analysis. The coefficient of financial planning ( $X_1$ ) is 0.121 and is significant at 5% significance level. This means that a unit increase in the financial planning process will increase the performance of project by 1.21 units. Also Coefficient of Financial Budgeting ( $X_2$ ) is 0.244 and is significant at 5% significance level. This means that a unit increase in the financial budgeting process will increase the performance of project by 0.244 unit other independent variables remain constant. Apart from that Financial Reporting ( $X_3$ ) is 0.274 and is significant at 5% significance level. This means that a unit increase in the financial reporting process will increase the performance of project by 0.274 unit other independent variables remain constant. Then Financial Release ( $X_4$ ) is 0.324 and is significant at 5% significance level. This means that a unit increase in the financial releasing process will increase the performance of project by 0.324 unit other independent variables remain constant. Also level of expenditure ( $X_5$ ) is 0.247 and is significant at 5% significance level. This means that a unit increase in the level of expenditure process will increase the performance of project by 0.247 unit other independent variables remain constant

a. Dependent Variable: Performance

$$Y = 0.058 + 0.121X_1 + 0.244X_2 + 0.274X_3 + 0.324X_4 + 0.247X_5$$

The above equation established that taking all factors into account (Financial Planning, Financial Budgeting, Financial Reporting, Financial Release and Level of Expenditure) constant at zero, performance would be 0.058. The findings of the study further show that taking all other independent variables constant, a unit increase in financial planning will lead to a 0.121 increase in performance. The p–

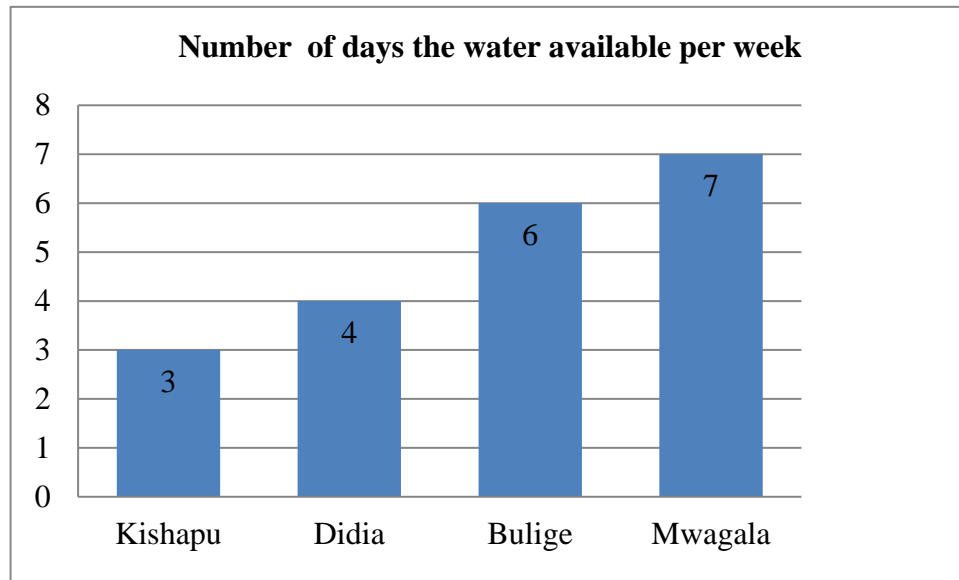
value was 0.015 which is less than 0.05 and thus the relationship was significant. It was also indicated in the study's findings that a unit increase in financial budgeting will leads to a 0.244 increase in performance. The p-value was 0.001 and thus the relationship between two was significant. It was also shown in the study's findings that a unit increase in financial reporting will leads to a 0.274 increase in performance. The p-value was 0.000 and thus the relationship between two was significant. It was also indicated in the study's findings that a unit increase in financial budgeting will leads to a 0.324 increase in performance. The p-value was 0.000 and thus the relationship between two was significant. Lastly, it was also indicated in the study's findings that a unit increase in financial budgeting will leads to a 0.274 increase in performance. The p-value was 0.001 and thus the relationship between two was significant.

The result from this study indicates that financial release in rural areas has the highest effect to the performance of the project. The study conducted a multiple regression analysis so as to determine the influence of the independent variables on performance. The significance level of Financial Reporting, Financial Release and Level of Expenditure were 0.000, 0.00 and 0.008 respectively ( $p < 0.05$ ); these three factors were the most related factors for influencing performance. Financing planning and financing budgeting show the least related factors in influencing performance.



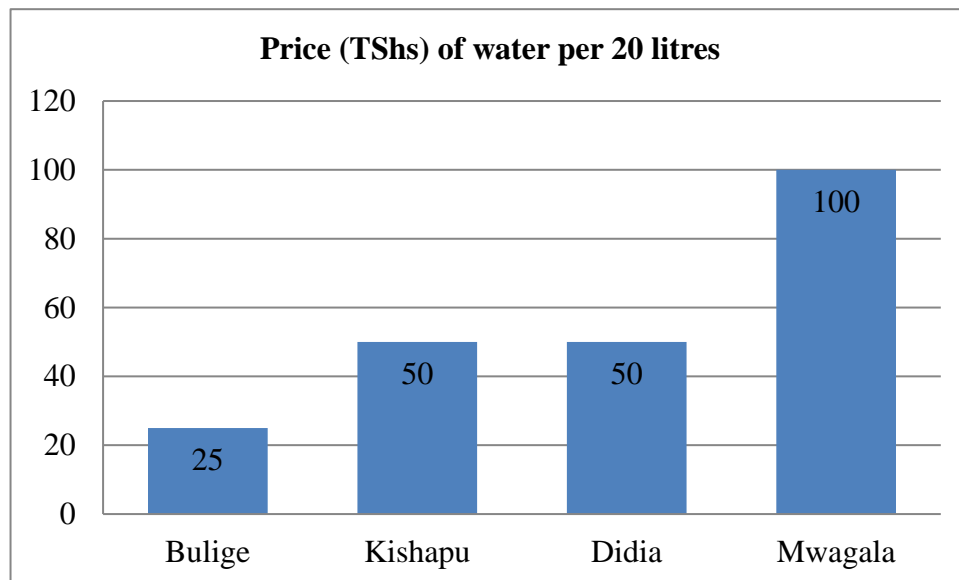
#### 4.3.4 Analysis of Data from Focus Group Discussion with Village Water Committee of 10-Village Project

**Figure 4.10: Number of Days for Availability of Water**



Source: Researcher, 2018

**Figure 4.11: Price of Water**



Source: Researcher, 2018

**Table 4.55: Analysis of Data from Focus Group Discussion**

<b>Description</b>	<b>Didia Village</b>	<b>Bulige Village</b>	<b>Mwagala Village</b>	<b>Mwamashimba (Kishapu) Village</b>
Political Influence	High	High	Low	High
Quality of Water Pipes	Poor	Poor	Medium	Poor
No. of Distribution Points (DPs)	Satisfactory	Satisfactory	Low	Satisfactory
Sustainability	Low	High	Low	Low
Quality of Water	Poor	Acceptable	Poor	Acceptable
Non Revenue Water	High	Medium	Low	High
Source of Water Supply	Stand Alone Project	District Water Supply Utility	Stand Alone Project	Stand Alone Project

Source: Researcher, 2018

Table 4.55 highlights performance of water utility projects in 10 Village Scheme in four villages which shows that on average political influence is high; quality of water pipes is poor; number of Distribution Points is satisfactory; sustainability is low; quality of water is fifty percent acceptable and another fifty percent is poor; and Non Revenue Water is high.

#### **4.3.5 Discussion of Results for Rural Areas**

This part is focusing on findings and results of rural areas, which includes discussion of each independent variable in relation to dependent variable.

**4.3.5.1 Objective One: To examine the effect of financial planning on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

Results presented in Table 4.48 indicate a positive relationship between financial planning and performance of water utilities for rural areas. Table 4.38 highlights how financial planning affects the dependent variable; during planning stage community is not effectively involved in deciding the design or type of project/technology or location of water project such as water pumps or wells in a 10 – village scheme, which is a non compliance to the Water Policy (2002) which requires effective involvement of community (water users) in decision making especially a choice of technology or design of the project. Financial planning is not well backed by research to find out the need assessment. Planning is mostly done Government official and politicians thus participatory planning is very ineffective. There is political influence during financial planning of WSDP funds which leads to unfair distribution between regions or districts. Inefficient financial planning has negatively affected completion of WSDP's activities; pricing of water or water billing; sustainability of water utilities; regular water supply, level of compliance of water utilities to water quality standards; and sustainability of water utilities of both urban and rural areas. This relates to studies by Kelly (2009) and Taylor et al. (2014) in constructing water projects across rural Africa and Tanzania respectively without fully consulting local people. This also relates to study of ADB (2016) on weak sector planning and monitoring in Philippines and also evaluation study ADB (2010) in Bangladesh regarding a gap between what was planned and actually implemented.

#### **4.3.5.2 Objective Two: To investigate the influence of financial budget on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

Table 4.49 regarding Pearson correlation implies that there is positive relationship between financial budget and performance of water utilities for both urban and rural areas. This means that ineffective financial budgeting in public sector results into poor performance of the utilities. Table 4.39 explains how financial budget has affected the performance of water utilities in various ways as follows; budgeting for WSDP is not realistic in terms of prices during procurement, costing of activities and costing base; the system of budgeting through ceiling set by Treasury has negatively affected completion of utility projects and economic development; there is ineffective budgeting which is also the cause for unfavorable variance between budget and actual implementation; and there is political influence during financial budgeting which has led to more favoring some of the districts or regions than others. Ineffective financial budget for WDSP in one of the caused for unnecessary budget reallocations during implementation of activities, this not only increases cost of activities but also wastes time of production. Other negative effects of ineffective financial budget include the following; under performance of water utilities; poor quality of reports especially audit opinion due to significant variance between budget and actual; untimely release of funds to water utilities; ineffective expenditure and monitoring of funds; poor regular supply of water; and poor quality of water. These results relates to findings by Maïke et al. (2012) in Sub Saharan countries regarding obstacles and bottlenecks to improving budget execution rates and also Flora et al. (2016) on challenges on budget allocation for water, Sanitation and Hygiene services.

#### **4.3.5.3 Objective Three: To evaluate the effect of financial reporting on utility performance in Shinyanga and Dar es Salaam region, Tanzania.**

Results presented in Table 4.50 put on view that there is a positive relationship between financial reporting and performance of water utilities which confirms that poor financial reporting has contributed to poor performance of the water utility projects financed by WSDP. Table 4.40 highlights various ways in which financial reporting has been part of the cause for negative performance of water utilities for both in urban and rural areas, the effects are hereby described; weak quality of reports including audit reports (opinion) has negatively affected release of funds to water utility projects; negative effect to financial planning and financial budget; contribution to ineffective expenditure and monitoring of funds which later discourage donors to continue financing the water utility projects; negative impact on compliance of water utilities and water quality standards; slow down completion of utility projects; hampers sustainability of water utility projects; misled decision making in many levels; level of expenditure is not well reported, which is a non compliance to various Laws and Regulations including Public Finance Act, 2001 (as revised 2004). These results relate to findings by Jiménez et. al. (2010) in Sub Saharan Africa, where Tanzania was selected as a representative case study whereby a number of weaknesses was revealed to continue undermining strategies as poverty eradication among others was inadequate internal information system. Also WSSR (2016), WSSR (2014) and EWURA Report (2016) highlight weaknesses with regard to reporting of water utility projects financed by WSDP.

**4.3.5.4 Objective Four: To examine the influence of financial release/dispensing on utility project performance in Shinyanga and Dar es Salaam region, Tanzania.**

Findings in Table 4.51 shows a positive relationship between release of funds and performance of water utility projects in rural areas which means poor release of funds contribute a major negative impact on performance of water utility projects. Rural water projects depends funds entirely from Treasury compared to urban water utility projects this is why financial release from Treasury poses great impact to rural areas.

Table 4.41 brings to light how financial release has affected performance of water utility project; its impacts are as follows; funds were released from Treasury without proper and timely instructions regarding its use which gave room for Local Government to diverge it into other activities; and negative effects to completions of water projects quality, water, quantity/supply of water and sustainability of water utility projects. Moreover it accelerates deterioration of economic development of some areas in rural ones.

Some of reasons that were found as causes for delay or non release of funds to water utilities projects were un-researched ceiling by Treasury and Government position problem.

These findings relate to study by Taylor et al. (2014), WSSR (2014) and WSSR (2011) with regard to untimely or non release of funds to finance WSDP's activities. It also relate to finding in SIDA report (2016 where Sweden and Finland support jointly release funds to a water programme in Kenya to benefit the marginalized women and men.

#### **4.3.5.5 Objective Five: To investigate the influence of the level of expenditure on utility project performance in Shinyanga and Dar es Salaam region, Tanzania**

Results presented in Table 4.52 confirmed that there is a positive relationship between level of expenditure and performance of water utility project for rural areas, thus ineffective expenditure leads to poor performance of water utility project. Table 4.42 reveals how level of expenditure has affected performance of water utility projects in the following ways; diversion of funds of WSDP from planned activities, the diversion was material which negatively affected performance of WSDP's activities poor coordination for WSDP's funds and expenditure between PMOLG, Ministry of Water, LGAs and implementing agencies including Water Authorities; poor monitoring of funds which was contributed by the Ministry of water not to take charge of supervisory roles; existing Laws and Regulations on water do not provide room for proper coordination of funds and expenditure of water projects; actions taken towards poor spending of funds are not tough enough to stop existing problems; level of expenditure is highly affected by unfair distribution of funds between districts; there is no correlation between approved budget and actual expenditure which has affected negatively performance of water projects; there is inefficient expenditure that has affected compliance of water utility projects to water quality standards; there is ineffective expenditure and poor monitoring of expenditure that has affected timely completion of water projects, regular supply of water and billing of water to water users; economic development of people is affected due to misspending of funds allocated for utility projects in this case people spend a lot of their time looking for water; there is ineffective expenditure that has negatively affected maintenance of water infrastructure and sustainability of water utilities; regulators responsible for financial reporting of government expenditure has not done enough to make sure there is full compliance with regard to government expenditure; and expenditure is not well researched to focus needs of water users.

Basing on finding of this study reasons for poor coordination of funds and spending of WSDP were: focal stakeholder (Ministry of Water) has no mandate on funds released to POLGRA and also there low skills of experts and unethical behaviors. Reasons for diverting funds were; presence of unbudgeted activities at LGS as well as poor type of management.

Findings from this study relates to study by Taylor et al. (2014) on coordination and procurement bottlenecks; diversion of funds and efficiency in spending of funds of WSDP. Also WSSR (2016) explains an underperformance with regard to procurement of contracts; CAG report of 2016 highlights anomalies in the procurement of contracts, non compliance to PPR (2013 and also the diversion of funds as well as delay in delivery of goods.

Maikde et al findings shows how public money is spent where the politically powerful reside; the findings also highlight the increasing volume of public expenditure without changing the targeting and execution.

#### **5.3.5.6 Model Summary**

Results in table 4.53 and 4.54 show that there is relationship between dependent variable (performance of water utilities) and independent variables (financial planning, financial budgeting, financial reporting, financial release and level of expenditure). These also relates to study of Treiche (2012) on financial performance of DAWASA and DAWASCO.



#### **4.3.5.7 Performance of Water Utility Project for Rural Areas**

Table 4.43 and 4.55 demonstrate the general performance of water utility projects after introduction of WSDP, whereby there is less improvement in availability, quality of water and sustainability of water utility projects in rural areas; however majority of water users are willing to make voluntary contribution for development of water infrastructure and sustainability of water utility projects.

Table 4.44 and Figure 4.08 provide a proof on satisfaction for availability of water in rural areas whereby majority had low satisfaction; very few are moderately satisfied. In rural areas water availability is on average of 20 das per month, which also means that its non availability is two days in a week. Also majority of water users in rural areas are willing to make voluntary contribution of not more than USD 9 per year. These data are supported by findings from focus group discussion with village water committee shown in table 4.55 and figure 4.10 and figure 4.11.

Results in Figure 4.11, Table 4.47 and Table 4.55 reveal that villages supplied water by a District or Regional Water Utilities have higher sustainability of services, better quality of water and lower prices of water than villages whose source of water is from a standalone water project.

The above findings on performance of water utility projects relate to findings by the following; Kelly (2009) on sustainability of water projects across rural Africa; UN (2013) on countries without access to water; World Bank Report (2017) in Sri Lanka on sustainability; Peter et al. (2011) on tariff as a source of revenue but can cause affordability problem; Delmon (2014) on challenge of water utilities to comply to water quality standards; ADB Report (2016) in Bangladesh on negative issues for water supply and quality; ADB Report (2010) on weakest aspect on water sector lending and sustainability; Aisha et al. (2010) in Pakistan on becoming an increasing water short country and poor quality levels of drinking

water; World Bank (2009) study on Palestinian Authority to access water; World Bank (2016) in Nigeria on lack of sustainability up to 30% of water points; Taylor et al. (2014) in Tanzania on challenges to obtain drinking water; Paul et al (2010) on challenges for sustainable rural water supply in Tanzania; Chumbula (2011) on sustainability of water projects in Iringa District, Tanzania; Mdende (2009) on access within 400 meters in Kilolo District, Tanzania ; World Bank Report (2017) on non revenue water and wastage of time in searching for water; EWURA Report (2017) on water utilities performance review report for the FY 2016/2017 – regional and National project water utilities; and EWURA Report (2016) on water utilities performance review report for the FY 2015/2016 – regional and National project water utilities.

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATION**

#### **5.0 Introduction**

This section illustrates conclusion of the study together with various recommendations. The recommendations are for each specific objective is also given together with recommendation on performance of water utility projects and for further studies.

#### **5.1 Conclusion**

Objective of this study was to find out the effect of public financing efficiency on performance of water utility projects a case of financing of Water Sector Development Programme in Dar es Salaam and Shinyanga Region. Findings from this study show that there is a relationship between public financing (financial planning, financial budget, financial reporting, financial release and level of expenditure) and performance of water utility project.

This study concludes that public financing has resulted into some improvement in performance of water utility projects in urban areas especially in water availability, quality of water and sustainability of the projects in Dar es salaam and Shinyanga regions; however in rural areas the performance of water utility projects is low compared to urban areas in terms of availability of water, quality of water and sustainability issues.

Interference of political influence together with non compliance to the Water Policy (2002) by lacking effective involvement of stakeholders during financial planning has contributed to un equal distribution of funds between districts and regions as well as under performance of water utilities projects.

Financial budget was unrealistic and not efficient in terms of costing of activities, and it was associated with un researched ceiling by Treasury which did not reflect actual needs of MoW, POLGARG, LGAs, other implementing agents and water users hence the actual implementation of WSDP activities were going astray.

Inefficiency of financial reporting had affected negatively other independent variables such as level of expenditure, financial release, financial planning and financial budget. This also gave a loophole for poor management of funds and coordination of activities.

Financial release in most cases was delayed or non released to implementing agents, this was associated with the problem of government position; the release also was not supported by proper instructions which later was another cause of diverting funds into other activities by implementing agencies. Non release or delay to dispense funds to water utility projects had more impact in rural areas than in urban areas hence economic development of people in rural areas was mostly affected.

Level of expenditure was affected by poor management style by approving a diversion of funds into other unplanned activities which is a non compliance to PFA, 2001 (as revised 2004) and its Regulations and PPA, 2011 and its Regulations; this problem was accelerated by lack of tough actions against any non compliance to Laws and Regulations. Implementation of water utility projects was associated with poor monitoring of funds and poor coordination of activities which was due to failure of the Ministry responsible for water to take charge of supervisory role; this led to loss of public funds and deprivation of needy people to access clean water.

Performance of water utility projects in urban areas was a bit higher than in rural areas, this means that inefficiency of public financing brought a major negative impact in rural areas compared to urban areas which was contributed by the fact that utilities in urban areas had access to funds from various sources apart from

Treasury such as lending institutions, own source especially water tariff collections and donor funds by name of direct to projects in a name of ear marked projects; conversely the projects in rural areas depended entirely funds from Treasury only as their major source of financing. Underperformance were mainly found in items of availability of water, billing. price of water, quality of water, non revenue water, and sustainability. There is high willingness of people from both urban and rural; men and women; employed people and non employed people; and institutions to make voluntary contributions for development of water infrastructure and sustainability of water supply, however the level of sensitization for this matter is very low and hence underutilization of a source of financing.

Underperformance of water utilities projects has affected economic development and standard of living in several ways; high water bills in urban areas, high prices of water in rural areas have increased cost of living to citizens as well as cost of production to investors, this discourage both local and foreign investments; non availability of water (non regular supply of water) leads to wastage of time in searching for water instead of engaging in other economic activities. Bad quality of water affects directly health of people and ultimately can reduce population because of increased death rate.

It is also concluded that other intervening variables such as political influence, regulations and Government policies have greater impact on performance of the water utilities projects, hence care must be taken as they directly affect not only economic development of the citizens but also foreign investments.

## **5.2 Recommendation on Public Financing Efficiency**

Political influence during financial planning should be eliminated. Political leaders are advised to focus on improving peoples' lives instead of achieving personal goals to gain political power, these leaders should sensitize and

encourage water users to make voluntary contribution for sustainability of water utility projects so as to improve economic activities of citizens instead of doing a vice versa.

Participatory as well as down up planning should be encouraged in order to provide room to many majority of citizens to participate during planning process, this will provide transparency and sense of ownership.

Ceiling during planning should base on professional research. Every ministry and department of the Government should establish a department for conducting research. Findings from these researches should be used and guiding the Treasury during planning process especially when setting of ceiling of various entities. This will result not only into effective planning for public funds but also transparency and proper management of such funds.

Realistic budgeting is highly recommended together with scientific methods of budgeting. Use of typical incremental budgeting should be discouraged instead application of a mix of different budgeting approaches should be applied.

For good governance un researched ceiling by Treasury should be avoided instead there should be involvement of all stakeholders during budgeting process, this will assist to have a realistic budgeting, promote proper financial management and effective implementation of water utility projects.

Capacity building and computerization of both accounts and reports should be highly encouraged and implemented in order to improve financial reporting. Effective implementation audit recommendations should be given high priority in all levels of management in order to achieve accountability of public funds.

Compliance to submission of reports is highly recommended, which will assist decision making at many levels of the Government as well as Development Partners. Regulators such as National Board of Accountants and Auditors and

EWURA should make sure that they make follow up and take immediate actions for any non compliance on reporting.

It is recommended for Development Partners (Donors) to dispense funds directly to water utility projects as it is the case of the ear marked projects. Channeling of funds using Basket Fund through the Ministry of Finance and Planning (Treasury) should be avoided and discouraged by all parties, as it will help to solve current challenges of late or non remittance of funds from development to water utility projects. Implementation of water projects through ear marked projects will outweigh weaknesses and bureaucracy of Treasury in managing funds of Basket Fund and to be specific on the issue of government position.

There should timely instruction for funds released to LGAs and other implementing agents in order to facilitate effective utilization of funds. On the other hand staffs who do not get instructions should not take advantage of diverting such funds; instead they should communicate to get proper information of the funds available in the accounts of their entities.

Ministry of Finance and Planning should work out on the issues of un researched ceiling as well as government position. It is advised that there should be established a special department for research in each ministry including the Ministry of finance and planning and ministry of water; this will assist effective needs assessment not only of Parent ministry but also water users; reports of researches should be effectively published to enable users to take actions.

Great care should be taken on procurement using public funds for water utility projects as it involves large percentage of projects' funds. Any non compliance with Public Procurement Act (and its Regulations) together with Public Finance Act (and its Regulations) and other related Laws should be accompanied by strong action against it in order to achieve high discipline of public expenditure.

Timely implementation of audit recommendation is highly recommended, as it will provide trust to all stakeholders involved in water utilities projects, these

include development partners, community, the Parliament and Government staff entrusted with management of public funds.

### **5.3 Recommendation on Performance of Water Utility Projects**

Water Utilities (Authorities) especially in rural areas are encouraged to widen up their sources of financing including secure of loans from different organizations in order to increase liquidity instead of relying entirely on funds from Treasury. In this case proper financial management should be enhanced to enable secured loans to be effectively utilized and recovered without default.

It is recommended to make high sensitization to all water users in both urban and rural areas so as to make voluntary contribution, this will not only increase liquidity ratio of water utilities but also bring a sense of ownership, and thereafter assists development of water infrastructure, improvement of water quality, increase availability of clean water, facilitates reduction of water prices and achieve sustainability of water utility projects. Basing on findings of this study which confirms high willingness of people to make contributions, Ministry responsible for water supply and management of water together with other implementing agents should take measures for increased sensitization as well as provide an assurance of good financial management of such funds. The Water Fund at the Ministry of Water and Irrigation should be well established together with relevant procedures and Regulations to make sure there is proper management of funds collected for this purpose.

Water utilities should innovated and increase more efforts to make sure that water tariffs are lowered and also bills are delivered on time in order to provide equitable service and avoiding disappointment to their customers. Recruitment of competent staff and learning from other countries can help to work innovatory.



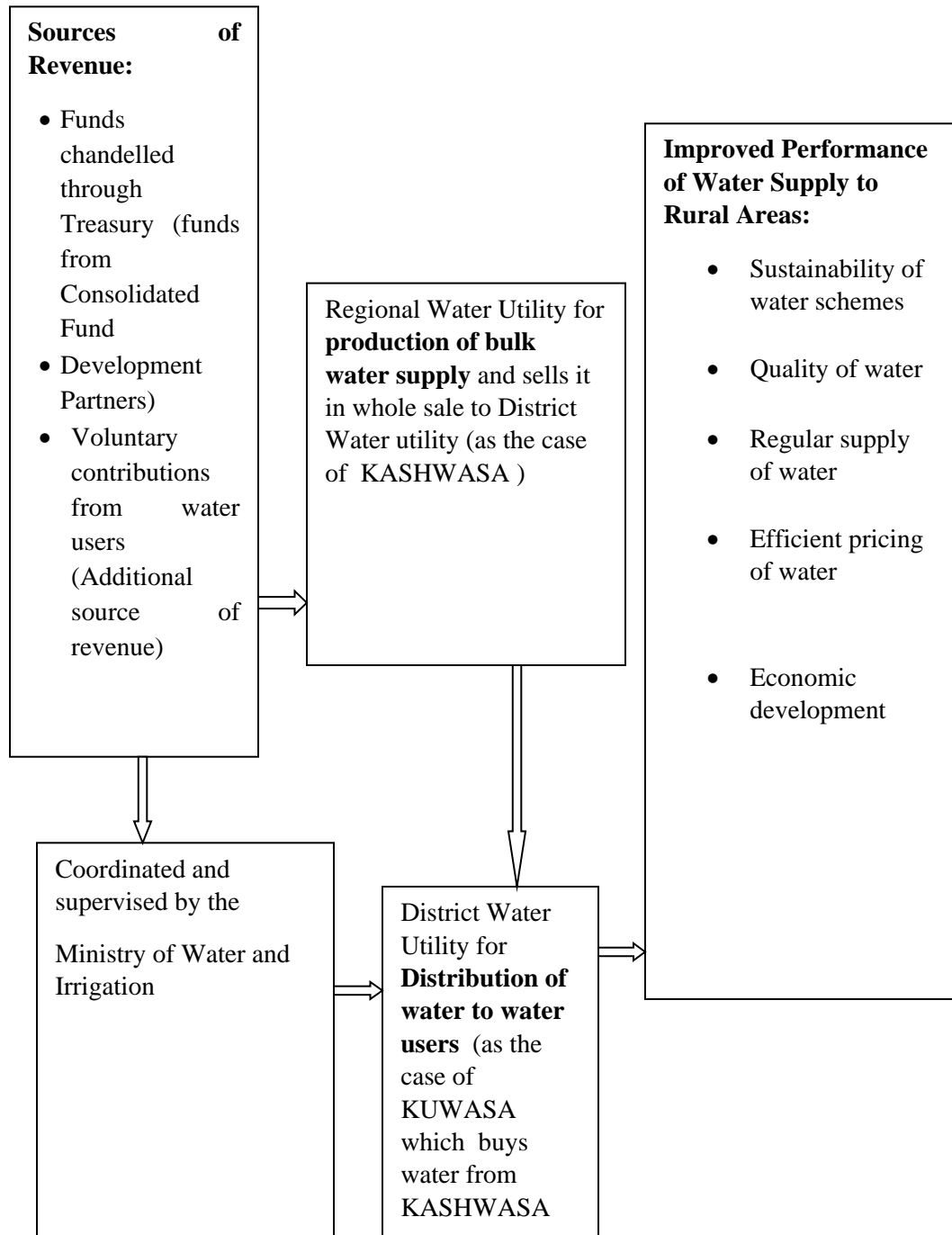
There are should be effective planning so that corresponding efforts made in water production should be made also in distribution of water, this will reduce wasting of water (Non Revenue Water) and hence reduce cost of production.

Water utilities should make sure that they comply with relevant Laws and Regulations. Compliance to water quality standards and timely releasing of reports should be effectively adhered to; strong actions should be taken for any non compliance, EWURA and the Ministry responsible for water management should take charge of this matter; also funds for water treatments should be well budgeted and effectively released.

Stakeholders responsible for pricing of water especially EWURA, water utilities, village committee should take measures to ensure all complains on prices of water and billing are reduced if not eliminated; findings of this study confirms that the current prices of water are too high compared to other East African countries. In order to improve economic development and encourage foreign investments and bring uniformity with other East African Countries it advised to increase efforts of lowering prices of water and eliminate efficiencies associated with water billing. There should be an effective complain department in each water utility which to make sure all complains from their clients (water users) are taken care with immediate effect.

In order to achieve sustainability of rural water projects, improve quality water, supply water on regular basis, attain efficient pricing and improve economic activities of people at rural areas it is highly recommended to go away from investing in a stand alone water utility project at individual village, instead water should be supplied using a bulky water system through water utilities (Authorities) as it is the case with Bulige village which is supplied water by KASHWASA as illustrated in table 5.1 below.

**Figure 5.1: Recommended Model for Rural Water Utilities**



**Source: Researcher, 2018**

Diagram 5.1 above shows that there should be three major sources of funds for effective financing water utility projects in rural areas which include funds from Treasury (collection of taxes), funds from Donors (Development Partners) and voluntary contributions from water users; the last one being the newly currently not properly utilized source.

Ministry of Water and Irrigation should take a major and role for coordination and supervision in proper management of water utility projects in rural areas rather than leaving this responsibility to the Local Government Authority.

District Water Utilities should take responsibility of water supply to rural areas; the District Water Utilities are to be supported by Regional Water Utilities through specialization of activities of production and distribution of water; this will lead to sustainability of the water supply, provision of clean water, lower prices of water, ensure constant availability and thereby support economic development of people at rural areas.

#### **5.4 Recommendation on Regulations**

Minister of Water and Irrigation is advised to forward proposal to the Parliament to revise the prevailing Act responsible for management resources related whole water sector, this will enable the Ministry to have an overall responsibility of supervising the water sector because the current situation does not give a room to the Ministry to make a close supervision of the water sector. Other important responsibilities are left with the Local Government, but this provides a room for inefficiency of spending public funds.

The way DAWASA and DAWASCO were functioning in Dar es Salaam was a bit chaos in terms of their legality; and production and distribution of water; however a major reform was made in the year 2018 where DAWASA was removed and DAWASCO is remained for operations of water supply in the

regions of Dar Es Salaam and Coast. Despite this reform, it is recommended to have two water utilities for the function of production and distribution of water as it the case with KASHWASA NA KUWASA in Shinyanga.

Strong actions should be taken where there is non-compliance with existing Laws and Regulations. EWURA should make sure that all water utilities comply with water quality standards without exceptions.

### **5.5 Recommendation for Further Studies**

Findings of this study shows that there exists a relationship between public financing variables which are financial planning, financial budgeting, financial reporting, financial release and financial expenditure, it is recommended to conduct a study to find out how these variables are influencing or affecting each other.

The same study such as public financing efficiency on water utility project performance but it recommended to include sample size from other regions of Tanzania or for other utility projects such as energy supply.

Other recommended study is to analyze performance and challenges of water utility projects as case of ear marked water projects in Tanzania where funds are channeled by Donors directly to projects without channeling them through the Donor basket Fund at the Ministry of Finance and Planning.

A study is recommended for analysis of public financing efficiency on water utilities performance a case of sanitation services in Tanzania. The current functions of Water Utilities include both water supply and sanitation services, but according to many writers including Flora et al (2016) and various Water Sector Status Reports have found that the function of sanitation is left behind by majority of water utilities.

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## APPENDICES

### **Questionnaire:**

Data collected from this questionnaire is used for academic research purpose only and will be treated with confidential. The research title is Public Financing Efficiency on Utility Project Performance: A case of Water Sector Development Programme in Dar es Salaam and Shinyanga Region. You are kindly requested to cooperate by responding to below questions:

#### **A) Demographic Information:**

Kindly tick (v) where appropriate

Gender: M( ) F ( )

Age: Below 18 yrs( ) 18yrs–28yrs( ) 29yrs–49yrs( ) 50yrs-60yrs ( ) Over 60yrs ( )

Education: No Education( ) Primary School( ) Secondary School( ) College( )

Employment: Employed( ) Not employed( ) Institution/Firm ( )

Location: Urban ( ) Rural ( )

Direction: Kindly respond to the options and be guided by the scoring system below:

#### **Scoring response mode**

#### **Description**

#### **Legend**

5 - Strongly Agreed	you strongly agree without any doubt	5
4 - Agreed	you agree with some doubt	4
3 - Neutral	you are not sure either to agree or not	3
4 - Disagreed	you disagree with same doubt	2
5 - Strongly Disagree	you strongly disagree with no doubt at all	

**B) Objective one: To examine the effect of financial planning on utility project performance in Tanzania:**

S/n	Effect	5	4	3	2	1
1.	Community is effectively involved during planning stage in deciding the location or design or type of project/technology of water project such as water pump or wells in a 10 – Village scheme.					
2.	Financial planning for utility projects is well backed by research where needs assessment of community is well reflected during planning.					
3	There is Down Top planning where people at lower level such as villagers are more involved in planning process in water projects					
4	Planning is not mostly done by Government officials and politicians with very little participatory planning of other stakeholders					
5	There is efficient planning which has affected positively completion of WSDP's activities and economic development of citizens					
6	Effective financial planning has positively affected pricing of water and water bills					
7	Efficient financial planning has positively affected sustainability of utility projects because people are involved to effectively make contributions to make utility project sustainable					
8	Efficient financial planning has positively affected regular water supply					

- 9 Financial planning has positively affected economic development as Government is spending much money for utility projects which are sustainable
- 10 Efficient financial planning has positively affected level compliance of water utilities to water quality standards, this has positively affected quality of water supplied to people
- 11 Political influence in financial planning has positively negatively affected performance of WSDP as some regions/districts were not favored more than others. This has not caused un fair distribution of funds between districts when implementing water projects.
- 12 Setting of un researched ceiling by treasury during planning has not negatively affected released of funds and performance of utility project

Explain how political influence has affected planning for implementing water projects?.....

**C) Objective two: To investigate the influence of financial budget on utility project performance in Tanzania**

S/n	Effect	5	4	3	2	1
1.	Budgeting for WSDP activities was realistic taking into account actual prices during procurement.					

2. Un realistic budgeting is not one of causes for under performance of WSDP due to the fact that more projects are implemented as compared to original budget
- 3 The costing of activities and costing base is realistic and is not one of causes for various budget reallocations and variance during actual implementing
- 4 There is efficient budgeting which has positively affected audit report (audit opinion) because of less significant variance between approved budget and actual implementation
- 5 There is no poor budgeting that has negatively affected release of funds from donors and performance of utility of projects
- 6 There is efficient budgeting that has positively affected expenditure and monitoring of funds in utility projects and has which has not caused funds to be spent in other activities outside intended ones and hence bad affected to performance
- 7 Inefficient budgeting has not caused poor regular supply of water
- 8 The system of budgeting through ceiling has not negatively affected completion of utility projects and economic development
- 9 Poor budgeting has not negatively affected

quality of water supplied to people, also  
costing in budgeting process is well  
researched

- 10 Political influence in financial budgeting has positively affected performance of utility project as some regions/districts were not more favored than others

**D) Objective three: To evaluate the effect of financial reporting on utility performance in Tanzania**

S/n	Effect	5	4	3	2	1
1.	Quality of reports including audit report has positively affected release of funds to utility project					
2.	There is no poor reporting that has negative effect to financial planning of utility projects					
3	There is efficient reporting has positively affected financial budgeting and performance of utility projects					
4	Effective reporting has positively affected expenditure and monitoring of funds and has not discouraged donors					
5	Financial reporting has positively affected regular supply of water					
6	Financial reporting has good impact on compliance of water utilities and quality of water					
7	There is no poor financial reporting and has not					

negatively affected sustainability of utility projects

- 8 Financial reporting has positively affected completion of water projects and economic development
- 9 There is no poor financial reporting and has not contributed to poor monitoring of funds and expenditure
- 10 There is no poor financial reporting that has misled decisions making in many levels to contribute to poor performance of utility projects
- 11 Level of expenditure is well reported to stakeholders

**E) Objective Four: To examine the influence of financial release/dispensing on utility project performance in Tanzania**

S/n	Effect	5	4	3	2	1
1.	Release funds to water utility was not affected by quality audit reports and also it did not affect performance of WSDP because funds were released on time					
2.	Release funds to water utility was not affected by release of physical reports to stakeholders including development partners and so funds were released on time					
3.	There was timely release of funds that positively affected quality of audit reports due and later positively affected release of funds from other donors and performance of utility projects					
4.	Inefficient release of funds has not affected quality of					

water

5. There is timely release of funds has positively affected regular supply of water because infrastructure were constructed and maintained on time
6. There is no delay to release funds that has affected economic development and performance of utility projects
7. There is reliable release of funds into utility projects and has positively affected sustainability of utility projects
8. There is no poor release of funds to utility projects that was caused by political influence which is bias and cause deterioration to economic development of some areas which were not favored by some politicians
9. There is no delay of financial release/dispensing of funds that had negative impact on completion of WSDP activities and de-motivating development partners to inject funds
10. Untimely dispensing of funds to utility projects is not one of causes for diverting funds into other activities which has worsen the performance of utility projects
11. Funds for utility projects were released with proper instruction and so they were spent properly in different activities and thereafter affected positively performance of utility projects

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Explain any reasons for delay or non release of funds to water utility projects

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**F) Objective Five: To investigate the level of expenditure on utility project performance in Tanzania**

S/n	Effect	5	4	3	2	1
1	There is no material diversion of funds of WSDP from planned activities. Immaterial diverted funds to other uses has not negatively affected performance to WSDP					
2	There is no poor coordination for WSDP funds (and expenditure) between PMOLG, Ministry of Water, LGAS (TAMISEMI) and implementing Agencies (Water Authorities)					
3	There is no poor monitoring of funds which contributed to the ministry responsible for water not to take charge of supervising other entities related to water management and water supply.					
4	Existing Laws and Regulations on water do provide room for proper coordination of funds and expenditure of water projects					
5	Actions taken towards poor spending of funds is tough enough to stop the problem					
6	Level of expenditure is not highly affected by unfair distribution of funds between districts					
7	There is correlation between approved budget and actual expenditure which has not affect negatively performance of water projects					
8	There is no inefficient expenditure that has affected compliance of utility projects to water quality standards and quality of water					



- 9 There is no ineffective expenditure and poor monitoring of expenditure that has affected timely completion of water projects, regular supply of water and billing of water to water users
  - 10 Economic development of people is not affected due to misspending of funds allocated for utility projects in this case people spend little of their time looking for water which was supplied from utility projects
  - 11 There is no ineffective expenditure that has negatively affected maintenance of water infrastructure and sustainability of utility projects
  - 12 Regulators responsible for financial reporting of Government expenditure like National Board of Accountants and Auditors has done enough to make sure expenditure is complying fully to international standards and Public Finance Act
  - 13 Expenditure of WSDP funds is well researched to focus and base on public needs and it is not allocated basing on political pressure, so it has improved performance of utility projects
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Explain reasons for poor coordination of funds and spending of WSDP? .....

Why are funds are diverted from WSDP to other activities?.....

Explain how existing Laws and Regulations affect coordination of water projects?.....

### G) . Performance of Utility Project

S/n	Effect	5	4	3	2	1
1.	Water utilities effectively comply to water quality standards					
2.	Quality of water has improved after introduction of WSDP					
3	There is improvement in water availability (water supply) after introduction of WSDP					
4	Availability of clean water to water users is satisfactory					
5	Water projects are sustainable also there is no problems with maintenance of infrastructure					
6	Water users are willingly to make voluntary contributions (donation) in order to facilitate construction of water infrastructure and supply of clean water.					
7	There is improvement in quality and supply of clean water which has positively affected economic growth					
8	There is an improvement in water billing, also water bills do reflect the real consumption water					
9	There is no problem of sustainability of water projects due to lack of funds					
10	There is enough measures taken to sensitize public to voluntary contributions to make water projects sustainable					

- 11 Sustainability of water projects is not affected by  
unequal distribution of funds between districts
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- How much are you willing to contribute per year in order to assist water project and improve quality and access of clean water? .....
- What are reasons for any of non-compliance of water utilities to water quality standards.....?.
- What is the level of your satisfaction on availability of clean water? .....
- How many days per month water is not available from your tap? .....
- What is price per unit (in TShs) shown in your current water bill (Urban)? ..... If its rural area how much do pay per a basket of water (of 20 litres)? .....
- What are problems with water bills or general water problems (if any)? .....

**H) Open Questions in Focus Group Discussion**

- What is the general performance of water utility projects?
- What are the general challenges of the water utility projects?

Thank you