NEXUS BETWEEN WATER SECTOR REFORMS AND FINANCIAL PERFORMANCE: A CASE OF WATER AND SEWERAGE COMPANIES IN NYERI COUNTY, KENYA.

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ABSTRACT

The United Nations categorizes Kenya not only as a water scarce country but also as one that is unable to manage its water resources properly. This condition has led the Government of Kenya pursue water sector reforms with a view to improve the performance of water sector players and particularly water and sewerage firms. The new constitution of 2010 effectively also placed water issues and management on the devolved units of governments, cognizant of the fact that every county has their own unique challenges. Water companies however continue to make losses making it unclear whether the water sector reforms are achieving their objectives. The study examines the effect of water sector reforms on financial performance of water companies in Nyeri County. The specific objectives included the assessment of the effects of metering ratio, revenue collection strategies, non-revenue water control and water coverage area on financial performance of water and sewerage companies. Financial performance was considered for two financial years 2013/2014 and 2014/2015 informed by the fact that during this period, the devolved systems of government had taken effect and the water service provision effectively placed with the devolved units in a quest for better management. Financial performance again, was measured through profitability and efficiency indicators. The financial ratios to this regard were the Return on Assets and Operating Margin respectively. The target population comprised of 60 respondents drawn from the senior level management and included all the board members, managing directors, technical officers, human resource managers and technical officers of all the 5 water companies in Nyeri County of Kenya. The researcher employed a census study technique where all the respondents identified under the target population were considered as participants. The study exploited both primary and secondary data resources. Primary data was collected by way of questionnaires and through the 'drop and pick later' method. The questionnaire was tested for validity using pretesting and expert opinion. Reliability was tested using Cronbach's Alpha reliability test. Secondary data was gathered from the financial statements of the Water and Sewerage Companies. The information was also sought from WASREB and the Auditor General's Office with which the entities are mandated by law to file returns. The Statistical Package for Social Scientists (SPSS) was utilized to generate both descriptive and inferential statistics. A multiple linear regression was also developed by the researcher in order to demonstrate the magnitude of effect, if any, of each of the variables under water sector reforms on financial performance of the water and sewerage companies. Going by the results, as explained by R squared which is the coefficient of determination, 89.40% of the variation in the Water Service Companies' Financial Performance (the dependent variable) is explained by variability in the independent variables i.e. Water Coverage area, Metering Ratio, Non-Revenue Water Control and Revenue Collection Strategies as indicated by R square. All the independent variables under assessment; Water Coverage area, Non-

Revenue Water Control, Revenue Collection strategies and Metering ratio were found to be useful predictors of financial performance of the water companies. Results of the Pearson Correlation Analysis indicated that a significant positive relationship between all the independent variables and financial performance. The study therefore recommended that water companies invest more in water sector reforms as the benefits were found to outweigh the costs.

Key words: Water Coverage area, Metering Ratio, Non-Revenue Water Control, Revenue Collection strategies, Financial Performance.

INTRODUCTION

During the last one decade or so, water scarcity has emerged as one of the important aspect of the socio-economic future of the world. There has been enough evidence to indicate that by 2025 nearly 1.4 billion people amounting to a quarter of the world's population or a third of the population in developing countries are destined to face absolute water scarcity (Rijsberman, 2006). The human consequences of such water scarcity, besides the environmental deterioration of water bodies, would be what is now being termed as water poverty, indicating the difficulties that human kind would face in procuring adequate and reliable access to safe water for productive and consumptive purposes (Shah and Van Koppen, 2006). Further, the population projections indicate that over the next 25 years, food will be required for another two to three billion people, creating additional stress on demand for water. Agriculture, which at present consumes more than 70% of all water withdrawals, is estimated to increase another 15-20% to feed the growing population of the world (GWP, 2000). This ever-increasing demand for water is likely to raise serious conflicts between utilization of water for irrigated agriculture and for other human and ecosystem purposes.

The government of Kenya through the Ministry of Water and Irrigation commenced water sector reforms enshrined in the Water Act (2002) and established autonomous institutions to oversee, manage and run the sector. According to the Ministry National Water Services 2007_2015, the sector reforms process clarifies the roles of key sector reforms players contributing to efficiency and effectiveness to improve coordination, harmonization and alignment. The sector reforms also emphasize on access to water and sanitation as a basic human right and ensures greater participation of citizens and other stakeholders in decision making (Owuor and Foeken, 2009).

The motivating factors behind water sector reforms clearly indicate which direction such institutional changes are heading to, and equally what are the future implications of these institutional reforms for water sector as a whole (Oginga and Onjala, 2002). While attempting to answer the questions of this nature, there is need to investigate the water sector institutional reforms in India. The broad objective being to analyze the trends, patterns, directions and implications of institutional reforms in the water sector in India. One of the important considerations of policy reforms in water sector is that of formation of water right arrangements

so that the water users can get an assured and secure claim over the resource. A secured right over water has significant bearing upon the resource as a whole, since an assurance that one will receive benefits from the resource will affect the incentives to invest and conserve the underlying resource(Bruns, Meinzen-Dick, *et al* 2005).

Akumu (2007) presents a comprehensive review of the players in the water sector in Kenya. Among the institutions involved in the management of the water resources in Kenya include the Ministry of Water and Irrigation (MWI) that provides Policy formulation, drives the water sector coordination, monitors the sector and provides financing and supervision of the crucial sector in the economy. The Water Resources Management Authority (WRMA) provides regulation relating to water resources management. The Catchment Area Advisory Committees (CAACs) is mandated to provide advisory on water resources management functions at water catchment level.

The Water Resources Users Association (WRUAs) is tasked to provide conflict resolution services and ensure Co-operative management of water resources at sub-catchment level. The Water Services Regulatory Board (WASREB) is the body tasked with Regulation of water and sewerage services. Water Services Boards (WSBs) plans for and provides Water and Sewerage services planning and provision at the regional level. The Water services providers (WSPs) are directly involved with provision of water and sewerage services as agents of the WSBs which act at the regional level. The Water Services Trust Fund (WSTF) is tasked with the responsibility of supporting financing of water services for underserved rural areas of Kenya. The Water Appeal Board (WAB) on the other hand handles disputes in the water sector whereas the National Water conservation and Pipeline Corporation (NWCPC) handles bulk water supply, flood control, land drainage dam construction, and ground water development (Owuor and Foeken, 2009).

According to Owuor and Foeken (2009), the Government of Kenya (GOK) has especially in the wake of the new constitutional dispensation has embarked on implementing a wide range of reforms in the water sector in accordance with the Water Act 2002. Through the enormous reform's introduction, the government aims at equitably improving access to sustainable safe water and sanitation services. The government also aims at prudent resource management and provision of affordable metering of water connections. The Water sector reforms described and included in this study include metering of water connections, Revenue Collections efficiency, non-Revenue water and Water Coverage area.

Gumbo (2004) present metering of water connections as the process of installing cold water meters before the tap of every consumer to measure the volume of water consumed, the water is measured in cubic meters. The cubic meters consumed are used in billing for the service which later is translated into revenue. Revenue collection efficiency according to Torome (2013) determines the level of service delivery, the total margin measures the percentage of revenue collected from both primary and peripheral activities that is kept as profit. The

operating margin measures the percentage of revenues collected from primary activities that is kept as profit.

According to Mukundi (2014), Non-Revenue Water as described by the International Water Association (IWA) task force on water loss, (IWA, 2003), is the difference between system input volumes and billed authorized consumption. It is also defined as the difference between the volume of water put in distribution system and the volume that is billed to the customers. Finally, Water coverage implies the extent to which supply of water and sanitation to any given water company is done in respective to the overall jurisdiction area (Loucks and Van Beek, 2005). According to WASREB Impact 6 report water coverage improved from 52% to 53% in the year 2013. Access in urban areas however remains highly unequal and unfair. On urban low-income areas (LIA) continues to be masked due to lack of disaggregated data. The inequality has its roots in poor planning, presence of informal settlements, network design favoring high-end users. Design demand structures and supply versus demand management, this is according to Impact 6 Report from WASREB.

Alegre (2000) presents measures that can be utilised in assessing the performance of water supply companies. The dimensions presented include Product quality which assesses regulatory compliance and adherence to guidelines and in this case WASREB guidelines. The other way of measuring performance is customer satisfaction which is concerned with customer service, perception and outreach performance. Employee and Leadership Development is the other method and includes employee retention, and satisfaction. Another method fronted is Operational Optimization and includes operational efficiency and resource utilisation. The other method is profit oriented and utilises profitability ratios such as the Return on Assets (ROA) also called Return on Investment (ROI). Infrastructure Stability is also presented as a worthy tool of assessing the performance of water companies and includes maintenance management and asset reinvestment. Finally, Water Resource Adequacy can also be used in this determination and includes supply and demand management, and water supply reliability. The study at hand was particularly interested with the efficiency and profitability aspects of financial performance of the Water and Sewerage companies. According to De'Bruijn (2007) efficiency is used to represent a process that uses the lowest possible amounts of inputs to create the greatest amount of outputs. Efficiency is critical to the minimisation of wastage of resources which include physical materials, energy and time, while successfully achieving the desired output. It is ideally the ratio between the inputs and outputs gained from the business undertaking. The inputs in this case include money (cost), human resources, time and effort. The outputs include turnovers, revenue, new customers, and customer loyalty (Brigham and Daves, 2012).

The researcher particularly used the operating margin to indicate efficiency or otherwise of the water companies in their operations. The ratio is used to indicate a company's pricing strategy and operating efficiency. Brealey, Myers, Allen, and Mohanty (2012) assert that operating margin is concerned with the proportion of a company's revenue left over after paying for variable costs of production. The ratio is computed by dividing a company’s operating profit

during a given period by its net sales during the same period under consideration. Operating profit in this understanding represents the profit that a company retains after deducting operating expenses such as cost of goods sold, wages and depreciation. The formula fronted by Saunders *et al* (2006) for computing the ratio is depicts that Operating Margin is arrived at by dividing the Operating Profit by the Net sales.

To assess the profitability performance of the companies, the researcher utilised the Return on Assets (ROA) ratio also called the Return on investment (ROI). According to Brealey *et al*. (2012), the Return on assets (ROA) ratio is signposts how profitable a company is in relation to its total assets. The Return on Assets ratio which is expressed as a percentage gives an idea as to how efficient management is at using its assets to generate earnings. It is computed by dividing a company's annual earnings by its total assets.

Statement of the Problem

Oginga and Onjala (2002) and Wacheke (2006) in a review of a United Nations (UN) report on climate variability and water resources degradation in Kenya identifies Kenya as having one of the lowest water replenishment rates in the world. The report further alerts that the country's water resources are still very poorly managed. As reported, 50% of the population lack safe reliable water and basic sanitation. The new governance framework of Devolution under Kenya's new Constitution of 2010 made water a devolved function where counties are mandated to undertake county specific strategies to ensure all citizens have affordable and easy access to water (Kibua, 2008). Despite a wide range of reforms undertaken by the Government of Kenya towards the improvement of water service provision, it is still not clear whether the players in the sector have in any way improved on their performance.

A study by Githua and Wanyoike (2014) focused on factors influencing performance of community water projects in Njoro Sub County. The study results revealed that stakeholders' participation has a significant and positive effect on the performance of community water projects in Njoro sub-county. Ng'etich (2015) undertook a study on corporate governance and financial performance of water companies in Kenya. The Return on Assets (ROA) ratio was used to indicate financial performance and considered last three financial years 2011/12 to 2013/2015. The financial results of the water companies were gathered from the Auditor General Office and WASREB. The results established a positive relationship between financial performance of the water companies and corporate governance practices in the water companies.

A study conducted by Kariuki (2010) on analysis of factors affecting strategic sustainability of water service providers in Kenya revealed that the current water sector financing was far below the sector requirement. However, he indicates that the water companies had to seek donor funds or Government intervention in case of a major breakdown of company's systems since they lack the capacity to do so. Kihumba (2013) conducted research on factors influencing revenue generation among water service providers in Kenya in an exclusive study of water service

providers in Kenya. It was established that the water metering ratio is a key determinant of revenue generated by a Water Service Providers and this affected the financial performance and sustainability of WSPs. The study is however narrow in modelling in that it contains empirical gaps since it considered only one aspect of water sector reforms.

Rao (2012) undertook a study on the impact of municipal billing systems on revenue collection. He reported that the Kenyan public and private sectors were exploring a wide range of reforms aimed at enhancing revenue collections. The central government and local authorities were embracing the integrated financial management systems (IFMS) to identify tax defaulters and manage bad debts. The water sector was introducing water meters for all clients as an effective way of enhancing collections of revenues from water utilities and thereby enhancing their performance. The study brings out both empirical gaps on the need to expand the variables modelling framework a swell as a contextual gap on the need to consider a local study. Mutikanga, Sharma, and Vairavamoorthy (2011) undertook a study on water meter performance in developing countries in case study of Kampala the capital city of Uganda. The study was conducted on the background challenge that water utility companies in developing countries face with high levels of water losses in distribution systems. The study established a positive relationship between the metering ratio and financial performance of the water utilities in Uganda. The study again is deficient of an all-dimensional empirical evidence on the role of water sector reforms on water service providers' performance.

From the review, it was established that financial performance of water companies had been a tethering concern for many water companies in Kenya. It was therefore very imperative to conduct a study to establish the implication of water sector reforms on this condition. The researcher had also encountered many gaps, in that very few studies had been done on this area especially since the introduction of the new constitution that redefined the water management framework. The gaps identified were methodological, empirical and contextual in nature. The gaps would be filled by conducting a local study, expanding the model of variables used in the study as well as extend the relationship to unveil the overall influence of the water sector reforms on financial performance. This study therefore sought to find out the impact of water sector reform strategies on water companies financial performance.

Purpose of the Study

The study at sought to determine the nexus between water sector reforms on financial performance of water companies in Nyeri County.

Specific Objectives

i. To determine the effect of Revenue Collection Strategies on Financial Performance of water and sewerage companies in Nyeri County, Kenya.
ii. To establish the effect of metering ratio on Financial Performance of water and sewerage companies in Nyeri County, Kenya.
iii. To assess the effect of Non-revenue Water Control on Financial Performance of water and sewerage companies in Nyeri County, Kenya.
iv. To determine the effect of Company's Water Coverage Area on Financial Performance of water and sewerage companies in Nyeri County, Kenya.

Research Hypothesis

The research study set to seek test the following null research hypothesis:-

H_{01}: Metering of water connections has no statistically significant effect on financial performance of water and sewerage companies in Nyeri County, Kenya.

H_{02}: Revenue collection strategies do not have a statistically significant effect on the financial performance of water and sewerage companies in Nyeri County, Kenya.

H_{03}: There is no statistically significant relationship between Non-revenue water control and the financial performance of water and sewerage companies in Nyeri County, Kenya.

H_{04}: Water Coverage area has no statistically significant influence on the financial performance of water companies in Nyeri County, Kenya.

LITERATURE REVIEW

Theoretical review

The study compared financial sustainability of water companies with Cost Benefit Analysis and The Cash Conversion theories.

Cost Benefit Analysis Theory

The early authors of the Cost benefit Analysis Model included Chakravarty (1989), Robinson (1993) and Layard and Glaister (1994). The model has since been developed further by (Atkinson, Mourato, *et al*, 2006) who argues that Cost Benefit Analysis compares the net present value of the stream of total benefits with the net present value of the stream of total costs of a proposed project. The break-even point in the Cost Benefit Analysis is the quantity of service at which total benefits equal total costs for the service to be financially self-supporting over some range of quantities of service provision.

Total benefits will also be greater than or equal to total costs at the levels of service provision and this is because the value of total benefits always equals or exceeds potential total revenue (Mishan and Quah, 2007). However, the reverse is not necessarily true even though there a be some range or level of the service that proves to be financially self -supporting, then it does not follow that all levels provision at which benefits exceed costs for the quantities of service provision but these levels of service will not be financially self-supporting because total costs exceed total revenues for these quantities of the service. The cost benefit analysis is a key model for the study as it justifies the choice of strategy brought in by water sector reforms. To that regard, the cost benefit analysis was a key guide to the analysis of non-revenue water control, water coverage area, metering ratio and revenue collection strategies and their influence or effect on financial performance as objectives or variables in the study.

The Cash Conversion Theory

According to McCall (2012), the Cash Conversion Cycle was developed to explain the period that a firm takes after procuring purchases and making sales to receive the cash. The cash conversion cycle which represents the interaction between the components working capital and the flow of cash within the company can be used to determine the operational efficiency of any firm. Cash conversion cycle plays the same role in the business as the role of a human heart in the human body. The reason behind this is because when funds are generated, they are circulated in the business as the role done by a human heart, thus if the cycle is not completed the business becomes lifeless. This reason is vital since working capital is known as circulating capital as it circulates in the business to make it more profitable (Eljelly, 2004). Shin and Soenen (1998) and recent authors such as McCall (2012) developed the cash conversion cycle as part of operating cycle which focus on the length of time between purchase of raw materials and other inputs and the inflow of cash from the sale of finished goods which represents the number of days of operation for which financing is needed with a shorter conversion cycle indicating operational efficiency. The Cash conversion cycle is computed by fist summing up the Days in Inventory holdings and Days in Accounts Receivable and then deducting the Days in Accounts Payable.

To achieve Operational Efficiency is important to maintain optimum inventory levels, accounts receivable and accounts payable. In order to achieve optimum days in receivable, a firm will be required to achieve efficient receivables management. First, to boost sales, the firm may require loosening its credit terms a factor that may increase bad debts resulting in losses apart from the firm suffering from opportunity cost by providing financial services to customers. However, tightening it would reduce receivables and bad debt losses but result in lower sales (Deloof, 2003). For efficient management of accounts payable, a firm should only choose to borrow using accounts payable if it is the cheapest source of funding, after considering discounts for early payment of their trade credit (that is) the free component should always be used but after analyzing, the costly component with respect to its cost and compared with the costs of the other sources of funds. Thus, the efficient management of working capital management (Gao, Harford, and Li, 2013). The theory was a key guide to the analysis of the effect of revenue collection strategies and non-revenue water control and the influence on financial performance as objectives of the study.

Empirical Review

This part covers empirical literature regarding the variables included in our study. The objective of the review was to understand past works by scholars and researchers on the subject of financial performance of water companies as influenced by water sector reforms. The review was key in establishing the research gaps that remained under covered with regard to this subject and help in the formulation of a framework to cover those research gaps.
Water Sector Reforms and Financial Performance of water companies.

Githua and Wanyoike (2014) undertook a study on Factors influencing performance of community water projects in Njoro Sub County. The study results revealed that stakeholders' participation has a significant and positive effect on the cost schedule indicated financial performance of community water projects in Njoro sub-county. Ng'etich (2015) undertook a study on corporate governance and financial performance of water companies in Kenya. The Return on Assets (ROA) ratio was used to indicate financial performance and considered last three financial years 2011/12 to 2013/2015. The financial results of the water companies were gathered from the Auditor General Office and WASREB. The results established a positive relationship between financial performance of the water companies and corporate governance practices in the water companies.

Guerrini, Romano, and Campedelli (2011) undertook a study on Factors affecting the performance of water utility companies. The study targeted 80 Italian water utility companies between 2004 to 2008 and assessed the variables ownership structure, size, diversification as well as geographical location. The study used tariffs, population served and volumes supplied to indicate performance and established that ownership structure, size, diversification and geographical location contribute significantly to the performance of water utility companies.

Metering ratio and financial performance

Kihumba (2013) conducted research on factors influencing revenue generation among water service providers in Kenya in an exclusive study of water service providers in Kenya. The study majored on service coverage, non-revenue water, metering ratio, staffing, and revenue collection efficiency of Water Service Providers. The study adopted a descriptive survey design and exploited self-Administered questionnaires as the choice data collection instrument. Utility managers identified through stratified random sampling were used as the target respondents. The researcher also used interviews to collect additional qualitative data for purposes of obtaining detailed information from the managers. Both descriptive and inferential statistics were used and generated using the Statistical Package for Social Science (SPSS). It was established that the water metering ratio is a key determinant of revenue generated by a Water Service Providers and this affected the financial performance and sustainability of WSPs.

Rao (2012) undertook a study on the impact of municipal billing systems on revenue collection. He reported that the Kenyan public and private sectors were exploring a wide range of reforms aimed at enhancing revenue collections. The central government and local authorities were embracing the integrated financial management systems (IFMS) to identify tax defaulters and manage bad debts. The water sector was introducing water meters for all clients as an effective way of enhancing collections of revenues from water utilities and thereby enhancing their performance.

Mutikanga, Sharma, and Vairavamoorthy (2011) undertook a study on water meter performance in developing countries in case study of Kampala the capital city of Uganda. The

study was conducted on the background challenge that water utility companies in developing countries face with high levels of water losses in distribution systems. The author underlines the critical role of the water meter as a worthy tool that helps not only the WSPs but also the customers in measuring and monitoring their consumption. The study established a positive relationship between the metering ratio and financial performance of the water utilities in Uganda.

Revenue Collection Strategies and Financial Performance

Kihumba (2013) conducted research on factors influencing revenue generation among water service providers in Kenya in an exclusive study of water service providers in Kenya. The study majored on service coverage, non-revenue water, metering ratio, staffing, and revenue collection efficiency of Water Service Providers. The study indicated a positive relationship between collection efficiency and revenue generation. The study also recommends that Water Service Providers enforce stricter collection policies and continuously improve on their service quality to ensure survival and superior financial performance of the WSPs.

Kondo (2015) undertook a study on the Effect of Revenue Enhancement Strategies on Financial Performance of Kenya Revenue Authority. The study relied on secondary data that was obtained from published annual reports and considered 13-year period between 2002-2003/2004 to 2014. The study relied on regression models to explain the effect, if any of the revenue collection strategies and financial performance if KRA. It was established that civic education and revenue collection points have a strong positive and significant effect financial performance. The researcher recommended the establishment of more revenue collection centres underpinning them as effective in enhancing financial performance.

Otieno *et al*. (2013) conducted a study on the effect of Information Systems on revenue collection of Local Authorities in Homa Bay, Kenya. The study sought to determine if Information Systems relate to effectiveness and efficiency of Revenue Collection. The researcher employed a structured cross-section survey of 2,007 individuals who included Local Authorities staff and traders. The study established a relationship between Information Systems as well as Internal Control Systems with both efficiency and effectiveness in revenue collection.

Non- Revenue Water Control and Financial Performance.

Kihumba (2013) in his research on factors influencing revenue generation among water service providers in Kenya established that the high levels of Non-Revenue Water (NRW) poses a major threat to the financial performance and sustainability of the majority of Water Service Providers. Non-revenue water accounted for more than 50% which kept revenue generation from water service provision at non-optimal levels. It was further determined that the rising operation and maintenance expenditure was on the rise and did not match the revenue generated from water.

Ramirez (2008) explored Non-Revenue Water Reduction Programs in Colombia using a Methodology Analysis using a System Dynamics Approach. The researcher utilised the System Dynamics model to ease the understanding of interactions and causal relations underlying the water loss problem among the clients, the company and the surrounding environment and was also helpful in analysing different water policies to investigate the effectiveness of water loss reduction programs and their ultimate effect on performance of water utility companies. The study established that reduction on non-revenue water levels impacted positively on both operational and financial performance of water utility services providers in Colombia.

Ndirangu, Chege, deBlois, and Mels (2013) conducted a study on local solutions in Non-Revenue Water management through North–South Water Operator Partnerships in Nakuru County. The study presents high Non-Revenue Water (NRW) levels averaging at 45% as negatively affecting the financial performance of water utility companies. The study further reported commendable gains on joint efforts by Nakuru Water, Sewerage and Sanitation Company (NAWASSCO), local partners as well as international partners in introducing innovative NRW model. The pilot study framework by the three levels of partnership resulted in marked reduction in NRW levels and increased revenue for the water company. As such, the study reveals empirical evidence relating non-revenue water reduction strategies to financial performance improvements.

Farley and Liemberger (2005) conducted a study on developing a non-revenue water reduction strategy and concentrated on the subject of planning and implementing the strategy. The paper presents a discussion on each step of the strategy development and implementation and reports that close monitoring of non-revenue reduction strategies impacts largely on performance of the strategy in reducing non-revenue water exposures.

Water Coverage Area and Financial Performance.

Kihumba (2013) conducted research on factors influencing revenue generation among water service providers in Kenya in an exclusive study of water service providers in Kenya. The study majored on service coverage, non-revenue water, metering ratio, staffing, and revenue collection efficiency of Water Service Providers. The study adopted a descriptive survey design and exploited self-Administered questionnaires as the choice data collection instrument. Utility managers identified through stratified random sampling were used as the target respondents. The researcher also used interviews to collect additional qualitative data for purposes of obtaining detailed information from the managers. Both descriptive and inferential statistics were used and generated using the Statistical Package for Social Science (SPSS). It was established that the average water service coverage area was below the acceptable sector benchmark. It was further established that the level of service coverage is a key determinant of revenue generated by a Water Service Providers and this affected the financial performance and sustainability of WSPs.

Mbuvi (2012) was interested in gathering knowledge on utility reforms and the resulting effects on performance of the urban water sector in Africa. The study established a strong link between the water coverage area and the performance of the water utility companies.

Research gaps

The researcher encountered many gaps which ranged from contextual, empirical as well as methodological gaps which the study at hand sought to fill. The contextual gap came from the fact that most studies done on this area of water sector reforms and the resulting influence on financial performance had a foreign origin and as such very few local studies were available as guiding empirical evidence for decision making by sector stakeholders and practitioners. There were also empirical gaps on the fact that most studies had not considered a comprehensive coverage of all major sector reforms and as such had only concentrated on one or two aspects. The researcher also encountered methodological gaps on the fact that most studies had only dissected the challenge and had not therefore attempted to give practical solutions to that effect. The study at hand sought to fill all these gaps as elaborated in the table of summary of literature review and research gaps.

RESEARCH METHODOLOGY

Research Design

The study employed a descriptive research design or approach. The scholars behind the development of this approach such as Bryman and Bell, (2015) present a descriptive research approach as concerned with determining the frequency with which something occurs and seeks to explain an already existing situation or relationship between variables. According to Bulmberg, Cooper, and Schindler (2011), a descriptive study seeks to find out the what, where and how of a phenomenon. The justification for the application of this research design approach was informed by the fact that the phenomena under the study could not be manipulated as it involved an already existing state of affairs. In conducting the study on the effect of water sector reforms on financial performance of water and sewerage companies, the researcher sought to explain the already existing state of affairs without any attempt to manipulate the relationships thereof.

Target Population

Target population according to Oso and Onen (2005) entails the complete set of elements with shared characteristics. Ott and Longnecker (2015) presents the target population as a group of individuals or elements from which the sample might be drawn. The population for the study consisted of 60 senior level management officials drawn from all the 5 water and sewerage companies in Nyeri County as gathered from the County Government of Nyeri (2016). The senior level official targeted included all the Board Members, Commercial Managers, Accountants, Technical Officers, and Managing Directors and Human Resource managers.

Sample Design.

A sample is a subset of the population selected for study to guide inferences about the population (Bryman and Bell, 2015). The study utilised a census study approach and as such targeted all the 60 respondents identified under the target population as possible participants. To be specific, the researcher used the executive management team comprising of board members, managing directors, commercial managers, accountants and human resource managers of all the 5 water and sewerage companies. As a rule of thumb, Mugenda and Mugenda (2003) recommends that a sample size should be more than 30 in order to allow normal approximations from population. The sample size attained was 60 participants which not only met but also even surpassed this threshold.

Table 3.1 Table of Target Respondents

	Number per Water Company	**Target population**	**Sampling ratio**	**Sample**
Managing Directors	1	5	1.0	5
Commercial Managers	1	5	1.0	5
Board Members	7	35	1.0	35
Accountant	1	5	1.0	5
Human Resource Manager	1	5	1.0	5
Technical managers	1	5	1.0	5
TOTALS	**12**	**60**	**1.0**	**60**
Sample size				**60**
Sample proportion				**100%**

Source: Researcher (2016)

Data Collection Instruments and Procedure

The study exploited both primary and secondary data sources. Primary data was collected using semi structured questionnaires containing both close ended and open ended questions. The researcher used the 'drop and pick later' method of questionnaire administration, the justification being the fact that, the target respondents were a busy category of corporate team with a lot of duties and commitments. Secondary data was gathered from the financial statements of the companies as well as WASREB and Auditor general's office where the companies are mandated by law to file returns.

Validity of Research Instrument

According to Mugenda and Mugenda (2003) validity of a research instrument is ideally the extent to which an instrument measures what it was originally intended or designated to measure. The researcher conducted a pre-test of the instrument by administering it in the neighbouring Muranga County's Muranga Water and Sewerage Company (MUWASCO) to ascertain the validity status of the instrument. The researcher also sought Expert Opinions on the validity status of the research instrument with the experts consisting of the supervisor and other lecturers. Improvements were then made where necessary until the experts were satisfied on the validity status of the instrument.

Reliability of Research Instrument

Bryman and Bell, (2015) assert that reliability is the extent to which the research instrument administered more than once would generate similar results. According to Kothari (2011), the idea behind reliability is that any significant result must be more than a one-time instance finding and must be inherently repeatable. The SPSS derived Cronbach's Alpha Reliability Test was utilised for purposes of assessing the reliability status of the research instrument. The Cronbach's alpha according to Mugenda and Mugenda (2003) evaluates internal consistency by calculating an equivalent to the average of all possible split half correlations.

Table 3.2: Chronbach's Alpha Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.799	.801	23

Source: Survey data (2015)

The Croncbach's alpha coefficient for 23 items was 0.801 which indicated a high internal consistency. Gliem & Gliem (2003) presents that a chronbach's alpha reliability coefficient of greater than 0.70 would be considered acceptable in social science research situations.

Data analysis and Presentation

The researcher engaged in a cleaning exercise of the data gathered which was then arranged in line with the objectives and research hypothesis. The data was then coded in the Statistical Package for Social scientists (SPSS) software. Quantitative data which formed the bulk of the data sought in the research tool was analysed using both descriptive statistics and inferential statistics. Content analysis was utilised in the analysis of qualitative data obtained from the open-ended questions. The regression model and correlation analysis models were the key most inferential statistics tools utilised.

The researcher sought to develop a regression model of the type given below as adopted from Kutner, Nachtsheim, and Neter (2004).

$$\mathbf{Y = \beta_0 + \beta_1 MR + \beta_2 RCS + \beta_3 NRW + \beta_4 WCR + \varepsilon}$$

Where; **Y= Financial Performance** [Return on Investment (ROI) and Operating Margin (OM)]

β_0 = is the regression intercept and represents the expected value of the dependent variable (Financial Performance) if all of the independent variables are zero

MR= Metering Ratio RCS= Revenue Collection Strategies, NRW= Non-Revenue Water Control, WCA= Water Service Coverage Area.

While β_1, β_2, β_3 β_4, are regression Coefficients representing the slope of the regression line & ε is the error term.

RESEARCH FINDINGS AND DISCUSSIONS

Response rate

The researcher distributed a total of 60 questionnaires to the various target respondents. However, only 47 respondents returned their questionnaires. The study therefore attained a response rate of 78.33 %. The response rate is therefore considered very good guided by the conventional wisdom presented by Mugenda & Mugenda (2003), who asserts that a response rate of 50% is considered adequate, 60% good and above 70% as very good. As such, the response rate in our case is very good.

Descriptive statistics.

With respect to profitability, the average Return on Assets ratio for the Water Companies in Nyeri County stood was approximately 5.0574 as indicated by the mean. The Company with the highest ROA recorded 10.60% with the least being 2.00% which represents a sector range of 8.60% which indicates huge performance differences. Turning the focus to efficiency, the average sector's Operating Margin stood at 7.8809% as indicated by the mean. The highest Operating Margin was 12.49% with the least being 1.30% which represents a range of 11.19%. As such, a conclusion was made that the water companies are generally efficient and profitable in their business. There are however wide performance differences among the water companies as indicated by the wide range for both profitability and efficiency indicators which agreed with past findings by Kihumba (2013).

Almost half, 48.94% of the respondents strongly agreed with the proposition that water sector reforms enhance water companies' profitability with a further 36.17% of the respondents agreeing with the proposition. An additional 6.38% of the respondents were indifferent about this condition while the lower cut class was represented by 4.26% of respondents who disagreed and a further 4.26% who strongly disagreed. As such, majority of respondents were of the opinion that water sector reforms enhanced profitability of the water companies at least to a great extent. The findings agree with Mutikanga, Sharma, and Vairavamoorthy (2011) who found similar results.

With regard to efficiency as a measure of performance, 46.8% of the respondents strongly agreed with the proposition that water sector reforms had enhanced efficiency of operations in the water companies. A further 29.8% of respondents agreed with the proposition while 10.60% were indifferent about such condition. An equal proportion of 6.4% each represented respondents disagreeing and strongly disagreeing with the proposition. Therefore, going by the majority, water sector reforms had enhanced efficiency of the water companies. These findings concur with past researchers including Ramirez (2008).

Metering ratio as a water sector reform was largely practiced. The average number of total water connections per company in the county stood at 9,402 connections. The company with

the highest total connections was 14,000 connections with the least having 6,000 connections, therefore representing a range of 8,000. The average number of metered connections in the water sector per company in Nyeri County stood at 7,796 metered connections. The company that registered the highest meter connections for water supply had 10,160 metered connections with the least having 5000 connections therefore presenting a sector range of 5,160. The average sector metering ratio in the County stood at 85.90%. The Company with the highest metering ratio had 100% of connections metered with the least having 71% of connections metered thereby presenting a sector range of 29.00%. The results present a wide spread with very huge differences on metered connections for the companies. As such, Companies need to revisit their water connections metering policies to achieve optimal billing. The findings agree with previous studies by Kihumba (2013) on wide disparities in connections to meters by individual water companies.

Metering of water connections was found to greatly enhance revenue collection in agreement with previous researchers who included Kihumba (2013), Rao (2012) and Mutikanga, Sharma, and Vairavamoorthy (2011). Metering also enhanced the production of reliable water bills and therefore, investments towards improving the water company's metering ratio was a viable strategy. The results also demonstrated that properly calibrated meters help in reducing water wastages. The findings also showed that proper management of cold-water meters and other hydraulic fixtures was key to proper determination of bills which enhances financial performance.

On non-revenue water control as a water sector reform, findings indicated that the average water volumes produced and channelled to the distribution system was 4,767,000 meters cubed. The company with the highest production had 6,059,000 meters cubed in water volume with the least recording 3,350,000 metres cubed in water volumes produced therefore giving a range of 2,709,000 metres cubed in production differences. Out of the production, the average sector water distribution was 2,119,600 meters cubed. The company that distributed the highest volume distributed 4,577,366 metres cubed with the least distributing a volume of 150,750 meters cubed thereby representing a range of 4,426,616 in distribution differences. The average percentage of Non-Revenue Water for the Water Service Companies stood at 53.92%. The Company that recorded the highest proportion of Non-Revenue Water had 65% of its distributed volumes going to Non-Revenue Water while the company with the least proportion of Non-Revenue Water had 20.0% record in Non-Revenue Water. This condition represented a wide sector range of 45.00%. As such, something needs to be done to check the trend of Non-Revenue Waters. It is also evident, going by the wide range that some companies are more effective in controlling levels of Non-Revenue Water and as such other companies can learn from them. The findings are in agreement with previous indications by Ndirangu, Chege, deBlois, and Mels (2013).

Respondents indicated that their companies were putting in place detection programs and involving stakeholders as ways of ensuring early detection and Control of Non-Revenue Water problem. It was indicated that Staff engagement was being heightened for detection of illegal

connections. The companies were also exploring leak mitigation strategies as a further way of dealing with Non-Revenue Water problem. Companies were also analysing meter tampers as a way of dealing with Non-Revenue Water. Respondents recommended actions towards the reduction of high costs of lost water as one of the strategies for dealing with the Non-Revenue Water Problem. The respondents brought out the need to prevent NRW losses and protect precious water resources and recommended an advanced metering infrastructure (AMI) system as a fundamental component NRW detection program for the Water Service Providers. The respondents also recommended the use of acoustic leak detection programs and more specifically acoustic leak sensors as a tool for proactive leak mitigation. There is also need, as reported by respondents, for stringent follow up mechanism to detect possible meter tampers at the earliest opportunity. Going by the findings, it was concluded that reduction of Non-Revenue Water enhances not only revenue collection but also financial soundness to a great extent. It was also demonstrated that the status of water infrastructure and other apparatus does influence at large the amount of Non-Revenue Water.

Revenue collection strategies as a water sector reform were also assessed. The average sector billing by the water companies stood at Kshs 5.9574 million with the company registering the highest figures having a billing of Kshs 10 million and the least being 4 million representing a range of Kshs 6 million. The average total collections for the water companies stood at Kshs 4.7064 million with the company achieving the highest collection having Kshs 7 million in Collections and the least collection being Kshs 3.3 million registering a sector range of 3.7 million. The average collections efficiency stood at 81.10% with the company with the highest and lowest collections efficiency having 91.00% and 70.00% respectively therefore giving a sector range of 21%. Therefore, it was concluded that the companies were generally fairy efficient in effecting collections though there was need for struggling companies to learn from the leaders on effective collection strategies. This recommendation follows the fairy huge efficiency range reported in the sector.

Respondents highly opined that revenue collection is a key determinant of financial performance of water companies. Timely production of water bills was reported to largely influence the amount of revenue collected. It was also largely held that a stringent policy was more effective than a lenient one in boosting financial performance of water companies. Water tariffs were reported to have a big effect in diluting the financial performance of water companies and as such respondents felt there was need to establish an optimal policy on the same. The respondents also reported that the company's workforce was well trained but there was need to address the fairy large number of dissenting voices to ensure this condition held for its role in enhancement of revenue collections. It was observed that most water companies had generally embraced technology as a way of enhancing Revenue Collections. The respondents also indicated that the Technology had served to improve the level of customer service in the organisation and that complaints had reduced significantly since introduction of the technologies.

Water coverage area as a water sector reform was also assessed. From the findings, the average population in the water companies' service area stood at 45,340 people. The company with the least population in its coverage area had 34,000 people with the highest having 59,000 people as the population in their area of jurisdiction. The registered water connections registered a sector average of 3,968 connections. The company with the highest level of connections had 6,000 connections with the least being 2000 connections thereby presenting a sector connections range of 4,000. The sector's average number of people served per active connection was 4 people per connection. The least average number of people served per connection was reported as 3 people with the highest service per connection being 5 people. As such, the total average number of people served in the water sector in the county stood at 17,617 people. The highest total number served by the companies stood at 30,000 with the company serving the least number having 6,900 people to serve. Therefore, the percentage water coverage in the service area stood at a sector average of 37.91%. The company with the highest rate of population served had 71% of people served with the least reporting only 19%. This condition presents a condition where the population in Nyeri County was still under served with water services and as such appropriate steps need to be undertaken to improve the service coverage levels. This would not only improve the company's revenues but also serve to enhance the living standards of the people. Respondents largely held that water coverage area yields great influence on revenues and as such efforts should be put in place to ensure more people are served. Results indicated the need to redefine the water service coverage areas of the water companies. Respondents also largely reported that there was need to revisit the water sector demarcations to improve the coverage status of the water companies.

Inferential Statistics

This section covers statistics that help us to make key conclusions and generalisations to the entire study population. The findings are compared and contrasted to arrive at logical conclusions.

Multiple Regression Analysis

Table 4.1: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.894	1.000	.00125

a. Predictors: (Constant), WATER COVERAGE AREA, METERING RATIO, NON REVENUE WATER CONTROL, REVENUE COLLECTION STRATEGIES

Source: Survey data (2016)

R Square which is also known as the Coefficient of Determination stands at 0.8940. This implies that 89.4% of the variation in the Water Service Companies' Financial Performance (the dependent variable) is explained by variability in the independent variables i.e. Water Coverage area, Metering Ratio, Non-Revenue Water Control and Revenue Collection strategies. To this effect, only 10.60 % of the variation in the financial performance of water companies is explained by other variables not included in the model. As such, the model

utilised is good in prediction of financial performance. R, the correlation coefficient stands at 0.946 which indicates a very strong association between water sector reforms as a whole and financial performance of the water companies. Guided by the works of Draper, Smith, & Pownell (1966) and Seber & Lee (2012), a conclusion was therefore made that at least one of the variables under assessment were useful predictors of financial performance.

Table 4.2: Regression Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.546	.006		3137.460	.047
	METERING RATIO	.020	.000	.195	1129.447	.035
	NON REVENUE WATER CONTROL	.175	.000	.848	4300.610	.021
	REVENUE COLLECTION STRATEGIES	1.725	.008	.052	226.466	.001
	WATER COVERAGE AREA	1.208	.003	.092	358.119	.000

a. Dependent Variable: FINANCIAL PERFORMANCE

Source: Survey data (2016)

As evidenced by the regression analysis output, all the independent variables, Water Coverage area, all the regression coefficients for the independent variables; Non-Revenue Water Control, Revenue Collection strategies and Metering ratio are statistically significantly different from 0 (zero) since their P Values are less than 0.05. The coefficient for Metering Ratio (0.20) is significantly different from 0 because its p-value is less than 0.035, which is smaller than 0.05 level of significance. Therefore metering ratio yields a significant influence to water companies' financial performance. The findings are in agreement with previous studies by Kihumba (2013), Rao (2012) and Mutikanga, Sharma, and Vairavamoorthy (2011) who established similar conditions.

The coefficient for Non-Revenue Water Control (0.175) is statistically significant because its p-value of 0.021 is less than 0.05 level of significance. As such, Non-revenue water control yields a statistically significant influence on financial performance of the water companies. The findings agree with Kihumba (2013), Ramirez (2008), Ndirangu, Chege, deBlois, and Mels (2013) and Farley and Liemberger (2005). The coefficient for Revenue Collection Strategies (1.725) is statistically significant because its p-value of 0.01 is less than 0.05 level of significance. Revenue Collection Strategies therefore determine the level of financial performance of the water companies. The findings concur with Kihumba (2013), Kondo (2015) and Otieno *et al*. (2013).

Finally, the coefficient for Water Coverage Area (1.208) is statistically significant because its P –Value of 0.00 is less than 0.05 level of significance. Therefore water coverage area, going by the results influence the financial performance of water companies. These findings concur with Kihumba (2013) and Mbuvi (2012). As such, all the independent variables under assessment are useful predictors of financial performance of the water companies. The regression model was therefore developed as follows;

Financial Performance = 17.546 + 0.20 (Metering Ratio) + 0.175 (Non-Revenue Water Control) + 1.725 (Revenue Collection Strategies) + 1.208 (Water Coverage Area).

Correlation analysis

The Pearson Correlation analysis was employed in order to understand the magnitude and direction of relationship, if any, between each independent variable and financial performance of the Water Service Providers. Table 4.3 indicates the Correlation Output as derived from SPSS.

Table 4.3: Pearson Correlation Analysis

		FINANCIAL PERFORMANCE
METERING RATIO	Pearson Correlation	.468**
	Sig. (2-tailed)	.001
	N	47
NON REVENUE WATER CONTROL	Pearson Correlation	.976**
	Sig. (2-tailed)	.000
	N	47
REVENUE COLLECTION STRATEGIES	Pearson Correlation	.163
	Sig. (2-tailed)	.004
	N	47
WATER COVERAGE AREA	Pearson Correlation	.785**
	Sig. (2-tailed)	.000
	N	47

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Survey data (2016)

There exists a significant positive relationship between Metering Ratio and financial performance as evidenced by the Pearson Correlation Output. The strength of association is moderate since the Pearson Correlation Co-efficient stands at 0.468 and statistically significant since the Sig. (2-tailed) value of 0.001 is less than 0.05 level of significance. The findings agree with Kihumba (2013), Rao (2012) and Mutikanga, Sharma, and Vairavamoorthy (2011).

As per the results of the Pearson Correlation analysis, there exists a positive relationship between Non-Revenue Water Control and Financial Performance. The association between the two variables is very strong since the Pearson Correlation Coefficient is 0.976 and statistically significant since the Sig. (2-tailed) value of 0.000 is less than 0.05 level of significance. The observations concur with Kihumba (2013), Ramirez (2008), Ndirangu, Chege, deBlois, and Mels (2013) and Farley and Liemberger (2005).

The Pearson Correlation coefficient for Revenue Collection Strategies is 0.163. This indicates a weak level of positive association between Revenue Collection strategies and financial performance. The relationship is statistically significant since the Sig. (2-tailed) value of 0.04

is less than 0.05 level of significance. The findings agree with Kihumba (2013), Kondo (2015) and Otieno *et al*. (2013).

Finally, the Pearson Correlation Coefficient for Water Coverage Area is 0.785 which indicates a strong level of positive association between Water Coverage Area and financial performance which is statistically significant since the Sig. (2-tailed) value of 0.00 is less than 0.05 level of significance. The findings are in agreement with Kihumba (2013) and Mbuvi (2012) who also established similar conditions.

Summary, Conclusions and Recommendations of the Study

Summary of Findings

On general Performance of the water sector in the County, it was established that the water companies are generally efficient and profitable in their undertaking. This informed by the fair average Return on Assets and Operating Margin reported in the sector. As gathered from the majority of the respondents, the water sector reforms had improved not just the efficiency levels but also the profitability of the Water Service Providers (WSPs). More than three quarters of the variation in the Water Service Companies' Financial Performance (the dependent variable) was explained by variability in the independent variables i.e., Water Coverage area, Metering Ratio, Non-Revenue Water Control and Revenue Collection strategies as indicated by R square. All the independent variables under assessment; Water Coverage area, Non-Revenue Water Control, Revenue Collection strategies and Metering ratio were found to be useful predictors of financial performance of the water companies.

Results of the Pearson Correlation Analysis indicated that a significant positive relationship between all the independent variables and financial performance. The strength of association for Metering Ratio was moderate while that of Non-Revenue Water Control and Financial Performance was very strong. The Pearson Correlation coefficient for Revenue Collection Strategies indicated a weak level of positive association between Revenue Collection strategies and financial performance. Finally, the Pearson Correlation Coefficient for Water Coverage Area indicated a strong level of association between Water Coverage Area and financial performance.

Conclusion

It was concluded that the water sector reforms had improved not just the efficiency levels but also the profitability of the Water Service Providers (WSPs). There were huge differences on the level of metered connections for the companies occasioning the need for companies to revisit their water connections metering policies to achieve optimal billing. On Non-Revenue Water Control, it was concluded that something needs to be done to check the trend of Non-Revenue Waters in the county. It was also evident, going by the wide range in proportions of Non-Revenue Water that some companies are more effective in controlling levels of Non-Revenue Water and as such other companies can learn from them. It was further concluded that

reduction of Non-Revenue Water enhances not only revenue collection but also financial soundness to a great extent.

On the efficiency of Revenue Collections Strategies, it was concluded that the companies were generally fairy efficient in effecting collections though there was need for struggling companies to learn from the leaders on effective collection strategies. It was also concluded that in deed revenue collection is a key determinant of financial performance of water companies. A conclusion was also made generally the company's workforce were well trained but there was need to address the fairy large number of dissenting voices to ensure this condition held for its role in enhancement of revenue collections. On water coverage area, it was concluded that a significant proportion of the county population were still under-served with water services and as such appropriate steps needed to be undertaken to improve the service coverage levels. It was further concluded that the water coverage area yields great influence on revenues and as such efforts should be put in place to ensure more people are served.

Policy Recommendations

The researcher recommended that the companies invest more on the application of water sector reforms as they were all found through the study undertaking to influence the level of financial performance of the water companies. The companies need to explore more options to address the case where many people were still under served with the crucial water services. With regard to metering ratio, the researcher recommends that the companies invest more in having more connections metered as metering of connections was found to enhance efficient and effective determination of consumptions and generation of reliable bills.

As concerns Revenue Collections Strategies, the researcher recommends that water companies develop a stringent collections framework as it is supported by the majority in enhancing revenue collections. The researcher further recommends exploitation of modern technology tools and particularly ICT and Mobile Money Technologies as an effective way of reducing collection costs, offering a more appealing customer service besides enhancing revenues collection levels.

On Non-Revenue water control, the researcher recommends the establishment of an advanced metering infrastructure (AMI) system as a fundamental component of NRW detection programs for the Water Service Providers. This will enable timely detection of leaks for immediate remedial action. The researcher further recommends the use of acoustic leak detection programs and more specifically acoustic leak sensors as a tool for proactive leak mitigation. The water companies also need to involve as many stakeholders as possible to ensure early detection and timely reporting.

With regard to water coverage area, the water service providers need to lobby for redefinition of water service coverage areas. They also need to explore options towards the improvement of the proportion of the population in the service area covered in the water service programs. The regulators need to revisit the demarcation levels in the county to ensure that the area covered is within acceptable sector benchmarks and also ensure the posterity of the Water

Companies. The Water Service Regulatory Board also needs to enforce its regulations on the water service providers as this was found to enhance financial performance.

The study recommends that the Ministry of Water and irrigation enforce the adoption of water sector reforms for the water service providers for more sustainable administration and management of the scarce resource. The study further recommends that the ministry evaluates more reforms towards the reduction of wastages in water resources. The regulators such as Water Services Regulatory Board need to be considered for more financing in order to fast track and enforce the embracement of water sector reforms for better management.

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