



# IMPACT

ISSUE NO. 9/2016

A Performance  
Review of  
Kenya's Water  
Services Sector  
2014 - 2015





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A Performance Review of Kenya's  
Water Services Sector 2014 - 2015

**ISSUE NO. 9**

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**WATER SERVICES REGULATORY BOARD**

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**Water Services Regulatory Board**

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## Water Services Regulatory Board

### *Vision*

To be a Model Regulator of Water Services

### *Mission*

To Regulate Water Services in Line with the Human Right to Water and Sanitation

### *Motto*

Water Services for All

## FOREWORD

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### Effective Regulatory Process Necessary for Proper Governance



*"That which is common to the greatest number has the least care bestowed upon it. Everyone thinks chiefly of his own, hardly at all of the common interest; and only when he is himself concerned as an individual. For besides other considerations, everybody is more inclined to neglect the duty which he expects another to fulfil"*

*Aristotle (384BC – 324BC), Greek Philosopher*

Since independence, public policies have aimed at reducing poverty to enhance social and economic development. Adequate water and sanitation services are pivotal in poverty reduction because their inadequacy results in public health risks whose impact is damage to our well being, low productivity, and increase in living costs. If our water resources and services are well managed, they can contribute significantly to our social and economic growth. However, the problems we prioritized more than fifty years ago are still with us today. This indicts our water management paradigms.

We are over three years into the implementation of what I would consider the most significant governance challenge in our country – devolution. I consider it significant because the essence of devolution is to bring services closer to people, in terms of both actual service responsibility and accountability. However, this does not necessarily mean a change in water management principles of equity, efficiency and sustainability. When we look back at the last 12 years, significant achievements have been made through water sector reforms, guided by good global practice. One of these is the Integrated Water Resources Management (IWRM) practice which has emerged as a response to the widespread concern that our freshwater resources are coming under pressure from population growth, increasing demand, and increasing pollution.

Decisions about how water resources are protected, managed, used, allocated and conserved are, therefore, governance decisions. It is widely believed that the 'water crisis' is largely a 'governance crisis'. As a country, we are faced with

the challenge of urbanization which demands a huge expansion of our water and sanitation infrastructure. This expansion depends on a resource base that is threatened by anthropogenic activities and, not least, the uncertainties of climate change. We therefore need to be guided by fundamental water service management principles as we implement devolution in the water services sector. Both levels of government need to ensure adherence to a proper governance framework established and enforced through an effective regulatory process. This will ensure minimal politicization of future key decisions with regard to utility oversight and financial sustainability. National and intercounty collaboration is imperative for this to happen. Under devolved units, there is need to structure service provision to ensure utilities benefit from economies of scale. We congratulate utilities who have performed well despite the challenges faced in the implementation of the new governance framework and the slow progress in infrastructure expansion.

Going forward, Wasreb is convinced that the game changer in the sector will be increased public funding and self-financing hinged on appropriate tariffs. We have developed a number of tools to increase access to water services through low cost funding (concessional loans and grants). One of these tools is the governance indicator and creditworthiness index. It is expected to provide a snapshot of the potential of utilities to private partners so that the partners can make decisions on utilities they can do business with, thereby increasing chances of accessing commercial financing. We are aware of the need for long-term capital in the water services sector and applaud the National Government for commitment to the development of a bond facility for water services financing. It is expected that these tools will be utilised to develop infrastructure and strengthen utility performance.

Finally, universal access can only be achieved if there is increased focus on the poor, who live in Low Income Areas (LIAs). Utilities are expected to demonstrate stronger orientation towards the underserved if the right to water is to be realised.

**Eng. Robert Gakubia**  
**Chief Executive Officer**





***CHAPTER ONE:***  
**BACKGROUND ISSUES**

# 1 BACKGROUND ISSUES

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## Transitioning to Sustainable Development Goals

At the 70th United Nation General Assembly (UNGA) Summit held in 2015, the United Nations (UN) Member States adopted the 2030 Agenda for Sustainable Development, which includes a set of 17 Sustainable Development Goals (SDGs) to end poverty, fight inequality and injustice, and tackle climate change by 2030. This marked a transition from the Millennium Development Goals (MDGs). The SDGs will guide global socio-economic development for the next 15 years.

Clean water and sanitation are captured in SDG 6, with targets to:

- a) Achieve universal and equitable access to safe and affordable drinking water for all
- b) Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- c) Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
- d) Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

- e) Implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
- f) Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
- g) Expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
- h) Support and strengthen the participation of local communities in improving water and sanitation management



These targets are particularly important for Kenya's water services sector given that by 2015, which was the target of attaining the MDGs, it is only in Sub-Saharan Africa where the target for water had not been met. While urban water utilities in Kenya differ greatly in terms of size and operating environments, they share one major challenge, that is, expanding access to appropriate levels of services to their growing urban populations.

The MDG target for water was to "halve the proportion of people without sustainable access to safe drinking water and basic sanitation" by 2015. In Kenya, only half of the utilities managed to hit this target.

According to the National Water Services Strategy (NWSS-2007 to 2015), Kenya's target for water and sewerage services in the urban setting was 80% and 40% respectively. Only 15% of utilities met this target.





SDG 16 on Peace, Justice and Strong Institutions is important from a regulatory perspective because it captures the aspect of effective institutions.

In 30% of utilities, more than 50% of the water produced is lost through physical and commercial losses with only 10% (8/84) of the utilities meeting the Non-Revenue Water (NRW) country target of 30% by 2015. On the other hand, only 40% of the utilities are able to cover their O+M costs.

It is clear that in addition to increased investment for infrastructural expansion and rehabilitation, the real potential in Kenya's urban water sector lies in reducing wastage, improving service quality, maximising on consumer contribution, and improving cash flows. Mobilisation of resources from the private sector is one way of improving cashflows to accelerate access to water. It can leverage on programmes like the Kenya Output-Based Aid (OBA), Aid on Delivery (AOD) programme, or on commercial financing.

Also critical is a proper legal and institutional framework, proper sector policies, and incentives for utilities to perform (extend services to the poor, build capacity and network, have financial sustainability). With the enactment of the Water Act 2015, the sector now has a better instrument to guide its operations.

## 1.1 Concerns on Sector Financing

The Kenya Vision 2030 National Development Plan seeks to make water and basic sanitation available to all by 2030. The total cost of investment and rehabilitation needed in water supply is estimated at Ksh 1.7 trillion (NWMP 2030). According to the Kenya Water Masterplan, 2030, the available government budget is Ksh 592.4 billion. This leaves a shortfall of Ksh 1.2 trillion. This gap could be plugged partly by increasing sector efficiency, maximising consumer contributions through tariffs, and encouraging private sector funding.

The option of tapping into private sector funding, however, presents two challenges. First, commercial lenders view the sector as high risk; and, secondly, commercial interest rates are high. This means there is need to look for a third strategy, hinging on increasing the confidence of financial institutions in the water services sector and also lowering the weighted cost of borrowing from the same institutions. This strategy would involve the use of low cost funding (concessional loans and grants) for the development of capital intensive infrastructure. This would in turn strengthen utilities' operations, improve their financial performance, and enable them access commercial financing.

#### **Requirements for commercial financing**

- *Conducive operating and legal environment for bank lending*
- *Utilities to continue operating at arm's length as autonomous entities that can borrow*
- *Ring fencing of revenue*
- *Urban utilities to be managed in business-like manner*
- *Tariff setting to allow for funds to leverage more borrowing and not politicized*
- *Independent regulation*

#### **Utility Creditworthiness Index**

Out of these considerations, Wasreb, in collaboration with the World Bank Water Global Practice, developed a Creditworthiness Index for large utilities, as well as tool kits on commercial lending to the water and sanitation sector for the three main stakeholders (utilities, commercial banks and county governments). The purpose of the Creditworthiness Index is to provide lenders with a snap-shot of the financial and operational performance of utilities across the sector. Commercial lenders will now be able to estimate the borrowing risk of all utilities, while providing Wasreb and the utilities an industry benchmark that can help identify specific areas (ratios) of strengths and weaknesses. In addition to assessing creditworthiness, the index is expected to assist utility managers towards sound financial management.





### **Other Financing Initiatives**

Other initiatives that are meant to support utilities to access commercial finance include the Water Services Trust Fund of Kenya (WSTF) grants scheme. WSTF is a state corporation that invests in pro-poor water and sanitation infrastructure. It runs a results-based financing programme that provides grants to utilities that access commercial loans for investment. The programme is supported by the World Bank through the Kenya Output-Based Aid (OBA) Fund for low-income areas, and by the German Development Corporation (KfW), through the Aid on Delivery (AOD) programme.

Under the OBA Fund, utilities will be prefinanced with commercial loans from

domestic lenders on market terms. The loans will support investments that deliver household water and sewer connections, public water kiosks, and public toilets. An OBA grant will buy down 60% of the sub-project cost financed by domestic lenders. The areas eligible for grants will be identified through WSTF's poverty database, MajiData, which has mapped over 1,880 urban settlements considered low income based on an index of quality-of-life indicators. It is expected that the project will support access to \$16 million (Ksh 1.6 billion) of debt and enable provision of water and sanitation to 30,000 households.

Murang'a South is one utility that has benefitted from this facility for its user connection sub-project. The sub-project is a component under the water resources augmentation project funded by AfDB. Under the AOD programme, utilities commit to achieving predetermined targets that result in higher volumes of water reaching final consumers, an increase in revenue, and a reduction in NRW. The utilities meet 20% of project costs up front and borrow 80% through a loan from domestic banks. A 40% grant is paid on achieving the targets.

Embu borrowed Ksh 85 million under this programme for network rehabilitation and was supported by a 50% partial credit guarantee from USAID's Development Credit Authority (DCA). Utilities seeking to improve operational efficiency and expand access through commercial borrowing could benefit from OBA and AOD as well as from the DCA credit guarantee structure. Most projects to be funded under these initiatives build on investments funded by the GoK and soft loans from development partners.

## 1.2 Serving the Poor

There are approximately 2,000 LIAs in the country with an estimated population of close to 8 million. With growing urbanisation, there is an influx of more than half a million people in towns every year. Today, the water sector has a challenge of providing services to nearly 10 million underserved communities living in densely populated low-income urban areas. These millions of underserved people pay much higher prices for water than consumers with household connections. In the absence of an outlet from a registered utility, the water supplied by informal water service providers to this portion of the population is of doubtful and uncontrolled quality. To reach these people adequately, the sector should embrace the use of low-cost solutions such as yard taps, water kiosks and onsite sanitation solutions.

### Unbundling the right to water

The right to water implies the following:

- Physical access (non-discriminatory) to a water outlet in urban areas with a 30 minutes cycle and in rural areas within a distance of 2 km
- Sustainability of access (water resources, asset resilience, O+M cost coverage)
- Acceptable water quality
- Affordability (regulated but not more than 5% of household income as maximum)
- Reliability (> 12 h as minimum service hours)
- Right to have complaints resolved (participation / access to standardised complaint mechanism)
- Transparency and accountability (access to sector information)

The right to sanitation means:

- Physical access to an acceptable toilet (household, public, working place, recreational facilities, learning institutions)
- Storage, collection and treatment of human and other waste
- Evacuation of treated effluent according to minimum standards
- Clean environment free of solid, liquid and gaseous wastes





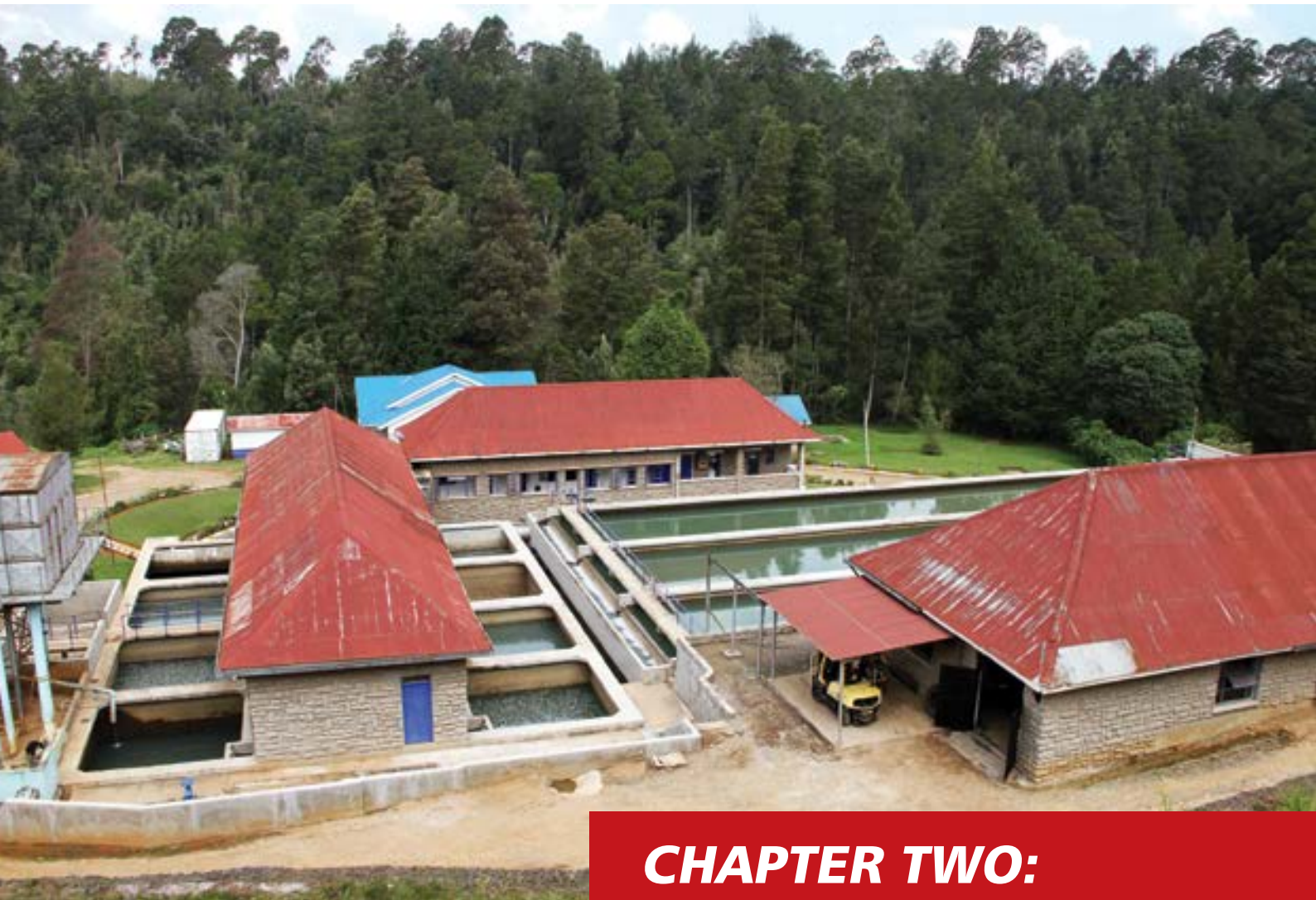
### 1.3 Adherence to National Values

Adherence to national values and principles of governance is a requirement for all organisations under Article 10 (2) of the Constitution of Kenya. These principles include participation, non-discrimination, good governance, integrity, transparency and accountability.

In line with this requirement, various regulatory measures have been prescribed to the water services sector. They include public participation in the tariff approval process, consumer engagement through Water Action Groups and MajiVoice; promotion of human dignity by ensuring affordability and price stability, approval of cost-reflective tariffs in various utilities, and also giving advisories as required to enable citizens continue enjoying shared waters. An indicator on corporate governance has also been developed to promote better management practices in institutions.

These actions lay a sound basis for partnership with the Regulator to balance the interests of consumers and those involved in water service provision.





## ***CHAPTER TWO:*** **SECTOR DEVELOPMENT**

## 2 SECTOR DEVELOPMENT



### Marginal Growth in Water Coverage as Sustainability Falters

Kenya’s population currently stands at 46 million, most of whom reside in rural areas. Of these, 20 million reside in areas currently served by 91 regulated utilities, with a total of 1.4 million connections. It is projected that by year 2030, the population in these service areas will increase to 45 million.

The National Water Services Strategy (NWSS 2007 -2015) had three main goals which are improvement of access, reduction of water losses (NRW) and improvement of sustainability (seen in terms of cost coverage).

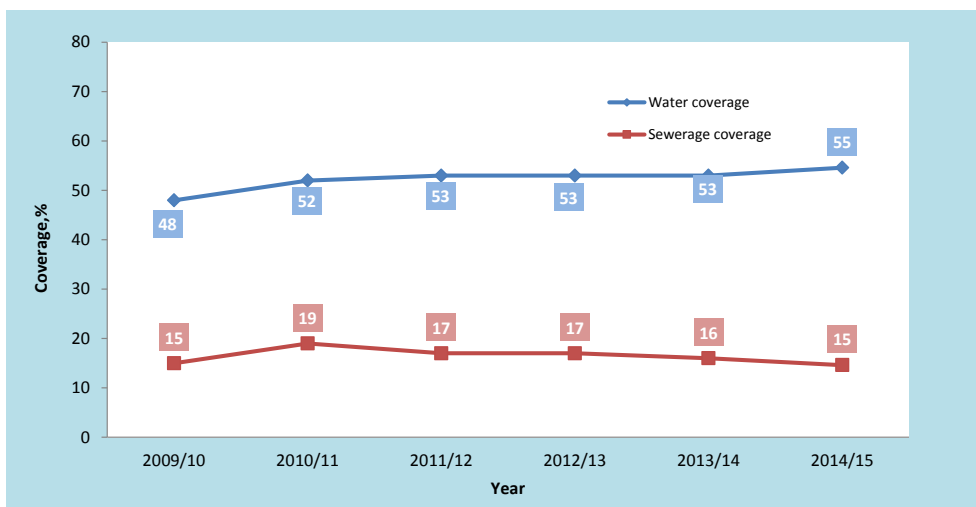
*Table 2.1: Status of National Goals*

Indicator	Status 2014/15	Goals (NWSS)	Goals 2030 (Vision 2030)	Remarks
Water Coverage	55%	80%	100%	This is for areas covered by commercialised utilities
Sewerage Coverage	15%	40%	100%	
NRW	43%	<30%	<25%	The indicator has not recorded significant improvement despite the commercialisation of services
O+M Cost Coverage	99%	100%	150%	150% is a proxy measure for full cost coverage

## 2.1 Water Coverage

Water coverage currently stands at 55% in urban and urbanising areas. The trend in coverage has been growing albeit slowly, starting from 48% in 2010 to current levels. Considering that the average annual growth within the last four years is about one percentage point, the sector must grow annually at five fold to reach the 2030 target of universal access. Considering that all urban areas will require professional management in the delivery of services, it is estimated that an annual average growth of 200,000 new water connections will be required. At the current average growth rate of 14,000 connections, the sector would be required to grow almost 15 fold in connections annually.

Figure 2.1: Trend in Water and Sewerage Coverage



## 2.2 Sewerage Coverage

Sewerage coverage currently stands at 15%. The trend has been declining from 19% in 2010 due to the rapid increase in population, which is not matched by corresponding investment in sewerage. As in the case of water supply, all urban settings will require some form of water borne system to manage waste water. To attain the sector target of 100% coverage for the urban population, the sector requires an average growth in sewer connections of approximately 350,000 which translates to 3.2 million people annually. It is clearly evident that the resource requirements to attain the 2030 target are enormous and the sector should explore other low cost options if access is to be progressively realised.

The trend in the nine KPIs which are used to assess sector development is presented in Table 2.2.

## 2.3 Performance of Utilities

Utility performance is central to ensuring the availability and sustainable management of water and sanitation services for all. In the year 2014/15, utilities were ranked on the basis of nine KPIs. These are Water Coverage, Drinking Water Quality, Hours of Supply, Non-Revenue Water reduction, and Metering Ratio. Others are Staff Productivity, Revenue Collection Efficiency, O+M Cost Coverage and Personnel Expenditure as a percentage of O+M costs.

**Table 2.2: Progress on Key Performance Indicators**

Key Performance Indicators	2013/14	2014/15	Trend
Water Coverage, %	53	55	↑
Drinking Water Quality, %	91	92	↑
Hours of Supply, hrs/day	18	18	→
Non- Revenue Water, %	42	43	↓
Metering Ratio, %	89	90	↑
Staff Productivity, Staff per 1000 Connections	7	7	→
Personnel expenditure as % of O+M Costs, %	42	42	→
Revenue Collection Efficiency, %	93	96	↑
O+M Cost Coverage, %	100	99	↓
Sewerage, %	16	15	↓

Sector Benchmarks: ■ good ■ acceptable ■ not acceptable ■ benchmark varies

The best performing utility for the seventh year in a row was Nyeri (Table 2.3) while the lowest ranked utility was Olkejuado (2nd consecutive year).

The following were the best performers in the cluster of indicators shown against their names:

- **Nyeri:** Quality of Service (Water Coverage, Drinking Water Quality & Hrs of Supply)
- **Ruiru-Juja:** Economic Efficiency (Personnel Expenditure as a % of O+M cost, O+M Cost Coverage, Revenue Collection Efficiency)
- **Nyeri:** Operational Sustainability (NRW, Staff Productivity and Metering Ratio)

**Table 2.3: Top and Worst Performing Utilities**

TOP TEN UTILITIES			BOTTOM TEN UTILITIES		
Rank	Utility	Score (Max 200)	Rank	Utility	Score (Max 200)
1	Nyeri	180	75	Mbooni	30
2	Ruiru-Juja	162	76	Kwale	26
3	Nakuru	140	77	Wote	22
4	Nanyuki	136	78	Tililbei	22
5	Thika	132	79	Nakuru Rural	22
6	Nithi	127	80	Gusii	21
7	Meru	123	81	Mombasa	14
8	Ngandori Nginda	119	82	Moyale	4
9	Kisumu	119	83	Nol Turesh Loitokitok	4
10	Eldoret	118	84	Olkejuado	0

Given that utilities operate under different conditions, aspects of their performance may be affected differently. Thus, effort may be commended even though it does not propel a utility to the top. Utilities can also drop in position despite enjoying a favourable operating environment. Recognition of effort is therefore captured by comparing a utility position at present against itself at an earlier position.

Table 2.4 indicates the top 10 improvers as well as the bottom 10 losers over time.

**Table 2.4: Top Improvers and Bottom Losers**

TOP TEN IMPROVERS				BOTTOM TEN LOSERS			
Utility	Score 2013/14	Score 2014/15	Scores (+)	Utility	Score 2013/14	Score 2014/15	Scores (-)
Ruiru-Juja	117	162	45	Ndaragwa	78	35	-43
Oloolaiser	52	86	34	Tililbei	58	22	-37
Imetha	32	65	32	Mavoko	110	75	-36
Tavevo	30	56	27	Karimenu	123	90	-32
Malindi	88	115	26	Githunguri	94	65	-29
Eldama Ravine	40	66	26	Kwale	54	26	-28
Namanga	63	86	24	Kahuti	76	49	-27
Nanyuki	114	136	23	Murang'a South	72	46	-26
Murang'a	79	100	22	Rukanga	95	70	-25
Ngandori Nginda	100	119	19	Kiambere Mwingi	88	66	-22

## 2.4 Performance of Water Services Boards

Water Services Boards are ranked against a cluster of investment, financial, and qualitative indicators. The evaluation criteria was modified taking into consideration the context of devolution, among other considerations. Under the qualitative cluster, consideration was given to performance with respect to utilities contracting and monitoring, tariff setting, reporting on capital works implementation and audit opinion. Where no reports were submitted, the score assigned was zero. The new scoring regime has a maximum score of 100. All WSBs scored below 50%.

Tana, Northern and Athi retained the top three positions in that order. Coast moved up four positions and was the only WSB that recorded improvement in rank (Table 2.5)

*Table 2.5: WSB Performance Ranking*

WSB	Score 2014/15 (Max 100)	Ranking 2013/14	Ranking 2014/15	Change in Rank
Tana	41	1	1	0
Northern	38	2	2	0
Athi	33	3	3	0
LVN	29	4	4	0
Coast	24	8	5	3
Rift Valley	21	5	6	-1
LVS	19	6	7	-1
Tanathi	12	7	8	-1

Table 2.6 presents the rating of the WSBs with respect to the timeliness and accuracy of WARIS data submission. Despite having improved to 'satisfactory' in the previous period, Tanathi slackened in the current period and only managed a 'fair' rating.

*Table 2.6: Ratings of WSBs According to Data Submission by Utilities*

WSB data submission rating	2013/14	2014/15
<b>Good</b> (>80%)	Tana, LVS	Tana, Athi
<b>Satisfactory</b> (>65 - 79%)	Rift Valley, Northern, Tanathi, Athi	Coast, LVN, LVS, Northern, Rift Valley
<b>Fair</b> (50 - 64%)	LVN	Tanathi
<b>Poor</b> (<49%)	Coast	

The table below gives details of WSB performance with respect to data submission.

**Table 2.7: Detailed Assessment of WSB Performance With Respect to Data Submission**

Dimension	Athi	Tana	LVS	Rift	Northern	Tanathi	LVN	Coast
Timeliness	Good	Good	Good	Poor	Fair	Poor	Fair	Fair
Completeness	Good	Good	Good	Fair	Fair	Fair	Fair	Fair
Accuracy of Data	Good	Good	Fair	Fair	Fair	Poor	Fair	Good
No. of Utilities Compliant	Good	Good	Good	Good	Good	Good	Good	Good
<b>Overall Rating</b>	<b>Good</b>	<b>Good</b>	<b>Sat.</b>	<b>Sat.</b>	<b>Sat.</b>	<b>Fair</b>	<b>Sat.</b>	<b>Sat.</b>

Sat. = Satisfactory

## 2.5 Regional Benchmarking of Utilities

Benchmarking has become a strategic tool for regulators to measure the performance of water utilities and promote competition to induce improvement in service delivery. However, large utilities are often resistant to having their performance benchmarked against 'smaller' utilities as they perceive the effort required to improve their operations as far greater in view of the size of areas they service. Further, large utilities are usually well resourced and can afford to waste more and yet perform better than smaller utilities. Thus, regulators have the challenge of finding sufficient utilities to benchmark with large utilities within a country, hence the need for regional benchmarking of large utilities.

In 2015, the Eastern and Southern Africa Water Regulators Association (ESAWAS) resolved to carry out a regional comparative performance report of the largest water utilities in their respective countries.



Members of this regional association include Wasreb, the Water Regulatory Council (CRA) of Mozambique; the Rwanda Utilities Regulatory Authority (RURA) of Rwanda; the Energy and Water Utilities Regulatory Authority (EWURA) of Tanzania; the National Water Supply and Sanitation Council (NWASCO) of Zambia and Lesotho Electricity and Water Authority (LEWA) of Lesotho and Agency for Regulation of Water Supply, Electricity and Mines (AREEM) of Burundi.

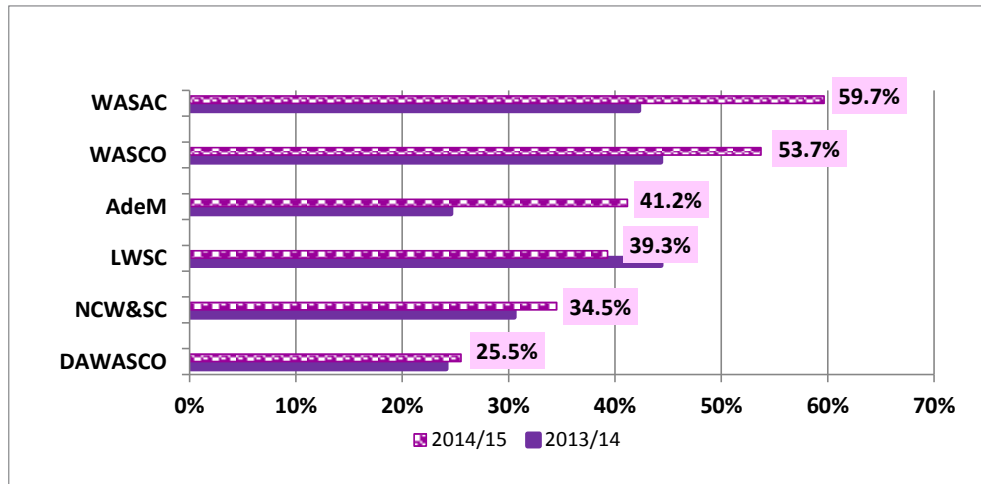
The largest water and sewerage utilities for the period 2014/2015 in each member country of ESAWAS were: Lusaka Water and Sewerage Company (LWSC) in Zambia; Nairobi City Water and Sewerage Company (NCWSC) in Kenya; Dar Es Salaam Water and Sewerage Corporation (DAWSCO) in Tanzania; Águas da Região de Maputo (AdeM) in Mozambique; Water and Sewerage Company WASCO in Lesotho; and Water and Sanitation Corporation (WASAC) in Rwanda.

The performance of the six water and sewerage utilities was done against ten key performance indicators with benchmarks defined by ESAWAS. The indicators were grouped according to similarity in the components of Quality of Service, Economic Efficiency and Operational Sustainability. Finally the utilities were ranked using an integrated measurement

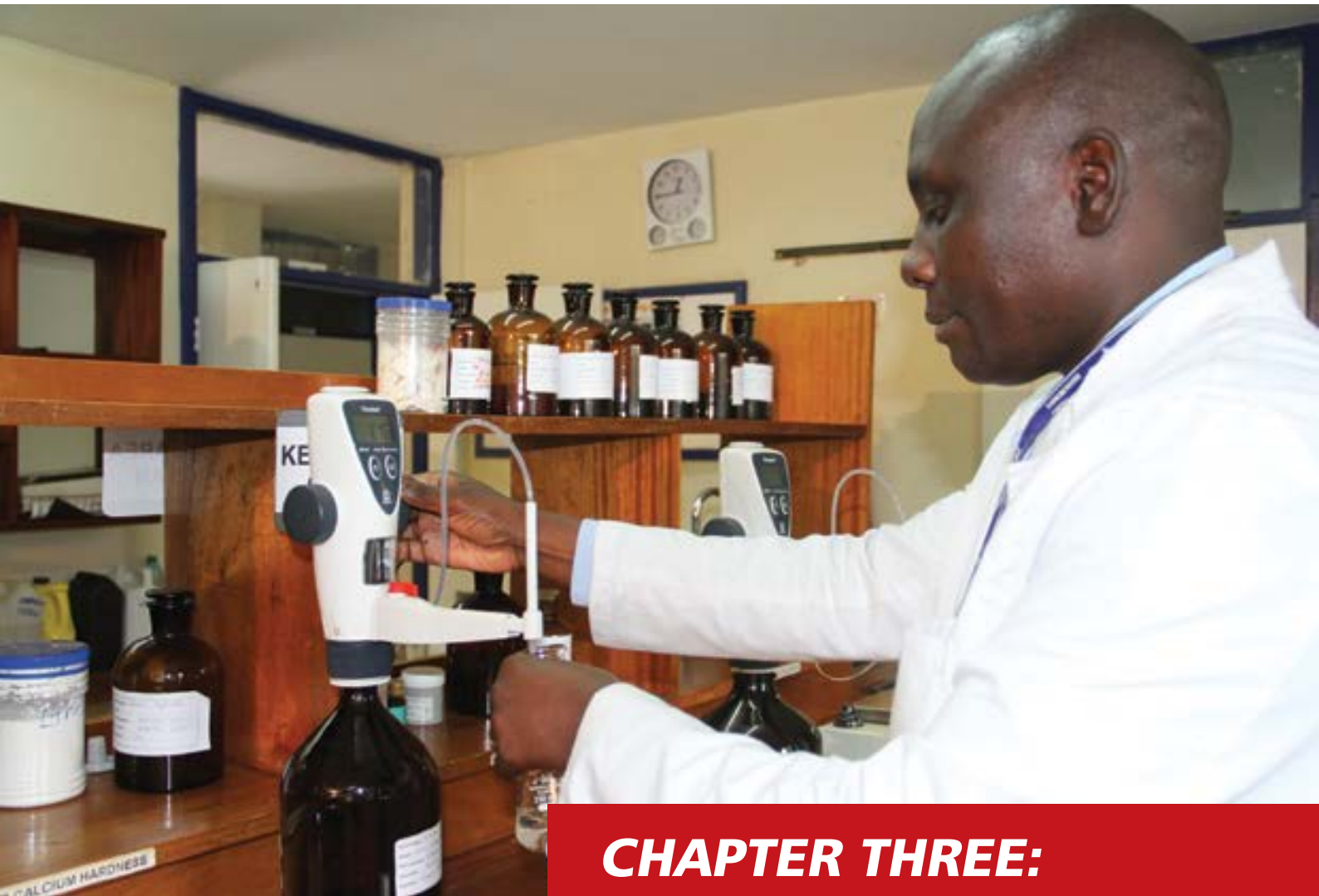
of performance in the aforementioned components, called the Water Utility Performance Index (WUPI). The WUPI is a composite indicator to evaluate the performance of the utilities in an integrated way for a set of similar indicators.

The chart below shows how the utilities ranked after integrating the three WUPI components (quality of service, economic efficiency and operational sustainability) into an overall WUPI. The overall best performing utility was WASAC while the least performing one was DAWASCO. Kenya's Nairobi City Water and Sewerage Company attained position 5 out of 6, with a score of 34.5% only.

Figure 2.2: WUPI Overall Performance







***CHAPTER THREE:***  
**DETAILED**  
**PERFORMANCE REVIEW**

## 3 DETAILED PERFORMANCE REVIEW

### Sector Targets in Coverage Missed as Water Loss Grows

#### 3.1 Introduction

Benchmarking and performance ranking are key in facilitating performance improvement through competition. Through benchmarking, transparency is instilled while holding utilities and asset holders (WSBs) to account. Performance ranking also spurs competition between utilities (as well as asset holders), driving them to improve service delivery.

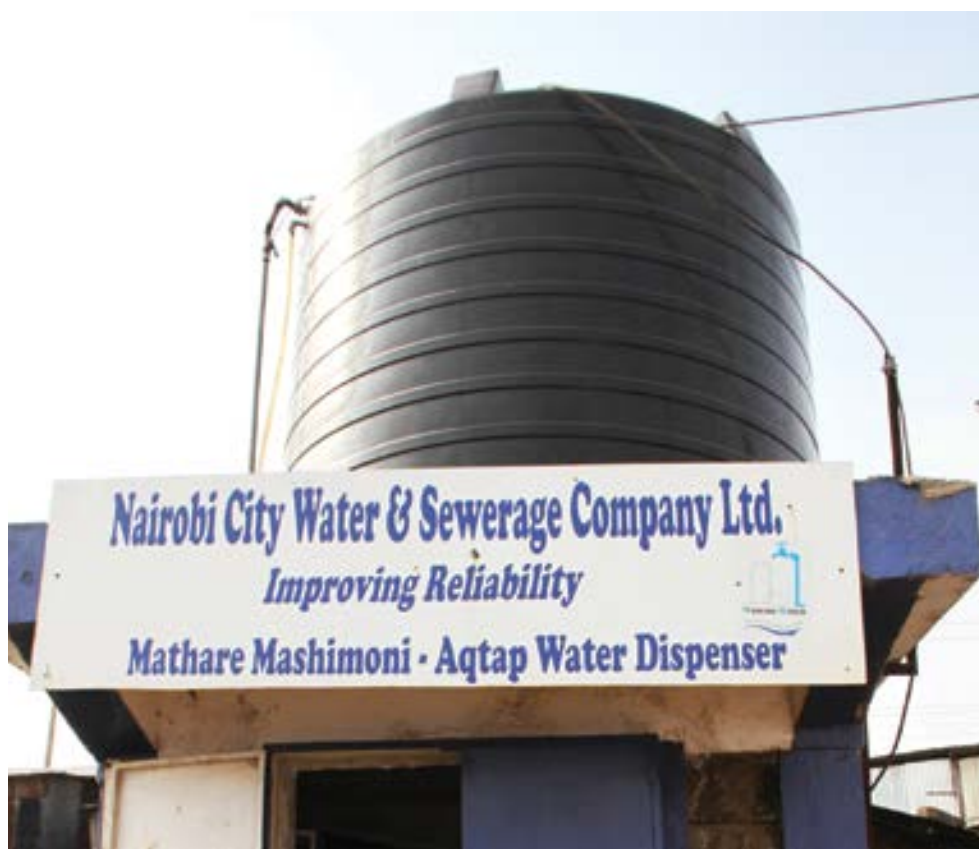
*Impact* is Wasreb's tool for performance reporting. It analyses utilities based on nine KPIs. These are Water Coverage, Drinking Water Quality, Hours of Supply, O+M Cost Coverage, Personnel Expenditure as a % of O+M Costs, Revenue Collection Efficiency, Non-Revenue Water, Staff Productivity and Metering Ratio.



#### 3.2 Data Collection

The Water Regulation Information System (WARIS) remains the main tool for data collection. The data collected through the system is corroborated by inspection reports, tariff information and annual licensee reports before it is published. Data that is not consistent with other sets of data submitted by the same entity is considered non-credible data and therefore not admissible for analysis.

For the period under review, 86 commercialised utilities submitted data for analysis. Compliance with data submission improved slightly from 92% to 93%, despite the decline in the number of reporting utilities. The inadequate capacity within the small utilities continued to impact on their utilization of WARIS V 3.0 for reporting. Mawingo, Kathiani and Mwala could not effectively use WARIS V 3.0 for reporting. Rumuruti was clustered with Nyahururu while Bomet and Wajir utilities were incorporated. Hola-Tana River and



Mandera have consistently failed to submit data. These dynamics led to a decrease in the number of commercialised utilities from 99 to 94 with the number of those not reporting increasing to six. The utilities who did not submit data are Homa Water, formerly South Nyanza (Medium), and Mwala, Kathiani and Mawingo in the small category. In the case of Gatanga (incomplete submission) and Homa Water (non submission), each of which has more than 120,000 people within their service area, lack of operational data greatly negates the reporting on the progressive realisation of the right to water.

**Table 3.1: Trend in Data Submission by Utilities**

Status of data submission	Impact 1 2005/6		Impact 2 2006/7		Impact 3				Impact 4 2009/10		Impact 5 2010/11		Impact 6 2011/12		Impact 7 2012/13		Impact 8 2013/14		Impact 9 2014/15	
					2007/8		2008/9													
	No. of utilities	%	No. of utilities	%	No. of utilities	%	No. of utilities	%	No. of utilities	%	No. of utilities	%	No. of utilities	%	No. of utilities	%	No. of utilities	%	No. of utilities	%
Complete	25	28	55	47	72	59	77	62	90	87	100	96	102	99	100	99	91	92	86	91
Incomplete	33	36	13	11	12	10	13	11	6	6	0	0	0	0	0	0	0	0	2	2
Non-Submission	33	36	50	42	38	31	34	27	8	7	4	1	1	1	1	1	8	1	6	6
Total	91		118		122		124		104		104		103		101		99		94	

Table 3.2 on the next page presents general data for these utilities that has a bearing on their performance.

Table 3.2: General Data on Utilities

UTILITY	Total Population in Service Area	Total Population Served	Total no. of connections (active+inactive)	Total No. Active Connections	No. of towns served	Turnover (Ksh million)	Total Water Produced in m <sup>3</sup> (000)	Domestic + kiosks billed volume in m <sup>3</sup> (000)	Total billed volume in m <sup>3</sup> (000)	Non-Revenue Water (%)	Production per capita l/(c/d)	Consumption per capita l/(c/d)	No. of total Staff	Validity of Tariff as at June 2015
<b>Very Large (≥35,000 conns.)</b>														
Nairobi	3,891,490	3,157,667	564,834	525,372	1	7,175	201,861	79,515	124,388	38	175	69	2,948	Expired RTA
Eldoret	408,215	295,651	95,915	77,893	2	465	12,857	5,606	7,059	45	119	52	265	Expired RTA
Mombasa	1,071,656	573,585	87,338	43,065	1	837	15,372	5,629	7,138	54	73	27	382	Expired RTA
Nakuru	462,043	415,999	53,712	47,388	4	790	12,152	5,232	7,602	37	80	34	234	Valid
Thika	214,533	204,951	45,607	40,131	1	481	11,680	4,322	7,885	32	156	58	216	Valid
Kisumu	414,885	280,462	42,305	42,095	5	519	10,164	4,858	5,140	49	99	47	285	Valid
Nyeri	147,484	133,742	36,608	31,709	1	389	5,577	3,259	4,577	18	114	67	105	Expired RTA
Kakamega Busia	411,131	298,070	35,628	27,118	6	246	4,742	2,005	2,229	53	44	18	162	Valid
<b>Large (10,000-34,999 conns.)</b>														
Nzoia	423,002	347,882	34,779	30,776	6	292	6,960	1,874	4,001	43	55	15	198	Expired RTA
Kirinyaga	444,103	125,814	27,316	16,649	1	124	5,737	1,772	2,057	64	125	39	161	Expired RTA
Kilifi Mariakani	824,180	319,624	26,696	16,281	3	459	7,843	1,844	4,120	47	67	16	226	Valid
Othaya Mukurweni	178,269	127,995	25,639	16,006	1	97	6,059	1,863	2,238	63	130	40	107	Expired RTA
Embu	181,951	124,589	24,025	22,320	2	247	6,337	2,750	3,249	49	139	60	105	Expired RTA
Mathira	149,951	53,564	23,679	10,956	1	94	4,173	858	1,600	62	213	44	65	Expired RTA
Malindi	295,062	233,334	23,094	20,899	1	334	6,317	3,601	4,621	27	74	42	130	Expired RTA
Murang'a South	485,475	193,680	22,086	17,735	1	91	6,096	1,961	2,107	65	86	28	128	Expired RTA
Gatundu	148,410	119,298	21,336	17,908	1	68	3,982	1,834	2,392	40	91	42	89	Expired RTA
Nakuru Rural	462,022	106,226	21,179	8,952	1	160	8,356	1,405	2,892	65	216	36	142	Expired RTA
Kenicho	175,626	98,780	20,491	17,454	4	148	2,830	1,263	1,582	44	79	35	136	Expired RTA
Gusii	723,434	267,409	20,111	16,400	7	78	1,867	968	1,162	38	19	10	128	Expired RTA
Nanyuki	89,506	84,408	19,403	19,296	1	247	4,012	1,417	2,618	35	130	46	78	Expired RTA
Kahuti	160,709	67,691	17,636	8,234	1	55	3,440	1,216	585	83	139	49	87	Expired RTA
Nyahururu	76,676	61,710	15,357	14,243	1	136	2,646	634	1,429	46	117	28	113	Expired RTA
Ruiru-Juja	188,935	145,548	15,041	14,878	2	164	2,698	1,936	1,936	28	51	36	47	Expired RTA
Kwale	302,965	233,272	14,533	8,627	1	113	2,137	1,826	1,406	34	25	21	131	Valid
Tetu	75,301	43,367	14,405	11,316	1	55	2,345	1,184	1,253	47	148	75	79	Expired RTA
Tavevo	63,046	48,175	14,010	9,134	3	145	4,752	1,932	2,367	50	270	110	119	Expired RTA
Imetha	392,998	122,389	13,952	6,945	1	38	n.c.d.	1,525	n.c.d.	n.c.d.	n.c.d.	34	136	Expired RTA
Murang'a	80,668	57,516	13,894	12,203	1	119	2,064	733	1,281	38	98	35	108	Valid
Bomet	117,000	88,254	12,497	8,299	1	53	2,815	1,001	1,472	48	87	31	68	Expired RTA
Meru	137,022	77,747	12,368	10,611	2	154	2,539	2,193	2,046	19	89	77	92	Valid
Ngandori Nginda	96,174	72,740	12,288	10,041	1	37	n.c.d.	1,075	n.c.d.	n.c.d.	n.c.d.	41	66	Expired RTA
Sibo	419,682	142,069	11,886	6,275	5	58	2,191	660	1,037	53	42	13	84	Valid
Makvo	186,113	123,137	11,074	9,416	1	177	1,711	664	917	46	38	15	80	Valid
Kitui	738,334	246,236	10,993	7,911	1	94	2,864	719	989	65	32	8	76	Expired RTA
Garissa	152,931	94,790	10,943	10,853	1	177	5,544	1,888	2,504	55	160	55	115	Expired RTA
<b>Medium (5,000-9,999 conns.)</b>														
Oloolaiser	299,261	126,539	9,979	6,996	3	137	2,519	1,445	1,587	37	55	31	101	Valid
Kikuyu	295,293	103,985	9,945	6,330	1	65	1,490	749	827	44	39	20	56	Expired RTA
Gatamathi	133,822	47,832	9,932	6,937	1	46	2,807	637	878	69	161	37	57	Expired RTA
Nithi	81,630	65,338	9,722	6,706	1	39	1,157	545	647	44	48	23	51	Valid
Ngakaga	73,229	70,589	9,531	6,276	1	29	1,076	457	560	48	42	18	41	Expired RTA
Machakos	216,730	122,913	9,038	6,179	2	98	1,104	543	573	48	25	12	60	Valid
Isiolo	63,325	36,982	8,874	7,663	1	70	1,258	562	837	34	93	42	54	Valid
Tillibe	182,628	118,512	8,541	3,796	1	30	1,310	293	603	54	30	7	47	Expired RTA
Karimenu	96,757	61,603	8,412	7,001	1	52	3,047	1,249	1,338	56	136	56	49	Expired RTA
Kyeni	81,689	18,381	8,080	4,408	1	18	1,040	381	381	63	155	57	33	Expired RTA
Tuuru	313,592	130,001	7,928	4,011	1	20	1,391	363	448	68	29	8	59	Expired RTA
Limuru	241,265	109,632	7,908	7,557	1	92	1,287	703	876	32	32	18	53	Valid
Githunguri	197,816	18,318	7,140	3,299	1	41	922	329	472	49	138	49	35	Valid
Amatsi	235,958	38,479	7,029	3,204	2	25	1,624	537	953	41	116	38	61	Expired RTA
Lodwar	66,498	32,715	6,947	6,630	2	41	1,269	114	756	40	106	10	58	Expired RTA
Kiambu	101,390	37,773	6,925	5,843	1	90	1,629	1,049	1,051	35	118	76	51	Valid
Nol Turesh Loitokitok	217,096	36,252	6,871	3,490	1	92	4,375	1,004	1,063	76	331	76	86	Expired RTA
Kibwezi Makindu	285,530	102,784	6,061	5,250	1	56	1,406	814	1,008	28	37	22	56	Expired RTA
Karuri	147,440	73,423	5,461	5,001	1	66	1,199	813	902	25	45	30	34	Valid
<b>Small (&lt;5,000 conns.)</b>														
Embe	47,303	20,268	4,610	2,438	1	25	756	312	397	48	102	42	20	Valid
Nyandarua	64,543	8,639	4,372	1,898	1	13	379	166	190	50	120	53	33	Expired RTA
Murugi Mugumango	32,907	19,975	4,160	4,091	1	12	2,874	1,469	1,919	33	394	201	29	Expired RTA
Eidama Ravine	36,038	16,377	3,956	1,717	1	14	1,000	240	298	70	167	40	31	Expired RTA
Lamu	22,630	16,441	3,890	2,751	1	23	606	440	365	40	101	73	32	Expired RTA
Mikutra	163,630	26,773	3,718	2,339	3	20	593	78	164	72	61	8	65	Expired RTA
Kiambere Mwingi	424,022	63,201	3,408	2,088	2	55	758	288	397	48	33	13	44	Expired RTA
Kapsabet Nandi	57,392	28,378	2,813	2,678	1	19	687	302	432	37	66	29	28	Expired RTA
Naivasha	153,975	90,816	2,807	2,442	1	83	1,006	363	448	56	30	11	51	Expired RTA
Olkejuado	50,763	4,691	2,798	807	1	14	n.c.d.	166	n.c.d.	n.c.d.	n.c.d.	97	20	Expired RTA
Kapenguria	78,715	15,799	2,680	1,286	1	10	305	107	223	27	53	18	30	Expired RTA
Muthambi 4K	22,458	19,812	2,425	2,423	1	10	753	447	568	24	104	62	17	Expired RTA
Yatta	160,557	15,481	2,218	2,138	1	8	n.c.d.	153	n.c.d.	n.c.d.	n.c.d.	27	26	Expired RTA
Iten Tambach	52,573	10,800	2,108	1,788	1	14	419	164	258	38	106	42	26	Expired RTA
Narok	67,832	22,065	2,090	1,853	1	41	727	173	413	43	90	21	37	Valid
Olkalou	84,618	27,040	2,031	1,419	1	20	431	127	162	63	44	13	16	Valid
Ndaragwa	14,714	13,459	2,025	1,345	1	3	156	42	76	51	32	9	24	Expired RTA
Rukanga	6,355	7,101	1,957	1,701	1	5	360	123	146	59	139	48	20	Expired RTA
Kikanamku	49,477	19,196	1,729	1,464	1	n.c.d.	392	168	235	40	56	24	11	Expired RTA
Namanga	19,324	11,400	1,680	1,603	1	8	n.c.d.	216	n.c.d.	n.c.d.	n.c.d.	52	11	Expired RTA
Maralal	40,779	10,042	1,680	1,443	1	10	335	198	206	38	91	54	33	Expired RTA
Mbooni	64,123	14,720	1,257	1,044	1	3	n.c.d.	5	n.c.d.	n.c.d.	n.c.d.	1	20	Expired RTA
Engineer	16,531	9,452	1,167	1,152	1	3	n.c.d.	320	n.c.d.	n.c.d.	n.c.d.	93	8	Expired RTA
Wote	71,786	11,414	1,148	1,101	1	19	n.c.d.	57	n.c.d.	n.c.d.	n.c.d.	14	20	Expired RTA
Runda	11,648	10,380	1,130	1										

The 86 utilities covered by this report serve a population of 11.12 million people out of a total of 20.38 million within their service areas. The utilities employ 9,494 staff and have a turnover of more than Ksh 16.6 billion, up from Ksh 16.56 billion in 2013/14. The total water production increased marginally from 425 to 429 million cubic meters while NRW increased from 42% to 43%. The increase in NRW outweighed the marginal increase in production, which implies that less water was available for consumption. There was a 35% increase in volumes available for domestic consumption which led to an increase in per capita consumption from 33 to 43 litres per person per day.

### 3.3 Classification of Utilities

Utilities were classified on the basis of size (total number of connections for both water and sewer) and ownership structure in order to ensure a fair comparison in their performance.

Categorisation by number of connections is pertinent as it dictates the potential business size of the company. Business size has a direct correlation to financial sustainability and human resources capacity. Using the number of registered connections for both water and sewer, utilities are placed under Very Large, Large, Medium and Small categories as presented in Table 3.2.

*Table 3.3: Categorisation of Reporting Utilities by Number of Connections*

Total Registered Water and Sewerage Connections	<5,000	5,000 - 9,999	10,000 - 34,999	≥35,000
Size Category	Small	Medium	Large	Very Large
Number of Utilities	31	19	28	8

The second categorization considered that utilities are either publicly or privately owned (Table 3.4). The two face different constraints and require different incentives with respect to regulation. Public utilities serve a wide range of customers from high to low-income, whereas privately-owned utilities have a more homogeneous medium- to high-income customer base and only cover a small population base. Presently, there are only two regulated privately-owned utilities, namely Runda Water Company and Kiamumbi Water Project.

*Table 3.4: Categorisation of Utilities by Public and Private Ownership*

Utility Type	No. of Utilities	Population in Service Area
Public Utilities	84	20,361,635
Private Utilities	2	21,228

### 3.4 Market Share

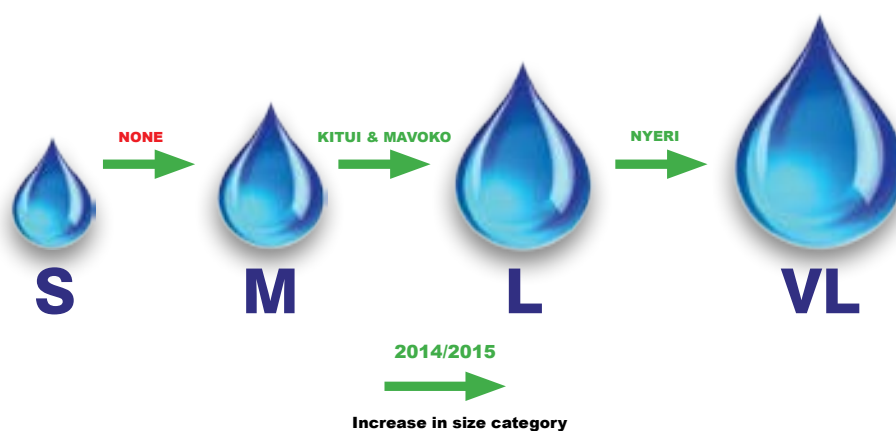
Table 3.5 and Figure 3.2 provide information on the market share of different utility categories.

*Table 3.5: Absolute Market Shares of Urban Utilities by Size Category*

Utility category	No. of utilities	Turnover in Ksh	Production in M <sup>3</sup>	People served	No. of connections	No. of Staff
Very Large	8	10,900,941,479	274,406,392	5,360,127	961,947	4,597
Large	28	4,013,058,472	108,315,959	3,827,244	510,711	3,094
Medium	19	1,108,994,007	31,910,205	1,352,051	154,324	1,042
Small	31	562,818,992	14,455,013	587,529	69,718	761
<b>Total</b>	<b>86</b>	<b>16,585,812,950</b>	<b>429,087,569</b>	<b>11,126,951</b>	<b>1,696,700</b>	<b>9,494</b>

Compared to the previous year, the percentage of utilities in the Very Large category increased from 8% to 9%. Those in the Large size category increased from 29% to 31%. However, for the Medium category, the percentage decreased from 25% to 23%, while for the Small category, it decreased from 38% and 36%. Overall, Nyeri graduated to Very Large while Kitui and Mavoko moved from Medium to large. The movement in size category is as depicted in Figure 3.1.

*Figure 3.1: Utilities Movement Within Size Categories*

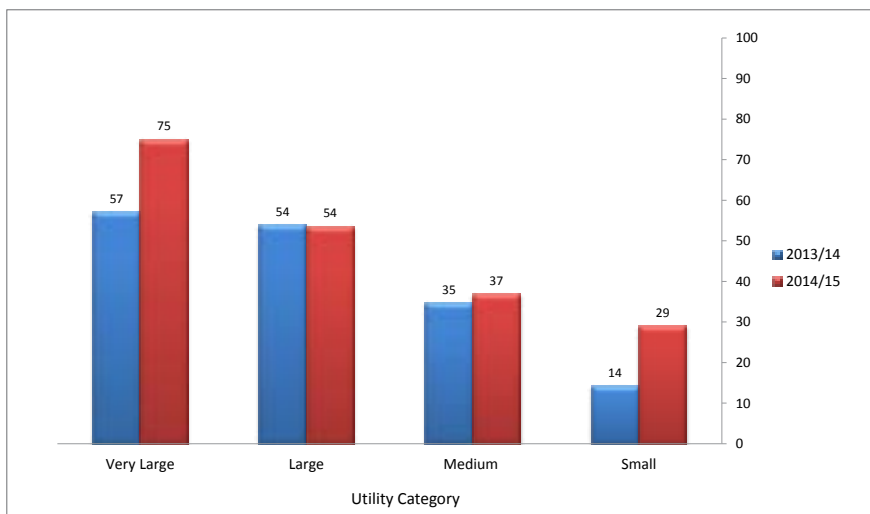


Large to Very Large = Nyeri, Medium to Large = Kitui, Mavoko

### 3.5 Financial Sustainability and Market Share Analysis

The size of a utility is critical to its viability. Consequently, large utilities are able to attract and retain qualified staff who then become useful in efficiency goals. They benefit from economies of scale hence the low operating costs per cubic metre produced. Figure 3.2 shows the proportion of utilities attaining at least 100% cost coverage for the four size categories.

Figure 3.2: Proportion of Utilities With Over 100% O+M Cost Coverage



The licence issued to the WSBs requires that their agents operate with justified tariffs (ref. Table 3.2 for type of tariff in each utility). However, many utilities continue to operate under tariffs that can hardly cover their O+M costs. In the majority of cases, these utilities rely on unpredictable and unsustainable subsidies to finance their operations.

Financial sustainability and commercial viability are important prerequisites in the realisation of the human right to water. Operating under cost reflective tariffs is a critical step towards this end as it enables a utility to effectively operate, maintain and in due course renew its assets.

Figure 3.3: Combined Business Share by Size

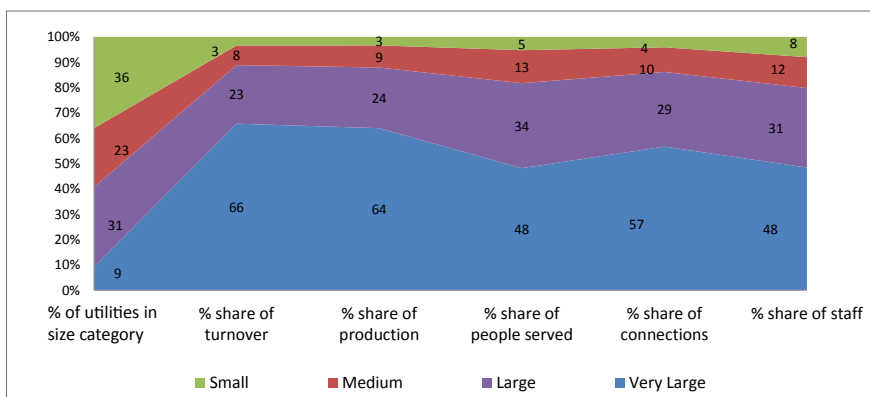


Figure 3.3 shows the market share of the four different categories of utilities. The increase in proportion of utilities in the Very Large and Large categories translates to an increase in market share for these two categories. It can be seen that Very Large and Large utilities are not only more likely to be viable than smaller utilities, but also dominate the market. While they represent 42% of all companies in the sector, they continue to account for the largest share of business (90% of the total turnover, 89% of the total water produced and 82%

of the people served). Large utilities perform better overall and are likely to require fewer subsidies to meet their operational costs and are likely to put less pressure for support from the county governments, who own them. Instead of handing new rural water projects to communities, county governments should cluster small and medium utilities for financial sustainability.

### 3.6 Performance Analysis and Ranking

The ranking of utilities was done on the basis of the cumulative score in the nine KPIs. For each of the KPIs, sector benchmarks were used to guide the scoring while taking cognizance of the status in sector development. The benchmarks are presented in Table 3.6.

**Table 3.6: Performance Indicators, Sector Benchmarks and Scoring Regime**

KPI CLUSTER	INDICATORS		SECTOR BENCHMARKS			SCORING REGIME		
			Good	Acceptable	Not Acceptable	Performance	Score	
QUALITY OF SERVICE	1	Water Coverage, %	>90%	80 - 90%	<80%	≥90%	30	
						≤50%	0	
	2	Drinking Water Quality, %	>95%	90 - 95%	<90%	≥95%	30	
QUALITY OF SERVICE	3	Hours of Supply, No.	Population >100,000	21 - 24	16 - 20	<16	≥20	20
							≤10	0
		Population <100,000	17 - 24	12 - 16	<12	≥16	20	
						≤6	0	
ECONOMIC EFFICIENCY	4	Personnel Expenditure as Percentage of O&M Costs, %	Large and Very Large Companies	<20%	20 - 30%	>30%	≤25	15
							≥35	0
			Medium Companies	<30%	30 - 40%	>40%	≤30	15
					≥40	0		
		Small Companies	<40%	40 - 45%	>45%	≤40	15	
						≥45	0	
ECONOMIC EFFICIENCY	5	O+M Cost Coverage, %	≥150%	100 - 149%	≤99%	≥150%	25	
						≤90%	0	
ECONOMIC EFFICIENCY	6	Revenue Collection Efficiency, %	>95%	95 - 85%	<85%	≥95%	20	
						≤85%	0	
OPERATIONAL SUSTAINABILITY	7	Non-Revenue Water, %	<20%	20 - 25%	>25%	≤20%	25	
						≥40%	0	
	8	Staff Productivity (Staff per 1000 Connections), No.	Large & Very Large Companies	<5	5 - 8	>8	≤5	20
							≥8	0
			Medium & Small (less than 3 towns)	<7	7 - 11	>11	≤7	20
						≥11	0	
		Medium & Small (3 or more towns)	<9	9 - 14	>14	≤9	20	
					≥14	0		
9	Metering Ratio, %	100%	95 - 99%	<95%	100%	15		
					≤80%	0		
<b>Total Maximum Score</b>							<b>200</b>	

#### 3.6.1 Overall Ranking

Based on the scoring regime discussed earlier, Table 3.7 presents the ranking of 84 publicly-owned utilities. The ranking of the two privately-owned utilities is presented in Table 3.7.



Table 3.7: Overall Ranking and Ranking by Category for Publicly-Owned Utilities

INDICATOR	DWQ (%)	Non-Revenue Water (%)	Water Coverage (%)	Hours of Supply (hrs./d)	Staff Productivity (staff/1,000 conns.)	Personnel expenditures as % of total O+M costs	Revenue Collection Efficiency (%)	O+M Cost Coverage (%)	Metering Ratio (%)	Total score	Ranking by category	Overall ranking
<b>VERY LARGE</b>												
Nyeri	96	18	91	24	3	41	107	138	100	180	1	1
Nakuru	95	37	90	17	5	30	96	111	94	140	2	3
Thika	95	32	96	21	5	34	95	98	n.c.d.	132	3	5
Eldoret	95	45	72	15	3	48	108	105	100	118	5	10
Nairobi	93	38	81	18	6	52	100	104	96	114	6	14
Kakamega Busia	95	53	73	20	6	43	91	109	88	106	7	19
Kisumu	95	49	68	24	7	30	94	104	100	119	4	9
Mombasa	68	54	54	5	9	32	89	83	58	14	8	81
<b>LARGE</b>												
Ruiru-Juja	95	28	77	22	3	26	100	114	100	162	1	2
Nanyuki	96	35	94	23	4	43	93	104	90	136	2	4
Meru	95	19	57	22	9	35	107	109	100	123	3	7
Ngandori Nginda	96	n.c.d.	76	24	7	48	97	138	58	119	4	8
Nyahururu	96	46	80	20	8	49	95	110	100	116	5	11
Malindi	79	27	79	22	6	29	96	82	100	115	6	12
Gatundu	68	40	80	23	5	39	97	113	100	107	7	17
Murang'a	93	38	71	24	9	49	98	111	100	100	8	21
Nzoia	95	43	82	22	6	38	91	97	78	99	9	23
Embu	91	49	68	23	5	38	89	126	100	98	10	24
Kericho	96	44	56	23	8	58	95	98	97	92	11	27
Kitui	95	65	33	16	10	22	108	61	95	88	12	29
Othaya Mukunweni	95	63	72	22	7	40	80	102	74	80	13	34
Mavoko	93	46	66	9	8	24	92	101	94	75	14	37
Tetu	67	47	58	24	7	60	104	111	97	75	15	38
Sibo	93	53	34	19	13	18	100	50	80	70	16	43
Kirinyaga	96	64	28	18	10	40	90	90	96	69	17	45
Imetha	63	n.c.d.	83	18	20	33	95	48	43	65	18	49
Mathira	87	62	36	20	6	58	88	122	87	59	19	55
Tavevo	58	50	76	11	13	20	91	68	n.c.d.	56	20	58
Kahuti	61	83	42	20	11	48	99	104	85	49	21	61
Bomet	95	48	75	0	8	37	38	86	37	49	22	62
Kilifi Mariakani	61	47	39	14	14	30	98	101	91	48	23	64
Garissa	89	55	62	22	11	25	73	95	69	46	24	66
Murang'a South	73	65	40	19	7	46	89	100	94	46	25	67
Kwale	80	46	47	8	15	27	76	83	98	26	26	76
Nakuru Rural	84	65	23	11	16	34	94	84	31	22	27	79
Gusii	74	38	37	14	8	29	79	68	75	21	28	80
<b>MEDIUM</b>												
Nithi	96	44	80	24	8	50	95	97	100	127	1	6
Ngagaka	70	48	96	23	7	50	101	120	96	114	2	13
Isiolo	96	34	58	11	7	44	101	93	100	110	3	15
Limuru	93	32	45	18	7	37	92	115	100	105	4	20
Kiambu	95	35	37	17	9	32	84	94	100	96	5	25
Karimenu	53	56	64	21	7	55	59	157	100	90	6	28
Oloolaiser	96	37	42	11	14	29	99	93	100	86	7	30
Karuri	24	25	50	13	7	18	82	98	100	86	8	32
Githunguri	64	49	9	14	11	25	95	84	97	65	9	48
Kibwezi Makindu	72	28	36	14	11	42	96	92	100	60	10	51
Kikuyu	60	44	35	10	9	28	101	78	98	60	11	52
Kyeni	38	63	23	18	7	39	91	108	78	59	12	54
Lodwar	50	40	49	19	9	30	87	108	77	57	13	56
Gatamathi	79	69	36	23	8	56	98	82	58	54	14	59
Tuuru	50	68	41	17	15	49	92	104	99	50	15	60
Amatsi	93	41	16	12	19	34	67	90	62	39	16	69
Machakos	72	48	57	11	10	40	79	113	100	38	17	70
Tililbei	53	54	65	n.c.d.	12	35	86	55	32	22	18	78
Nol Turesh Loitokitok	59	76	17	n.c.d.	25	51	63	82	85	4	19	83
<b>SMALL</b>												
Embe	96	48	43	17	8	43	114	99	100	108	1	16
Muthambi 4K	40	24	88	23	7	n.c.d.	87	n.c.d.	100	107	2	18
Murugi Mugumango	22	33	61	24	7	60	93	119	100	100	3	22
Nyasare	94	38	23	19	15	42	82	137	98	92	4	26
Namanga	25	n.c.d.	59	10	7	26	99	99	97	86	5	31
Olkalou	29	63	32	15	11	29	94	133	100	83	6	33
Lamu	96	40	73	8	12	36	75	71	98	80	7	35
Nyakanja	37	57	39	8	7	19	100	97	100	76	8	36
Matungulu Kangundo	80	44	3	16	19	42	97	117	100	74	9	39
Tachasis	69	29	56	24	16	49	107	99	94	72	10	40
Kapenguria	52	27	20	19	23	25	97	51	48	72	11	41
Engineer	0	n.c.d.	57	24	7	44	75	143	0	70	12	42
Rukanga	59	59	93	22	12	63	81	119	90	70	13	44
Eldama Ravine	94	70	45	10	18	9	101	14	35	66	14	46
Kiambere Mwingi	68	48	15	14	21	20	104	59	100	66	15	47
Maralal	96	38	25	8	23	37	91	30	80	63	16	50
Narok	68	43	33	16	20	22	93	60	91	60	17	53
Kapsabet Nandi	72	37	49	21	10	22	93	77	80	57	18	57
Iten Tambach	84	38	21	12	15	24	100	84	9	49	19	63
Mikutra	96	72	16	7	28	23	79	46	72	47	20	65
Nyandarua	34	50	13	17	17	40	76	49	94	45	21	68
Kikanamku	0	40	39	21	8	n.c.d.	72	n.c.d.	0	37	22	71
Yatta	76	n.c.d.	10	18	12	45	80	32	100	35	23	72
Ndaragwa	0	51	91	21	18	29	95	122	0	35	23	72
Naivasha	80	56	59	10	21	31	85	99	79	34	25	74
Mbooni	46	n.c.d.	23	5	19	15	47	32	100	30	26	75
Wote	89	n.c.d.	16	8	18	49	86	93	100	22	27	77
Moyale	59	n.c.d.	22	8	35	n.c.d.	44	n.c.d.	0	4	28	82
Olkejuado	43	n.c.d.	9	12	25	51	50	61	57	0	29	84

n.c.d. = non-credible data; green marking = top 10 performer; red marking = bottom 10 performer

Nyeri continued to dominate the first position, with an improved score of 180 compared to 172 in the previous year. Ruiru-Juja moved up seven positions to clinch the 2nd position while Nakuru improved to take the 3rd place.

The worst performers for the current period are Olkejuado (2nd year in a row), Nol Turesh and Moyale in the bottom three positions. The worst performers in the Very Large, Large, Medium and Small categories are Mombasa (fifth year in a row), Gusii, Nol Turesh and Olkejuado respectively. Mombasa’s performance continued to decline as they did not manage a score in six out of the nine KPIs. It is of major concern that all the quality of service indicators namely Water Coverage, DWQ and Hours of Supply declined in the current year for this utility. There is very urgent need to strengthen the governance structures for all the poor performing utilities in order to safeguard public interests.

In general, Very large and Large utilities continued to dominate the top 10 positions. The utilities in the top ten positions in terms of size category are Very Large (4), Large (5) and Medium (1). This firms the case that, save for Mombasa, Gusii and Nakuru Rural and Kwale, size is a critical element for financial sustainability. Therefore, county governments must be encouraged to progressively cluster utilities in addition to ensuring proper governance structures are in place if the progressive realisation of the right to water is to be achieved.

For the privately-owned utilities, Runda retained the 1st position as in the previous year improving its score by two points while Kiamumbi declined by one point.

**Table 3.8: Overall Ranking for Privately-Owned Utilities**

Indicator	DWQ (%)	Non-Revenue Water (%)	Water Coverage (%)	Hours of Supply (hrs./d)	Staff Productivity (no. staff/1,000 conns.)	Personnel Expenditures as % of Total O+M Costs	Revenue Collection Efficiency (%)	O+M Cost Coverage (%)	Metering Ratio (%)	Total score	Ranking by category	Overall ranking
Runda	95	32	89	16	6	28	104	120	100	152	1	1
Kiamumbi	68	36	95	23	10	4	100	134	100	129	2	2

### 3.6.2 Performance Against Sector Benchmarks

Wasreb uses sector benchmarks “good, acceptable and not acceptable” (Table 3.6) to define performance in relation to the Key Performance Indicators (KPIs). On the basis of these KPIs, utility performance can also be classified along the three performance ranges using the limits of performance defined in Table 3.6 to determine the cut-off score. Table 3.9 provides the performance of utilities in relation to the sector benchmarks.



**Table 3.9: Assessment of KPIs Against Sector Benchmarks**

Sector Benchmark	Key Performance Indicators								
	Quality of Service			Economic Efficiency			Operational Sustainability		
	Water Coverage	Drinking Water Quality	Hrs. of Supply	O+M Cost Coverage	Collection Efficiency	Personnel Expenditures	Staff Productivity	Non Revenue Water	Metering Ratio
Good	8	26	39	1	39	23	13	2	31
Acceptable	8	9	20	36	25	19	32	2	13
Not Acceptable	70	51	25	46	22	41	41	73	40
n.c.d.	0	0	2	3	0	3	0	9	1
TOTAL	86	86	86	86	86	86	86	86	85
% of utilities within 'not acceptable' sector benchmark	81%	59%	29%	53%	26%	48%	48%	85%	47%

Apart from Revenue Collection Efficiency and Hours of Supply, the performance of the utilities for most of the KPIs is still way below the sector benchmarks. In Water Coverage, 81% of utilities are outside the sector benchmark while 85% of utilities are outside the sector benchmark in Non-Revenue Water. This indicates the need for adequate planning and target setting in the water services sector to be backed by adequate financing.

### 3.6.3 Performance Over Time

Wasreb uses performance improvement over time to recognise utilities whose performance has shown progress despite not attaining the top positions in the short or medium term, due to factors beyond their control (mainly different operating conditions or with respect to condition of infrastructure).

The Tables 3.10 and 3.11 show the performance over time of urban publicly- and privately-owned utilities respectively.

*Table 3.10: Performance Over Time of Publicly-Owned Utilities*

Rank	Utility	Score 2013/14	Score 2014/15	Scores +/-	Rank	Utility	Score 2013/14	Score 2014/15	Scores +/-
1	Nyeri	172	180	8	43	Sibo	83	70	-13
2	Ruiru-Juja	117	162	45	44	Rukanga	95	70	-25
3	Nakuru	127	140	13	45	Kirinyaga	87	69	-18
4	Nanyuki	114	136	22	46	Eldama Ravine	40	66	26
5	Thika	149	132	-17	47	Kiambere Mwingi	88	66	-22
6	Nithi	132	127	-5	48	Githunguri	94	65	-29
7	Meru	138	123	-15	49	Imetha	32	65	33
8	Ngandori Nginda	100	119	19	50	Maralal	67	63	-4
9	Kisumu	110	119	9	51	Kibwezi Makindu	70	60	-10
10	Eldoret	126	118	-8	52	Kikuyu	70	60	-10
11	Nyahururu	101	116	15	53	Narok	52	60	8
12	Malindi	88	115	27	54	Kyeni	65	59	-6
13	Ngagaka	111	114	3	55	Mathira	41	59	18
14	Nairobi	115	114	-1	56	Lodwar	57	57	0
15	Isiolo	111	110	-1	57	Kapsabet Nandi	76	57	-19
16	Embe	106	108	2	58	Tavevo	30	56	26
17	Gatundu	99	107	8	59	Gatamathi	61	54	-7
18	Muthambi 4K	99	107	8	60	Tuuru	51	50	-1
19	Kakamega Busia	112	106	-6	61	Kahuti	76	49	-27
20	Limuru	110	105	-5	62	Iten Tambach	57	49	-8
21	Murang'a	79	100	21	63	Kilifi Mariakani	52	48	-4
22	Murugi Mugumango	93	100	7	64	Mikutra	32	47	15
23	Nzoia	109	99	-10	65	Garissa	61	46	-15
24	Embu	103	98	-5	66	Murang'a South	72	46	-26
25	Kiambu	89	96	7	67	Nyandarua	28	45	17
26	Nyasare	80	92	12	68	Amatsi	42	39	-3
27	Kericho	83	92	9	69	Machakos	37	38	-1
28	Karimenu	123	90	-33	70	Kikanamku	40	37	-3
29	Kitui	98	88	-10	71	Yatta	47	35	-12
30	Oololaiser	52	86	34	72	Ndaragwa	78	35	-43
31	Namanga	63	86	23	73	Naivasha	35	34	-1
32	Karuri	104	86	-18	74	Mbooni	35	30	-5
33	Olkalou	79	83	4	75	Kwale	54	26	-28
34	Othaya Mukurweni	89	80	-9	76	Wote	33	22	-11
35	Lamu	87	80	-7	77	Tililbei	58	22	-36
36	Nyakanja	82	76	-6	78	Nakuru Rural	21	22	1
37	Mavoko	110	75	-35	79	Gusii	40	21	-19
38	Tetu	94	75	-19	80	Mombasa	18	14	-4
39	Matungulu Kangundo	58	74	16	81	Moyale	22	4	-18
40	Tachasis	73	72	-1	82	Nol Turesh Loitokitok	21	4	-17
41	Kapenguria	69	72	3	83	Olkejuado	12	0	-12
42	Engineer	53	70	17	84	Bomet	n.d.	49	n/a



Ruiru-Juja, Ololaiser and Imetha are the top three improvers while Ndaragwa, Tililbei and Mavoko are the greatest losers. The continued decline in performance of Mombasa in the current period is a worrying trend considering that the utility serves close to 573,585 people, with a turnover of 837 million per year. The dismal performance of Mombasa with a score in only three KPIs means that services in the region are declining despite the fact that the utility enjoys a favourable operating environment, with investments of over Ksh 2.3 billion in the last five years.

**Table 3.11 Performance Over Time of Privately-Owned Utilities**

Rank	Utility	Score 2013/14	Score 2014/15	Scores +/-
1	Runda	150	152	2
2	Kiamumbi	130	129	-1

In the Private category, Runda improved its score while Kiamumbi slightly declined.

Table 3.12 indicates that the overall performance for utilities has declined compared to the previous reporting period. Whereas in 2013/14, 32% of the utilities improved their performance, an increase of four percentage points to 36% was recorded in the number of utilities reporting improved performance.

**Table 3.12: Number and Percentage of Utilities Recording Improvement**

Year	No. of Utilities	No. of Improvers	% of improvers
2014/15	86	31	36
2013/14	91	29	32

### 3.6.4 Performance of Utilities by Indicators



#### (a) Water Coverage

Water Coverage refers to the number of people served with drinking water by a utility expressed as a percentage of the total population within the service area of a utility. It assesses performance in executing the core mandate of the utility of supplying potable water to consumers.

The year under review recorded an improvement in performance of two percentage points from 53% to 55% (Figure 3.5). The population in the service area of the commercialised utilities increased by 562,026 (2.34%) compared to an increase of 630,846 (6.01%) in the number of people served. The number of connections increased by 14,674, which is a decrease of 60% compared to the previous year. Under the Vision 2030 goals, one connection should serve an average of 12 people. Using this measure, an average of 200,000 connections have to be put in place annually to serve approximately 2.4 million people. This scenario assumes that the projected population of Kenya will be 67.8 million out of which 46.02 million (67.84%) will be living in areas considered as urban/urbanising and hence within service areas of regulated utilities.

This situation calls for innovative ways in the delivery of service both in terms of technology options as well as exploring financing mechanisms outside the traditional sources.

Figure 3.4: Water Coverage in %

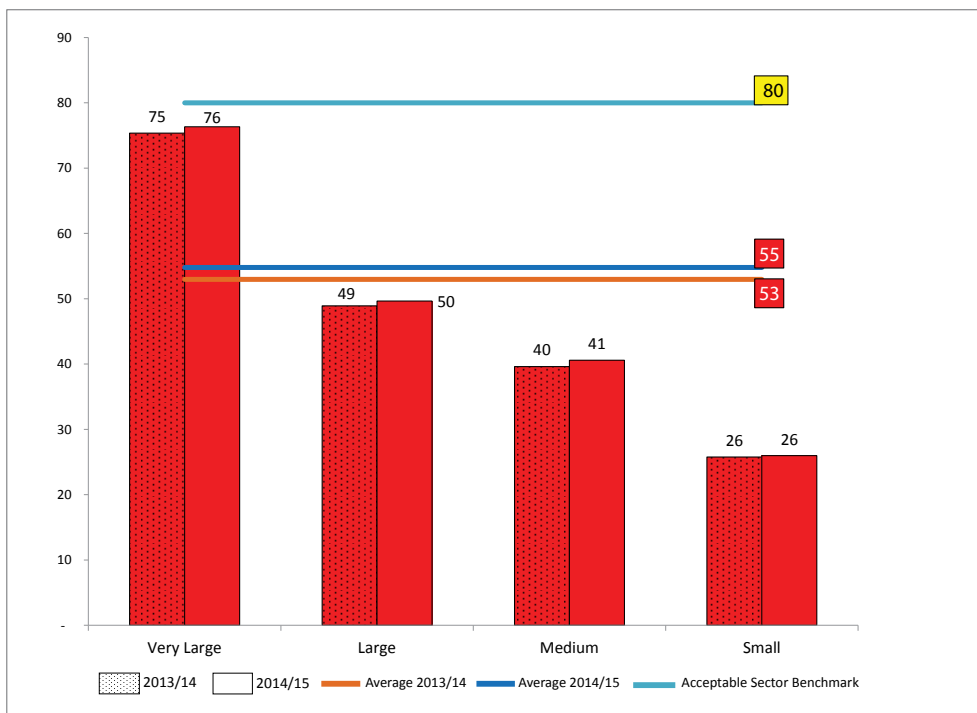
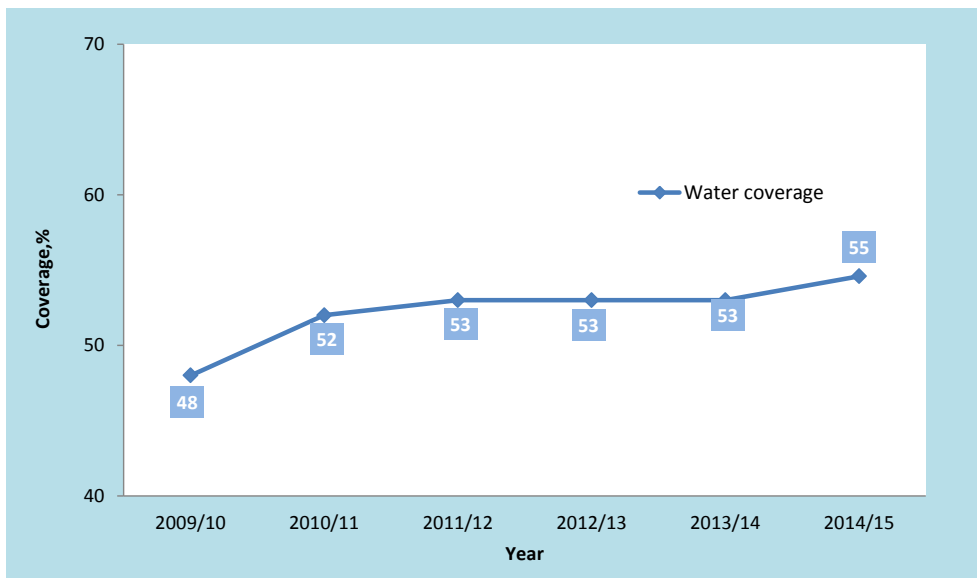


Figure 3.5: Trend in Water Coverage (%)



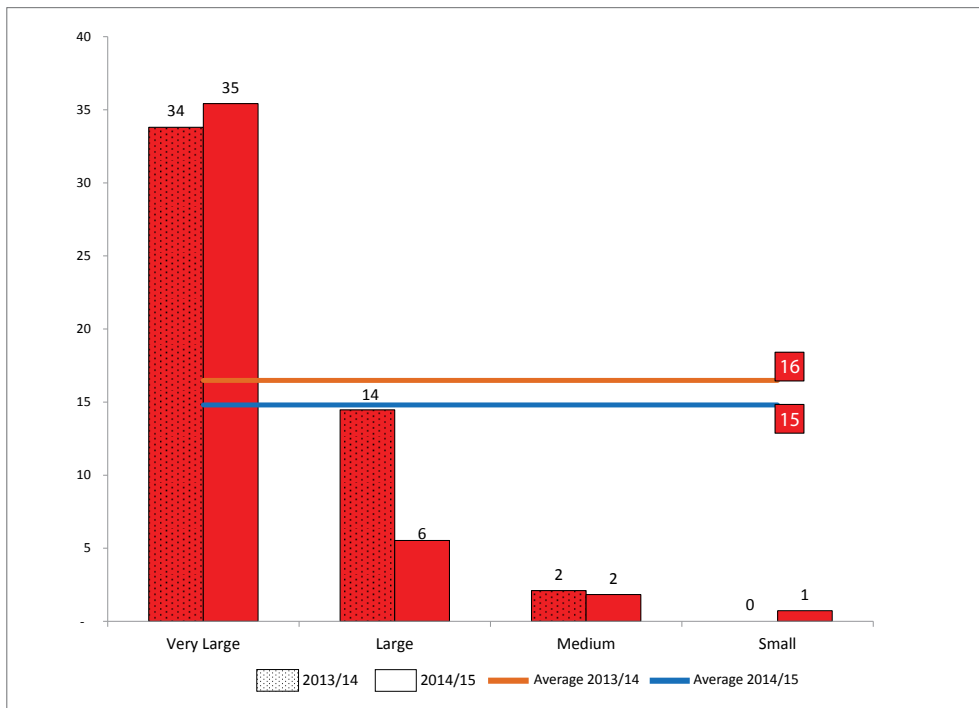
**(b) Sewerage Coverage**

Sewerage Coverage refers to the number of people served with flush or pour-flush to piped sewer systems, as a percentage of the total population within the service area of the utility. It measures the performance of utilities with sewerage systems in delivering sewerage services to consumers.

With the completion of the Othaya sewerage project, sewerage services are now available in 30 urban centres across the country. The operations of sewerage services in Kapsabet Nandi and Tavevo are still under the direct management and operation of county governments. Despite having reported consistently in the previous years, Homa Water Company did not submit data for the current period. The performance on sewerage therefore does not include the areas covered under Kapsabet, Voi and Homa Bay towns. The later has, however, handed over sewerage service operations to the utility. Appreciating that not all utilities have sewerage services in their areas, this indicator has not been employed in the ranking of utilities. Wasreb urges county governments of Nandi and Taita Taveta to hand over the operations of the sewerage facilities to the utilities in their areas.

Sewerage coverage in the current period stood at 15%, which is a decline from the previous period. In absolute terms, the number of sewer connections declined by 6,431 compared to the previous period. This decline negates the aspirations of the sector where a sewerage coverage of 80% coverage is anticipated by the year 2030. To attain the sanitation goal under Vision 2030, approximately 350,000 additional connections need to be done. This translates to 3.2 million annually, considering the average number of people to be served per sewer connection as nine. The continued decline of sewerage coverage over the last two years is a clear indication of the need for of a paradigm shift both in focus and technology options if the targets have to be met.

**Figure 3.6: Sewerage Coverage in %**





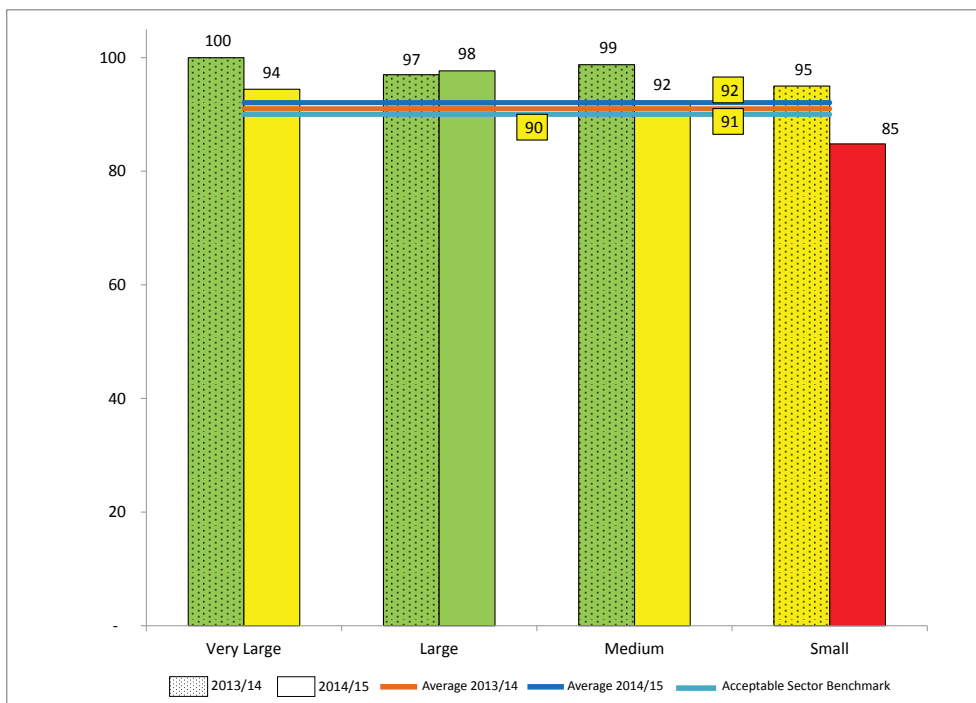
### (c) Drinking Water Quality

Drinking Water Quality (DWQ) measures the potability of the water supplied by a utility. It is a critical performance indicator since it has a direct impact on the health of consumers. This is a composite indicator measuring compliance with residual chlorine standards (40%) and bacteriological standards (60%). The two sub-indicators are also composed of two components each, namely:

- i) The number of tests conducted as a percentage of the number of tests planned in accordance with the Guidelines on Water Quality and Effluent Monitoring (GWQEM). This is weighted at 67%
- ii) The number of samples within the required norm as a percentage of total number of samples taken (weighted at 33%)

Performance on this indicator improved from 91% in 2013/14 to 92% in 2014/15.

Figure 3.7: Drinking Water Quality in %



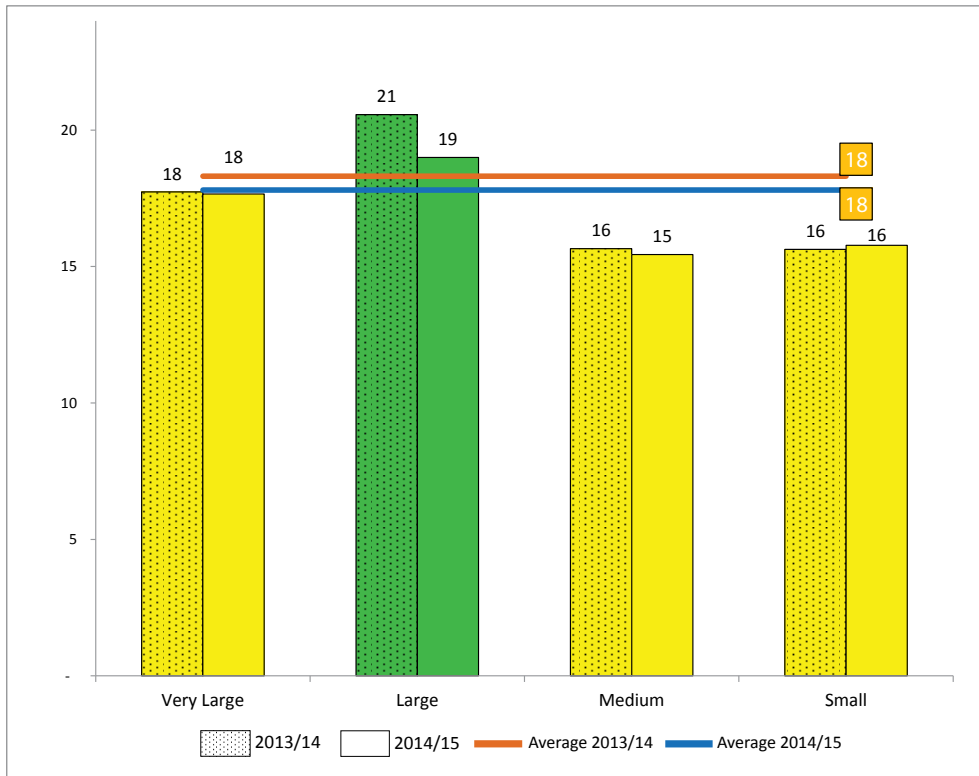
The improved performance in this indicator is attributed to the increased number of samples taken by utilities mainly for bacteriological assessment. Submission of reports as per the requirements of GWQEM continues to be factored in the performance assessment of the utilities. A breakdown of utility performance in the two components of the DWQ sub-indicators is provided in Annex 4.

In the past, Wasreb has relied solely on end point sampling as a means of assessment of performance in this indicator. Utilities will now be required to use comprehensive risk assessment and risk management approaches in their reporting. Utilities will now be assessed on the extent of implementation of the requirements of Water Safety Planning (WSP) based on the 10 steps of WSP. This shift is also in line with Goal 6 under the Sustainable Development Goals (SDG) of “ensuring the availability and sustainable management of water and sanitation for all”.

### (d) Hours of Supply

Hours of Supply refers to the average number of hours per day that a utility provides water to its customers. It measures the continuity of services of a utility and thus the availability of water to the customer. It is an important indicator on quality of service and shows the extent to which the utility is making progress towards the fulfilment of the human right to water and sanitation in terms of availability.

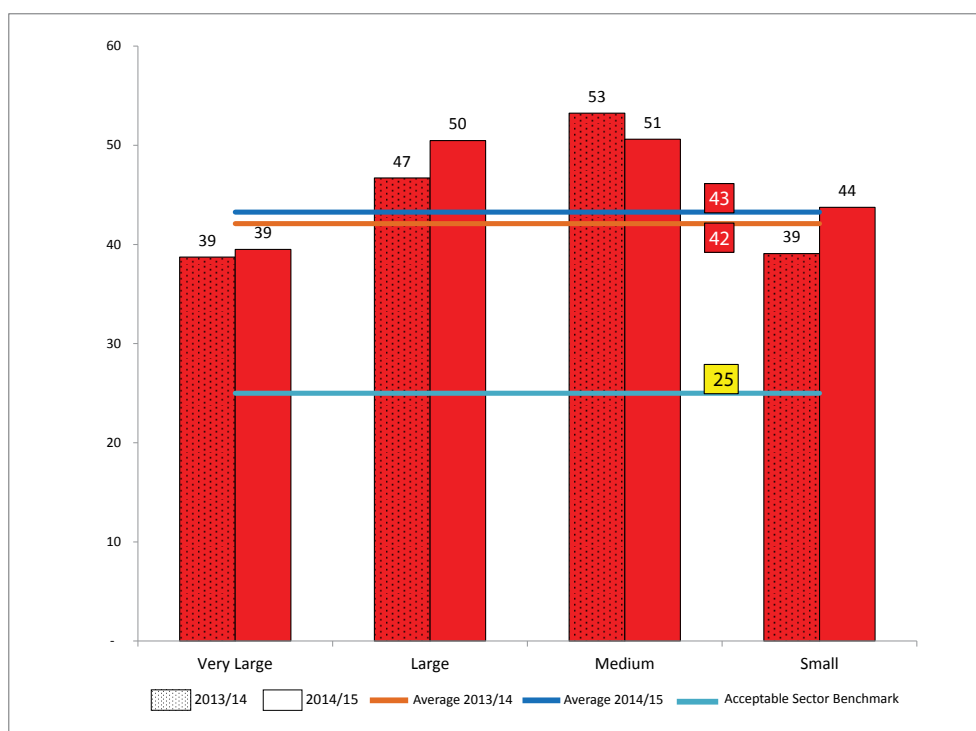
Figure 3.8: Hours of Supply



In 2014/15, average daily service hours remained 18, as was the case the previous year. However, the combined per capita water consumption for individual connections and kiosks increased from an average of 33 to 43 l/c/d. This level of consumption was reached despite the marginal decrease (1%) in billed volume, a situation that was brought about by increased volumes for domestic category in comparison to other categories. Utilities in the Large category declined by an average of two hours per day from 21 to 19. An acceptable level of Hours of Supply positively impacts on customer satisfaction which translates into willingness to pay. This has a direct correlation with collection efficiency.

### (e) Non-Revenue Water

Non-Revenue Water (NRW) refers to the difference between the amount of water produced for distribution and the amount of water billed to customers. It measures the efficiency of the utility in delivering the water it produces to customer take-off points. It captures both technical losses (leakages) and commercial losses (illegal connections/water theft, metering errors and unbilled authorised consumption). High levels of NRW indicate that utilities are losing revenue and will not be able to render proper service in terms of water availability and price.

**Figure 3.9: Non-Revenue Water in %**

Performance in this indicator declined from 42% in 2013/14 to 43% in 2014/15, which raises a lot of concern. The acceptable sector benchmark is less than 25%. Despite controlling a combined market share of 89%, the Very Large and Large utilities still record unacceptable high NRW levels of 39% and 50% respectively. Performance in the Large category was impacted significantly by the graduation of Nyeri to the Very Large category.

There is a debate as to the most appropriate measure of NRW. A percentage approach can make utilities with high levels of consumption, or compact networks, look to be better performing than those with low levels of consumption or extensive networks. To capture these different perspectives, it is now the norm to report on the three measures of NRW. The three dimensions of reporting on NRW are proportion of volume lost to volume produced, volume lost per connection per day and volume lost per unit length of network per day. Table 3.13 captures the first two.

**Table 3.13: Breakdown of NRW**

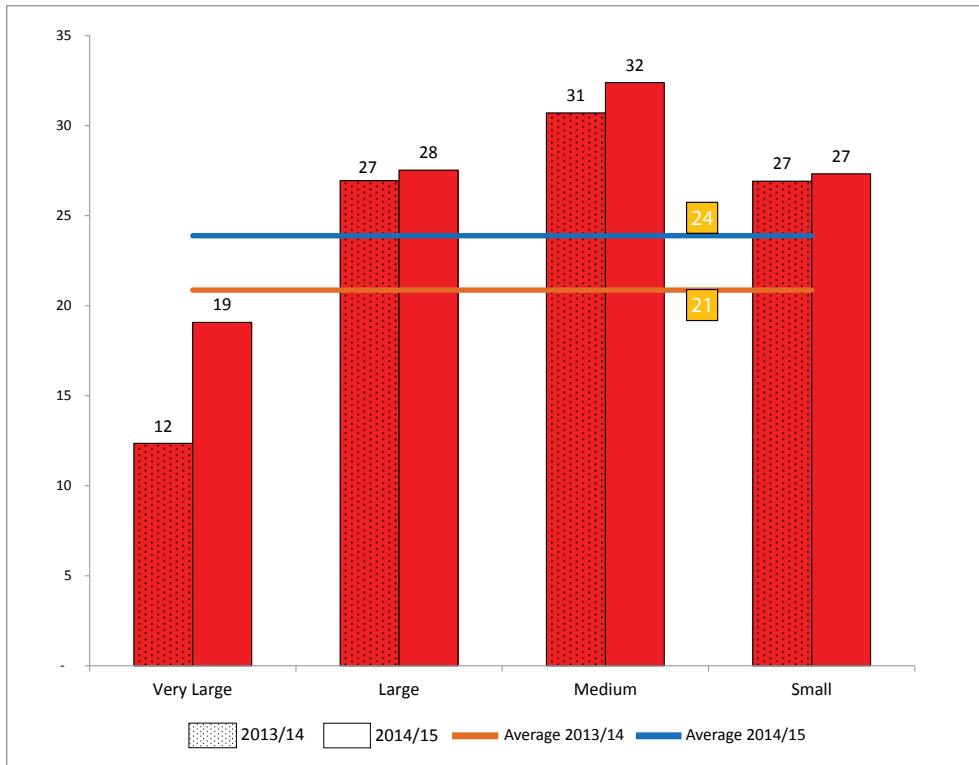
Utility size	NRW, %	Litres lost / conn/day
Very large	39	309
Large	50	292
Medium	51	287
Small size	44	249

Considering the sector benchmark of NRW levels of below 25%, the current NRW level of 43% translates to a financial loss of Ksh 6.7 billion to the sector annually. Therefore the continued underperformance in NRW is not only a direct expense to the customers but also contradicts Kenya's aspiration of moving towards higher living standards. Apart from wasting funds which could have been used to increase access and improve service delivery, the foregoing situation also threatens the financial sustainability of the utilities. Hence, counties that are providing subsidies to utilities with high levels of NRW are supporting mismanagement at the expense of utilizing the resources for infrastructure development.

**(f) Dormant Connections**

This indicator is computed as the number of connections equivalent to accounts that have been disconnected or have not received water for more than three months, expressed as a percentage of total water connections. It is an indicator of a utility’s management capacity to deliver quality services to its customers. Where the percentage of dormant connections is high, the utility is either not able to provide services to all its registered customers or it provides services of inferior quality. This forces customers to shift to alternative sources of supply, which may not be regulated. It could also imply that a large number of customers connect illegally, assuming that they still obtain water from the utility without the knowledge of the utility, thereby contributing to high NRW.

**Figure 3.10: Dormant Connections**



The decline in performance recorded in the previous period continued to be witnessed in the current year with the performance declining from 21% in 2013/14 to 24% in 2014/15. The decrease in production coupled with the increase in NRW may have served to exacerbate the situation. The huge increase within the Very Large category is as a result of more accurate reporting by Nairobi which provided a figure of 11%.

A high level of dormant connections could partly be due to poor governance, where in some cases, disconnected customers collude with utility staff to get new account numbers. Records of a utility may therefore have dormant accounts that do not physically exist. Alternatively, some disconnected accounts, classified as dormant, continue to receive water through illegal reconnections. This situation leads to loss of business and gives way to the mushrooming of informal providers, thus decreasing revenue.

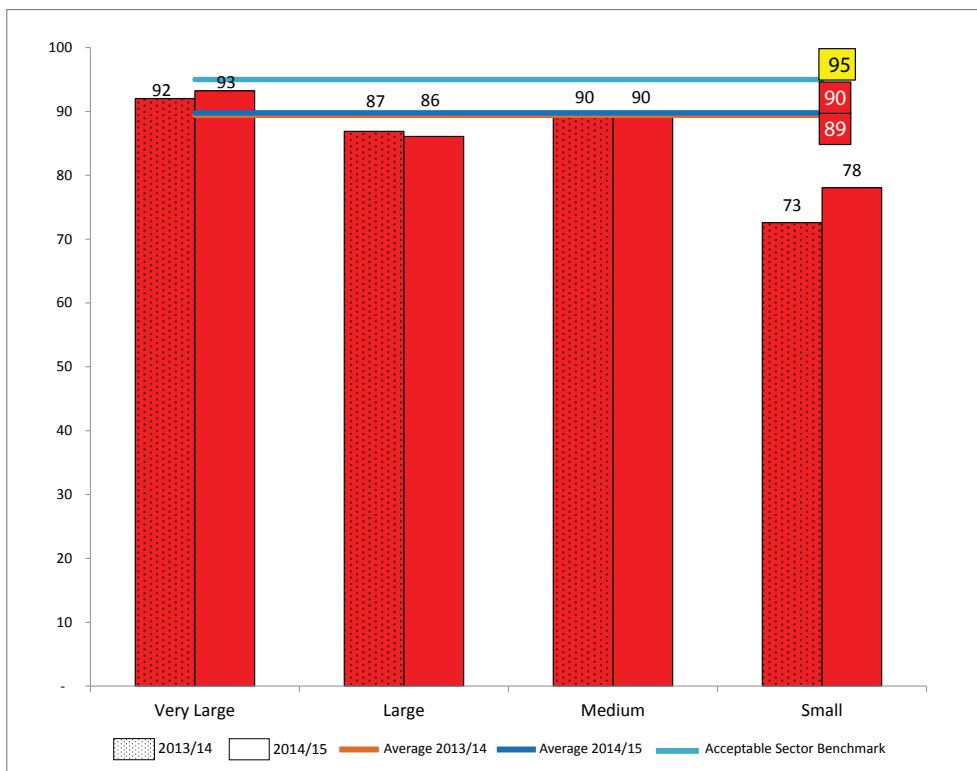
Guided by the NRW management standards developed by Wasreb, utilities will be expected to carry out a detailed water balance to identify the technical and commercial losses hence develop appropriate NRW reduction plans for implementation.

### (g) Metering Ratio

Metering Ratio refers to the number of connections with functional meters expressed as a percentage of the total number of active water connections. It measures the extent to which a utility has implemented metering as a tool to manage NRW so that consumers can only pay for what they consume.

In 2014/15, metering level recorded a marginal increase to 90%. Considering that about two-thirds of the losses are estimated to be commercial, the increase in NRW may not be as a result of meter inaccuracies but other forms of commercial losses. It is expected that where metering is implemented effectively (high ratio), NRW levels can be measured more accurately.

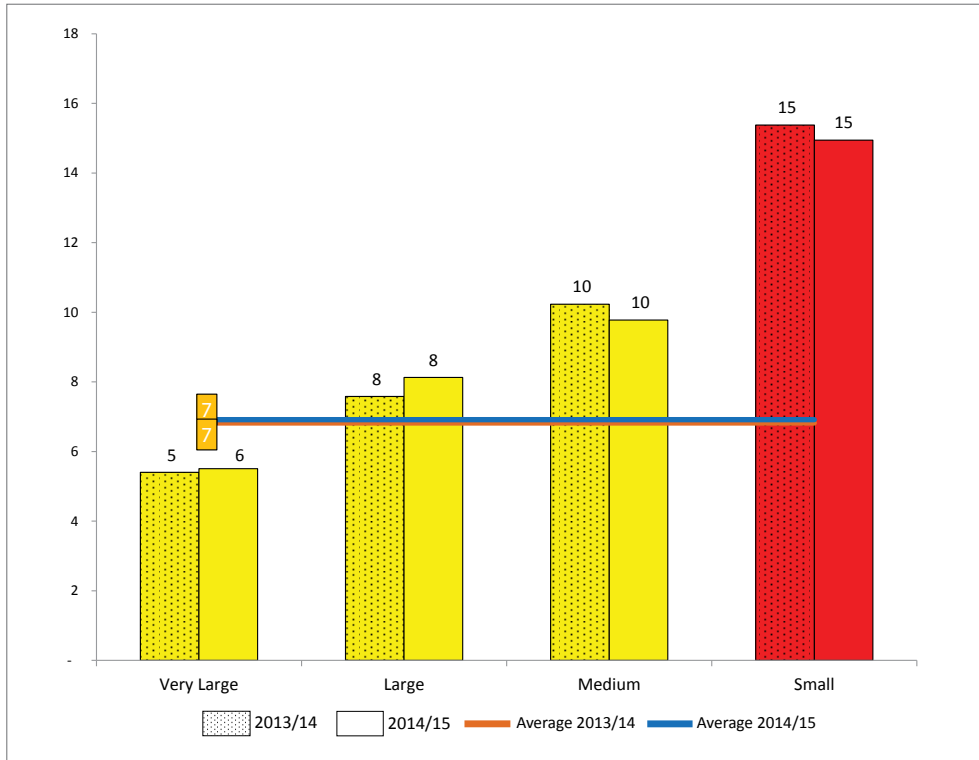
Figure 3.11: Metering Ratio



**(h) Staff Productivity (Staff per 1,000 Connections)**

Staff Productivity refers to the number of staff in employment for every 1,000 connections (total registered water and, where applicable, sewer connections). It measures the efficiency of utilities in utilising its staff. Thus, a low figure is desirable. It should be noted that staff productivity is affected by factors such as the nature of human settlement (distances between connections), skills mix, outsourcing, the number of schemes served and whether a utility provides water alone or water and sewerage services together.

*Figure 3.12: Staff Productivity*



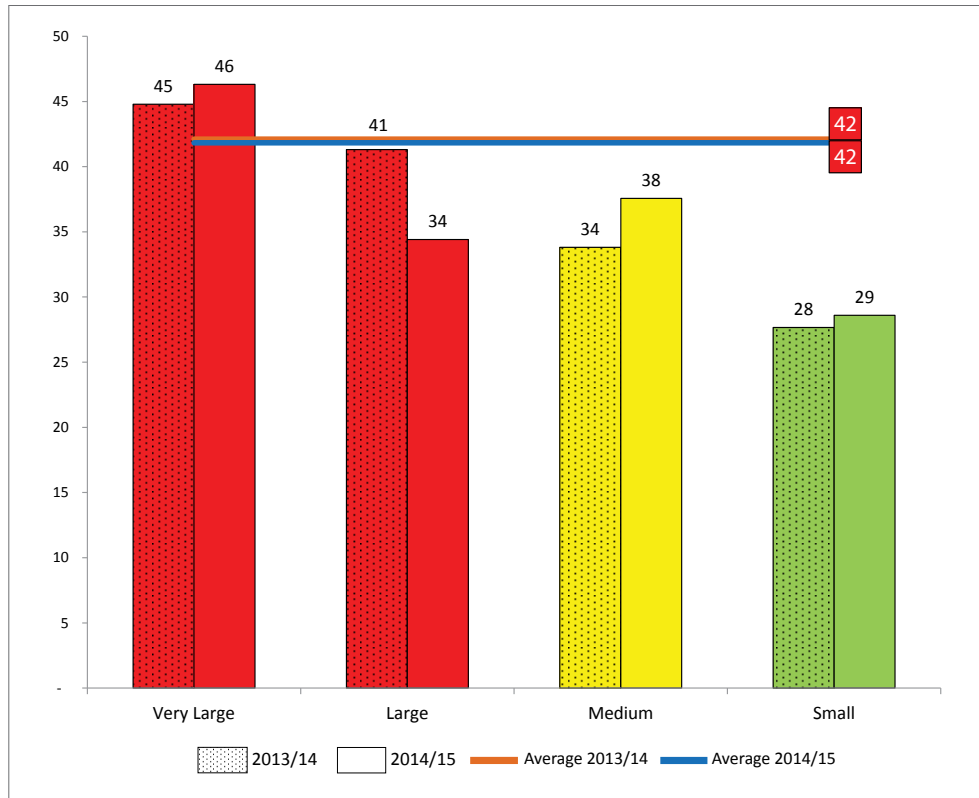
For the third year, performance in this indicator remained at seven staff per 1,000 connections. It should be noted, however, that in absolute terms, the number of staff increased by 4.3% compared to a 2.9% increase in connections.

The Very Large and Large utilities have been able to maintain an acceptable level of staff productivity within the last two periods mainly due to economies of scale. Utilities in the Very Large category however need to ensure that this performance in staff productivity is in consonance with the proportion of costs incurred for personnel as compared to the total O+M costs which is very much outside the acceptable levels of sector performance.

### (i) Personnel Expenditure as a Percentage of O+M Costs

Personnel Expenditure as a Percentage of O+M Costs measures whether personnel related expenses are proportionate to overall O+M costs as defined through the respective sector benchmarks (Section 3.4).

Figure 3.13: Personnel Expenditure as a Percentage of O+M

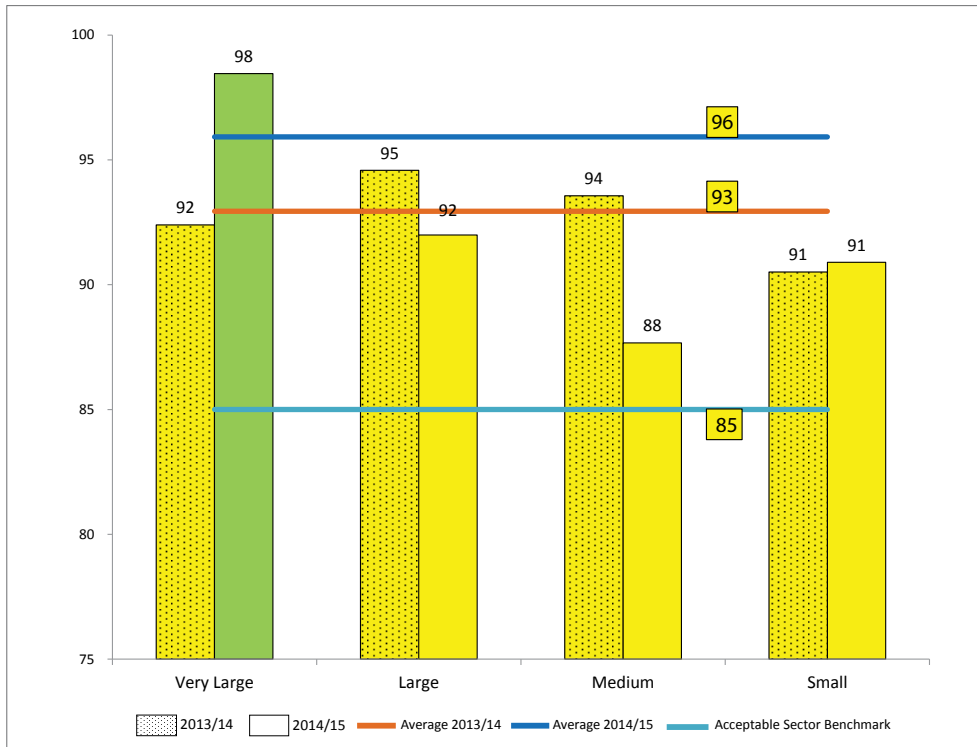


Performance in this indicator stagnated at 42%. Except for the Large category that recorded a marked improvement during the current period, the other three size categories recorded a decline in performance. The Very Large utilities, especially, must seek to reverse the situation where almost half of the resources go towards meeting personnel expenses. Left unchecked, this situation may stifle resources for other operations hence compromising on the quality of service rendered. Utilities with approved tariffs are expected to grow their expenses as per the agreed projections in the tariff and Wasreb will closely monitor to ensure that other aspects of utility operations are not compromised.

### (j) Revenue Collection Efficiency

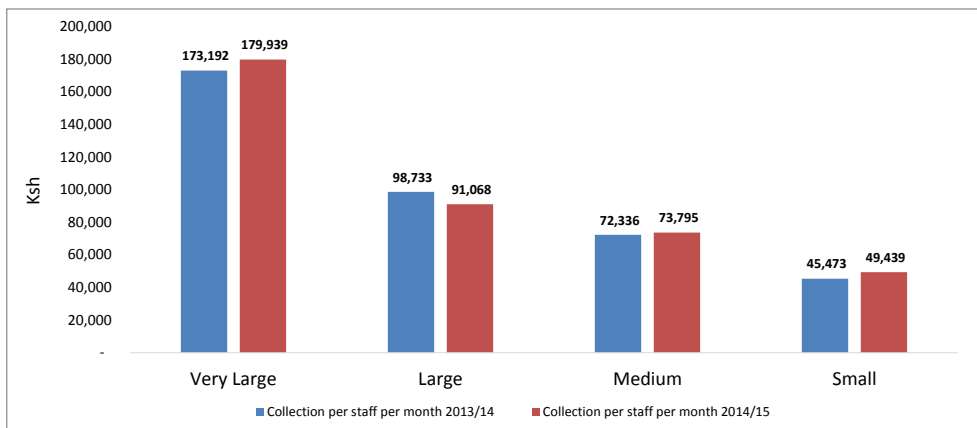
Revenue Collection Efficiency refers to the total amount collected by a utility expressed as a percentage of the total amount billed in a given period. It measures the effectiveness of the revenue management system of a utility. Revenue collected, as opposed to amounts billed, is what impacts on a utility's ability to fund its operations. Collection Efficiency is a proxy indicator on the commitment of management in optimizing the utility revenue inflow and is, indirectly, a reflection of customers' willingness to pay and, by extension, their satisfaction with services provided.

Figure 3.14: Revenue Collection Efficiency



Overall performance in this indicator continued to improve with performance in the current period reaching the acceptable level of sector performance. A comparison of performance of utilities in terms of collection per staff per month is shown in the Figure 3.15.

Figure 3.15: Average Collection per Staff per Month





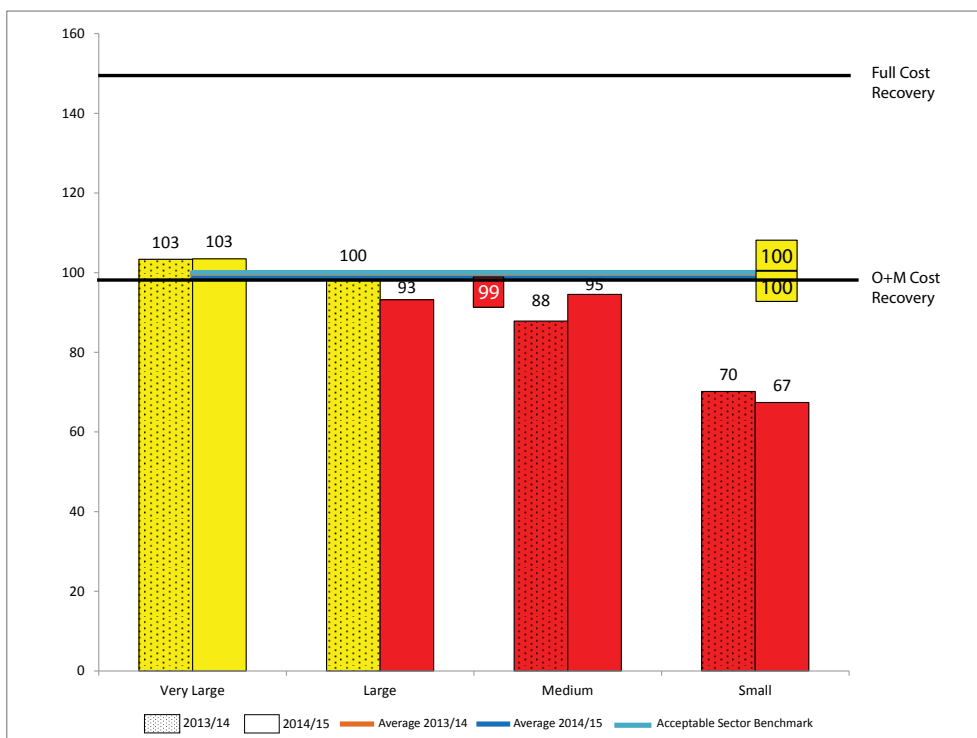
It is evident that economies of scale play a very crucial part in the performance of utilities in the above indicator. Utilities enjoying economies of scale are able to report significantly better staff productivity levels in this indicator when compared with smaller ones e.g. Very Large utilities are able to report collections per staff of almost four times what is reported by utilities in the Small category.

The separation between the current collections from arrears continues to present a challenge to utilities. Utilities should gradually strive to separate between arrears and current collections. This calls for implementation of robust billing systems that meet minimum requirements prescribed by Wasreb.

### (k) Operation and Maintenance Cost Coverage

Operation and Maintenance (O+M) Cost Coverage is the extent to which internally-generated funds cover the cost of running a utility. O+M Cost Coverage is critical to the performance of a utility as it is a first step towards full cost coverage. It ensures long term financial sustainability. A utility is estimated to have reached full cost coverage when it reaches above 150% O+M Cost Coverage. At this level, a utility is able to meet its O+M costs, service debt and renew its assets.

Figure 3.16: O+M Cost Coverage



In the reporting period, overall performance in terms of O+M Cost Coverage declined by one percentage point from 100% to 99%.

Decreased performance in this indicator is a result of O+M costs increasing at a higher proportion (7%) compared to revenues (5.4%). This increase in O+M costs compared to the revenues results from lack of justified tariffs or failure to adhere to the approved budget

ceilings set in the tariff or both. The increase in revenues of 5.4% compared to the average inflation rate of about 7% implies that utilities may not be recovering costs required to provide services.

The continued decline in cost coverage is contrary to the sector aspiration towards self financing.

Wasreb has defined the following levels of cost coverage in the assessment of operation sustainability of utilities.

**Table 3.14: Assessment of Cost Coverage**

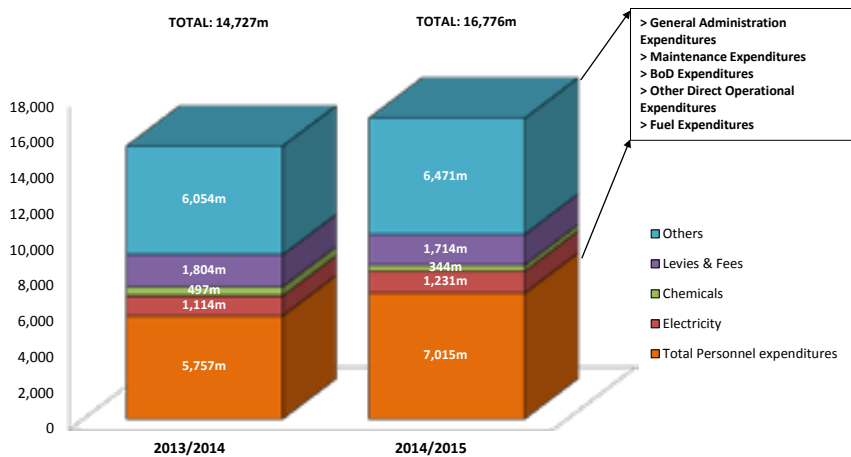
% O+M Cost Coverage	Cost Components
100%	O+M Cost
101-149%	O+M Cost + Debt Service + Minor Investments
≥150%	Full Cost Recovery

The high proportion of utilities without justified tariffs at 78% (Table 3.2) negatively impacts on performance in this indicator. Where utilities reported very high figures in this indicator, this may be a pointer that utilities are receiving subsidies and not disclosing the same to the Regulator. WARIS has made a provision for utilities to report on subsidies received either for O+M or investments. For the latter, the source and the type of investments carried out should clearly be reported.

**(I) O+M Cost Breakdown**

Cost distribution in a utility is a major factor in ensuring financial sustainability. Wasreb has set benchmarks for some of these cost components e.g. personnel, BoD and maintenance, among others. The breakdown of O+M costs into personnel, electricity, chemicals, levies & fees and other operational expenditures provides important information on the main cost drivers in the operation of utilities. These cost components differ depending on the degree to which they are under the control of the utility. Figure 3.17 shows the aggregated O+M cost breakdown for all utilities.

**Figure 3.17: Aggregated O+M Cost Breakdown for all Utilities**

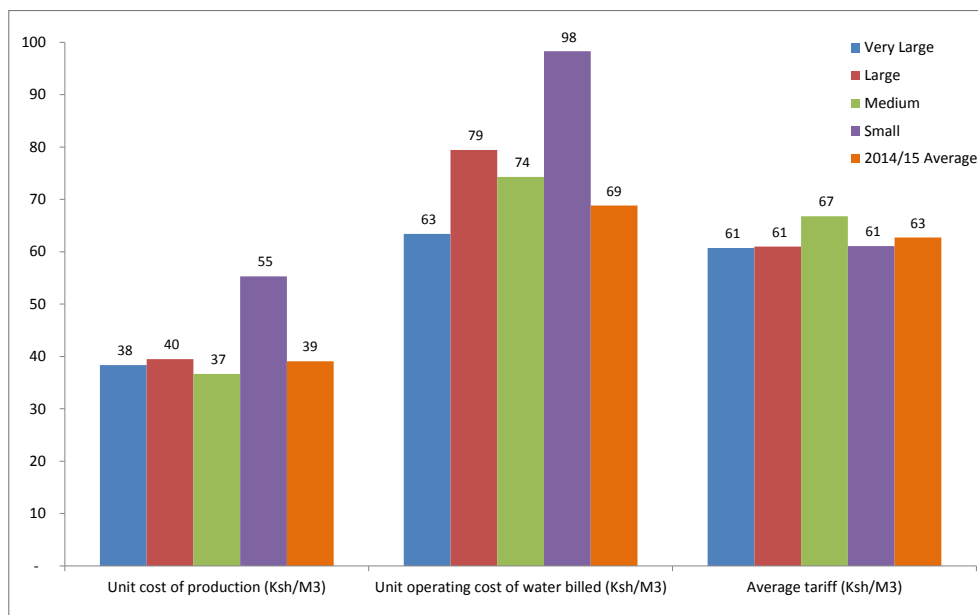


As illustrated, the main cost drivers for O+M are: personnel expenditure (42%), levies and fees (10%), electricity (7%) and chemicals (2%). The "other" costs constituting 39% comprise general administration expenditure, maintenance, and BoD allowances. The only increase is in personnel costs from 39% to 42%. Electricity and chemicals remained constant at 7% and 2% respectively while levies & fees and "Others" decreased by 2 and 1 percentage points respectively.

**(m) Comparison of Unit Cost of Production, Unit Cost of Water Billed and Average Tariff**

The assessment of the unit cost of production against the unit cost of water billed measures the operational efficiency of a utility. On the other hand, a comparison of the unit cost of water billed against the average tariff is central in shaping the financial sustainability of the utility. Assuming that utilities were operating within the acceptable level of NRW of 25% as opposed to the current 43%, the unit cost of water billed would be expected to be Ksh 46 per M<sup>3</sup> as opposed to the current Ksh 63 per M<sup>3</sup>, as seen in Fig 3.19. This means that the difference of Ksh 17 per M<sup>3</sup> goes towards paying for inefficiencies of the utilities instead of the development of infrastructure. At the current average tariff of Ksh 63 per M<sup>3</sup> consumers are paying Ksh 14 per M<sup>3</sup> for inefficiencies and the balance of Ksh 6 per M<sup>3</sup> is covered by subsidies or deterioration of service levels. Self financing of the sector is central to the progressive realisation of the right to water. The foregoing situation is contrary to the aspirations of the sector. Therefore, it should be noted that tariff adjustments by Wasreb will only allow for coverage of O+M costs and contribution to infrastructure development and will not pay for inefficiencies.

**Figure 3.18: Tariff-Cost Comparison**





### 3.6. 5 Corporate Governance Assessment

The Water Act 2002 gave Wasreb the mandate 'to develop guidelines for and provide advice on the cost effective and efficient management and operation of water services'. In the year 2010, Wasreb developed Corporate Governance Guidelines setting standards for adoption by the sector. The overriding concern was that the manner in which power was exercised within a utility could impact on its financial sustainability and service delivery. Transparency, sustainability and public participation are critical if the right to water has to be realised.

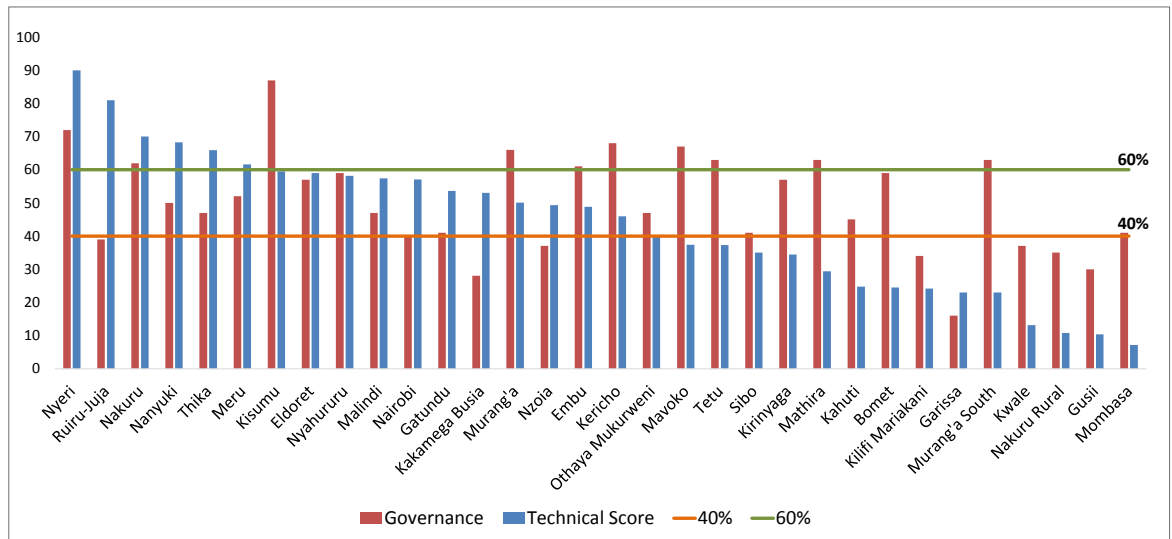
The assessment of corporate governance laid emphasis on:

- a) Utility oversight and supervision measuring transparency and accountability in leadership; and public participation in the appointment of directors
- b) Information and control systems measuring transparency and checks and balances in operational functions and compliance to set organisational systems
- c) Financial management measuring compliance to the financial management infrastructure in and effectiveness in using the tools to improve performance
- d) Service standards measuring effectiveness in engaging consumers, and deploying ICT to communicate with consumers to address their complaints or suggestions
- e) Human resources measuring adherence to the values in Article 10 of the Constitution especially inclusivity and adherence to the technical criteria of competence issued by Wasreb by LN 137 of 2012
- f) User consultation measuring whether the community served is involved in the decision making process and effectiveness of methods of sharing information with consumers

The assessment focused on 32 Very Large and Large service providers who were invited to assess themselves using the tool. Most utilities complied with the submission of data but equally most were meagre with the supporting documentation. Despite reminders to send

supporting documentation, many did not comply. Thus, Wasreb used what was available which included data from inspection reports by Wasreb or Water Services Boards. Critical also was the Report of the Auditor General for the previous year 2013-14. Unfortunately, some utilities sent truncated documents leaving out the opinion of the Auditor General.

**Figure 3.19: Technical vs Governance Score**



**Results**

For utilities scoring between 40% and 60%, critical supporting documentation was not submitted. The scoring would probably have been higher if the documentation was sent. Another factor was the poor state of the websites. Websites had very little information that was useful to consumers. However, commendable deployment of ICT was observed in Kirinyaga, which had application forms for services on the website, and Kisumu and Nakuru which had adequate information on indicators (iv) to (vi).

It is commendable that Ruiru-Juja and Nyeri had an unqualified opinion from the Report of the Auditor General. Some utilities had qualifications from the Auditor General only on the sector issues which are unresolved such as accounting for assets due to the incomplete Sector Transfer Plan as well as poor Non-Revenue Water scores. However, many also had qualification on problems with financial transactions which, if the audit committees of these institutions were keen, would have been rectified before being picked up by the Auditor General. A worrying few had adverse assessments by the Auditor General. Those who lag at the lower end, with a score of 40% and below, fall in this category.

Wasreb plans to engage county governments in improving governance in the utilities. Audit Committees and the Annual General Meetings are powerful tools for governance improvement but they are still not being used effectively by county governments. County Assemblies must also interrogate the performance of utilities as per the law. Well-governed utilities will be sustainable and will be able to attract resources and position themselves as reliable agents for providing water services.

Wasreb will continue improving the tool as it progressively rolls it out to the medium companies.

### 3.6.6 Creditworthiness Analysis

The purpose the Creditworthiness Index is to provide an annual snapshot of the operational and financial performance of selected utilities. The index relies on data from financial statements and operating statistics as reported by utilities in WARIS. Qualitative inputs are not used in the Creditworthiness Index results.

The analysis presented in this report is based on the financial and operational data submitted by utilities to Wasreb for the 2014/2015 financial year. Where possible, the data is reported from financial statements audited by Office of the Auditor General of Kenya. However, due to timing issues, much of the data is based on unaudited most recent management accounts.

The index is calculated from 23 weighted indicators that are based on the initial objective indicators used in the shadow rating report, but tailored from consultations with local commercial lenders and the Regulator.

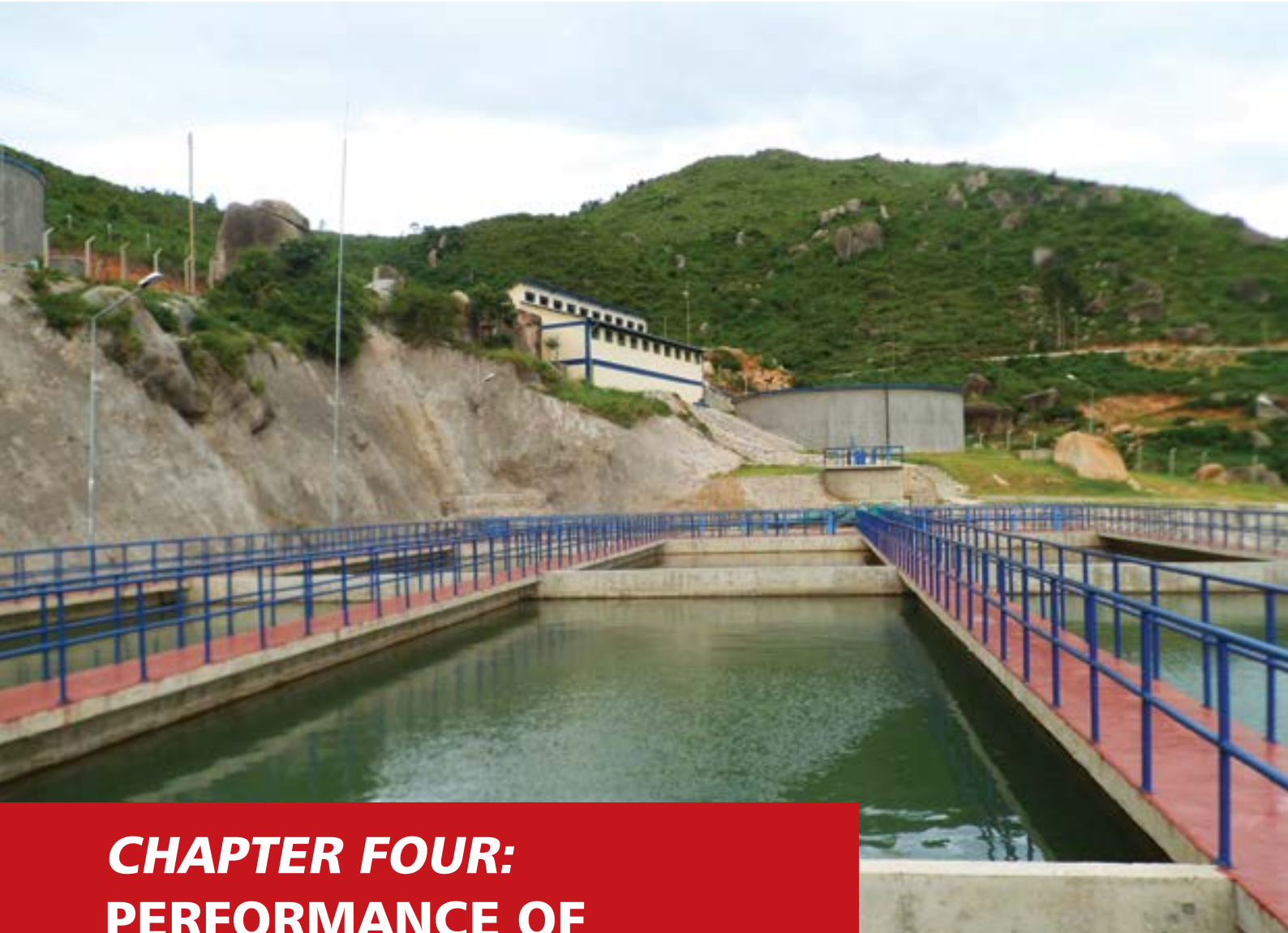
**Table 3.15: Guide to Creditworthiness**

Score	Indicative credit worthiness level	Description
86 to 100	Creditworthy, probably AAA category	Denotes the lowest expectation of default risk. Assigned only in cases of exceptionally strong capacity for payment of financial commitments. Highly unlikely to be adversely affected by foreseeable events.
71 to 85	Creditworthy, probably AA category	Denotes expectations of very low default risk. Very strong capacity for payment of financial commitments. Not significantly vulnerable to foreseeable events.
61 to 70	Low-Creditworthy, probably in A category	Denotes expectations of low default risk. Capacity for payment of financial commitments is considered strong. Capacity may, nevertheless, be more vulnerable to adverse business or economic conditions than is the case for higher ratings. In a credit rating, this definition is equivalent to an A rating.
51 to 60	Low-Creditworthy, probably in BBB category	Indicates that expectations of default risk are currently low. Capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity. In a credit rating, this definition is equivalent to a BBB rating.
41 to 50	Low-Creditworthy, probably in BB category	Indicates an elevated vulnerability to default risk, particularly in the event of adverse changes in business or economic conditions over time; however, business or financial flexibility exists which supports the servicing of financial commitments .In a credit rating, this definition is equivalent to BB rating.
31 to 40	Lower-Creditworthy, probably in B category	Indicates that material default risk is present, but a limited margin of safety remains. Financial commitments are currently being met; however, capacity for continued payment is vulnerable to deterioration in the business and economic environment. In a credit rating, this definition is equivalent to B rating.
< 30	No Rating awarded	Indicative of substantial to exceptionally high risk of default.

Forty one utilities were rated in this edition, using the 2014/15 financial year information. Gatundu, Othaya Mukurweini and Lodwar were rated as the new entrants while Karuri, Tililbei and Kiamumbi were dropped from the index by virtue of size and/or performance.

Table 3.16: Comparison of Utility 2014/15 Ranking with 2013/14 Creditworthiness Index

Rank	Utility	2013/2014		2014/2015		Change
		Score	Creditworthiness Index Proxy Rating	Score	Creditworthiness Index Proxy Rating	
<b>AAA (Score 86 to 100)</b>						
None						
<b>AA (Score 71 to 85)</b>						
None						
<b>A (Score 61 to 70)</b>						
1	Ruiru-Juja	72	AA	69	A	Deterioration
2	Nairobi	40	B	68	A	Notable improvement
3	Meru	61	BBB	67	A	Improvement
4	Murang'a	47	BB	67	A	Notable improvement
5	Nyeri	66	A	64	A	Stable
6	Nakuru	39	B	63	A	Notable improvement
7	Embu	53	BBB	63	A	Improvement
<b>BBB (Score 51 to 60)</b>						
8	Nyahururu	48	BB	61	BBB	Improvement
9	Isiolo	58	BBB	60	BBB	Stable
10	Nakuru Rural	38	B	59	BBB	Notable improvement
11	Thika	65	A	59	BBB	Deterioration
12	Limuru	44	BB	58	BBB	Improvement
13	Gatundu	N/A	N/A	57	BBB	N/A
14	Othaya Mukurweni	N/A	N/A	56	BBB	N/A
15	Kisumu	45	BB	55	BBB	Improvement
16	Kirinyaga	48	BB	55	BBB	Improvement
17	Malindi	43	BB	54	BBB	Improvement
18	Mavoko	48	BB	54	BBB	Improvement
19	Nzoia	53	BBB	53	BBB	Stable
20	Kakamega Busia	55	BBB	52	BBB	Stable
21	Kikuyu	40	B	52	BBB	Improvement
<b>BB (Score 41 to 50)</b>						
22	Eldoret	40	B	51	BB	Improvement
23	Nanyuki	55	BBB	44	BB	Deterioration
24	Kibwezi Makindu	50	BB	49	BB	Stable
25	Mombasa	45	BB	49	BB	Stable
26	Oloolaiser	52	BBB	48	BB	Deterioration
27	Kiambu	48	BB	48	BB	Stable
28	Kilifi Mariakani	31	B	47	BB	Improvement
29	Kericho	39	B	45	BB	Improvement
30	Lodwar	N/A	N/A	44	BB	N/A
31	Mathira	56	BBB	41	BB	Deterioration
<b>B (Score 31 to 40)</b>						
32	Murang'a South	N/A	N/A	40	B	N/A
33	Tavevo	37	B	40	B	Stable
34	Kitui	51	BB	39	B	Deterioration
35	Kwale	37	B	39	B	Stable
36	Narok	43	BB	38	B	Deterioration
37	Machakos	31	No Rating	38	B	Improvement
38	Garissa	48	BB	37	B	Deterioration
39	Cusii	33	B	37	B	Stable
40	Naivasha	44	BB	37	B	Deterioration
41	Sibo	39	B	36	B	Stable
<b>No Rating (Score &lt; 30)</b>						
None						



***CHAPTER FOUR:***  
**PERFORMANCE OF**  
**WATER SERVICES BOARDS**



# 4 PERFORMANCE OF WATER SERVICES BOARDS



## Investments Crucial for Realisation of Right to Water

### 4.1 Introduction

Water Services Boards (WSBs) are expected to undertake investments to increase water and sanitation coverage. However, the role of WSBs in supervising the utilities continued to diminish as a result of the challenges brought about by devolution. The situation was further worsened by county governments issuing advisories to their utilities not to remit the licensee administrative fees to the WSBs. Considering that the tariff process factors the licensee administrative fees in the tariff, the foregoing situation denies WSBs their income but also amounts to an unfair charge to the consumer. Utilities are expected to continue remitting the fees to WSBs until a new legal framework becomes operational in the sector. It should be noted that WSBs are still licensees for the provision of water services and utilities are constituted as their agents. The relationship between utilities and WSBs is still regulated through Service Provision Agreements (SPAs) and therefore tariffs charged by the utilities are governed by Clause 8 of the licence.

The chapter presents the performance of the eight WSBs for the period 2014/15. WSBs are ranked on the basis of their performance with respect to key investment, financial and qualitative indicators, developed in line with their mandate under the Water Act 2002 and the Licence given to them by Wasreb.

## 4.2 Data Collection

All the eight WSBs submitted information for the year 2014/15. A general improvement in data submission was recorded especially with regard to timeliness and completeness. The accuracy of data, however, is still a challenge to Wasreb with inconsistencies still being noted between the data for performance assessment and that for tariff adjustment. Quality data is crucial for effective decision making in the planning and monitoring of investments. It ensures that investments are timely and well targeted.

Coast WSB recorded an improvement in rating from 'poor' to 'satisfactory'. Overall, three WSBs improved their performance, two declined while performance for three stagnated (Table 2.7).

### General information on the Water Services Boards

The general data on the WSBs is given in Table 4.1 below.

**Table 4.1: General WSB Information for the Period 2014/15**

	Athi	Coast	Lake Victoria N	Lake Victoria S	Northern	Rift Valley	Tana	Tanathi	Total	
Area in square km (km <sup>2</sup> )	3,239	82,816	16,977	20,340	232,737	113,771	14,272	66,614	550,766	
Population in WSB service area	6,014,128	3,949,504	7,825,040	8,649,885	4,156,299	6,016,134	5,073,119	4,351,570	46,035,680	
Total no. of utilities	VL	2	1	2	1	0	1	1	0	8
	L	2	4	1	3	3	1	11	2	27
	M	7	1	1	3	1	1	5	4	23
	S	2	1	1	2	4	11	4	9	34
	Total	13	7	5	9	8	14	21	15	92
Total no. of utilities who submitted the information	13	6	5	8	6	14	21	13	86	
Population in utility service area	5,678,379	2,579,539	1,535,698	2,321,568	471,085	1,635,317	3,323,090	2,972,009	20,516,685	
Population served water	4,099,477	1,333,678	1,008,460	1,059,165	298,415	798,667	1,600,131	886,037	11,084,030	
Water Coverage %	72	52	66	46	61	49	48	30	54	
Population served sewerage	1,987,573	94,548	314,621	197,086	81,178	145,626	99,228	61,206	2,981,066	
Sewerage Coverage %	35	4	20	8	17	9	3	2	15	
Total water produced (M3)	233,760,208	26,870,966	13,795,194	26,751,262	37,661,774	56,579,787	22,207,004	14,902,956	432,529,151	
NRW %	39	47	45.39	48	45	49	52	56	42	
Total no. of viable utilities (≥ 100% O + M Cost Coverage)	1	1	2	2	2	5	15	3	31	
Turnover in Ksh (Total billing for water and other services)	8,395,612,741	1,046,213,577	649,952,470	1,199,506,959	1,908,298,802	1,687,927,339	908,649,547	771,436,626	16,567,598,061	
No. of staff (WSBs)	57	63	60	54	35	36	85	40	430	
Counties served	Nairobi, Kiambu and Gatanga district in Murang'a	Kwale, Taita Taveta, Kilifi, Malindi, Mombasa, Lamu and Tana River	Kakamega, Vihiga, Busia, Bungoma, Trans Nzoia, Uasin Gishu, Nandi North within Nandi and Marakwet within Elgeyo Marakwet County	Siaya, Kisumu, Migori, Homabay, Kisii, Nyamira, Bomet, Kericho and Nandi South within Nandi County	Isiolo, Laikipia, Samburu, Marsabit, Garissa, Wajir and Mandera	Nakuru, Baringo, Narok, West Pokot, Turkana, Nyandarua and Keiyo within Elgeyo Marakwet County	Nyeri, Murang'a, Kirinyaga, Embu, Meru, and Tharaka Nithi	Kitui, Machakos, Makueni and Kajiado		

NOTE: S = Small, M = Medium, L = Large, VL = Very Large

The combined turnover of the eight WSBs, i.e. the total billing of the registered utilities within their respective jurisdiction, increased by 6% from Ksh 15.65 billion in 2013/14 to Ksh 16.56 billion in the current reporting period. The total number of viable utilities (at least 100% O+M Cost Coverage) increased slightly from 34% in 2013/14 to 36%, with Tana recording the highest number of viable utilities at 15 (71%). The rest of the WSBs have a big challenge as regards the viability of their utilities.

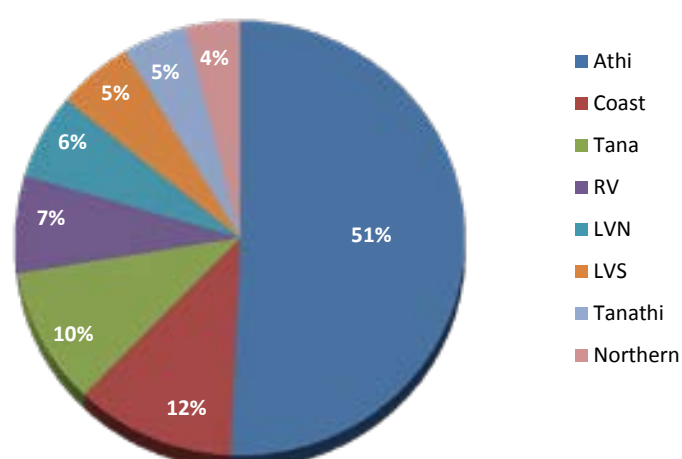
As shown in Table 4.2, all WSBs realised an increase in turnover with the highest proportion being within Rift Valley at 17%. This increase in turnover can partly be attributed to the increase in production (1.7%). On the other hand the declining increase in turnover may be attributed to the reduced number of utilities operating with justified tariffs.

**Table 4.2: Sector Turnover**

WSB	Turnover 2013/14	Turnover 2014/15	% Change
Athi	8,044	8,396	4
Coast	1,881	1,908	1
Lake Victoria North	1,005	1,046	4
Lake Victoria South	814	909	12
Northern	626	650	4
Rift Valley	1,023	1,200	17
Tana	1,598	1,688	6
Tanathi	660	771	17
<b>Total</b>	<b>15,651</b>	<b>16,568</b>	<b>6</b>

In terms of relative share (Figure 4.1), the proportion of turnover for all the WSBs remained the same as the previous year.

**Figure 4.1: Share of Turnover Among WSBs**



**Sector Benchmarks, Performance Indicators and Scoring Criteria**

The assessment of performance of a WSB with regard to investment related indicators is an aggregation of the performance of utilities within the WSB area. The corresponding scoring criteria is outlined in Table 4.3. The indicators adopted depict the performance of WSBs in the planning, development and expansion of water and sanitation infrastructure; and the monitoring of utilities.

**Table 4.3: WSB Performance Indicators and Scoring Criteria**

INDICATOR		Sector Benchmarks			Adopted Scoring Regime				
		Good	Acceptable	Not acceptable	Performance	Score	Performance	Score	
INVESTMENT INDICATORS	Water Coverage	>90%	80-90%	<80%	≥90%	15	≤50%	0	
	Non Revenue Water	<20%	25-20%	>25%	≥20%	15	≥40%	0	
	Hours of Supply	21-24	16-20	<15	≥20	10	≤10	0	
FINANCIAL INDICATORS	Cost Coverage of operating costs through fees from utilities	>100%	50-100%	<50%	≥100%	5	≤50%	0	
	Personnel expenditures as a % of total operating costs	<20%	70-20%	>70%	≤20%	5	≥70%	0	
	BoD expenditures as a % of total operating costs	<2%	5-2%	>5%	≤2%	5	≥5%	0	
	Operating costs of WSB as percentage of turnover in WSB area	Turnover > 1.5 Ksh billion	<3.5%	10-3.5%	>10%	≤3.5%	5	≥10%	0
		Turnover ≥ 0.75 < 1.5 Ksh billion	<10%	20-10%	>20%	≤10%	5	≥20%	0
Turnover < 0.75 Ksh billion		<15%	25-15%	>25%	≤15%	5	≥25%	0	
QUALITATIVE INDICATORS	Adequacy of monitoring of utilities	Proportion of utilities with approved tariffs	>90%	80-90%	<80%	100%	10	≤50%	0
		Proportion of utilities with valid SPAs	>90%	80-90%	<80%	100%	10	≤50%	0
		Utility monitoring evidenced by quarterly reports, No.	4		<4	4	6	0	0
	Driving efficient investments in WSB area	WSB capital works implementation report, No.	1		0	1	5	0	0
	Transparency and Adherence to regulations	The WSB was certified as unqualified in the latest Auditor General's report against the status of the FY 2014/15 audited accounts	Unqualified		Qualified		Adverse		
			4		2		0		
	WARIS data submitted (timely, accurate)	Good	Satisfactory	Fair	Poor				
		5	3	2	0				
<b>Total Maximum Score</b>		100							

## 4.3 Performance Analysis and Ranking of WSBs

### 4.3.1 Overall Ranking

The performance analysis and ranking of WSBs is shown in Table 4.4. It is based on the scoring regime outlined in Table 4.3 and considers the aggregated performance of utilities within the Board area for the period in 2014/15.

*Table 4.4: Performance Analysis and Ranking of WSBs*

PERFORMANCE INDICATORS		WSBs								
		TANA	NORTHERN	ATHI	LVN	COAST	RIFT VALLEY	LVS	TANATHI	
INVESTMENT INDICATORS	Water Coverage %	48	63	72	66	52	49	46	48	
	Non Revenue Water (NRW)	52	45	39	45	47	49	48	52	
	Hours of Supply	22	20	18	18	12	16	16	22	
FINANCIAL INDICATORS	Cost Coverage of operating costs through fees from utilities	81	20	161	55	108	150	19	81	
	Personnel expenditures as a % of total operating costs	35	37	54	48	41	56	51	35	
	BoD expenditures as a % of total operating costs	1	1	5	10	8	4	7	1	
	Operating costs of WSB as percentage of turn-over in WSB area	8	16	4	14	8	10	20	8	
QUALITATIVE INDICATORS	Adequacy of monitoring of utilities	Proportion of utilities with regulated tariffs	19%	13%	38%	20%	29%	20%	20%	20%
		Proportion of utilities with valid SPAs	76%	63%	77%	40%	71%	33%	80%	53%
		Utility monitoring evidenced by quarterly reports, No.	0	4	0	3	0	0	1	0
	Driving efficient investments in WSB area	WSB capital works implementation report, No.	1	1	0	0	1	0	0	0
	Transparency and adherence to Regulation	The WSB was certified as unqualified in the latest Auditor General's report against the status of the FY 2014/15 audited accounts	Qualified	No report	Qualified	No report	Qualified	No report	No report	No report
	WARIS data submitted (timely, accurate)	Good	Satisfactory	Good	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Fair	
SCORES		41	38	33	29	24	21	19	12	
RANKING		1	2	3	4	5	6	7	8	

Note: As per the Scoring Regime in Table 4.3, both 'satisfactory' and 'fair' performance have been classified as acceptable and are therefore marked in yellow. Since 'satisfactory' performance is considered to be closer to 'good' performance and 'fair' performance closer to 'poor' performance, the latter has been allocated fewer points than the former.



### 4.3.2 Performance Over Time

On the basis of the scoring regime outlined in Table 4.3, Tana, Northern, Athi and LVN retained the top four positions in that order. Coast moved up three positions and was the only WSB that recorded improvement in rank. This improvement in performance was attributed to compliance with reporting requirements having been placed under a special regulatory regime. The evaluation criterion was modified in the context of realignment with devolution among other considerations in the sector. Table 4.5 shows the change in rank for the WSBs.

*Table 4.5: Performance Ranking Over Time*

WSB	Ranking 2014/15	Ranking 2013/14	Change in Rank
Tana	1	1	0
Northern	2	2	0
Athi	3	3	0
Lake Victoria North	4	4	0
Coast	5	8	3
Rift Valley	6	5	-1
Lake Victoria South	7	6	-1
Tanathi	8	7	-1

## 4.4 Detailed Performance Analysis of WSBs

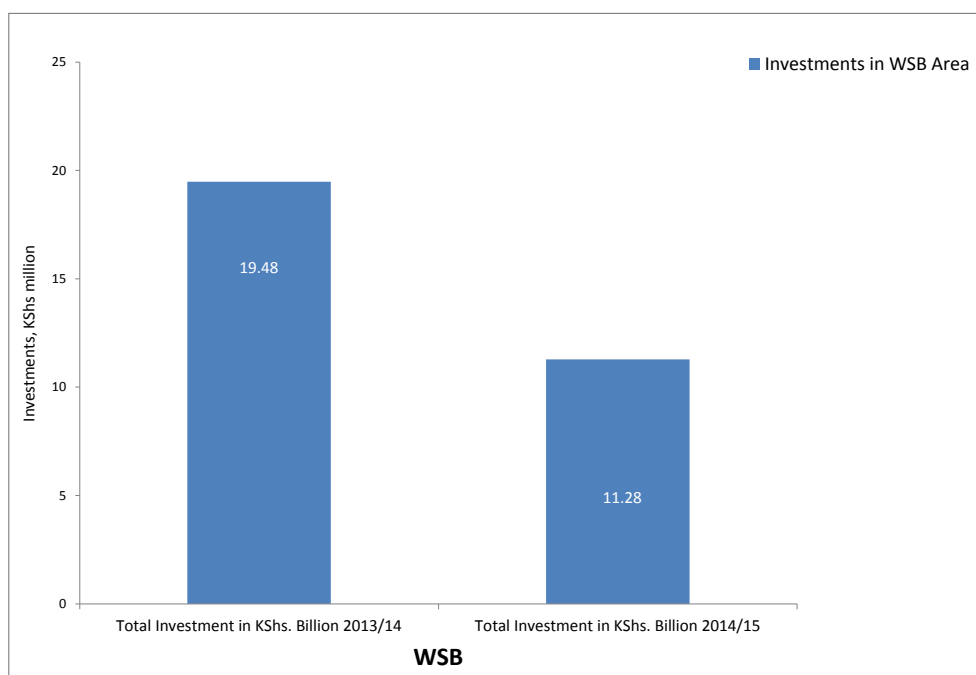
A detailed analysis of the performance of WSBs broken down into the key areas of investment, financial and qualitative analysis is presented below.

### 4.4.1 Investment Indicators

Investments by WSBs are key in the realisation of the right to water and sanitation services. The investments are expected to translate to improvement in the investment related indicators at the utility level. The indicators expected to show improvement are water and sewerage coverage, Hours of Supply and NRW reduction.

Investments by the WSBs for the period 2014/15 amounted to Ksh 11.28 billion, a decrease of Ksh 8.2 billion (42%) compared to the total investments in 2013/14. This decline in amount of investment implies that the investment gap for water and sanitation infrastructure continues to widen. The figure of Ksh 11.28 billion translates to a meagre 10% of the investment needs in the water services sector, estimated at Ksh 110.27 billion annually, if the targets under Vision 2030 (The National Water Master plan 2030) have to be met.

**Figure 4.2: Investments in WSB Area**



The highest investment levels were recorded by Athi, who accounted for 40% of total sector investments. Rift Valley WSB had less than 1% of the total investments during the period. Taking into account the fact that investments by the WSBs should translate into an improvement in quality of service, it is critical that WSBs track the impact of the investments to ensure progressive realisation of the right to water services. Table 4.6 presents the impact of WSB investments on the three investment-related indicators.

**Table 4.6: WSB Investments Against Performance Change in Investment-Related KPIs**

WSB	Investments in WSB Area (in million Ksh)	Change in water coverage, %	Change in NRW, %	Change in Hours of Supply, Hrs/day
Athi	4,474	1	1	0
Tanathi	1,890	1	-2	1
Coast	1,503	-4	4	-1
Lake Victoria South	1,408	4	3	-3
Tana	741	2	1	0
Lake Victoria North	639	2	8	-3
Northern	509	3	5	0
Rift Valley	112	-2	5	2

Out of the three investments indicators, i.e. Water Coverage, Hours of Supply, and NRW, it is only water coverage that shows some correlation to investments. On the other hand, the amount of investments does not seem to show a direct correlation to performance in this indicator. Out of the three indicators, Hours of Supply does not seem to show any correlation whatsoever to the amount of investments. The refinement of WARIS was to enable utilities explicitly capture investments by category (new, expansion, rehabilitation) and type (water sources, treatment facilities, storage etc) in order to allow for the proper tracking of impact. If WSBs provide details of their investments in this form, then data will enable comparisons between investments of the same category on one hand and the different types on the other. Wasreb has developed Investment Planning Guidelines for WSBs to enable them have structured plans whose implementation will be easy to track.

County governments/WSBs being responsible for asset development are expected to revise their investment plans to incorporate the requirements of the Guideline.

## 4.4.2 Financial Indicators

### (a) Coverage of Operating Costs

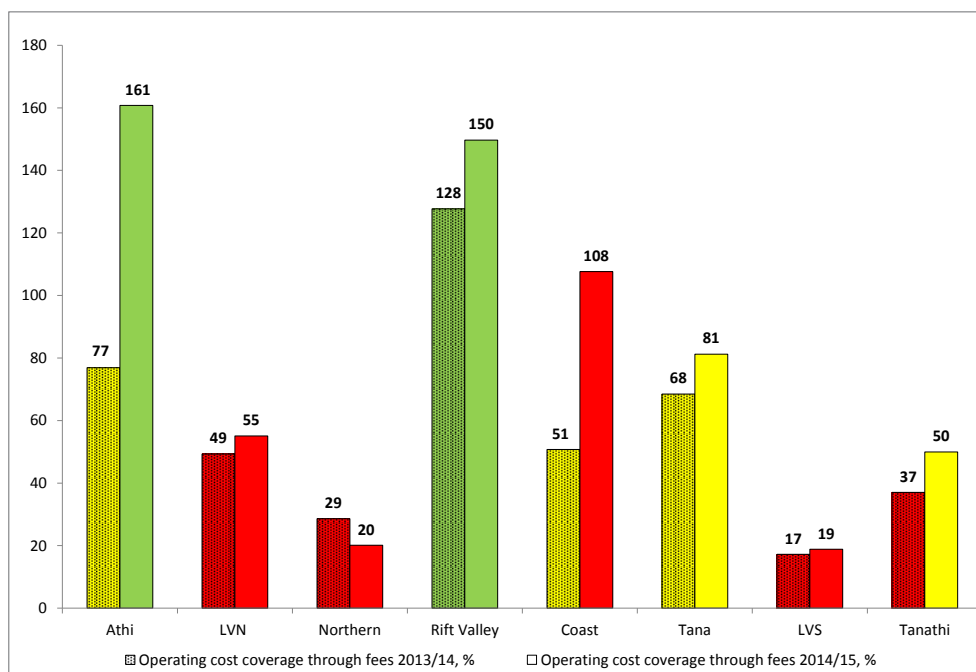
Coverage of Operating Costs measures the extent to which a WSB as the licensee is able to finance its operations from the licensee administrative fees collected from its agents (utilities). The tariff determination process allows for the licensee administrative fees of a WSB to be shared out to the utilities within the Board area in proportion of the utility turnover. Operating costs of WSBs mainly relate to administrative expenses arising from their role as licensees and hence principals of the utilities. Full cost coverage is crucial and this assumption is considered during the tariff setting process. Considering that only 32% of the utilities nationally have valid tariffs with proportions within the WSB areas varying from 20-48%, none of the WSBs would be expected to meet their costs. The analysis indicates otherwise with Athi and Rift Valley reporting very high levels of cost coverage, contrary to the expectations of the tariff setting process. Additionally, cost coverage that is too high (above 110%) implies that the costs of the WSB may not be justified and that utilities may be paying higher licensee remuneration fees than required; or that WSBs did not separate asset renewal funds from the licensee remuneration fee. Asset renewal funds are intended



for asset development, not for meeting operational expenditure. Institutional financial arrangements should make a clear separation between these items.

Figure 4.3 shows the performance of WSBs in this indicator.

**Figure 4.3: Coverage of WSB Operating Costs in %**



Athi, Rift Valley and Coast are the only WSBs able to fully cover their operational costs from licensee administrative fees. It will be noted that a majority of the utilities are not remitting the licensee administrative fees to their principals, which is contrary to Clause 9 of the SPA. Poor performance by a majority of the WSBs in this indicator poses a big concern on their financial sustainability. The tariff process seeks to ensure that WSB operating expenses are financed through the tariff. The low proportion (22%) of utilities with justified tariffs therefore aggravates the situation. The licensee administrative fees payable by utilities in comparison with the WSB operating costs is presented in Table 4.7.

**Table 4.7: Administrative Fees from Utilities vs Operating Costs**

WSB	Administrative Fees from the Utilities in 2013/14 in Ksh million	Operating Cost in 2013/14 in Ksh million	Operating cost coverage through fees 2013/14, %	Administrative Fees from the Utilities in 2014/15 in Ksh million	Operating Cost in 2014/15 in Ksh million	Operating cost coverage through fees 2014/15, %
Athi	260	338	77	495	308	161
LVN	83	169	49	83	151	55
Northern	19	66	29	21	107	20
Rift Valley	144	113	128	172	115	150
Coast	172	338	51	166	154	108
Tana	107	156	68	114	141	81
LVS	40	231	17	35	185	19
Tanathi	46	124	37	63	127	50

### (b) Operating Costs of WSBs as Percentage of Turnover in WSB Area

Operating costs as a percentage of the turnover in the WSB area measures the efficiency of a WSB in executing its functions. It is expected that the operating costs of a WSB should be proportional to its turnover. Therefore, different benchmarks apply to each WSB, depending on the turnover (Table 4.8). WSBs' expenditure as a percentage of their turnover is shown in Table 4.8.

**Table 4.8: Operating Costs of WSBs as Percentage of Turnover in WSB Area**

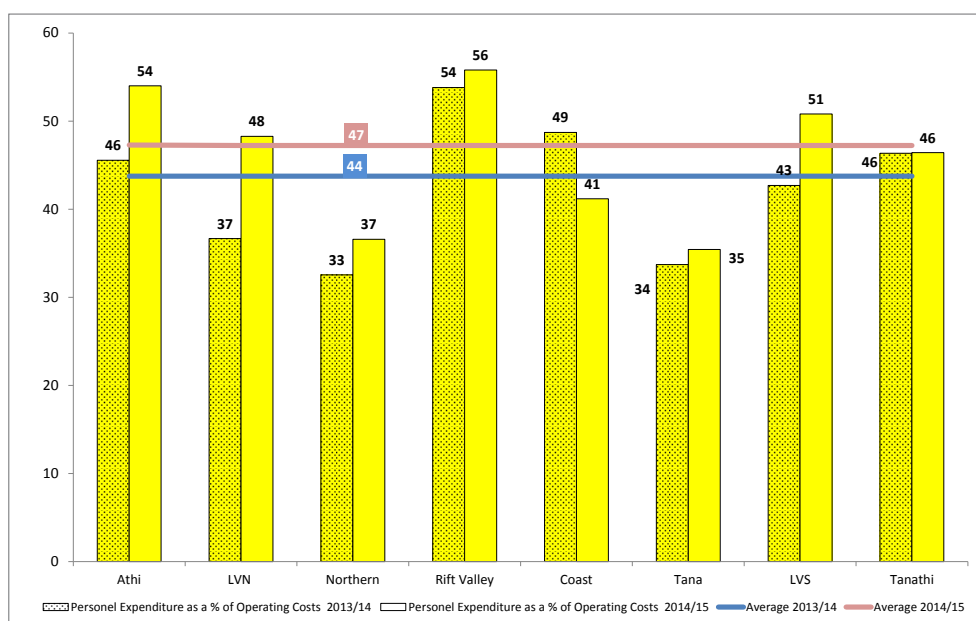
WSB	Operating Cost in 2013/14 in Ksh million	Turnover 2013/14 in Ksh million	Operating Cost as a % of Turnover 2013/14	Operating Cost in 2014/15 in Ksh million	Turnover 2014/15 in Ksh million	Operating Cost as a % of Turnover 2014/15
Athi	338	8,044	4	308	8,396	4
LVN	169	1,005	17	151	1,046	14
Northern	66	626	11	107	650	16
Rift Valley	113	1,023	11	115	1,200	10
Coast	338	1,881	18	154	1,908	8
Tana	156	1,598	10	141	1,688	8
LVS	231	814	28	185	909	20
Tanathi	124	660	19	127	771	16

All the WSBs, except Coast and LVS, were within the acceptable level of the sector benchmark. LVN, Coast and LVS recorded declines with Coast WSB recording the biggest decline of 10 percentage points.

### (c) Personnel Cost as Percentage of Operating Costs

Personnel Cost as Percentage of Operating Costs measures whether staff costs are proportionate to the overall operating costs, as defined by the sector benchmark.

**Figure 4.4: Personnel Expenditures as Percentage of Operating Costs**



A comparison of WSBs' personnel expenditure with their operating costs is presented in Table 4.9.

**Table 4.9: Personnel Expenditure of the Utilities vs Operating Expenditure**

WSB	Personel Expenditure in 2013/14 in Ksh million	Operating Cost in 2013/14 in Ksh million	Personel Expenditure as a % of Operating Costs 2013/14	Personel Expenditure in 2014/15 in Ksh million	Operating Cost in 2014/15 in Ksh million	Personel Expenditure as a % of Operating Costs 2014/15
Athi	154	338	46	166	308	54
LVN	62	169	37	73	151	48
Northern	22	66	33	39	107	37
Rift Valley	61	113	54	64	115	56
Coast	165	338	49	63	154	41
Tana	53	156	34	50	141	35
LVS	99	231	43	94	185	51
Tanathi	57	124	46	59	127	46

Although all WSBs are within the acceptable range for this indicator, all except Tanathi recorded a decline. In absolute terms, except for LVS and Tana WSBs, all the WSBs recorded an increase in the amount spent on personnel.

#### (d) Board of Directors Expenditure as a Percentage of Operating Costs

Board of Directors (BoD) Expenditure as a Percentage of Operating Costs measures the extent to which BoD costs are within the set benchmark. Wasreb's Corporate Governance Guideline sets these costs at 5% of the total operating costs for WSBs. It is expected that for WSBs with high turnovers such as Athi and Coast WSBs, the percentage should be even lower than 2%. This is because BoD expenditure and hence BoD mandate should not vary with the size of the WSB.

A comparison of WSB's BoD expenditure with their operating cost is shown in Table 4.10.

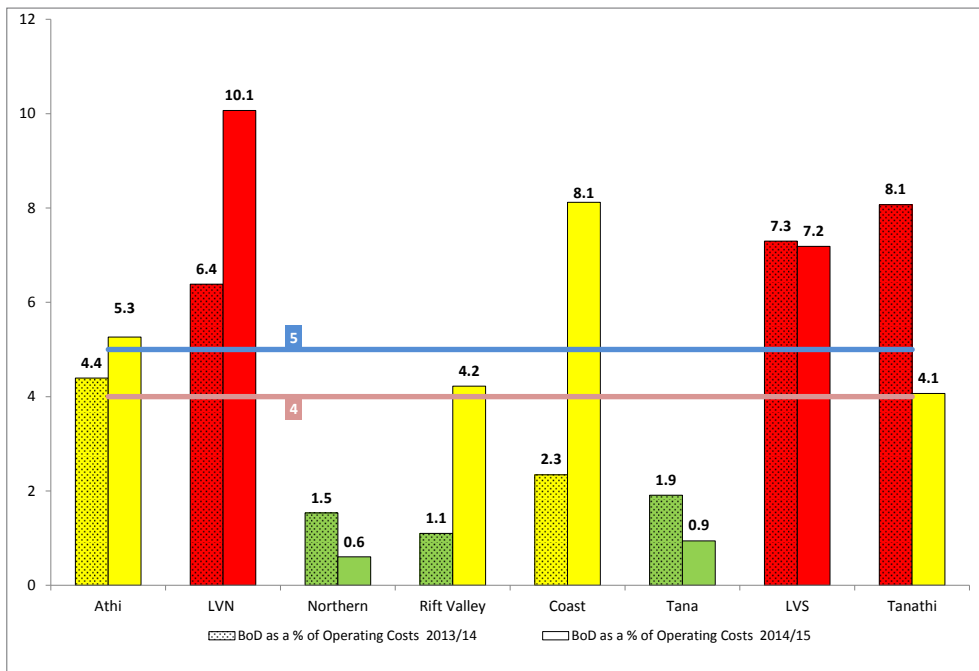
**Table 4.10: BoD Expenditure of the WSBs vs Operating Expenditure**

WSB	BoD Expenditure in 2013/14 in Ksh million	Operating Cost in 2013/14 in Ksh million	BoD as a % of Operating Costs 2013/14	BoD Expenditure in 2014/15 in Ksh million	Operating Cost in 2014/15 in Ksh million	BoD as a % of Operating Costs 2014/15
Athi	15	338	4	16	308	5
LVN	11	169	6	15	151	10
Northern	1	66	2	1	107	1
Rift Valley	1	113	1	5	115	4
Coast	8	338	2	12	154	8
Tana	3	156	2	1	141	1
LVS	17	231	7	13	185	7
Tanathi	10	124	8	5	127	4

During the period under review, two WSBs (Northern and Tana), were within the 2% sector benchmark compared to four WSBs in the previous period. Though it was a good performance, this may have been attributed to the lower number of Directors as the sector was awaiting their appointment. Athi, Rift Valley and Tanathi WSBs were within the acceptable sector benchmark. The remaining three WSBs (LVN, LVS and Coast) were outside the acceptable sector benchmark. In terms of absolute performance, three WSBs (Tanathi, LVS and Tana) recorded absolute drops in BoD expenditure while Northern maintained its costs with the remaining four incurring higher costs, led by Athi at Ksh 16 million.

The amount of Ksh 16 million incurred by Athi WSB is more than the combined expenses of Northern, Rift Valley, Tanathi and Tana. This is highly unacceptable considering that BoD remuneration is uniform across all WSBs, as defined by the State Corporations Guidelines. Hence the huge variations between the different WSBs can only be attributed to the varying activities of Boards. The huge variation between the highest and lowest spending WSB shows non-adherence to defined levels of expenditures and is an expression of poor corporate governance. To contain costs, WSBs need to adhere to the schedules of planned Board meetings and approved ceilings of BoD expenditure.

**Figure 4.5: Board of Directors (BoD) Expenditures as a Percentage of Operating Costs**



### 4.4.3 Qualitative Indicators

#### (a) Proportion of Utilities with Approved Tariffs

Justified tariffs are crucial in promoting the financial sustainability of utilities as well as ensuring that consumers pay fair prices for water services. As licensees, WSBs are required to establish the customer water supply and sewerage tariffs applicable for each utility in accordance with the guidelines issued by the Regulator. Additionally, the licensee has a responsibility of monitoring the correct implementation of tariffs and should notify Wasreb of any deviations by the agent.

In the period under review, all the WSBs had less than 50% of their utilities operating with justified tariffs. It is expected that the proportion of utilities with justified tariffs would have a direct correlation with the cost coverage of WSBs, who are supposed to recoup their costs from fees paid by utilities. However, this does not seem to be the case for all the WSBs.

Table 4.11 provides the proportion of utilities with valid tariffs in WSB areas vis-a-vis operating cost coverage from licensee administrative fees.

**Table 4.11: Proportion of Utilities With Valid Tariffs in the WSB Areas vis-a-vis Operating Cost Coverage**

WSB	Proportion of Valid Tariffs, %, 2013/14	Operating cost coverage through fees 2013/14, %	Proportion of Valid Tariffs, %, 2014/15	Operating cost coverage through fees 2014/15, %
Athi	38	77	38	161
Coast	57	51	29	108
LVN	20	49	20	55
LVS	22	17	20	19
Northern	43	29	13	20
Rift Valley	26	128	16	150
Tana	43	68	13	81
Tanathi	20	37	20	50

#### (b) Proportion of Utilities with Valid SPAs

Every utility that operates formally in a regulated environment must at all times have a valid SPA because that is the legal instrument that outlines the contractual obligations of the parties to the contract. WSBs bear the ultimate responsibility of ensuring that their utilities have valid SPAs, the process involved notwithstanding.

The proportion of utilities with valid SPAs in the WSBs varied from a low of 33% in Rift Valley to a high of 80% in both LVS and LVN. Clause 8.4 of SPA prescribes that intention to renew or extend a lapsing SPA should have taken place six months prior to the end date. This has largely not been observed by the majority of WSBs. On average, only 63% of the regulated utilities have valid SPAs, which is not acceptable at all as it amounts to gross non compliance with primary requirements. WSBs and the counties are called upon to cooperate so as to shepherd the renewal of SPAs for their respective utilities.

### **(c) Monitoring of Utilities Evidenced by Quarterly Reporting**

WSBs are expected to be monitoring their utilities regularly through quarterly engagements as per work plans that run in tandem with the performance contracting framework. Clause 5.3 of the SPA document obligates WSBs to monitor their utilities' performance in line with the performance targets outlined as minimum service levels (MSLs). This is emphasized further in Clause 14.5(d). The outputs of these monitoring and inspection exercises are quarterly M&E reports which should be shared with Wasreb.

WSBs have fared badly on this for the period under review because only Northern WSB submitted all the four quarterly reports, followed by LVN with three and LVS with one. The rest of the WSBs had no submission at all. WSBs are reminded to ensure they comply with this requirement so that the MSLs targets are consistently tracked towards their realisation as targeted.

### **(d) Capital Works Implementation**

The National Water Master Plan estimates that about Ksh 1,287 billion will be required to achieve 100% water supply coverage by 2030. The reality, however, is that this budget cannot be financed wholly by government funding and development partners' support. In addition, there appears to be no clear correlation between the continually growing development budget and the impact of the investments on the ground, which is partly due to inadequate investment planning and monitoring. Clause 5.3 of the license requires the licensees in agreement with the utilities in the area to develop a plan for a ten year capital works plan. The capital works plan reflects programmes for facilities development for each utility so as to increase coverage in line with the NWSS. The plan must be updated on a rolling basis every one year and reported on annually. During the period under review, only three WSBs namely Tana, Northern and Coast submitted their capital works implementation reports to Wasreb. The five WSBs who did not submit reports should ensure that their capital works plan implementation reports are updated and submitted as this is necessary to ensure that existing and future financial resources are commensurate with investment needs as well as the costs of operating and maintaining services. This is necessary to achieve the progressive realisation of the right to water and sanitation, based on prioritised demands.

### **(e) Financial Management**

Efficiency and compliance to financial rules and regulations is crucial for the effective delivery of the mandate of WSBs. In the current period, financial management was assessed on the basis of the Auditor General's report. The focus is to ensure that WSBs are certified as unqualified in the latest Auditor General's report against the status of the FY 2014/15 audited accounts. Athi, Coast and Tana submitted their audited financial statements for 2014/15 and all the three WSBs had their accounts qualified by the Auditor General. The other five WSBs did not have audited accounts for the period and therefore could not be rated. These WSBs should ensure timely preparation and prompt response to audit queries in order to ensure that the audited accounts are available as this is the only score card on their efficiency and compliance to regulations. It is also a confirmation by the WSBs to transparency and scrutiny by the public.



***CHAPTER FIVE:***  
**WATER SERVICES IN**  
**COUNTIES**

## 5 WATER SERVICES IN COUNTIES

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### Constituting Water Delivery Entities Under Devolved Governance

#### 5.1 Introduction

One of the objectives of having devolved service provision was to devolve decision making to the grassroots. Counties within the same geographical proximity have been forming economic blocks whose objective is to pool together to synergize on development aspirations. This resolve stems from the realisation that emerging disparities amongst counties were posing major threats to trade and investment.

Similarly within the water sector, disparities in resource endowment can pose major threats to the advancement of the right to water under the devolved system of governance. Under this arrangement, counties that have potential to develop joint water and sewerage infrastructure should not shy away from advancing the same course and equally having joint entities to provide these services. Within the counties also, formation of commercially viable entities that can naturally enjoy economies of scale is highly encouraged. Realising that financial sustainability is key, Embu, Laikipia and Kiambu have started the journey towards clustering their utilities. Wasreb has disseminated the clustering study to assist counties in structuring service provision in their areas to ensure efficiency and sustainability in service provision.



## 5.2 Situation of Water Services in Counties

The population in the service area of regulated utilities is 20.4 million people, which is slightly higher than the national urban population estimated to be 18.4 million. Urban boundaries need to be defined on the basis of local population densities, irrespective of administrative boundaries. Wasreb has recently completed an exercise of reviewing service areas of 41 large utilities to ensure the effective monitoring of the realisation of the right to water.

County governments should ensure that gradually all urban consumers receive formalized services in line with the criteria developed by the Regulator.

### *Provision of Subsidies*

One of the key goals of the water sector reform process was to ensure that utilities are able to cover their O+M costs. It is commendable that a number of utilities have not only attained this objective but are also able to set aside resources for servicing debts and investments. Of major concern however are those utilities that continue to rely on state subsidies to meet their O+M costs. The tariff review process by the Regulator seeks to ensure that utilities are gradually driven towards full coverage of their O+M costs. In the absence of a justified tariff therefore, the transfer of subsidies can be interpreted to mean supporting inefficiency since the utility would be operating without clear performance targets.

The expectation of the regulator from the counties with regard to subsidies to utilities is that proper disclosures must be made. It is only then that consumers can be protected from unfair exploitation by the utilities. Utilities should also be held accountable for non-performance. Counties are expected to use the tariff process in their planning and in the management of resource allocation to their utilities. Where utilities have been assessed and a subsidy recommended, the expectation is that counties will ensure the transfer of the same to the utilities.

## 5.3 Performance Analysis of Counties

### 5.3.1 Data Collection

Data that was used in this assessment of counties is based solely on submissions by regulated utilities (both public and private) in the respective counties. The data on these counties is captured in Table 5.1.



Table 5.1: General Data on Counties

ID.	County	Population in the county	Utilities in the county	Percentage of county population within service areas of utilities (%)	INDICATORS														
					Water Coverage (%)	Drinking Water Quality (%)	Hrs of supply (hrs./d)	Personnel Exp. As % of O+M	O+M Cost Coverage (%)	Revenue Collection Efficiency (%)	NRW (%)	Staff per 1000 (no. staff per 1000 conns.)	Metering Ratio (%)	Sewerage Coverage (%)	Unit cost of water produced (Ksh/m <sup>3</sup> )	Unit operating cost of water billed (Ksh/m <sup>3</sup> )	Average tariff (Ksh/m <sup>3</sup> )	Weighted score	
001	Mombasa	1,100,267	Mombasa	97	54	68	5	32	83	Mombasa: 83	89	54	9	58	9	68	140	113	14
002	Kwale	758,144	Kwale	40	47	80	8	27	83	Kwale: 83	76	46	15	98	0	50	91	75	26
003	Kilifi	1,328,946	Kilifi Mariakani, Malindi	84	61	71	18	29	90	Kilifi Mariakani: 101 Malindi: 82	97	36	10	96	0	64	98	80	86
004	Tana River	293,407	Hola Tana River	51	n.d.	n.d.	n.d.	n.d.	n.d.	Hola Tana River: n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
005	Lamu	117,547	Lamu	19	73	96	8	36	71	Lamu: 71	75	40	12	98	0	55	87	59	80
006	Taita-Taveta	315,698	Tavevo	20	76	58	11	20	68	Tavevo: 68	91	50	13	n.c.d.	0	45	90	58	56
007	Garissa	774,823	Garissa	20	62	89	22	25	95	Garissa: 95	73	55	11	69	5	37	74	69	46
008	Wajir	823,174	Wajir	13	n.c.d.	n.c.d.	n.c.d.	n.c.d.	n.c.d.	Wajir: n.c.d.	n.c.d.	n.c.d.	n.c.d.	n.c.d.	n.c.d.	n.c.d.	n.c.d.	n.c.d.	n.c.d.
009	Mandera	1,294,916	Mandera	6	n.d.	n.d.	n.d.	n.d.	n.d.	Mandera: n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
010	Marsabit	343,637	Moyale	14	22	59	8	n.c.d.	n.c.d.	Moyale: n.c.d.	44	n.c.d.	35	0	0	n.c.d.	n.c.d.	n.c.d.	4
011	Isiolo	156,221	Isiolo	41	58	96	11	44	93	Isiolo: 93	101	34	7	100	12	62	90	81	110
012	Meru	1,588,611	Meru, Tuuru, Imetha	38	62	76	20	37	89	Meru: 109 Tuuru: 104 Imetha: 48	101	33	13	81	4	48	62	55	91
013	Tharaka-Nithi	436,223	Murugi Mugumango, Nithi, Muthambi 4K	31	76	63	24	54	105	Murugi Mugumango: 119 Nithi: 97 Muthambi 4K: n.c.d.	93	37	7	100	0	23	41	31	115
014	Embu	571,155	Ngandori Nginda, Embu, Ngagaka, Kyeni, Embe	84	68	84	22	42	124	Ngandori Nginda: 138 Embu: 126 Ngagaka: 120 Kyeni: 108 Embe: 99	94	50	6	88	7	34	55	64	101
015	Kitui	1,153,958	Kitui, Kiambere Mwingi	96	29	89	16	22	61	Kitui: 61 Kiambere Mwingi: 59	107	62	12	96	0	69	172	100	83
016	Machakos	1,215,511	Matungulu Kangundo, Machakos, Mavoko, Yatta, Mwala, Kathiani	66	55	83	11	33	97	Matungulu Kangundo: 117 Machakos: 113 Mavoko: 101 Yatta: 32 Mwala: n.d. Kathiani: n.d.	86	47	10	97	12	96	174	168	58
017	Makueni	1,043,926	Wote, Kibwezi Makindu, Mbooni	40	31	71	12	39	83	Wote: 93 Kibwezi Makindu: 92 Mbooni: 32	87	28	13	100	0	44	60	54	50
018	Nyandarua	724,508	Engineer, Olkalou, Ndaragwa, Nyakanja, Nyandarua, Kikanamku, Mawingo	35	43	17	18	33	104	Engineer: 143 Olkalou: 133 Ndaragwa: 122 Nyakanja: 97 Nyandarua: 49 Kikanamku: n.c.d. Mawingo: n.d.	84	52	12	51	0	37	72	57	56
019	Nyeri	727,522	Nyeri, Mathira, Tetu, Othaya Mukurweni	76	72	90	23	46	123	Nyeri: 138 Mathira: 122 Tetu: 111 Othaya Mukurweni: 102	97	40	5	92	12	40	51	59	121
020	Kirinyaga	577,397	Rukanga, Kirinyaga	78	34	92	19	42	93	Rukanga: 119 Kirinyaga: 90	89	64	10	95	0	23	63	51	69
021	Muranga	1,096,950	Murang'a, Kahuti, Murang'a South, Gatamathi, Gatanga	78	48	77	21	49	101	Murang'a: 111 Kahuti: 104 Murang'a South: 100 Gatamathi: 82 Gatanga: n.c.d.	95	62	8	88	6	29	66	59	62
022	Kiambu	1,889,131	Karimenu, Kiamumbi, Limuru, Ruiru-Juja, Gatundu, Thika, Karuri, Kiambu, Githunguri, Kikuyu	87	74	81	20	33	106	Karimenu: 157 Kiamumbi: 134 Limuru: 115 Ruiru-Juja: 114 Gatundu: 113 Thika: 98 Karuri: 98 Kiambu: 94 Githunguri: 84 Kikuyu: 78	93	36	6	92	16	42	63	59	117
023	Turkana	1,001,913	Lodwar	7	49	50	19	30	108	Lodwar: 108	87	40	9	77	0	32	50	53	57
024	West Pokot	615,753	Kapenguria	13	20	52	19	25	51	Kapenguria: 51	97	27	23	48	0	64	87	43	72
025	Samburu	253,688	Maralal	16	25	96	8	37	30	Maralal: 30	91	38	23	80	0	110	158	42	63
026	Trans Nzoia	1,048,000	Nzoia	23	82	95	22	38	97	Nzoia: 97	91	43	6	78	31	61	75	67	99
027	Uasin Gishu	1,089,651	Eldoret	37	72	95	15	48	105	Eldoret: 105	108	45	3	100	30	42	62	59	118
028	Elgeyo Marakwet	436,675	Iten Tambach	12	21	84	12	24	84	Iten Tambach: 84	100	38	15	9	0	42	66	53	49
029	Nandi	893,855	Tachasis, Kapsabet Nandi	9	51	71	22	28	82	Tachasis: 99 Kapsabet Nandi: 77	96	36	12	83	0	29	46	33	60
030	Baringo	648,061	Eldama Ravine	6	45	94	10	9	14	Eldama Ravine: 14	101	70	18	35	0	107	359	47	66
031	Laikipia	502,242	Nyahururu, Nanyuki	33	88	96	22	45	107	Nyahururu: 110 Nanyuki: 104	94	40	6	94	39	60	89	89	128
032	Nakuru	1,959,498	Nakuru, Naivasha, Nakuru Rural	55	79	92	15	31	107	Nakuru: 111 Naivasha: 99 Nakuru Rural: 84	95	42	7	84	23	56	93	97	118
033	Narok	1,033,929	Narok	7	33	68	16	29	60	Narok: 60	93	43	20	91	0	95	162	92	60
034	Kajiado	895,573	Namanga, Oloolaiser, Nol Turesh Loitokitok, Olkejuado	65	35	74	11	36	89	Namanga: 99 Oloolaiser: 93 Nol Turesh Loitokitok: 82 Olkejuado: 61	86	50	17	93	0	49	97	83	59
035	Kericho	867,454	Kericho, Tililbei	41	58	88	23	54	90	Kericho: 98 Tililbei: 55	94	46	9	85	15	53	95	73	79
036	Bomet	856,687	Bomet	14	75	95	0	37	86	Bomet: 86	38	48	8	37	0	35	42	36	49
037	Kakamega	1,883,403	Kakamega Busia	16	73	95	20	43	109	Kakamega Busia: 109	91	53	6	88	15	55	101	101	106
038	Vihiga	673,906	Amatsi	35	16	93	12	34	90	Amatsi: 90	67	41	19	62	0	66	30	26	39
039	Bungoma	1,770,225	Nzoia	10	82	95	22	38	97	Nzoia: 97	91	43	6	78	31	61	75	67	99
040	Busia	883,148	Kakamega Busia	12	73	95	20	43	109	Kakamega Busia: 109	91	53	6	88	15	55	101	101	106
041	Siaya	986,575	Sibo	43	34	93	19	18	50	Sibo: 50	100	53	13	80	0	53	111	48	70
042	Kisumu	1,134,865	Kisumu	37	68	95	24	30	104	Kisumu: 104	94	49	7	100	18	51	97	98	119
043	Homabay	1,130,855	South Nyanza	14	n.d.	n.d.	n.d.	n.d.	n.d.	South Nyanza: n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
044	Migori	1,098,343	Nyasare, Mikuta	24	18	95	10	27	68	Nyasare: 137 Mikuta: 46	80	64	25	78	0	63	209	79	58
045	Kisii	1,355,969	Gusii	40	37	74	14	29	68	Gusii: 68	79	38	8	75	13	64	98	63	21
046	Nyamira	689,738	Gusii	26	37	74	14	29	68	Gusii: 68	79	38	8	75	13	64	98	63	21
047	Nairobi	3,994,003	Runda, Nairobi	98	81	93	18	52	104	Runda: 120 Nairobi: 104	100	38	6	96	48	36	55	53	114

n.d. = no data n.c.d. = non-credible data

The performance analysis of counties is based on the proportion of the county population falling within the service areas of those regulated utilities only. This proportion varies from a low of 6% in Baringo and Mandera to a high of 100% in Mombasa and Nairobi. The foregoing situation is not only dependent on the urbanization extent in the counties but also the ease with which commercialisation of water services was embraced in different areas.

The distribution of the number of utilities in the counties is given in Table 5.2.

**Table 5.2: Distribution of Number of Water Utilities by Counties**

No. of Utilities	No. of Counties
1	28*
2	8
3	3
4	3
5	2
6	2
10	1
<b>94**</b>	<b>19</b>

\* There are three pairs of counties that share a utility each i.e. Trans Nzoia & Bungoma, Kisii & Nyamira and Kakamega & Busia.

\*\* Includes four utilities that did not submit data or submitted but the data was not credible for analysis.

As can be seen from the table, 28 counties have only one utility. Three of these utilities are cross county i.e. Nzoia (Bungoma and Trans Nzoia), Gusii (Kisii and Nyamira) and Kakamega Busia (Kakamega and Busia). The remaining counties have multiple utilities with Kiambu having the most regulated utilities at 10.

All counties have at least one regulated utility, notwithstanding the level of compliance. However, Tana River, Mandera and Homa Bay did not submit data. Wajir submitted non credible data that could not be relied upon for aggregation.

### 5.3.2 Ranking of the Counties

The Benchmarking of counties is hoped to be a wakeup call for learning and co-operation to influence the development of water services in the country. It is one way of advancing the process of realising the right to water.

**Table 5.3: Methodology for Weighted Scores for the Counties**

Indicator	Indicator Elements	Computation
County Indicator Performance	County utilities achievement on every key performance indicator considered	Sum (Utility indicator performance X utility total active connections) / Sum of utilities total active connections
County Indicator Weighted Score	County utilities score on every key performance indicator considered	Sum (Utility indicator score X utility total active connections) / Sum of utilities total active connections
County Weighted Aggregate Score	County utilities weighted score for the aggregated key performance indicators considered	Sum (Utility score x utility total active connections) / Sum of utilities total active connections

Table 5.4 presents the ranking of counties based on the weighted aggregate scores computed using the methodology for weighted scores for the counties outlined in table 5.3.

Laikipia County led the pack followed by Kiambu and Nyeri with 128, 123 and 121 marks respectively. The bottom five among those who submitted data included Marsabit, Mombasa, Nyamira & Kisii and Vihiga with 4, 14, 21, 21 and 39 marks at positions 43, 42, 40, 40 and 39 respectively. Kisii and Nyamira tied because they are served by the same utility, Gusii. Four counties were not ranked for the reasons of lack of data submission. Only thirteen counties had a score above 101 (>50%) marks out of the 200 expected.

County governments are highly encouraged to ensure their utilities comply with minimum regulatory requirements like data submission. Utilities are expected to collect primary data, process it and produce reports on the basis of which decisions can be made. Failure to submit data on the part of any utility is a major breach of the provisions of the SPA. This would reflect failures on the part of management and to an extent the BoDs that supervise them.

Table 5.4 outlines the ranking of counties based on the methodology outlined in Table 5.2.

**Table 5.4: Ranking of Counties**

Code	County	Weighted Score	Rank
031	Laikipia	128	1
019	Nyeri	121	2
042	Kisumu	119	3
027	Uasin Gishu	118	4
032	Nakuru	118	5
022	Kiambu	117	6
013	Tharaka-Nithi	115	7
047	Nairobi	114	8
011	Isiolo	110	9
037	Kakamega	106	10
040	Busia	106	10
014	Embu	101	12
026	Trans Nzoia	99	13
039	Bungoma	99	13
012	Meru	91	15
003	Kilifi	86	16
015	Kitui	83	17
005	Lamu	80	18
035	Kericho	79	19
024	West Pokot	72	20
041	Siaya	70	21
020	Kirinyaga	69	22
030	Baringo	66	23
025	Samburu	63	24
021	Murang'a	62	25
029	Nandi	60	26
033	Narok	60	27
034	Kajiado	59	28
044	Migori	58	29
016	Machakos	58	30
023	Turkana	57	31
006	Taita-Taveta	56	32
018	Nyandarua	56	33
017	Makueni	50	34
036	Bomet	49	35
028	Elgeiyo Marakwet	49	36
007	Garissa	46	37
038	Vihiga	39	38
002	Kwale	26	39
045	Kisii	21	40
046	Nyamira	21	41
001	Mombasa	14	42
010	Marsabit	4	43
043	Homabay	n.d.	44
009	Mandera	n.d.	44
004	Tana River	n.d.	44
008	Wajir	n.c.d.	44

n.d. = no data    n.c.d. = non-credible data



### 5.3.3 Performance of Counties by Indicator

#### (a) Water Coverage

Water coverage varies from a low of 16% in Vihiga to a high of 86% in Laikipia. Nineteen counties have water coverage at less than 50% while twenty four have their coverage levels at more than the 50%.

#### (b) Drinking Water Quality (DWQ)

Only 17 counties are within the acceptable level of 90% DWQ. Lamu, Isiolo, Samburu and Laikipia led in this indicator at 96% while Nyandarua and Turkana scored below 50%. In Nyandarua County, lack of water treatment facilities in the small utilities is the main factor for the poor performance in this indicator. Counties should ensure that all commercialised utilities have treatment systems if the supply of potable water is to be guaranteed.

#### (c) Hours of Supply

This ranged from a high of 24 hours in Kisumu and Tharaka Nithi counties to a low of 5 hours in Mombasa. Thirty two counties had more than 12 Hours of Supply, which is commendable considering the national average is 18 hours. The reliability of supply is a key dimension in the quality of service and directly impacts on the consumers' willingness to pay.

#### (d) Personnel Expenditure as Percentage of O+M costs

The best performer in this indicator was Baringo at 9% followed by Siaya at 18% with the worst performance being recorded by Tharaka Nithi and Kericho at 54%. A situation where

more than 50% of the costs go to personnel is clearly unacceptable as this deprives other areas of resources and negates the push for the progressive realisation of the right to water.

### (e) O+M Costs Coverage

Only 14 counties have O+M costs above 100%, with two counties namely Baringo and Samburu reporting O+M Cost Coverage of 14% and 30% respectively. O+M Cost Coverage is crucial in ensuring the operational sustainability of a utility. Utilities should, as a minimum, be able to meet O+M expenses and only be subsidized for investments. It is worth noting that in Samburu and Baringo, the average tariff is only 27% and 13% respectively of the unit cost of water billed. On the other hand, for Baringo, the unit cost of water billed is 3.5 times the unit cost of water produced, a situation that can be attributed to mismanagement.

### (f) Revenue Collection Efficiency

Eight counties have their collection ratios at more than 100%. Uasin Gishu leads at 108% followed by Kitui at 107%. Only seven counties have collection efficiencies below the acceptable benchmark of 85%. The worst performers are Bomet and Marsabit at 38% and 44% respectively. Where consumers are assured of good quality of service, there is a very high likelihood that they will pay for services and hence the direct correlation of this indicator with the reliability of service. Counties can support their utilities by ensuring that government institutions make timely payments for services rendered.



### (g) Non-Revenue Water (NRW)

NRW ranged from 27% in West Pokot to a high of 70% in Baringo. In 12 counties (28%), NRW was equal to or more than 50% of the water produced, which is counter-productive to the principles of commercialisation. None of the counties achieved the acceptable benchmark of less than 25%.

Effective NRW management is the bedrock of operational sustainability of a utility and it is not surprising that Baringo, with the highest NRW levels, has the highest unit cost of water billed. The difference between the unit cost of water billed and the unit cost of water produced, factoring in the acceptable level of losses, represents mismanagement, forcing customers to pay for inefficiencies.

#### (h) Staff Productivity (Staff per 1000 connections)

Two counties, namely Uasin Gishu and Nyeri, recorded staff productivity within acceptable levels of the sector benchmark of five. The worst performance in this indicator was recorded by Marsabit, with 35 staff per 1000 connections, way outside acceptable limits of 14 for the smallest utility. Nineteen counties (44%) had more than 11 staff per 1000 connections, which is not encouraging. Counties must therefore ensure that utilities operate with an optimal number of staff for commensurate workload as per the established threshold.

#### (i) Metering

Isiolo, Kiambu, Tharaka Nithi and Uasin Gishu counties have their metering levels at 100%. The worst performing counties are Marsabit (0%) and Elgeyo Marakwet (9%). In total, 30 counties (69%) have metering levels below the acceptable level of 95%. The right to



water includes the right to fairness, which is only possible where consumers only pay for what they fairly use. This is only possible if metering is implemented effectively as a prudent tool of water management.

#### (j) Unit Cost of Production, Unit Cost of Water Billed and Average Tariff

The average sector unit production cost is Ksh 42/m<sup>3</sup>. It is lowest in Kirinyaga and Tharaka Nithi counties at Ksh 23/m<sup>3</sup> followed by Nandi and Murang'a at Ksh 29/m<sup>3</sup>. Samburu, Baringo, Machakos and Narok have their unit costs of production at Ksh 110, 107, 96 and 95/m<sup>3</sup> respectively.

Baringo and Migori counties have the highest unit cost of water billed at Ksh 359 and 209/m<sup>3</sup> while the lowest is Vihiga at Ksh 30/m<sup>3</sup>. A unit cost of water billed that is more than 1.25 times the unit cost of water produced reflects mismanagement. Migori and Baringo have their unit cost of water billed at 3.3 times the unit cost of water produced.

The average tariff in the country is Ksh 63/m<sup>3</sup>. The following counties have the lowest tariffs as follows: Vihiga (26/m<sup>3</sup>), Tharaka Nithi (31/m<sup>3</sup>), Nandi (33/m<sup>3</sup>), Bomet (36/m<sup>3</sup>) and Samburu (42/m<sup>3</sup>). Machakos has the highest tariff at Ksh 168/m<sup>3</sup>.



## ***CHAPTER SIX:*** **CONCLUSION**



## 6 CONCLUSION

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### Collaboration Required Between National and County Governments

The task of ensuring access to water services is huge. The challenge of access to sanitation is even more difficult. A paradigm shift is therefore required to ensure adequate effort towards this challenge. It should not be "water for all" any more but "all for water".

In harnessing this effort, it is good to look back and ensure that past gains are built on. Gains already in place include formalization, professionalization and socially acceptable commercialisation of water services.

Formalization means that services are provided by licensed utilities. This is important for accountability and sustainability.

Professionalization and commercialisation imply that at the local level there is a clear separation between politics and service provision. This implies that utilities have to operate on business principles.

Under devolved systems, county governments are responsible for ensuring that water services are delivered in an efficient and effective manner. The Bill of Rights gives all citizens the right to safe water and basic sanitation and thereby obliges the state and county governments, as duty bearers, to take necessary measures for the progressive realisation of the right and show these to the public.

Close collaboration between the two levels of government guided by national policy and legislation will be key to improving service delivery. This collaboration will be necessary in a number of areas specified below.



### ***Investments***

In a context of rapid population growth and urbanization, there will be a requirement for more significant investments to be undertaken. This in turn requires utilities which are commercially viable and which operate according to good corporate governance principles. This means they have to be accountable to the national Regulator and to the public. By their sheer efficiency, such utilities are able to attract finances for investments not only from the public but also the private sector.

Cross-county assets of national interest (such as for bulk water supply) shall be managed and held at a supra-county level in order to ensure that general public interest is preserved.

### ***Water Resources Management***

More effort will be required in water resources management and development. The planning and financing will have to be done at regional and national levels through a basin management approach, following natural boundaries, so as to ensure a need-based allocation of water. For that reason, and in the same vein as cross-county assets, bulk water services will need to be operated at a supra-county level.

### ***Governance***

It is necessary to have professionals with integrity both at Board and management levels in our institutions. County Assemblies must be able to interrogate the annual performance of utilities as devolution matures. This will ensure that well governed utilities are put in place.

### ***Ring-fencing of Revenues***

Considering that there is a huge investment gap, the guaranteed source for service improvement is the tariff. Revenues from water sale should be ring-fenced and used exclusively for reinvestment. This is essential for the sustainability of the sector.

### ***Service Improvement***

Efforts to improve water services within utilities should be focused on two aspects: efficiency and sustainability. For water services to be delivered in an efficient and effective manner and in order to gradually extend access to all, it is imperative that utilities become commercially viable. Economies of scale can only be enjoyed where utilities reach a certain size. Utilities which are too small to be viable therefore need to be aggregated into larger units.

### ***Serving the Poor***

The development of the Kenyan water and sanitation sector depends to a large extent on the utilities orientation towards demand, seen in terms of service improvement to the poor. Utilities are required to demonstrate stronger orientation towards the underserved and LIAs if universal access is to be guaranteed.



## ANNEXES

### ANNEX 1: METHODOLOGY FOR QUALITY OF SERVICE KPIS

KPI Cluster	Indicator	Indicator elements	Computation
QUALITY OF SERVICE	Water Coverage	Population served through individual connections - A	Total no. of active connections x Average household size The average household size is derived from the census data and is unique for each area The allowed per capita consumption is 20l/c/day and 10l/c/day for domestic and communal water points respectively
		Population served through yard taps - B	Total no. of active yard taps x Average no. of households served by a yard tap x Average household size Allowed range of average number of households per yard tap is 4 -10
		Population served through small MDUs - C	Total no. of active small MDUs x Average no. of households per small MDU x Average household size Allowed range of average number of households per small MDU is 4-10
		Population served through medium MDUs -D	Total no. of active medium MDUs x Average no. of households per medium MDU x Average household size Allowed range of average number of households per medium MDU is 11-20
		Population served through large MDUs - E	Total no. of active large MDUs x Average no. of households per large MDU x Average household size Allowed average number of households per large MDU is >21
		Population served through Kiosks - F	Total no. taps (depends on kiosk type) x Average no. of people served per tap Allowed range for kiosks is 100-400 people Sublocation population is derived from Census data and growth rates applied appropriately
		Number of people served with water services	A+B+C+D+E+F
		Population in Service area	Sum population of all sublocations within the utility service area
		Water Coverage	Number of people served with water services/ Population in Service area
	Drinking Water Quality	Compliance with planned no. of residual chlorine tests	Total no. of residual chlorine tests conducted of all the schemes within the utility service area / Total no. of residual chlorine tests planned of all the schemes within the utility service area x 100
		Compliance with residual Chlorine standards	Total no. of residual Chlorine tests within norm for all the schemes within the utility service area / Total no. of residual Chlorine tests conducted for all the schemes within the utility x 100
		Drinking Water quality, Residual Chlorine	0.6 * Compliance with planned no. of residual chlorine tests + 0.4 x Compliance with residual Chlorine standards
		Compliance with planned no. of bacteriological tests	Total no. of bacteriological tests conducted of all the schemes within the utility service area / total no. of bacteriological tests planned of all the schemes within the utility x 100
		Compliance with bacteriological standards	Total no. of bacteriological tests within norm for all the schemes within the utility service area / total no. of bacteriological tests conducted for all the schemes within the utility x 100
		Bacteriological quality	0.6 x Compliance with planned no. of bacteriological tests + 0.4 x Compliance with bacteriological standards
		Drinking Water Quality	0.4 x Drinking Water quality, Residual Chlorine + 0.6 x Bacteriological quality
	Hours of Supply	This is the average no. of hours water services are provided per day of all the zones within a scheme	Weighted average of all registered zones, factoring no. of active connections (hrs x number of active connections, zone 1) + (hrs x number of active connection, zone 2) + (hrs x number of active connection, zone n)

## ANNEX 2: METHODOLOGY FOR ECONOMIC EFFICIENCY KPIS

KPI Cluster	Indicator	Indicator elements	Computation
ECONOMIC EFFICIENCY	Personnel Expenditure as a Percentage of O&M Costs	Total personnel expenditures	Sum of personnel expenditures incurred during the reporting period  They include basic salaries, allowances, wages, gratuity, statutory and pension contributions by employer, subscriptions and training levy, leave, Incentives (Bonus) & Any other personnel expenditure.
		Personnel Expenditure as a Percentage of O&M Costs	$(\text{Total personnel expenditures} / \text{Total O+M}) \times 100$
	Operation and Maintenance Cost Coverage	Total operating revenues <b>A</b>	Sum of billing for water, sewerage and other services  Billing for other services include charges on connection and reconnection, illegal connections, meter rent, meter testing, replacement of stolen meters and exhaustor services.
		Total operating expenditures <b>B</b>	Sum of expenses on personnel, BoD, General admin, direct operations, maintenance and levies and fees.  1. Direct operational expenditures include electricity, chemicals and fuel for vehicles.  2. Levies and fees include water abstraction fees, WSB fees, effluent discharge fees and regulatory levy.
		Operation and Maintenance Cost Coverage	$(A/B) \times 100$
	Revenue Collection Efficiency	Total water and sewerage billing amount - <b>A</b>	Total amount of all bills on water and sewerage services during the reporting period of all the schemes within the utility service area
		Total billing for other services - <b>B</b>	Total of all billing for other services of all the schemes within the utility service area
		Total billing	$A + B$
		Total collection	Sum of all revenue collected of all the schemes within the utility service area
		Collection Efficiency	$(\text{Total Collection} / \text{Total Billing}) \times 100$

### ANNEX 3: METHODOLOGY FOR OPERATIONAL SUSTAINABILITY KPIS

KPI Cluster	Indicator	Indicator elements	Computation
OPERATIONAL SUSTAINABILITY	Non-Revenue Water	Commercial Losses (Apparent Losses) <b>A</b>	Unauthorized consumption (e.g. illegal connections) + Customer meter reading inaccuracies, Estimates and Data Handling errors
		Physical Losses <b>B</b>	Leakages on transmission and /or distribution pipes + Leakages and overflows at utility storage tanks + Leakage on service connections up to the point of customer use
		Non-Revenue Water	$(A+B / \text{Volume of water produced}) \times 100$
	Metering Ratio	Total number of active water connections	Sum of all active individual, MDU, yard taps, institutional, schools, commercial, industrial, bulk and other water connections of all the schemes within a utility service area
		Total number of active metered water connections	Sum of all active individual, MDU, yard taps, institutional, commercial, industrial, schools, bulk and other water connections of all the schemes within a utility service area that are metered
		Metering Ratio	$(\text{Total number of active metered connections} / \text{Total number active of connections}) \times 100$
	Staff Productivity	The total number of staff divided by the total	Total number of staff in the utility / (total number of active water connections + total number of sewer connections)

## ANNEX 4: COMPONENTS OF DRINKING WATER QUALITY

UTILITY	DWQ - Residual Chlorine (%)	DWQ - Bacteriological Quality (%)	DWQ (%)
Nairobi	93	93	93
Eldoret	94	96	95
Mombasa	61	73	68
Nakuru	93	96	95
Thika	96	95	95
Kisumu	94	96	95
Nyeri	96	96	96
Kakamega Busia	95	96	95
Nzoia	95	95	95
Kirinyaga	96	96	96
Kilifi Mariakani	74	51	61
Othaya Mukurweni	94	96	95
Embu	84	96	91
Mathira	75	95	87
Malindi	93	71	79
Murang'a South	86	64	73
Gatundu	94	50	68
Nakuru Rural	85	83	84
Kericho	96	96	96
Gusii	45	94	74
Nanyuki	96	95	96
Kahuti	93	40	61
Nyahururu	96	96	96
Ruiru-Juja	95	95	95
Kwale	83	78	80
Tetu	74	63	67
Tavevo	73	48	58
Imetha	94	43	63
Murang'a	96	91	93
Bomet	94	96	95
Meru	96	95	95
Ngandori Nginda	96	96	96
Sibo	90	95	93
Mavoko	90	95	93
Kitui	95	95	95
Garissa	89	89	89
Oololaiser	96	96	96
Kikuyu	40	73	60
Gatamathi	78	80	79
Nithi	95	96	96
Ngagaka	94	53	70
Machakos	91	59	72
Isiolo	96	96	96

UTILITY	DWQ - Residual Chlorine (%)	DWQ - Bacteriological Quality (%)	DWQ (%)
Tililbei	64	46	53
Karimenu	74	40	53
Kyeni	96	-	38
Tuuru	-	83	50
Limuru	89	95	93
Githunguri	67	62	64
Amatsi	96	91	93
Lodwar	48	51	50
Kiambu	94	96	95
Nol Turesh Loitokitok	96	35	59
Kibwezi Makindu	96	56	72
Karuri	-	39	24
Embe	95	96	96
Nyandarua	84	-	34
Murugi Mugumango	-	37	22
Eldama Ravine	94	93	94
Lamu	96	96	96
Mikutra	96	96	96
Kiambere Mwingi	78	61	68
Kapsabet Nandi	96	56	72
Naivasha	57	95	80
Olkejuado	33	50	43
Kapenguria	95	24	52
Muthambi 4K	37	43	40
Yatta	46	96	76
Iten Tambach	80	87	84
Narok	96	50	68
Olkalou	-	48	29
Ndaragwa	-	-	-
Rukanga	95	35	59
Kikanamku	-	-	-
Namanga	62	-	25
Maralal	96	96	96
Mbooni	34	54	46
Engineer	-	-	-
Wote	91	88	89
Runda	95	95	95
Moyale	59	58	59
Nyakanja	-	61	37
Kiamumbi	96	50	68
Nyasare	92	96	94
Matungulu Kangundo	72	85	80
Tachasis	95	52	69

## ANNEX 5: GOVERNANCE ASSESSMENT

RANK	UTILITY	GOVERNANCE PARAMETERS						Totals	% Level of Governance	Impact Score
		Utility Oversight/ Supervision	Information and Control Systems	Financial Management	Service Standards	Human Resources	User Consultation			
		40	12	24	12	16	12	116	100%	100%
1	Kisumu	40	12	13	12	12	12	101	87	52
2	Nyeri	29	4	15	12	12	12	84	72	90
3	Kericho	32	8	7	8	12	12	79	68	46
4	Mavoko	34	4	9	5	14	12	78	67	37
5	Murang'a	29	4	13	10	12	8	76	66	50
6	Murang'a South	35	8	13	5	12	0	73	63	23
7	Tetu	33	8	9	5	16	2	73	63	37
8	Nakuru	28	4	9	11	12	8	72	62	70
9	Embu	25	8	7	11	10	10	71	61	49
10	Bomet	26	8	13	6	12	4	69	59	25
11	Eldoret	30	4	15	5	8	4	66	57	59
12	Kirinyaga	25	12	9	6	6	8	66	57	34
13	Nyahururu	33	12	7	4	6	2	64	55	58
14	Meru	25	8	9	6	8	4	60	52	62
15	Nanyuki	25	4	7	6	12	4	58	50	68
16	Malindi	23	8	5	6	7	6	55	47	57
17	Thika	21	8	7	6	10	2	54	47	66
18	Othaya - Mukurweini	21	4	9	5	15	0	54	47	40
19	Kahuti	28	8	7	1	8	0	52	45	25
20	Mathira	28	8	8	11	6	12	73	42	29
21	Gatundu	20	8	11	1	8	0	48	41	54
22	Sibo	21	4	9	5	9	0	48	41	35
23	Mombasa	1	4	8	11	11	12	47	41	7
24	Nairobi	4	4	8	8	10	12	46	40	57
25	Ruiru-Juja	24	0	5	5	9	2	45	39	81
26	Kwale	22	4	9	5	1	2	43	37	13
27	Nzoia	12	4	5	10	8	4	43	37	49
28	Nakuru Rural	17	8	2	5	9	0	41	35	11
29	Kilifi	9	4	9	5	13	0	40	34	24
30	Gusii	9	8	4	1	13	0	35	30	10
31	Kakamega - Busia	0	0	10	7	7	8	32	28	53
32	Garissa	1	4	3	1	5	4	18	19	23



## ANNEX 6a: CREDITWORTHINESS ANALYSIS

UTILITY	INDICATOR CATEGORY																						
	TECHNICAL & OPERATIONAL INDICATORS					FINANCIAL INDICATORS																	
	Poverty Rate	Sewerage Coverage	Water Coverage	NRW	No. of staff per 1000 Connections	Revenue Diversification	Average Tariff Differential	Maintenance costs as % of opex	Electricity as % of opex	Employee Costs /Total OPEX	Percentage O&M coverage	Grant dependency for opex	EBITDA/Revenue	Liquidity reserves as % of annual operating expenses	Liquidity ratio	EBITDA/DEBT SERVICE PAYMENTS	Debt/EBITDA	Debt:Equity Ratio	Debtor Days	Reduction in Debtor Days	Bad debt provision	Billing Ratio	Collection Efficiency
WEIGHTS																							
	3	1	1	5	3	6	8	3	2	2	4	3	5	5	4	5	10	5	5	5	5	5	5
Eldoret	2.25	-	0.25	1.25	3	1.5	6	1.5	2	1	1	2.25	-	5	-	NS	NS	5	-	-	5	1.25	5
Embu	2.25	-	-	1.25	3	1.5	8	3	2	-	3	3	3.75	5	1	5	7.5	5	-	-	5	1.25	2.5
Garissa	1.5	-	-	-	-	3	8	2.25	1.5	1.5	-	1.5	-	2.5	-	NS	NS	5	-	-	5	-	-
Gatundu	2.25	-	0.5	2.5	3	-	4	3	2	-	-	2.25	-	5	1	NS	NS	5	-	5	5	2.5	5
Gusii	1.5	-	-	2.5	1.5	3	2	0.75	1.5	0.5	-	0.75	-	5	-	NS	NS	5	-	-	5	2.5	-
Isiolo	0.75	-	-	2.5	1.5	4.5	4	3	2	0.5	-	3	-	5	2	NS	NS	5	5	5	-	2.5	5
Kakamega Busia	1.5	-	0.25	-	3	3	8	2.25	1.5	-	3	3	5	5	-	NS	NS	5	-	-	-	-	3.75
Kericho	2.25	-	-	1.25	1.5	1.5	6	0.75	2	-	-	3	-	-	-	-	10	5	-	-	5	1.25	5
Kiambu	2.25	-	-	2.5	0.75	1.5	4	0.75	1.5	1	-	1.5	-	3.75	-	NS	NS	5	2.5	5	5	2.5	1.25
Kibwezi Makindu	0.75	-	-	3.75	-	1.5	4	3	1.5	-	-	2.25	-	5	-	NS	NS	5	1.25	-	5	3.75	5
Kikuyu	2.25	-	-	1.25	2.25	4.5	4	2.25	1.5	1	-	2.25	-	5	-	NS	NS	5	1.25	-	5	1.25	5
Kilifi Mariakani	1.5	-	-	1.25	-	6	6	-	2	0.5	-	3	-	2.5	-	-	10	-	-	2.5	5	1.25	5
Kirinyaga	2.25	-	-	-	2.25	1.5	8	1.5	2	-	1	2.25	-	5	-	5	10	5	-	-	5	-	3.75
Kisumu	2.25	-	-	1.25	1.5	4.5	8	3	1.5	0.5	1	2.25	-	1.25	-	5	10	-	-	5	-	1.25	3.75
Kitui	0.75	-	-	-	1.5	1.5	6	0.75	1.5	1.5	-	-	-	5	-	NS	NS	5	-	-	5	-	5
Kwale	0.75	-	-	1.25	-	6	4	-	1.5	1	-	1.5	-	5	-	NS	NS	5	-	-	5	1.25	1.25
Limuru	2.25	-	-	2.5	1.5	1.5	4	2.25	1.5	0.5	-	3	-	5	-	NS	NS	5	3.75	5	5	2.5	3.75
Lodwar	0	-	-	1.25	-	3	6	2.25	1.5	1	-	2.25	-	5	-	-	10	5	2.5	-	-	1.25	2.5
Machakos	1.5	-	-	1.25	1.5	-	8	1.5	1.5	-	2	2.25	1.25	5	-	NS	NS	5	-	-	-	1.25	-
Malindi	1.5	-	0.25	3.75	2.25	4.5	4	0.75	2	0.5	-	2.25	-	5	-	NS	NS	5	-	-	5	3.75	5
Mathira	2.25	-	-	-	3	-	8	3	2	-	1	2.25	-	5	-	NS	5	5	-	-	-	-	2.5
Mavoko	1.5	-	-	1.25	0.75	6	6	3	2	1	1	3	-	5	-	NS	NS	5	-	-	5	1.25	3.75
Meru	2.25	-	-	5	0.75	4.5	4	3	2	-	-	3	-	5	1	NS	NS	5	1.25	5	5	5	5
Mombasa	2.25	-	-	-	3	4.5	6	2.25	2	0.5	-	2.25	-	-	-	NS	NS	5	1.25	5	5	-	2.5
Murang'a	2.25	-	0.25	2.5	0.75	6	6	2.25	2	-	2	1.5	1.25	5	-	NS	NS	5	2.5	5	5	2.5	5
Murang'a South	2.25	-	-	-	2.25	-	8	2.25	2	-	1	2.25	-	5	-	-	2.5	-	-	5	5	-	2.5
Nairobi	2.25	-	0.5	2.5	2.25	4.5	6	1.5	2	-	1	3	-	2.5	-	5	10	5	2.5	5	5	2.5	5
Naivasha	2.25	-	-	-	-	4.5	6	3	1.5	1	-	0.75	-	5	-	NS	NS	5	-	-	-	-	2.5
Nakuru	2.25	-	-	-	1.5	3	8	1.5	2	-	-	3	-	5	-	NS	NS	5	5	5	5	-	3.75
Nakuru Rural	2.25	-	0.75	2.5	3	6	6	-	1.5	-	2	3	-	5	-	5	NS	5	-	2.5	5	2.5	5
Nanyuki	1.5	-	0.75	2.5	3	3	6	3	2	-	1	3	-	-	-	NS	NS	5	-	-	5	2.5	3.75
Narok	1.5	-	-	1.25	-	6	4	3	1.5	0.5	-	1.5	-	-	-	-	NS	5	-	-	5	1.25	3.75
Nyahururu	1.5	-	0.5	1.25	0.75	4.5	6	3	1.5	-	1	3	-	5	-	NS	NS	5	3.75	5	5	1.25	3.75
Nyeri	2.25	-	0.75	5	3	4.5	6	3	2	1	3	3	5	5	-	3.75	-	-	1.25	-	5	5	5
Nzoia	1.5	-	0.5	1.25	2.25	3	6	2.25	1.5	-	1	3	-	5	-	5	NS	5	-	-	5	1.25	3.75
Oloolaiser	2.25	-	-	2.5	-	-	4	0.75	1.5	1	-	2.25	-	5	-	NS	NS	5	3.75	-	5	2.5	5
Othaya Mukurweni	2.25	-	0.25	-	3	1.5	8	2.25	2	1	-	2.25	-	5	-	NS	NS	5	5	5	5	-	-
Ruiru-Juja	2.25	-	0.25	3.75	3	-	6	3	1.5	1	2	3	1.25	5	2	NS	NS	5	5	1.25	5	3.75	5
Sibo	2.25	-	-	-	0.75	1.5	2	3	1.5	2	-	-	-	2.5	-	NS	NS	5	-	-	5	-	5
Tavevo	1.5	-	-	1.25	1.5	3	4	2.25	1.5	2	-	3	-	5	-	NS	NS	5	-	2.5	-	1.25	-
Thika	2.25	-	0.75	2.5	3	4.5	4	3	1.5	0.5	-	3	-	5	-	NS	NS	5	-	2.5	5	2.5	5

NS = No Score

## ANNEX 6b: CREDITWORTHINESS ASSESSMENT GUIDE

Indicators	Definition	Weight	4	3	2	1	0
<b>ECONOMIC INDICATORS</b>							
Poverty Rate	County poverty rates are derived simply by dividing the total number of poor people in each county in by the total population in each county	3	0-20	20-40	40-60	60-80	80-100
<b>OPERATIONAL INDICATORS</b>							
Sewerage Coverage	Number of people served with Sewerage Services/ Population of area	1	100	90-100	80-90	70-80	<70
Water coverage	Number of people served with Water Supply Services/ Population of area	1	100	90-100	80-90	70-80	<70
NRW	Total Volume of Water Lost from Commercial and Physical Losses as a proportion of Water Produced	5	<20%	20-30%	30-40%	40-50%	>50%
No of staff per 1000 connections	Number of Staff Members/( Total number of Connections/1000)	3	<5	6	7	8	>8
<b>FINANCIAL INDICATORS</b>							
<b>i) Revenue Indicators</b>							
Total revenue (Excl Grants)	Total revenue from water & sewerage sales & other income	0	N/A	N/A	N/A	N/A	N/A
Revenue Diversification	The difference between the % residential revenue and % institutional	6	<10%	10-30%	30-50%	50-70%	>70%
Average tariif differential	The difference between Average tariff per cubic metre and Production cost per cubic metre.	8	>50%	35-50%	20-35%	5-20%	<5%
<b>ii) Cost Indicators</b>							
Total opex	Total Operational & Maintenance Expenditure	0	N/A	N/A	N/A	N/A	N/A
Maintenance costs as % of opex	Total Maintenance Costs divided by total operations and maintenance expenditure	3	>8%	6-8%	6-4%	0-4%	>0%
Electricity as % of opex	Total Electricity Costs divided by total operations and maintenance expenditure	2	<10%	10-15%	15-20%	20-25%	>25%
Employee Costs /Total Opex	The Salary Costs as a % of Total OPEX	2	<25%	25-30%	30-35%	35-40%	>40%
Percentage O&M coverage	Total revenue from water and sewerage sales divided by total operations and maintenance expenditure	4	>130%	120-130%	110-120%	100-110%	<100%
Grant dependency for opex	The proportion of OPEX financed by income from Grants	3	0%	0-10%	10-15%	15-20%	20-25%
<b>iii) Profitability Indicators</b>							
EBITDA/Revenue	Earnings Before Interest Tax, Depreciation & Amortization	5	>25%	20-25%	15-20%	10-15%	<10%
Annual Operational surplus /deficit	Total Revenue Less Total O&M Costs incurred	0	N/A	N/A	N/A	N/A	N/A
Profit / loss for year		0	N/A	N/A	N/A	N/A	N/A
<b>iv) Liquidity &amp; Solvency Indicators</b>							
Liquidity reserves as % of annual operating expenses	Cash & Near Cash Reserves/ Annual Operating Expenses *12	5	>25%	20-25%	15-20%	10-15%	<10%
Liquidity ratio	Cash & Near Cash Reserves/ Current Liabilities	4	>1.6	1.5-1.6	1.4-1.3	1.2-1.3	<1
Debt Service Coverage Ratio	CFADS/ Total Debt Service (Interest + Principal Repayments)	5	>1.8	1.5-1.8	1.3-1.5	1.2-1.3	<1.2
Cash Flow Available for Debt Service	Net Operating Cashflow + Interest Repayments	10	>0	<0	<0	<0	<0
Debt:Equity Ratio	Total Debt/Total Equity	5	<20%	20-30%	25-30%	30-35%	>35%
Debtor Days: average number of days it takes a utility to collect monies billed	Net billed amount outstanding/ Total annual operating revenues excluding grants and transfers *365	5	<45 Days	45-60 Days	60-90 Days	90-120 Days	>120 Day
% Change in debtor days over the last financial year	(Debtor Days in Current Financial Year Less Debtor Days in previous Financial Year)/Debtor Days in Current Financial Year	5	>25%	20-25%	15-20%	10-15%	<10%
Consumer bad debt provison% Cash provision for bad and doubtful debts	Cash provision for bad and doubtful debt /Consumer bad debt provision%	5	Provision for all debt older than 60 days	Provision for all debt older than 90 days	Provision for all debt older than 365 days	Ad hoc limited provision	No provision
Billing Ratio	Volume of water Bought/ Volume of Water Produced	5	95% and above	93% to 94%	90% to 92%	85% to 89%	Less than 85%
Collection efficiency: Utilities ability to collect billed accounts	Total amount collected as % of the total amount billed	5	95% and above	93% to 94%	90% to 92%	85% to 89%	Less than 85%
<b>Total</b>		<b>100</b>	<b>4.0</b>	<b>3.0</b>	<b>2.0</b>	<b>1.0</b>	<b>-</b>

Source of all data: WARIS





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