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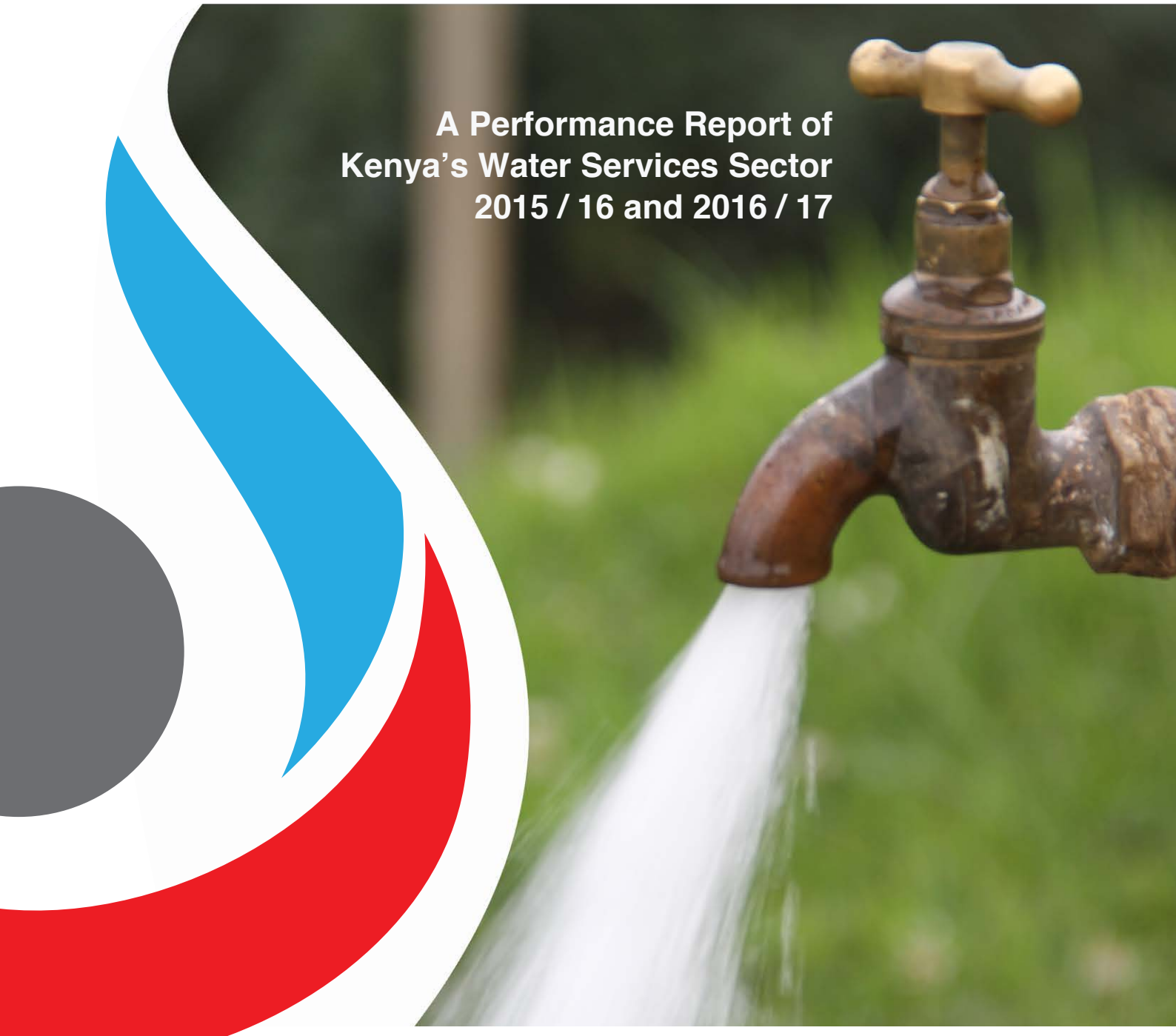

A Performance Report of Kenya's Water Services Sector 2015 / 16 and 2016 / 17

KENYA VISION 2030

WASREB
Water Services Regulatory Board

IMPACT

A Performance Report of
Kenya's Water Services Sector
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KENYA VISION 2030

Water Services Regulatory Board

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Contents

Water Services Regulatory Board

Vision

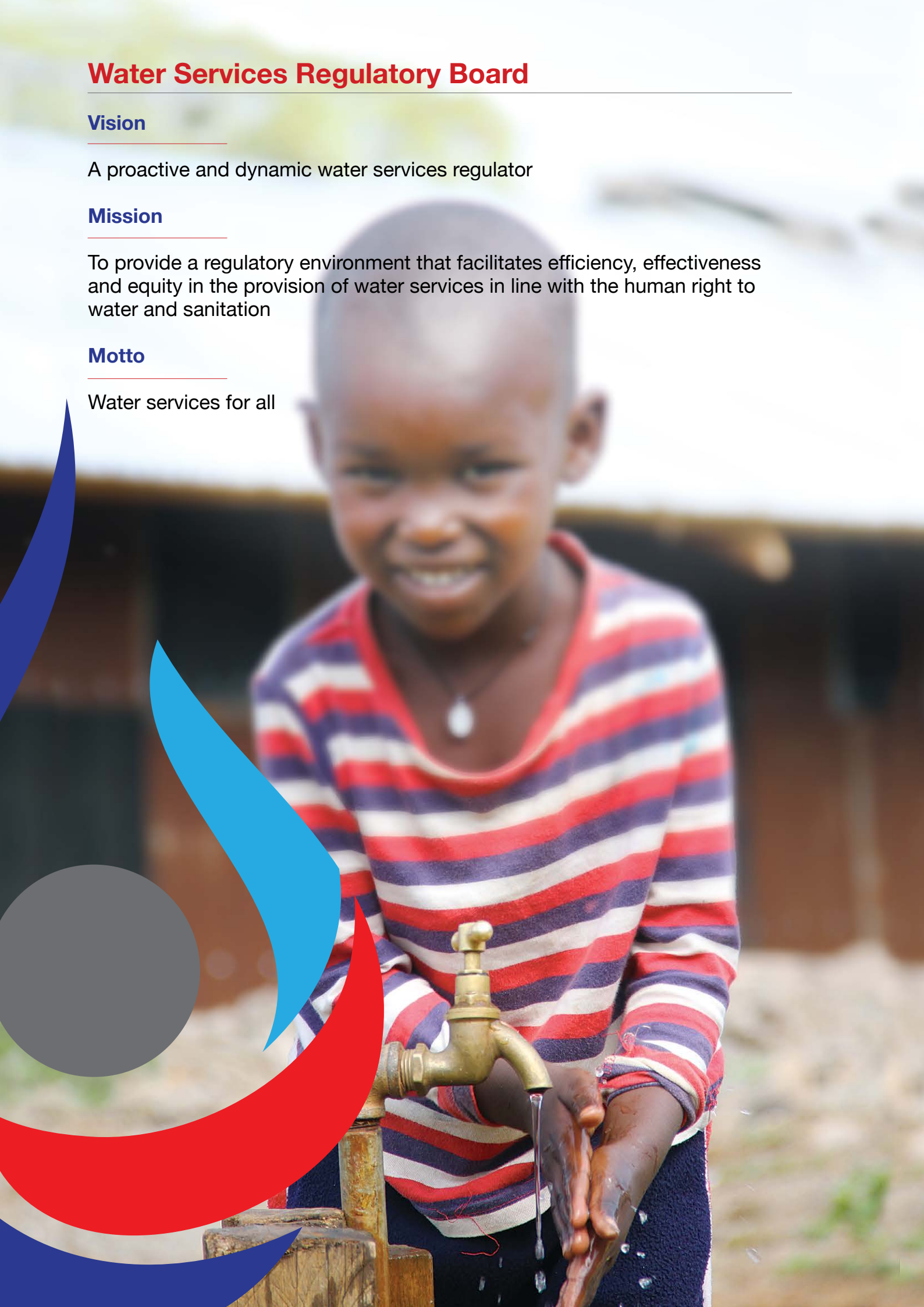
A proactive and dynamic water services regulator

Mission

To provide a regulatory environment that facilitates efficiency, effectiveness and equity in the provision of water services in line with the human right to water and sanitation

Motto

Water services for all



CLARITY PROVIDED BY NEW LEGISLATION IS GOOD IMPETUS FOR SECTOR

The publication of the 10th edition of *Impact* coincides with the coming into effect of the long awaited Water Act 2016 which repealed the Water Act 2002. The Act was assented to by the President on 16th September 2016 and operationalized on 21st April 2017, through legal notice No. 59 and 60. The new law clarifies the roles of various players in the water sector thus minimizing the potential for conflict while providing room for synergy. The law provides more clarity on institutional roles in the regulation, management and development of water resources and water services. The new law also aligns the reforms introduced by the Water Act 2002 with constitutional provisions on the human right to water.

The law recognizes that if water is to be governed effectively and sustainably, the regulation of resources and services has to be done at national level so that similar standards are set and applied to citizens throughout the country. Thus, regulators would have the mandate to monitor the implementation of national strategies on water resources and services, including all permit and licence holders. The import of this arrangement is that the right to water can progressively be realised and that water resources are protected and sustained for use by present and future generations.

The National Water Master Plan 2030 projects that urban population will increase from 13 million in year 2010 to 46 million in year 2030. Most of these people will live in urban low income areas (LIAs) creating a huge strain on water resources. The drought experienced in year 2017 and other effects of climate variability should be lessons to the sector that the development of water resilient systems is fundamental to achieving Sustainable Development Goals (SDGs). While Wasreb is concerned with water services regulation, a stable resource base is crucial in delivering acceptable services to consumers.

In this report, we highlight the performance of the water services sector over a two year period (2015/16 to 2016/17). The report indicates that performance has more or less stagnated. The water services sector has three immediate goals of improving access, ensuring cost recovery and reducing losses. It is regrettable that no significant improvement in all the three indicators has been realised in the last few years. The foregoing situation is partly driven by inadequate investments which are not in tandem with the rapid population growth. The significant system inefficiencies that still exist and lack of sustainable cost recovery models compound the situation. The need for increasing financing and ensuring efficiency of the investments cannot be overemphasized if the journey to universal access is to be achieved. In this regard, Wasreb continues to facilitate and build an environment that makes the water services sector open to innovative and non-traditional sources of finance. Focusing the assessment of utilities on technical standards, corporate governance and creditworthiness is an integral part of this endeavor.

Our assessment of utilities shows marginal improvements in their performance, from 36% in the last reporting period (2014/2015) to 38% in the year 2016/17. In order to address the inequality in water access in urban areas, Wasreb piloted a new indicator that looks at utility performance in LIAs. This has the aim of addressing service inequalities and driving utilities to put more focus on the underserved areas.

I wish to congratulate utilities who have shown consistent improvement in performance. I hope the momentum that has been realised will be sustained. I call on all stakeholders to realise that good governance and sustainable development are at the centre of our national values and principles of governance in our constitution. It is therefore paramount for all actors in the water sector to be guided by these principles in administering the new law to guarantee human dignity, equity, social justice, inclusiveness and non-discrimination.

Eng Robert Gakubia
Chief Executive Officer

CHAPTER ONE
BACKGROUND ISSUES

BUILDING ON GAINS FROM THE REFORM YEARS

The National Water Policy of 1999 and the Water Act 2002 triggered extensive reforms to Kenya's water sector, bringing it in line with international best practice. The objective of these reforms was to improve water resource management, meet the growing demand for water services, attract more professionals into the sector, attract greater investment, and create a modernized sector that is robust and more capable of responding to emerging challenges such as climate change and urbanization.

1.1 PAST REFORMS

Years of the operation of the water services sector has yielded benefits which the sector should not lose even as it implements devolution. Key features of the reform years included the following:

- Separation of policy from other functions
- Separation of water resource management and water service provision
- Separation of regulatory functions from investments and operations
- Separation of asset holding from operations and increased user participation
- Enhanced pro-poor orientation
- Socially responsible commercialization in the provision of water supply and sanitation services
- Conflict resolution which was conferred by the Water Act to the Water Appeals Board

1.2 NEW LEGAL FRAMEWORK

In 2010, Kenya promulgated a new constitution - the Constitution of Kenya 2010 (CoK 2010). Fundamental to the new constitution was the creation of two levels of government, the national government and county governments. The ownership, use and regulation of water resources, consumer protection and national public works was assigned to the national government while county governments were assigned water and sanitation service provision, catchment management and county public works.

Further, the CoK 2010 entrenched the right to water and sanitation in the bill of rights, effectively making water and sanitation a human right. These developments created the need to align the Water Act 2002 to the CoK 2010. Consequently, the Water Act 2016 came into effect in April 2017 and is under implementation.

The Act also promotes good practices especially in the water services sector on commercial viability, ring fencing of water services revenue, mechanisms of resolving consumer complaints and good governance at utility level.

1.3 NEW INSTITUTIONAL FRAME WORK

The Water Act 2016 anticipates the formation and transformation of various water sector institutions to align to the constitution. Below are some highlights:

- The Water Services Regulatory Board (Wasreb), retains its name and role as a regulator of water services although with an enhanced mandate. This enhancement is particularly in the area of monitoring and the fact that the Regulator will now play a more direct role in the licensing of Water Service Providers (WSPs).

- The Water Resources Management Authority (WRMA) changes name to Water Resources Authority (WRA) with the mandate of regulation of the management and use of water resources at the national level. At the regional level, Catchment Areas Advisory Committees (CAACs) change name to Basin Water Resources Committees with the responsibility for the management of water resources at basin level.

- Water Services Boards (WSBs) are meant to transform to Water Works Development Agencies (WWDAs) with a mandate over cross-county public water works on a needs basis.

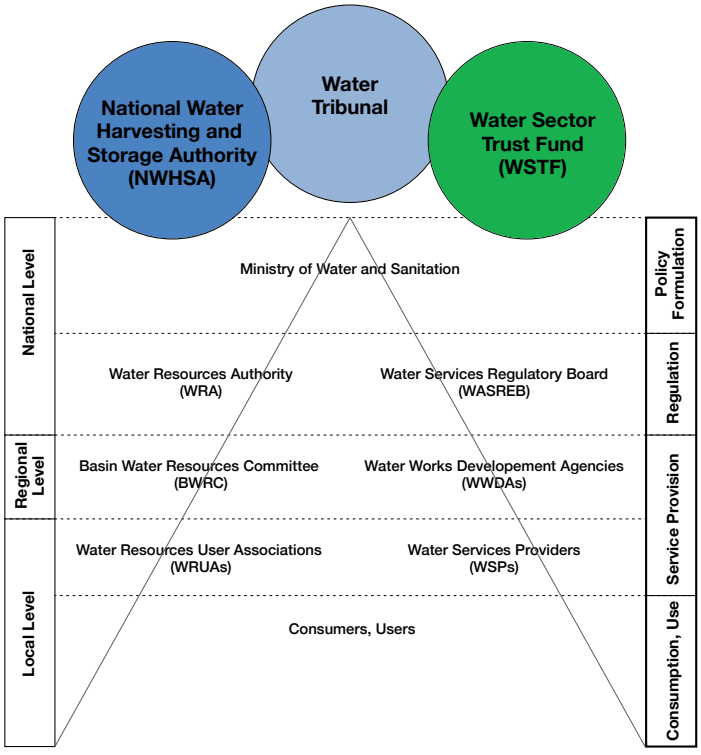
- The National Water Conservation and Pipeline Corporation changes name to National Water Harvesting and Storage Authority (NWHSA) with the mandate to undertake, on behalf of the national government, the development of national public works for water storage and flood control.

- Existing Water Service Providers (utilities) continue operating as county water service providers or cross county water service providers as the case may be. Other water service providers may be established by county governments as public limited liability companies under the Companies' Act 2015 but have to comply with the standards of commercial viability set out by Wasreb. This also applies to any other bodies providing water services to the public.

- The Water Services Trust Fund (WSTF) changes from a financing mechanism to a financing institution and is renamed the Water Sector Trust Fund, with an expanded mandate for collaboration with County Governments and Water Resource Users Associations (WRUAs) over water service provision in underserved areas and catchment management respectively. Further, the WSTF has the mandate to mobilise financial resources from private investors for onward lending to creditworthy utilities and to promote research on water services and water resources. The core of its mandate is to assist in financing the development and management of water services in marginalised areas or any underserved area.

- The Water Appeals Board changes name to Water Tribunal. It has powers to hear and determine appeals from any person or institution directly affected by the decision or order of the Cabinet Secretary responsible for matters relating to water, the Water Resources Authority and the Water Services Regulatory Board. The tribunal also has powers to hear and determine any dispute concerning water resources or water services where there is a business contract, unless the parties have otherwise agreed to an alternative dispute resolution mechanism.

Figure:1.1: Institutional Framework under the Water Act 2016

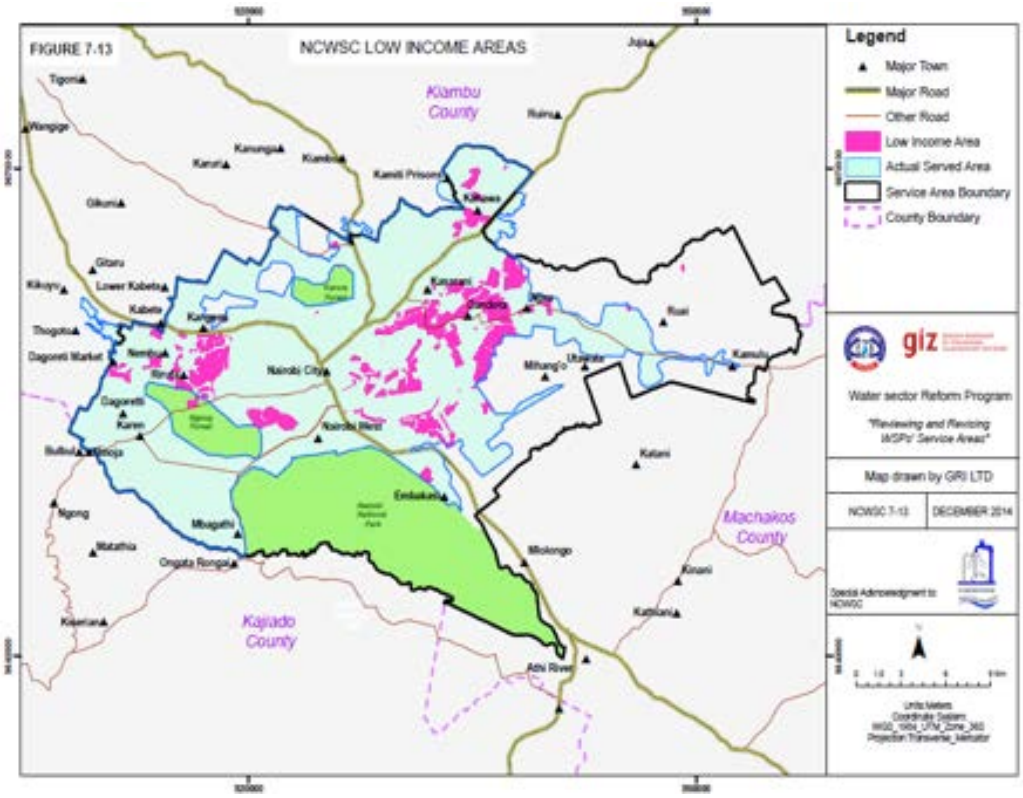


1.4 DEFINING UTILITY SERVICE AREAS

Under the Constitution 2010, the responsibility for the provision of water supply and sanitation services has been devolved to counties. Under the new framework, counties are required to establish water service providers that comply with the standards of commercial viability as set out by the Regulator. On the basis of this, there is need to clearly define the service areas of the WSPs in order to effectively track growth in access hence the progressive realization of the right to water.

To be able to deliver on this mandate, Wasreb carried out a review of service areas of the WSPs guided by the following key principles: viability, population density, efficiency, agglomeration of settlements, transition from community systems to utilities and independent schemes within service areas. Sixty six (66) WSPs had their service areas reviewed and rationalized with the following being the outputs of the exercise: digitized map of the utility service area, listing of all sub-locations linked to the Service Area and list of sub-locations with low income areas (LIAs). The agreed service areas will form the basis for licensing of utilities under the new framework.

Further, in the financial year 2017/2018, Wasreb expects to complete the review of service areas of another 13 WSPs, bringing the total to 79 WSPs. The area of jurisdiction to supply water is a key licencing requirement. Therefore, the activity to review service areas opens the door for WSPs to apply for licences as required by the Water Act 2016.



1.5 SERVING MARGINALISED AREAS

The development of water and sanitation infrastructure in marginalised and rural areas has been done under many different management models, with community management, still being the main model. Most of these areas are not commercially viable. Most community water projects therefore stop functioning within the first three years. This is mainly a consequence of community groups struggling to put in place adequate governance and management systems, as well as lacking linkage to regulated WSPs. Therefore, they end up operating in isolation and outside the sector's regulatory systems. Thus, there is scanty supervision and lack of control on the quality of services provided. This means human rights standards and the national government responsibility for fulfilling the right to water is undermined.

The Water Act 2016 Section 72 (1) (p) confers to Wasreb the mandate to make recommendations on how to provide basic water services to marginalised areas. Wasreb is developing a regulatory tool that gives guidance on possible management models for small water supply systems as per the Water Act 2016. Template contracts for the different models and a list of simple indicators to assess performance of these systems will be developed through a consultative process with national and county government partners, water sector experts, and community groups. County governments, WSPs and other development partners will be trained on these regulatory tools to streamline the approaches and enhance coordination in the development of community water supply systems.

1.6 SERVING THE POOR

It is estimated that out of the 21 million people living in service areas of the 88 regulated utilities, more than eight million people are living in more than 2,000 urban low income areas and a majority of these still depend on informal services that do not comply with the normative content of the human right to water.

Further, access to water in urban areas is highly unequal and unfair. The inequality has deep structural roots mainly from informality and poor planning, network configuration favouring higher-end users, supply versus demand management and weak incentives for change. Therefore, more water to urban areas does not neccessarily guarantee a reduction in the inequalities.

Characteristics of Low Income Areas

- *Often high population densities with plots accommodating more than one household.*
- *Many low income areas are located on marginalized land (areas with a high water table or situated on top of hills or on riverbanks, etc.).*
- *Most residents have low income levels. Most of them are active in the informal sector of the local economy and derive their income from small-scale businesses, trade and casual labor.*
- *Many low income areas have poor infrastructure (e.g. roads, drainage, hospitals) and services (e.g. solid waste collection, Public Health).*
- *Low income areas can be planned or unplanned. Planned (formal) low income areas are mostly found on government or council land.*
- *Obtaining land for the construction of WSS infrastructure (such as water kiosks and public sanitation facilities) can be a challenge.*
- *Landowners control investments in proper water supply and sanitation or construction of houses.*
- *The quality of housing is often low.*

Under the Water Act 2016 Section 70, Wasreb is established to protect the interests and rights of consumers in the provision of water services. The population living within service areas of regulated utilities including those who are living in low income areas are considered to be protected by Wasreb. As a first step, Wasreb has mapped all low income areas within the services areas. As a second step, Wasreb has already developed a pro-poor assessment tool which has been piloted in 28 very large and large utilities. The tool will now be applied in all utilities.

Wasreb is in the process of developing new regulatory instruments to monitor the performance of utilities in low income areas. These include guidelines on pro-poor services and on kiosks management.

Unbundling the Right to Water and Sanitation

In more detail the right to water means:

- *Physical access (non-discriminatory) to a water outlet in urban areas with a 30 minutes cycle and in rural within a distance of 2km round trip.*
- *Sustainability of access.*
- *Acceptable water quality (in the urban setting treated water).*
- *Affordability (regulated but not more than 5% of household income as maximum).*
- *Reliability (>12h as minimum service hours).*
- *Right to have grievances resolved (participation/ access to standardized complaint mechanism).*
- *Transparency and accountability (access to sector information).*

The right to sanitation in details 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.*

In the assessment of utility performance with respect to pro-poor services, Wasreb has set the following priorities at the utility level:

- Implementation of a pro-poor strategy including institutionalization of the pro-poor function within the organization
- Reporting on coverage in the Low Income Areas (LIA) and planned extension of services
- Reporting on service levels and their improvements
- Compliance to standards for water kiosks

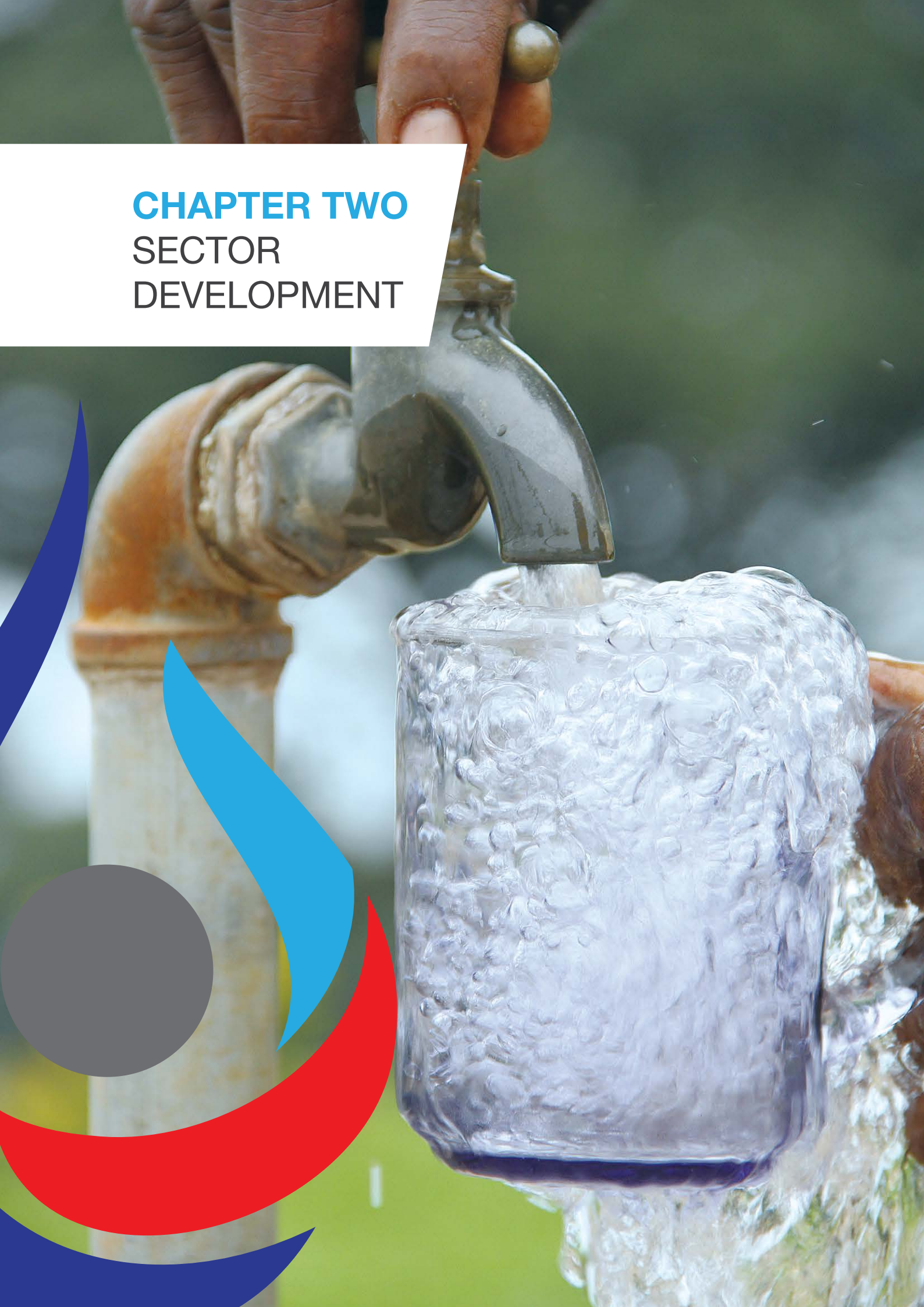
The implementation of these initiatives has commenced with the assessment of utility pro-poor orientation. The assessment of WSPs on pro-poor performance is presented in Chapter 3.

1.7 CLIMATE CHANGE AND ADAPTATION

The recent drought experienced in most parts of the country and the resultant effect on availability of water resources implies that the effects of climate change can no longer be wished away. To alleviate against the effects of climate change, actors need to:

- develop policy for water storage and flood control
- review resilience of the water supply systems
- manage water demand among competing needs and
- improve O+M costs to reduce wastage

Faced with the reality of climate change, all players in the sector need to develop climate resilient systems.



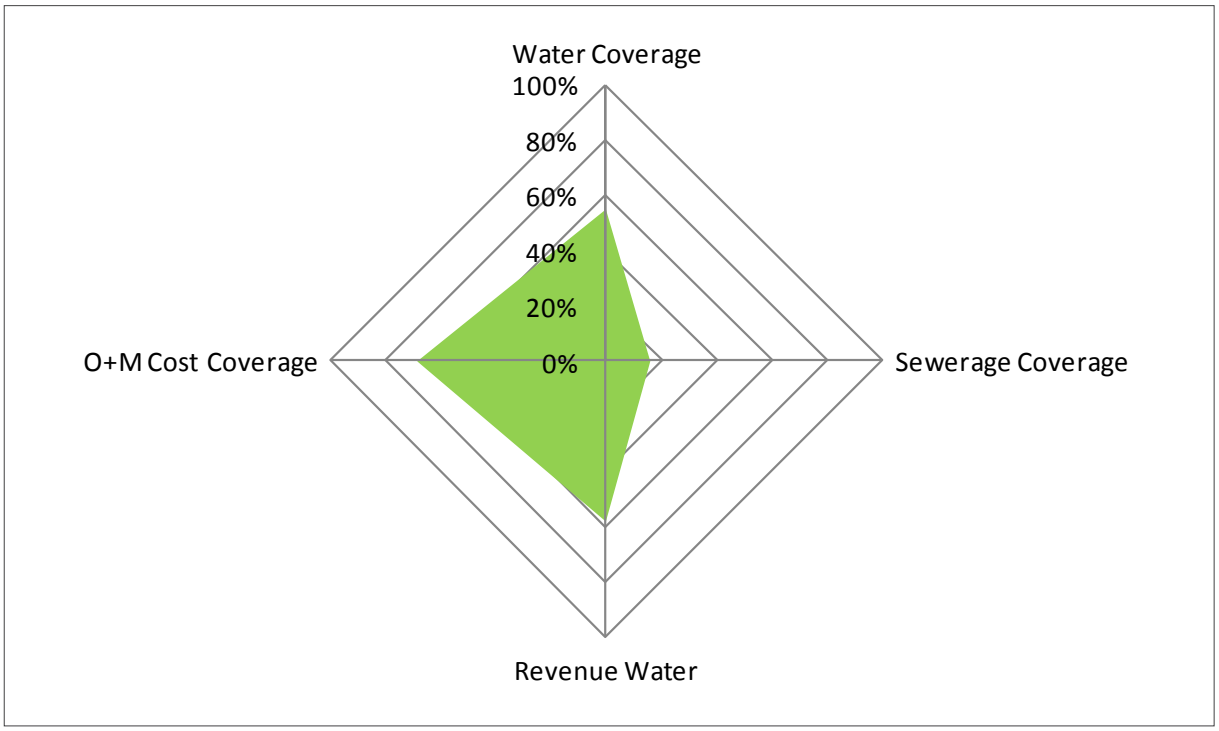
CHAPTER TWO
SECTOR DEVELOPMENT

STAGNATION: IS UNIVERSAL ACCESS A MIRAGE?

One of the key roles of the Regulator is to monitor progress in the attainment of national targets with an expected outcome of unlocking any bottlenecks to the realization of these targets. National targets on water and sanitation are captured in the National Water Services Strategy (NWSS) and implemented in phases through the Medium Term Plans (MTPs). Kenya's population is currently estimated at 48 million people. Out of this population, 21 million reside in urban areas currently served by 88 regulated utilities through 1.5 million connections. It is projected that by year 2030, the total population will be 67 million with about 46 million living in urban areas and 21 million living in rural areas.

The status of national goals (Fig 2.1) depicts the current position with respect to the targets set under Vision 2030 for the three main goals under the National Water Services Strategy (NWSS) which are improvement of access (water and sewerage), reduction of water losses (NRW) and Recovery of O+M costs (seen in terms of cost coverage).

Figure 2.1: Progress Made Under NWSS 2015 Goals

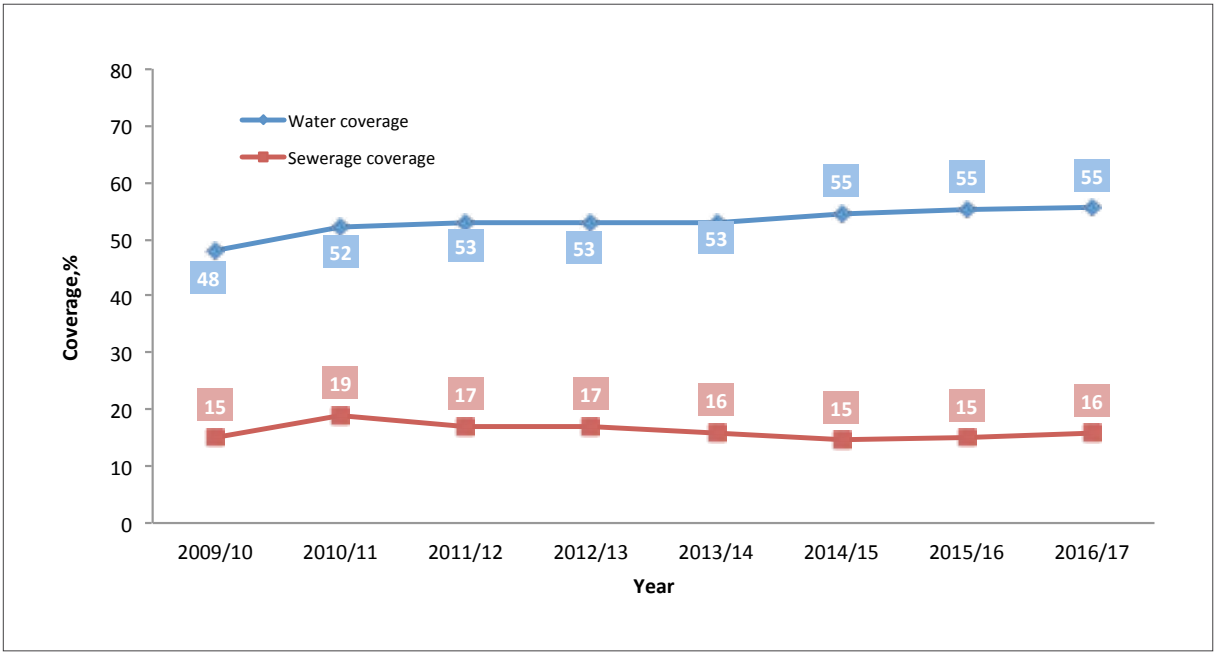


2.1 WATER COVERAGE

Kenya's water coverage currently stands at 55 per cent against a 2015 National Water Services Strategy (NWSS) target of 80 per cent. This indicator has not registered any significant growth in the last three (3) years.

To realize the targets under Vision 2030, the sector needs to grow by at least three percentage points annually for the next 13 years. Therefore, using the projections in the Master Plan and with the current levels of NRW, the sector needs to increase water production to two and a half times the current levels in order to meet demand. This situation requires a sustained investment of a minimum of Ksh 100 billion annually as opposed to the current amount of Ksh 29 billion. Further, there is need to explore innovative financing to complement funding from traditional sources of transfers, taxes and tariffs. This could be in form of Output Based Aid (OBA), Aid on Delivery (AoD), Commercial Financing, and Private Sector Financing.

Figure 2.2: Trend in Water and Sewerage Coverage



2.2 SEWERAGE COVERAGE

Sewerage coverage currently stands at 16 per cent. This indicator recorded a one (1) percentage point increase in the immediate past year although it has been showing a declining trend over time.

The policy goal under Vision 2030 is to increase sanitation coverage in urban areas to 100% by increasing coverage rate of sewerage system to 80% and installing improved on-site treatment facilities for populations not covered by sewerage systems.

According to the National Water Master Plan, the projected financing requirement is Ksh 500 billion against identified sources of Ksh 31 billion by 2030. Wasreb has analysed all the feasible options of bridging the financing gap through a study entitled 'Feasibility Study of Sewer Levy 2014'. The findings indentifed a financing gap of between Ksh 200- 250 billion. Several options are proposed to bridge the gap:

- A surcharge of 5% of the water billing to raise about Ksh100 billion.
- Reduce Non-Revenue Water to below 30%. This would raise Ksh 80 billion by year 2030.
- Increase tariffs to stimulate revenue for investments in infrastructure development.
- Target private sector financing to the tune of Ksh 50 billion as more WSPs become credit worthy and financing institutions develop an appetite for water sector financing.
- Increased budgetary allocation to the sector.

Efforts are being explored to implement the options above.

2.3 PERFORMANCE ASSESMENT AND RANKING OF UTILITIES

2.3.1: Overall Performance

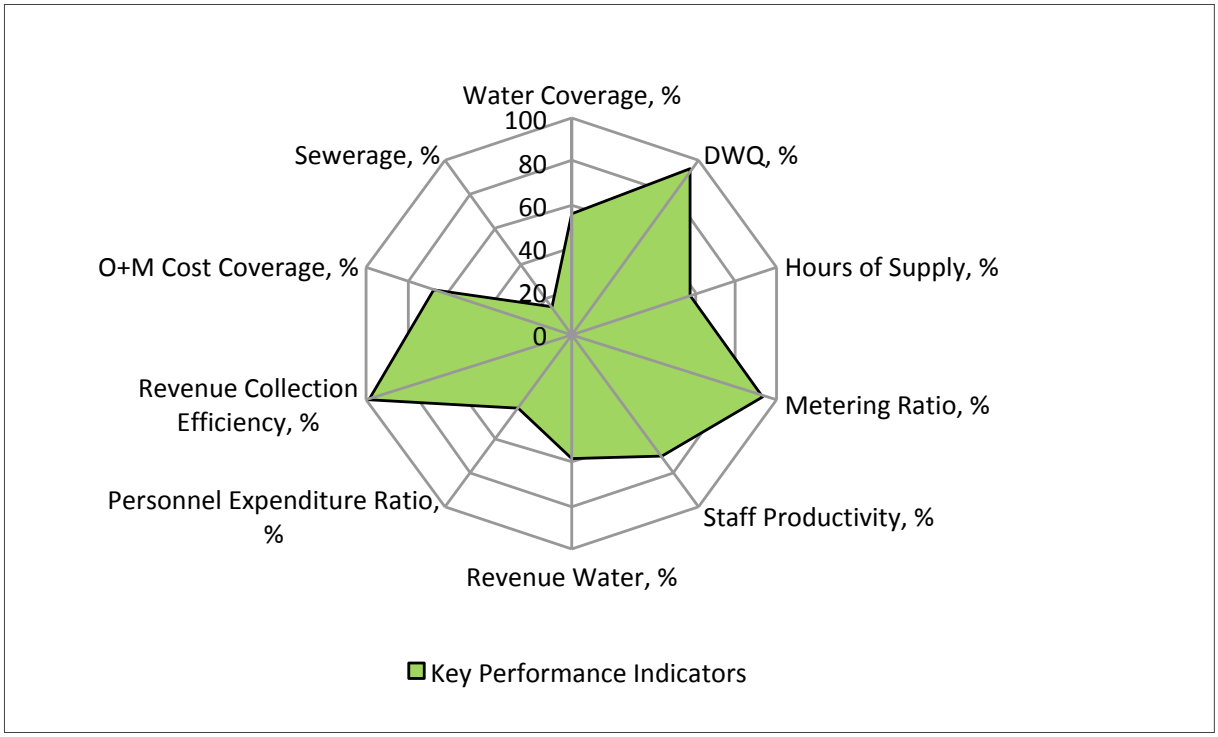
Performance assessment and ranking of utilities is key in ensuring that water services are provided in an efficient and sustainable manner. Utilities continue to be assessed and ranked on the basis of nine Key Performance Indicators (KPIs). These are Water Coverage, Drinking Water Quality, Hours of Supply, Non-Revenue Water reduction, and Metering Ratio. The others are Staff Productivity, Revenue Collection Efficiency, O+M Cost Coverage and Personnel Expenditure as a Percentage of O+M Costs. The overall performance of the water services sector based on the nine KPIs is presented in Table 2.1.

Table 2.1: Overall Performance of the Water Services Sector

Key Performance Indicators	2014/15	2015/16	2016/17	Trend
Water Coverage, %	55	55	55	→
Drinking Water Quality, %	92	94	94	→
Hours of Supply, hrs/day	18	17	14	↓
Non- Revenue Water, %	43	43	42	↑
Metering Ratio, %	90	91	93	↑
Staff Productivity, Staff per 1000 Connections	7	7	7	→
Personnel Expenditure as % of O+M Costs, %	42	45	46	↓
Revenue Collection Efficiency, %	96	96	100	↑
O+M Cost Coverage, %	99	100	102	↑
Sewerage, %	15	15	16	↑
Sector Benchmarks: good acceptable not acceptable benchmark varies				

Figure 2.3: illustrates the current status on the 10 KPIs in relation to sector targets.

Figure 2.3: Overall Performance of Water Services Sector



2.3.2: *Specific Utility Performance*

The overall best performing utility for the eighth year in a row was Nyeri (Table 2.2) while the lowest ranked utilities were Olkejuado (third consecutive year) and Eldama Ravine. It is worrying that the two worst performing utilities recorded a score of zero in all the nine indicators.

Table 2.2: Overall Top and Bottom Ten Utilities

TOP TEN UTILITIES 2016/17			BOTTOM TEN UTILITIES 2016/17		
RANK	UTILITY	SCORE (Max 200)	RANK	UTILITY	SCORE (Max 200)
1	Nyeri	183	74	Lodwar	25
2	Meru	137	75	Migori	22
3	Thika	137	76	Tililbei	20
4	Nakuru	132	77	Kwale	18
5	Ngagaka	132	78	Kitui	15
6	Nanyuki	129	79	Bomet	14
7	Ngandori Nginda	120	80	Wajir	10
8	Embu	118	81	Garissa	7
9	Malindi	118	82	Eldama Ravine	0
10	Kakamega	116	82	Olkejuado	0

Utilities operate under different conditions and this has an effect on certain aspects of their performance. Thus, a utility may put commendable effort that may not propel it to the top due to its previous positioning. Similarly, a utility may also drop in position despite enjoying a favourable operating environment and remain among the top performers. The recognition of effort is therefore captured by comparing a utility position at present against itself in the immediate past. The improvement or decline in performance has been derived from utility score over two years, 2015/16 and 2016/17.

Table 2.3 indicates the top improvers as well as the bottom losers by comparing two subsequent reporting periods. Only seven (7) utilities recorded consistent improvement in performance in the two years under review. A consistent and sustained performance improvement is crucial for building consumer confidence in service provision.

Table 2.3: Top Improvers and Bottom Losers

TOP IMPROVERS				
WSP	SCORE 2014/15	SCORE 2015/16	SCORE 2016/17	VARIANCE
Naivasha	34	67	70	36
Rukanga	70	87	102	32
Karuri	86	92	114	28
Tachasis	72	90	95	23
Tetu Aberdare	75	79	91	17
Meru	123	129	137	14
Nyeri	180	182	183	3

BOTTOM LOSERS				
WSP	SCORE 2014/15	SCORE 2015/16	SCORE 2016/17	VARIANCE
Narok	60	48	34	-26
Oloolaiser	86	62	58	-29
Limuru	105	85	75	-31
Lodwar	57	56	25	-33
Imetha	65	51	28	-37
Garissa	46	19	7	-39
Kericho	92	71	45	-47
Nyasare	92	71	30	-62
Kitui	88	70	15	-73
Olkejuado	0	12	0	0

2.4 PERFORMANCE OF WATER SERVICES BOARDS

The performance of Water Services Boards (WSBs) has not been ranked in the current period. Under the Water Act 2002, WSBs were responsible for driving investments in their areas as well as monitoring of water service provision. However, the devolution of water services to county governments inter-alia gave the following roles to counties:

- supervising administration and delivery of services in the county and all decentralised units and agencies
- developing performance management plans
- county planning
- developing standards and norms of public service delivery

In the context of the above, the role of WSBs in the current period was been limited to assessing the impact of the investments with regard to change in investment related indicators namely Water Coverage, NRW and Hours of Supply. WSB performance has also been evaluated on the basis of investment related indicators as outlined in Chapter 4.

2.5 REGIONAL BENCHMARKING

In recognition of the need for collaboration in the development of an effective Water Supply and Sanitation (WSS) regulatory framework, the Eastern and Southern Africa Water and Sanitation (ESAWAS) Regulators Association was formed in 2007 to foster exchange of experiences and knowledge on WSS regulation through regional cooperation on issues of mutual concern and interest.

ESAWAS membership is currently drawn from eight regulators. These are: Water Services Regulatory Board (Wasreb) of Kenya; 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; the Lesotho Electricity and Water Authority (LEWA) of Lesotho; the Agency for Regulation of Electricity, Potable Water and Mines (AREEM) of Burundi and the Zanzibar Utilities Regulatory Authority (ZURA) of Zanzibar.

In addition to the eight members, four regulators have observer status. These are: Water Utility Regulation Department of Uganda, the Ministry of Water Resources and Irrigation of South Sudan, the Public Utilities Regulatory Commission of Ghana and the Department of Water Affairs of Botswana. ESAWAS is continuously incorporating other institutions within the region and growing its membership.

Although benchmarking is a key regulatory tool for assessing and improving the performance of WSS utilities in the Eastern and Southern African region, the largest utilities tend to have no peers, while some countries only have a single WSS provider, thus making reasonable comparison of performance difficult. In recognition of these challenges, ESAWAS in 2015 developed a regional benchmarking framework thus availing a platform by which large utilities can be compared to similar sized utilities within the region.

The benchmarking exercise only selected the largest utility in each member country and the single utility where this is the case. The utilities considered are: Nairobi City Water and Sewerage Company (NCWSC) of Kenya; Dar es Salaam Water and Sewerage Corporation (DAWASCO) of Tanzania; Lusaka Water and Sewerage Company (LWSC) of Zambia; Águas da Região de Maputo (AdeM) of Mozambique; Water and Sanitation Corporation Ltd (WASAC) of Rwanda; Water and Sewerage Company (WASCO) of Lesotho, National Water and Sewerage Corporation (NWSC) of Uganda and Zanzibar Water Authority (ZAWA) of Zanzibar. The results of the assessment are presented in Table 2.4.

Table: 2.4: Summary of Utility Performance by ESAWAS

Indicator / Utility	Water Coverage, %	Sewerage Coverage, %	Water Quality, %	Hours of Supply, hrs/day	O+M Cost Coverage, %	Collection Efficiency, %	Staff Cost vs O&M Costs, %	Staff/1,000 W&S Connections	Metering Ratio, %	NRW, %
AdeM	63	-	99	13	113	93	30	3	81	42
DAWASCO	55	7	100	17	190	55	36	5	98	53
LWSC	83	13	98	17	115	77	66	7	67	46
NCWSC	81	50	93	14	105	104	56	6	100	38
NWSC	78	8	98	18	135	97	41	6	100	28
WASAC	95	-	95	15	140	102	30	4	100	39
WASCO	62	6	95	18	103	81	39	6	100	47
ZAWA	78	10	58	20	60	35	33	8	7	53

The results of this benchmarking exercise are intended to serve as a support tool to:

- foster improvement in the WSS services by creating competition among the benchmarked utilities
- identify strengths and weakness within the utilities and areas for improvements
- generate information for decision making and
- contribute to the attainment of targets with respect to country visions and Sustainable Development Goals (SDGs).

CHAPTER THREE
DETAILED PERFORMANCE REVIEW

MARGINAL GROWTH IN WATER AND SEWERAGE SERVICES

3.1 INTRODUCTION

Consumer protection is at the center of the Regulator's mandate and utilities have to be continuously nurtured to improve efficiency. Performance assessment and ranking remains a key regulatory tool to spur competition between utilities, by scoring, comparing and publishing their performance over a given period.

Impact remains a key tool for performance reporting. The performance of utilities is analyzed based on nine KPIs namely 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

Data for performance assessment is collected through the web-based Water Regulation Information System (WARIS). To ensure credibility, the data is cross-checked with submissions for tariff negotiations, inspections reports and quarterly monitoring and evaluation reports from utilities.

For the period under review, 86 public and two private urban utilities submitted data for analysis. Compliance with data submission remained at 96% with capacity challenges continuing to impact on small utilities. The small WSPs who did not submit data are Kapenguria, Kikanamku, Engineer and Marsabit. Failure to submit data hampers effective monitoring and is injurious to the progressive realization of the right to water.

Figure 3.1: Trend in data submission by Utilities

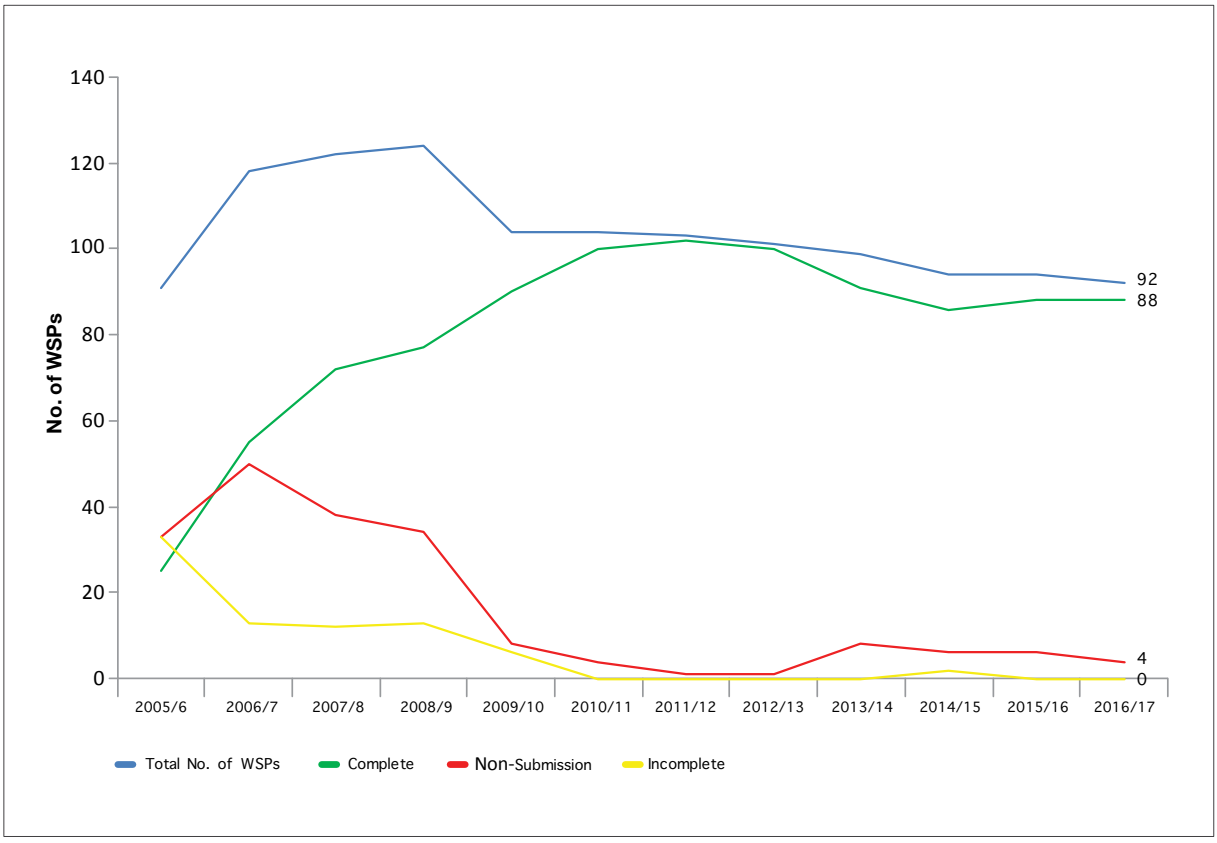


Table 3.1 presents general data for these 88 utilities that have a bearing on their performance.

Table 3.1: General Data on Utilities 2016/17

UTILITY	Total Population in Service Area	Total PopulationServed	Total no. of connections (active+inactive)	Total No.Active Connections	No. of towns served	Turnover (KSh million)	Total Water Produced in m3 (000)	Domestic + Kiosks billed volume in m3 (000)	Total billed volume in m3 (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 2017
Very Large (≥35,000 conns.)														
Nairobi	4,249,604	3,426,434	604,649	582,502	1	9,603	181,364	61,973	112,819	38	145	50	3,511	Valid
Eldoret	436,004	321,165	116,355	87,064	2	741	13,359	6,206	7,604	43	114	53	325	Valid
Mombasa	1,129,642	482,141	79,665	38,030	1	712	13,470	5,491	6,770	50	77	31	380	Expired RTA
Nakuru	493,996	442,703	57,550	49,986	4	831	11,107	5,272	7,613	31	69	33	228	Expired RTA
Kisumu	437,336	289,247	53,296	53,222	5	641	13,232	3,196	7,778	41	125	30	323	Valid
Thika	225,658	219,507	48,741	43,416	1	630	13,528	4,770	9,288	31	169	60	197	Valid
Nzoia	459,611	381,864	45,773	41,410	6	346	7,193	1,915	4,231	41	52	14	274	Expired RTA
Nyeri	159,287	147,603	42,864	37,229	1	441	6,366	3,808	5,247	18	118	71	125	Valid
Kakamega	389,444	335,580	37,151	30,718	6	226	5,276	2,657	3,001	43	43	22	129	Expired RTA
Large (10,000-34,999 conns.)														
Gatundu	273,241	174,530	34,235	26,676	1	124	7,008	4,152	4,403	37	110	65	154	Expired RTA
Embu	188,191	152,430	31,355	29,868	2	334	7,090	3,130	4,072	43	127	56	118	Valid
Murang'a South	440,742	208,085	31,215	24,127	1	131	5,569	2,074	2,227	60	73	27	130	Expired RTA
Kirinyaga	457,737	147,444	30,016	19,161	1	150	5,556	1,948	2,251	59	103	36	174	Valid
Malindi	313,337	247,977	28,764	25,605	1	382	6,962	3,577	4,822	31	77	40	194	Expired RTA
Othaya Mukurweni	181,131	135,696	29,190	17,407	1	127	6,261	2,283	2,404	62	126	46	108	Expired RTA
Kilifi Mariakani	875,830	390,037	28,099	19,295	3	449	8,883	2,235	4,602	48	62	16	212	Expired RTA
Mathira	144,897	59,521	25,779	13,721	1	99	3,105	1,072	1,448	53	143	49	89	Expired RTA
Kericho	184,157	98,499	23,217	17,086	4	193	3,252	1,322	1,734	47	90	37	134	Valid
Ruiru-Juja	198,731	194,134	22,407	22,200	2	281	5,359	3,946	3,946	26	76	56	61	Valid
Nakuru Rural	493,975	108,745	22,266	12,211	1	211	8,582	1,700	3,151	63	216	43	175	Expired RTA
Gusii	762,336	307,576	20,649	15,167	7	93	2,406	739	1,984	n.c.d.	21	7	147	Expired ETA
Murang'a	160,973	91,614	19,953	17,331	1	206	2,450	1,032	1,673	32	73	31	90	Valid
Bomet	123,403	61,614	16,455	8,925	1	92	4,113	1,971	1,971	52	183	88	89	Valid
Kahuti	169,045	79,237	18,565	9,305	1	66	4,213	1,015	1,450	66	146	35	74	Valid
Nanyuki	95,283	83,070	18,776	18,583	1	261	3,988	1,309	2,457	38	132	43	114	Expired RTA
Tavevo	75,304	60,206	18,474	11,577	3	204	7,054	2,264	2,870	59	321	103	136	Expired ETA
Nyahururu	82,772	59,980	17,829	16,740	1	186	2,895	714	1,737	40	132	33	108	Expired RTA
Kwale	318,925	153,945	16,955	11,540	1	140	3,026	1,654	1,748	42	54	29	147	Expired RTA
Tetu Aberdare	74,537	44,171	15,750	12,457	1	65	2,181	990	1,131	48	135	61	80	Expired RTA
Imetha	155,398	109,789	15,128	6,230	1	41	1,368	483	673	51	34	12	118	Expired ETA
Ngandori Nginda	99,470	80,032	14,159	11,012	1	41	n.c.d.	1,926	2,779	n.c.d.	n.c.d.	66	54	Expired ETA
Meru	144,438	92,247	14,145	12,640	2	202	2,698	1,764	2,128	21	80	52	85	Valid
Garissa	164,420	96,690	13,819	9,830	1	0	5,110	2,951	3,765	n.c.d.	145	84	138	Expired RTA
Sibo	442,393	178,670	13,346	7,973	5	37	1,507	504	658	56	23	8	79	Valid
Mavoko	194,483	130,855	13,284	11,459	2	244	1,391	588	820	41	29	12	82	Valid
Kitui	770,375	278,636	16,663	11,518	1	101	2,939	708	1,114	62	29	7	108	Expired RTA
Nithi	86,600	73,955	11,198	7,518	1	45	1,546	761	888	43	57	28	50	Expired RTA
Oloolaiser	326,861	167,015	11,086	7,516	3	179	3,047	1,790	2,089	31	50	29	119	Valid
Kikuyu	310,601	107,962	10,955	6,754	1	84	1,767	424	992	44	45	11	58	Expired RTA
Gatamathi	140,762	54,135	10,601	7,296	1	53	2,840	715	962	66	144	36	57	Expired ETA
Isiolo	65,175	43,714	10,063	8,667	1	70	1,437	707	874	39	90	44	68	Expired RTA
Medium (5,000-9,999 conns.)														
Kiambu	106,649	35,624	9,344	7,273	1	117	2,054	677	1,310	36	158	52	57	Valid
Kyeni	84,492	26,170	9,167	5,234	1	14	1,040	1,039	462	56	109	109	31	Expired RTA
Limuru	253,777	123,450	9,001	8,705	1	104	1,482	685	1,014	32	33	15	58	Valid
Tililbei	191,499	112,738	8,627	3,797	1	38	1,326	392	576	57	32	10	51	Expired RTA
Karuri	155,085	79,173	8,467	6,767	1	76	1,616	858	1,073	34	56	30	42	Valid
Gatanga	132,472	38,932	8,296	7,651	1	37	2,086	832	1,127	46	147	59	39	Expired ETA
Busia	114,243	83,298	8,019	6,259	1	40	1,010	435	435	57	33	14	59	Expired RTA
Amatsi	250,367	36,874	7,829	4,316	2	39	1,732	591	995	43	129	44	68	Valid
Tuuru	330,557	124,227	7,807	3,774	1	22	1,513	343	411	73	33	8	59	Expired ETA
Githunguri	208,076	21,029	7,788	3,675	1	43	1,105	340	503	54	144	44	34	Valid
Lodwar	70,097	35,824	7,569	7,383	2	59	1,705	139	1,463	n.c.d.	130	11	79	Expired ETA
Ngagaka	75,741	74,936	10,621	7,378	1	30	1,196	585	585	51	44	21	33	Expired ETA
Kibwezi Makindu	301,741	92,276	7,244	4,908	1	61	1,204	586	849	30	36	17	48	Expired RTA
Nol Turesh Loitokitok	234,691	36,920	6,917	3,509	1	87	4,563	1,203	1,203	74	339	89	78	Expired ETA
Homabay	187,057	26,822	6,745	4,415	1	43	779	278	278	64	80	28	88	Valid
Machakos	224,162	83,333	11,237	8,470	1	99	1,025	109	586	43	34	4	85	Valid
Embe	48,923	28,687	5,602	2,969	1	28	1,114	404	480	57	106	39	20	Valid
Migori	189,602	37,641	5,239	4,271	3	21	773	215	481	38	56	16	60	Expired ETA
Naivasha	164,624	120,100	5,109	4,551	1	115	1,139	425	714	37	26	10	69	Valid
Narok	85,279	33,600	5,016	4,016	1	66	941	413	656	n.c.d.	77	34	66	Expired RTA
Small (<5,000 conns.)														
Nyandarua	68,874	8,260	4,744	1,814	1	18	472	206	233	51	156	68	38	Expired RTA
Murugi Mugumango	34,911	20,991	4,476	4,295	1	12	2,575	1,306	1,610	n.c.d.	336	170	28	Expired ETA
Kapsabet Nandi	67,301	47,276	4,475	4,003	1	41	1,081	334	573	47	63	19	36	Expired ETA
Lamu	24,343	19,365	4,289	2,878	1	23	592	366	379	36	84	52	33	Expired ETA
Kiambere Mwingi	442,888	72,892	4,021	2,764	2	58	693	287	420	39	26	11	44	Expired ETA
Eldama Ravine	75,287	36,522	3,884	1,486	1	n.d.	n.d.	n.d.	n.d.	74	n.d.	n.d.	29	Expired ETA
Olkejuado	55,444	2,813	3,057	559	1	18	317	157	208	n.c.d.	309	153	33	Expired ETA
Samburu	42,509	17,648	3,028	2,536	1	17	452	220	385	n.c.d.	70	34	112	Expired ETA
Iten Tambach	55,558	13,873	2,852	2,277	1	16	403	162	274	32	80	32	49	Expired RTA
Muthambi 4K	23,825	21,966	2,724	2,716	1	10	753	442	590	n.c.d.	n.c.d.	55	16	Expired ETA
Olkalou	89,770	33,800	2,584	2,468	1	32	401	160	224	n.c.d.	33	13	19	Expired RTA
Mwala	88,261	12,453	2,319	1,476	1	n.d.	124	n.d.	n.d.	n.c.d.	27	n.d.	33	Expired ETA
Rukanga	7,878	7,386	2,072	1,719	1	6	252	110	128	49	n.c.d.	41	15	Valid
Namanga	21,106	11,740	1,780	1,736	1	8	402	166	173	57	94	39	11	Expired ETA
Wote	75,860	19,070	1,697	1,633	1	24	247	71	192	n.c.d.	35	10	22	Expired ETA
Kathita Kiirua	32,853	24,700	1,651	1,523	1	23	774	440	629	38	86	49	37	Expired ETA
Mbooni	67,764	15,851	1,297	1,093	1	6	8	5	6	n.c.d.	1	1	20	Expired ETA
Yatta	166,062	12,798	1,267	1,237	1	17	n.c.d.	67	209	n.c.d.	n.c.d.	14	31	Expired ETA
Naromoru	6,826	6,355	1,232	1,125	1	9	222	98	150	32	96	42	19	Expired ETA
Matungulu Kangundo	273,271	6,523	1,204	579	1	14	161	87	98	39	n.c.d.	37	12	Expired ETA
Kiamumbi	10,077	9,996	1,152	1,049	1	20	292	246	214	27	80	67	10	Expired ETA
Ndaragwa	15,701	11,358	1,135	1,135	1	4	0	0	80	n.c.d.	n.c.d.	0	20	Expired ETA
Runda	12,436	10,368	1,130	1,117	1	77	857	592	606	29	n.c.d.	157	30	Expired RTA
Kathiani	23,470	5,802	1,073	632	1	10	128	31	90	29	n.c.d.	15	25	Expired ETA
Nyasare	104,364	24,996	1,070	798	1	5	144	45	81	44	16	5	10	Valid
Tachasis	27,956	18,121	870	829	1	2	298	165	210	29	n.c.d.	25	9	Valid
Wajir	18,603	11,720	307	307	1	4	751	56	336	55	175	13	40	Expired ETA
TOTALS	**21,838,438**	**12,074,752**	**1,927,474**	**1,576,077**	**134**	**20,667**	**435,810**	**164,105**	**256,683**	**42***	**99***	**37***	**10,850**	

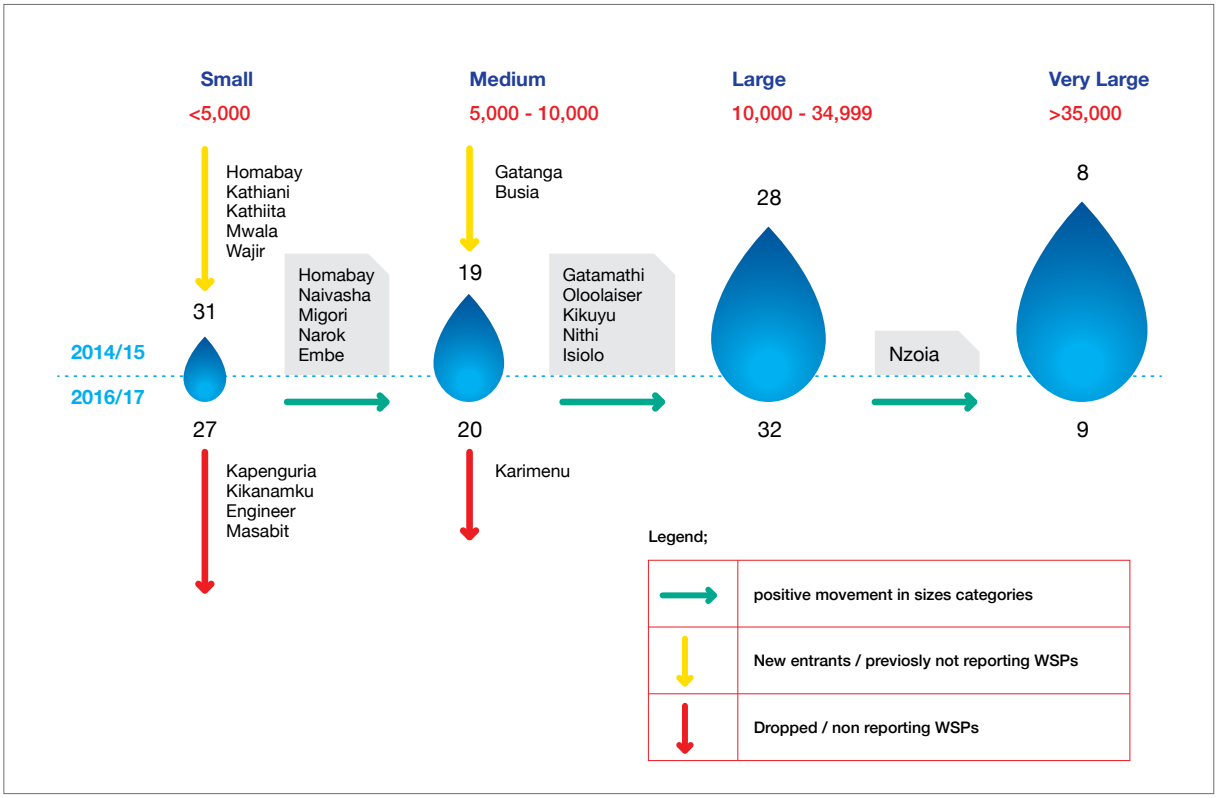
The 88 utilities covered by this report serve a population of 12.07 million people out of 21.83 million within their service areas. At an average household size of 4, this translates to 5.45 million households. The utilities employ 10,850 staff and have a turnover of more than Ksh 20.67 billion, up from 16.6 billion in 2014/15. Water production decreased from 429 to 419 million cubic meters, NRW slightly improved from 43% to 42% and per capita consumption slightly reduced to 37 litres per person per day.

3.3 CATEGORISATION OF UTILITIES

Utilities have been categorised based on the size (total number of registered connections for both water and sewer) and ownership structure (public or private) in order to ensure fair comparison.

The number of connections is significant as it dictates the potential business size of the company. This potential in certain instances is negated by the unacceptably high levels of dormant connections. Some of the utilities where more than half of the connections are dormant include Mombasa (Very Large); Mathira, Kahuti and Imetha (Large); Tililbei, Tuuru, Githunguri (Medium); Nyandarua, Eldama Ravine, Olkejuado and Matungulu Kangundo (Small). Considering that business size has a direct correlation to commercial viability, the above utilities are not fully exploiting their operating conditions to ensure viability. Using the total number of registered connections for both water and sewer, utilities have been categorised as Very Large, Large, Medium and Small as per the thresholds indicated (Fig 3.2).

Figure 3.2: Movement in Size Category



The second categorization is by operating environment and appreciates that public and privately owned utilities face different constraints and require different incentives with respect to regulation (Table 3.2). Public utilities serve a wide range of customers from high - low income, whereas, privately owned utilities have a more homogeneous medium - 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 3.2: Categorization by Ownership

Utility type	No. of Utilities	Population in Service Area
Public	86	21,815,925
Private	2	22,513

3.4 MARKET SHARE BY UTILITY SIZE

Compared to the previous year, the percentage of utilities in the Very Large and Large categories increased from 9% to 10% and from 31% to 36% respectively. However, for the Medium category, the proportion remained constant at 23% while there was a decline from 36% to 31% in the Small category (Fig 3.3).

Figure 3.3: Market Share by Utility Size

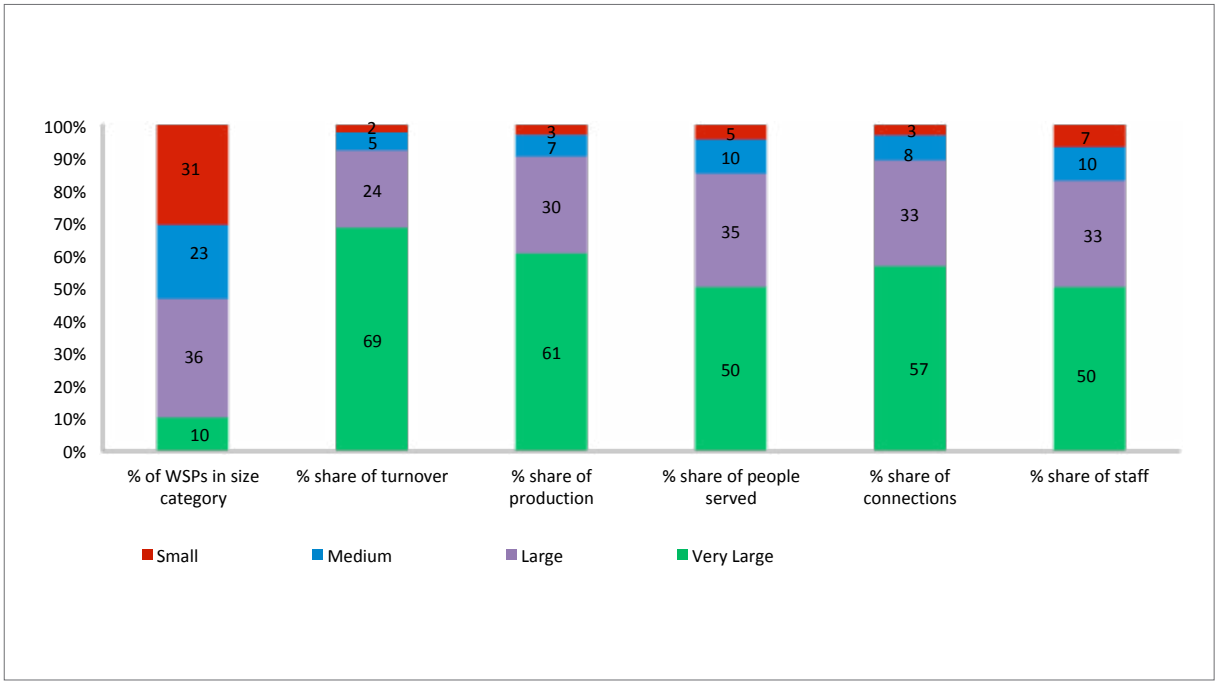
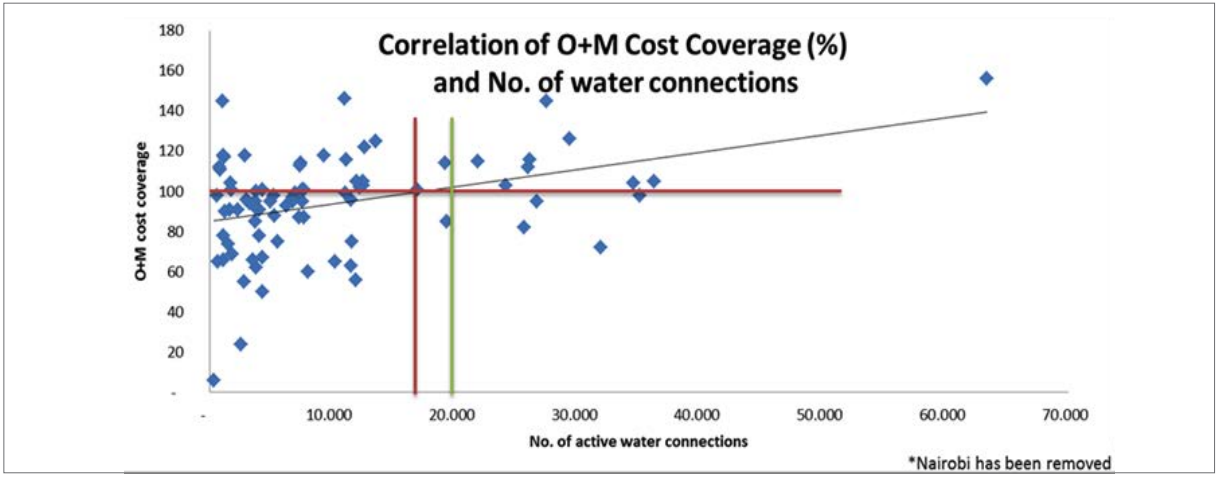


Figure 3.3 indicates that the number of utilities in the category of Very Large and Large represent 46% of all regulated utilities in the sector. They account for the largest share of business (93% of the total turnover, 91% of the total water produced and 85% of the people served). The Very Large and Large categories of utilities have a higher proportion of O+ M cost coverage (Fig 3.4).

Figure 3.4: Relationship of Active Connections to O+M Cost Coverage



The Water Act 2016 requires that utilities are licensed on the basis of commercial viability. Large utilities perform better on the overall and are likely to require fewer subsidies to meet their operational costs. In turn, they are likely to put less pressure for support from county governments, who own them. From Figure 3.4, the breakeven point using 100% cost coverage corresponds to about 18,000 connections.

In 2013, Wasreb conducted a study on "Assessing options to achieve commercial viability and financial sustainability of water supply and sanitation services". The objective of the study was to provide county governments with an overview of the commercial viability and financial sustainability of formalized WSS services within their area of jurisdiction and to identify suitable options to ensure adequate and cost-effective service delivery. Counties are encouraged to make use of this study to ensure that any proposed clusters comply with standards of commercial viability.

3.5 PERFORMANCE ANALYSIS AND RANKING

The performance analysis and ranking is based on the score of a utility in the nine KPIs . The scoring limits and the benchmarks of the KPIs are presented in Table 3.3.

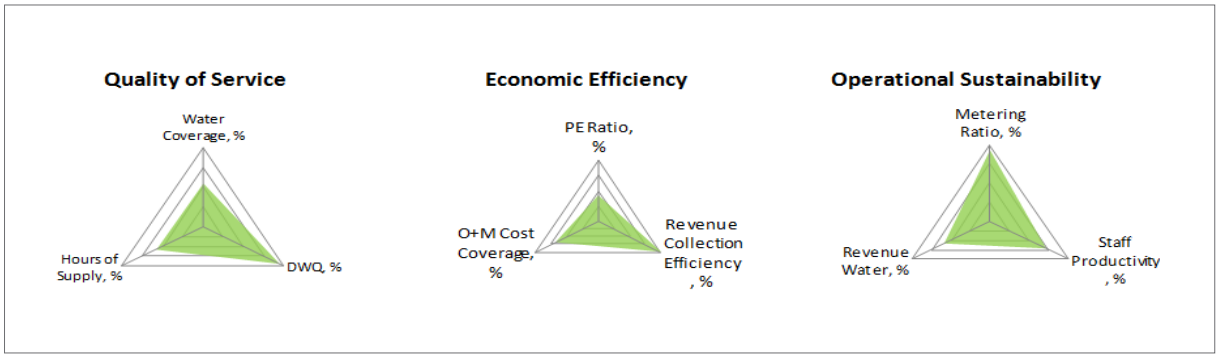
Table 3.3: Performance Indicators, Sector Benchmarks and Scoring Regime

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
							≤90%	0
	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
	5	O+M Cost Coverage, %		≥150%	100-149%	≤99%	≥150%	25
							≤90%	0
	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
Total Maximum Score								**200**

3.5.1 Overall Ranking

The national aggregated performance as per the cluster of indicators order is shown in Figure 3.5.

Figure 3.5: KPI Cluster Triangles



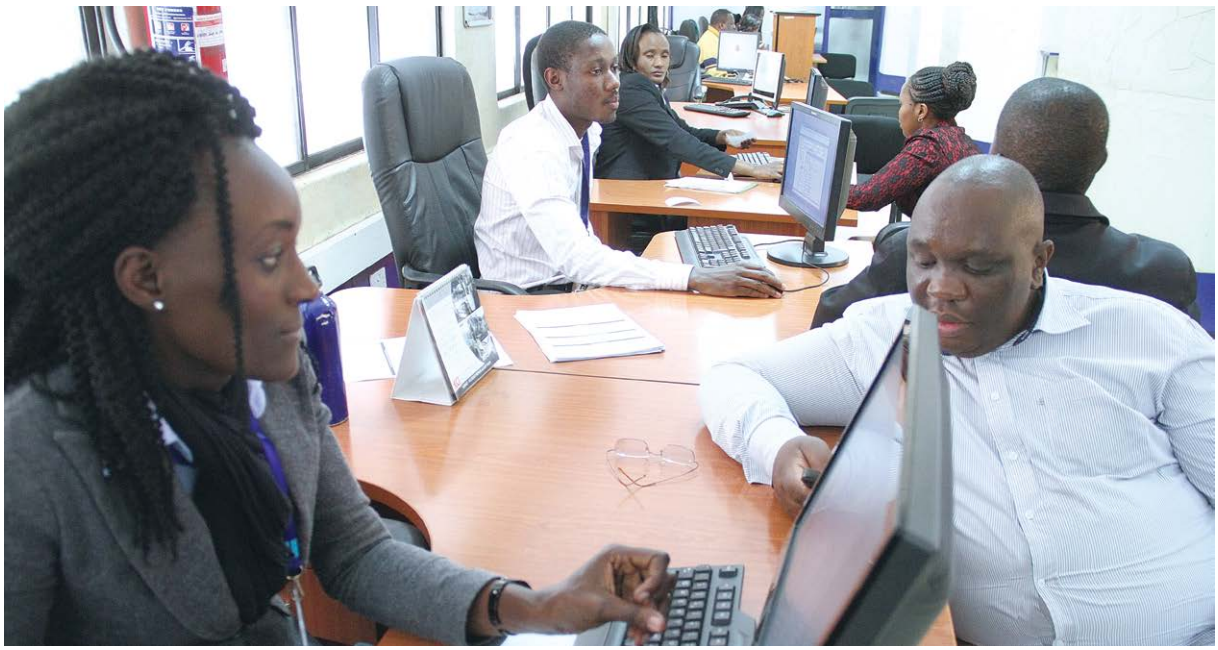


Table 3.4 presents the individual ranking of the 86 publicly-owned utilities based on the scoring regime outlined earlier. The ranking of the two privately-owned utilities is presented in Table 3.5.

Table 3.4: Overall Ranking and Ranking by Category for Publicly-Owned utilities

Indicator / Utilities	DWQ (%)	Non-Revenue Water (%)	Water Coverage (%)	Hours of Supply (hrs./d)	Staff Productivity (no. staff/K 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
Very Large Utilities												
Nyeri	96	18	93	24	3	46	100	145	100	183	1	1
Thika	93	31	97	21	5	41	97	126	81	137	2	3
Nakuru	92	31	90	17	5	30	99	104	96	132	3	4
Kakamega	91	43	86	21	4	50	101	112	95	116	4	10
Eldoret	93	43	74	15	4	48	83	156	99	108	5	13
Nairobi	93	38	81	6	6	56	104	105	100	101	6	17
Kisumu	91	41	66	24	6	32	97	105	88	88	7	27
Mombasa	85	50	43	5	10	31	103	72	64	27	8	73
Large Utilities												
Meru	95	21	64	21	7	37	117	116	100	137	1	2
Nanyuki	93	38	87	23	6	47	108	125	94	129	2	6
Ngandori Nginda	n.c.d.	n.c.d.	80	24	5	50	123	146	99	120	3	7
Embu	93	43	81	24	4	40	94	116	87	118	4	8
Malindi	93	31	79	21	8	31	101	82	100	118	5	9
Nithi	93	43	85	24	7	46	93	95	100	109	6	12
Othaya Mukurweni	95	62	75	23	6	51	102	101	78	105	7	14
Isiolo	93	39	67	15	8	52	104	99	100	92	8	23
Murang'a South	93	60	47	21	5	46	100	103	91	92	9	24
Tetu Aberdare	93	48	59	24	6	50	94	103	92	91	10	25
Murang'a	86	32	57	24	5	47	88	122	100	89	11	26
Gatundu	41	37	64	21	6	52	99	95	100	86	12	29
Nyahururu	93	40	72	20	6	42	88	105	94	81	13	32
Mathira	93	53	41	22	6	47	100	99	76	75	14	34
Mavoko	60	41	67	6	7	29	107	114	100	73	15	36
Tavevo	68	59	80	13	12	25	93	75	99	66	16	39
Kilifi Mariakani	92	48	45	9	11	26	97	85	96	60	17	43
Kahuti	68	66	47	21	8	49	96	118	91	60	18	44
Oloolaiser	79	31	51	13	16	36	99	101	100	58	19	47
Gusii	93	n.c.d.	40	n.c.d.	10	45	104	65	100	56	20	48
Kikuyu	88	44	35	10	9	30	107	97	100	46	21	55
Kericho	78	47	53	23	8	50	81	105	100	45	22	56
Gatamathi	83	66	38	23	8	49	96	87	54	41	23	61
Nakuru Rural	93	63	22	12	14	37	88	102	27	34	24	65
Sibo	93	56	40	n.c.d.	10	31	66	60	88	30	25	70
Imetha	84	51	71	n.c.d.	19	56	88	93	88	28	26	71
Kwale	65	42	48	9	13	35	67	96	100	18	27	77
Kitui	38	62	36	n.c.d.	9	23	77	63	68	15	28	78
Bomet	0	52	50	12	10	34	66	56	47	14	29	79
Garissa	27	n.c.d.	59	22	14	n.d.	n.d.	n.d.	60	7	30	81
Medium												
Ngagaka	93	51	99	22	4	52	95	113	95	132	1	5
Karuri	93	34	51	12	6	23	104	95	100	114	2	11
Embe	93	57	59	17	7	48	101	96	100	105	3	15
Kiambu	93	36	33	21	8	31	88	98	100	100	4	18
Busia	93	57	73	n.c.d.	9	46	109	75	92	75	5	33
Limuru	85	32	49	n.c.d.	7	37	125	101	100	75	6	35
Naivasha	93	37	73	n.c.d.	15	36	88	94	100	70	7	37
Githunguri	88	54	10	14	9	30	92	85	100	68	8	38
Kyeni	38	56	31	18	6	46	96	88	88	66	9	41
Kibwezi Makindu	62	30	31	15	10	42	87	95	100	58	10	45
Nol Turesh Loitokitok	60	74	16	18	22	46	104	66	91	49	11	52
Amatsi	92	43	15	13	16	26	75	67	66	43	12	58
Gatanga	0	46	29	23	5	50	n.c.d.	87	82	42	13	60
Tuuru	57	73	38	n.c.d.	16	39	95	100	99	39	14	62
Narok	n.d.	n.c.d.	39	16	16	n.d.	n.d.	78	98	34	15	66
Homabay	29	64	14	13	20	44	91	92	83	30	16	68
Machakos	78	43	37	n.c.d.	10	39	90	95	100	27	17	72
Lodwar	70	n.c.d.	51	n.c.d.	11	61	90	n.c.d.	97	25	18	74
Migori	38	38	20	8	14	22	64	50	75	22	19	75
Tililbei	57	57	59	n.c.d.	13	31	82	62	78	20	20	76
Small Utilities												
Lamu	93	36	80	8	11	n.c.d.	96	118	100	99	3	20
Rukanga	89	49	94	22	9	68	99	104	100	102	1	16
Muthambi 4K	0	n.c.d.	92	23	6	29	n.c.d.	n.c.d.	100	100	2	19
Tachasis	88	29	65	24	11	43	98	111	99	95	4	21
Naromoru	39	32	93	22	6	59	108	78	100	95	5	22
Murugi Mugumango	n.d.	n.c.d.	60	24	7	66	100	101	100	87	6	28
Kathita Kiirua	60	38	66	24	53	49	90	n.c.d.	100	85	7	30
Namanga	24	57	56	15	6	28	126	101	50	82	8	31
Kiambere Mwingi	93	39	16	n.c.d.	16	26	106	55	92	66	9	40
Ndaragwa	0	n.c.d.	72	n.c.d.	18	37	109	117	0	63	10	42
Kathiani	72	29	25	10	40	26	98	65	100	58	11	46
Kapsabet Nandi	29	47	70	n.c.d.	9	29	88	91	93	55	12	49
Wote	93	n.c.d.	25	8	13	33	80	91	100	54	13	50
Yatta	57	n.c.d.	8	8	25	40	95	90	100	54	14	51
Matungulu Kangundo	23	39	2	17	21	34	89	98	100	47	15	53
Samburu	90	n.c.d.	42	11	44	41	90	24	97	46	16	54
Nyandarua	34	51	12	16	21	32	85	69	93	44	17	57
Iten Tambach	87	32	25	15	22	42	87	91	61	43	18	59
Olkalou	n.d.	n.c.d.	38	n.d.	8	64	100	n.c.d.	n.c.d.	37	19	63
Mwala	85	n.c.d.	14	n.c.d.	22	28	102	74	76	35	20	64
Mbooni	0	n.c.d.	23	n.c.d.	18	16	n.d.	66	100	30	21	67
Nyasare	5	44	24	n.c.d.	13	43	81	112	99	30	22	69
Wajir	0	55	63	n.d.	130	45	55	6	63	10	23	80
Olkejuado	n.d.	n.c.d.	n.c.d.	n.c.d.	59	49	81	61	12	0	24	82
Eldama Ravine	58	74	49	n.d.	20	n.d.	n.d.	n.d.	59	0	24	82
Under Special Regulatory Regime												
Nzoia	93	41	83	n.c.d.	7	41	97	98	83	X	X	X
Ruiru-Juja	93	26	98	22	3	21	99	115	100	X	X	X
Kirinyaga	95	59	32	18	9	55	86	114	95	X	X	X

n.d. = no data; green marking = top 10 performer; red marking = bottom 10 performer n.c.d=non credible data

Top and Worst Performers

Nyeri continued to dominate the first position, with an improved score of 183 compared to 180 in the previous period.

The worst performers in the bottom three positions for the current period are Olkejuado (4th year in a row), Eldama Ravine and Garissa. The worst performers in the Very Large, Large, Medium and Small categories are Mombasa (seventh year in a row), Garissa, Tililbei and Olkejuado respectively. Although Mombasa improved its score by 13 points, it only managed a score in only two out of nine KPIs. It is of major concern that water coverage for this utility declined from 54% to 43% with close to 100,000 people being left out of service provision. It should be worrying to the County Government of Mombasa that a city with a population of over 1.1million can be allowed to go on this downward trend. There is urgent need to strengthen the governance structures for all the poor performing utilities in order to safe guard public interests.

The top 10 positions continued to be dominated by Very Large and Large utilities. The utilities in the top 10 positions in terms of size category are Very Large (4) and Large (6). This firms the case that, save for Mombasa and Garissa, size is a critical element in the viability of a utility. The Water Act 2016 makes it mandatory for a county government to establish a Water Service Provider which meets the commercial viability standards set by the Regulator and which shall be governed according to the national standards on governance.

Privately Owned

In the privately owned category, Runda, despite losing 11 percentage points, retained the top position.

Table 3.5: Overall Ranking for Privately Owned Utilities

Indicator / Utilities	DWQ (%)	Non-Revenue Water (%)	Water Coverage (%)	Hours of Supply (hrs./d)	Staff Productivity (no. staff/K 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	93	29	83	18	27	37	106	118	100	141	1	1
Kiamumbi	77	27	99	23	10	n.c.d.	98	145	100	132	2	2

Special Regulatory Regime

Ruiru-Juja, Kirinyaga and Nzoia, being currently under the Special Regulatory Regime, were not ranked. Inspection findings from these utilities identified material governance lapses under the SPA, the Public Finance and Management Act 2012 and the utilities systems and policies. Subsequently, after consultation with respective county governments, the three utilities were placed under a special regulatory regime to facilitate compliance.

3.5.2 Performance Against Sector Benchmarks

Wasreb uses sector benchmarks classified as 'Good, Acceptable and Not Acceptable' (Table 3.6) to define performance in relation to the KPIs. On the basis of performance in these KPIs, utility performance can also be classified along the three performance ranges using the limits of performance defined in Table 3.3 to determine the cut-off score. Table 3.6 provides the performance of utilities in relation to the sector benchmarks and the number of utilities within each performance range.

Table 3.6: Assessment of KPIs Against Sector Benchmarks by No of WSPs

Sector Benchmark	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	9	4	34	1	47	19	18	1	42
Acceptable	10	33	16	33	22	17	32	1	8
Not Acceptable	68	46	16	48	13	47	38	71	37
n.d.	0	4	3	2	4	3	0	0	0
n.c.d.	1	1	19	4	2	2	0	15	1
TOTAL	88	88	88	88	88	88	88	88	88
% of utilities within sector benchmark	22%	42%	57%	39%	78%	41%	57%	2%	57%

One of the goals of the Regulator under the strategic objective of 'ensuring efficiency and sustainability in water service provision' is to ensure at least 50% of the WSPs meet at least 50% of the sector benchmarks by year 2017'. This is achieved in only four indicators namely Hours of Supply, Collection Efficiency, Staff Productivity and Metering Ratio. The worst performed KPI is NRW where only 2% of the utilities are within the sector benchmark. The performance of the utilities on a cluster basis is highest for economic efficiency at 51% with quality of service and operational sustainability at 38%. Future licensing of WSPs shall take into account this scenario to ensure that set targets are attained.

3.5.3 Performance Over Time

Performance improvement over time is employed to recognise utilities whose performance has improved 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 3.7 and 3.8 show the performance over time of urban publicly and privately owned utilities.

Table 3.7: Performance Over Time of Publicly-Owned Utilities

Rank	WSP	Score 2014/15	Score 2015/16	Score 2016/17
1	Nyeri	180	182	183
2	Meru	123	129	137
3	Thika	132	105	137
4	Nakuru	140	131	132
5	Ngagaka	114	110	132
6	Nanyuki	136	138	129
7	Ngandori Nginda	119	106	120
8	Embu	98	135	118
9	Malindi	115	122	118
10	Kakamega	106	124	116
11	Karuri	86	92	114
12	Lamu	80	37	109
13	Nithi	127	112	109
14	Eldoret	118	128	108
15	Othaya Mukurweni	80	100	105
16	Embe	108	104	105
17	Rukanga	70	87	102
18	Nairobi	114	118	101
19	Kiambu	96	83	100
20	Muthambi 4K	107	95	100
21	Tachasis	72	90	95
22	Naromoru	n.d.	84	95
23	Isiolo	110	100	92
24	Murang'a South	46	90	92
25	Tetu Aberdare	75	79	91
26	Murang'a	100	135	89
27	Kisumu	119	125	88
28	Murugi Mugumango	100	87	87
29	Gatundu	107	86	86
30	Busia	n/a	n/a	86
31	Kathita Kiirua	n.d.	85	85
32	Namanga	86	92	82
33	Nyahururu	116	71	81
34	Mathira	59	97	75
35	Limuru	105	85	75
36	Mavoko	75	90	73
37	Naivasha	34	67	70
38	Githunguri	65	73	68
39	Tavevo	56	49	66
40	Kiambere Mwingi	66	87	66
41	Kyeni	59	58	66
42	Ndaragwa	35	n.d.	63
43	Kilifi Mariakani	48	31	60
44	Kahuti	49	48	60
45	Kibwezi Makindu	60	56	58
46	Kathiani	n.d.	39	58
47	Oloolaiser	86	62	58
48	Gusii	21	64	56
49	Kapsabet Nandi	57	70	55
50	Wote	22	57	54
51	Yatta	35	30	54
52	Nol Turesh Loitokitok	4	30	49
53	Matungulu Kangundo	74	73	47
54	Samburu	63	31	46
55	Kikuyu	60	39	46
56	Kericho	92	71	45
57	Nyandarua	45	62	44
58	Amatsi	39	46	43
59	Iten Tambach	49	61	43
60	Gatanga	n.c.d.	49	42
61	Gatamathi	54	40	41
62	Tuuru	50	37	39
63	Olkalou	83	34	37
64	Mwala	n.d.	47	35
65	Nakuru Rural	22	44	34
66	Narok	60	48	34
67	Mbooni	30	38	30
68	Homabay	n/a	55	30
69	Nyasare	92	71	30
70	Sibo	70	80	30
71	Imetha	65	51	28
72	Machakos	38	52	27
73	Mombasa	14	22	27
74	Lodwar	57	56	25
75	Migori	47	40	22
76	Tililbei	22	42	20
77	Kwale	26	31	18
78	Kitui	88	70	15
79	Bomet	49	66	14
80	Wajir	n.c.d.	n.d.	10
81	Garissa	46	19	7
82	Eldama Ravine	66	n.d.	0
83	Olkejuado	0	12	0

Naivasha, Rukanga and Karuri are the top three improvers while Nyasare, Kitui and Olkejuado are the greatest losers. Compared to the previous period, the number of Large and Very Large WSPs whose performance declined rose from five to seven. This high proportion of Large and Very Large WSPs (5 out of 10) in the loser's category is of great concern since their decline impacts on services.

Table 3.8: Performance Over Time of Privately-Owned Utilities

Rank	WSP	Score 2014/15	Score 2015/16	Score 2016/17
1	Runda	152	137	141
2	Kiamumbi	129	151	132

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

Table 3.9 indicates that the overall performance of utilities improved slightly. Whereas in 2014/15, 36% of the utilities improved their performance, a marginal improvement to 38% was recorded in the current reporting period.

Table 3.9: Number and Percentage of Utilities Recording Improvement

Year	2014/15	2015/16	2016/17
No. Utilities	86	88	88
No. of Improvers	31	50	33
% of improvers	36	57	38

3.5.4 Performance of Utilities by Indicators

a) Water Coverage

Water Coverage refers to the number of people served with drinking water expressed as a percentage of the total population within the service area of a utility. It is critical in tracking the progressive realization of the right to water with regard to the accessibility component in the normative content of the right to water.

In the review period, the population in the service area of the 88 utilities was 21.78 million. At an average of 4 members per household, this represents 5.45 million households. Out of these, the utilities were able to serve 12.07 million people, representing 3.02 million households.

The average Water Coverage in the year under review was 55.42% compared to 54.59% in the previous reporting period (Fig 3.6). This change translates to an additional 944,988 people, representing 236,247 households. The average for Very Large utilities was 76%, just four (4) percentage points short of the sector benchmark of 80%. The Small utilities trailed at an average of 26%.

The number of new connections has increased annually by only 91,594. This reflects 46% of the annual required average growth of 200,000 connections to be able to meet the target of universal access under Vision 2030. This growth in connections was, however, not matched by corresponding consumption volumes implying a lower per capita consumption and hence a decline in the quality of service. Further, the actual sector development funding during the period was Ksh 29.542 billion (The Annual Water Sector Review, 2015/16) which translates to only 27.5% of the required funding. This calls for increasing the proportion of investments financed from budgetary allocation, blended financing and Internally Generated Funds (IGFs).

Figure 3.6: Water Coverage in %

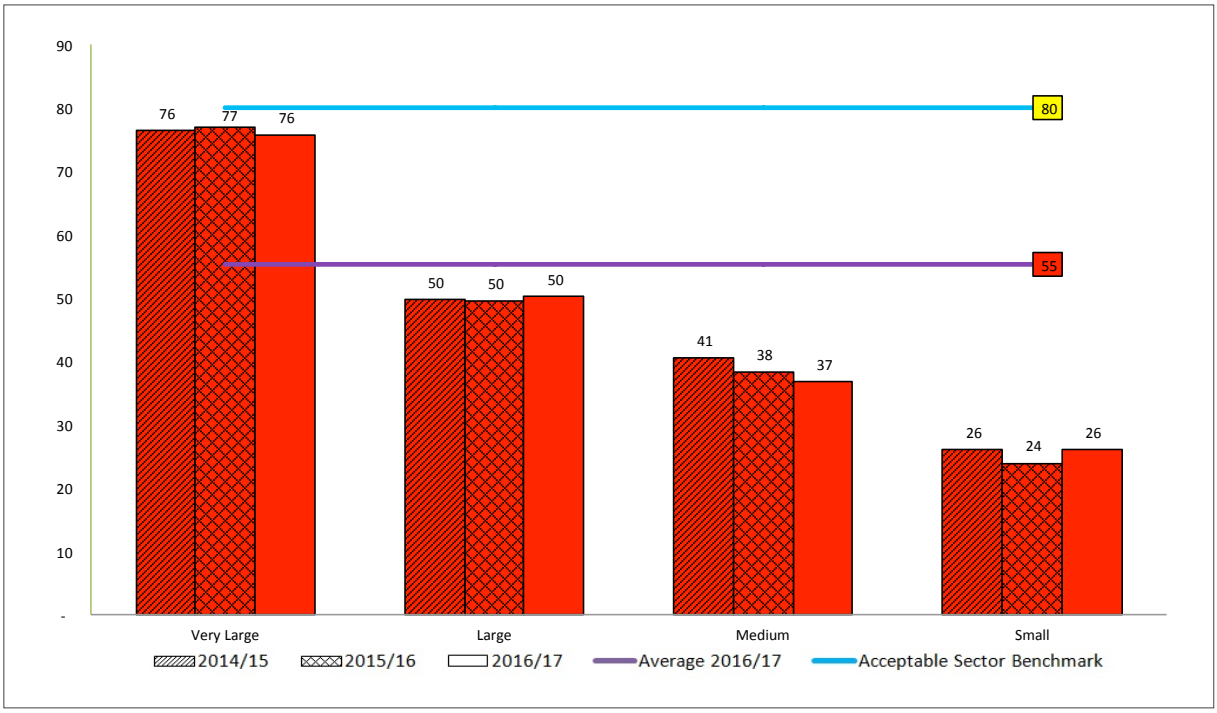
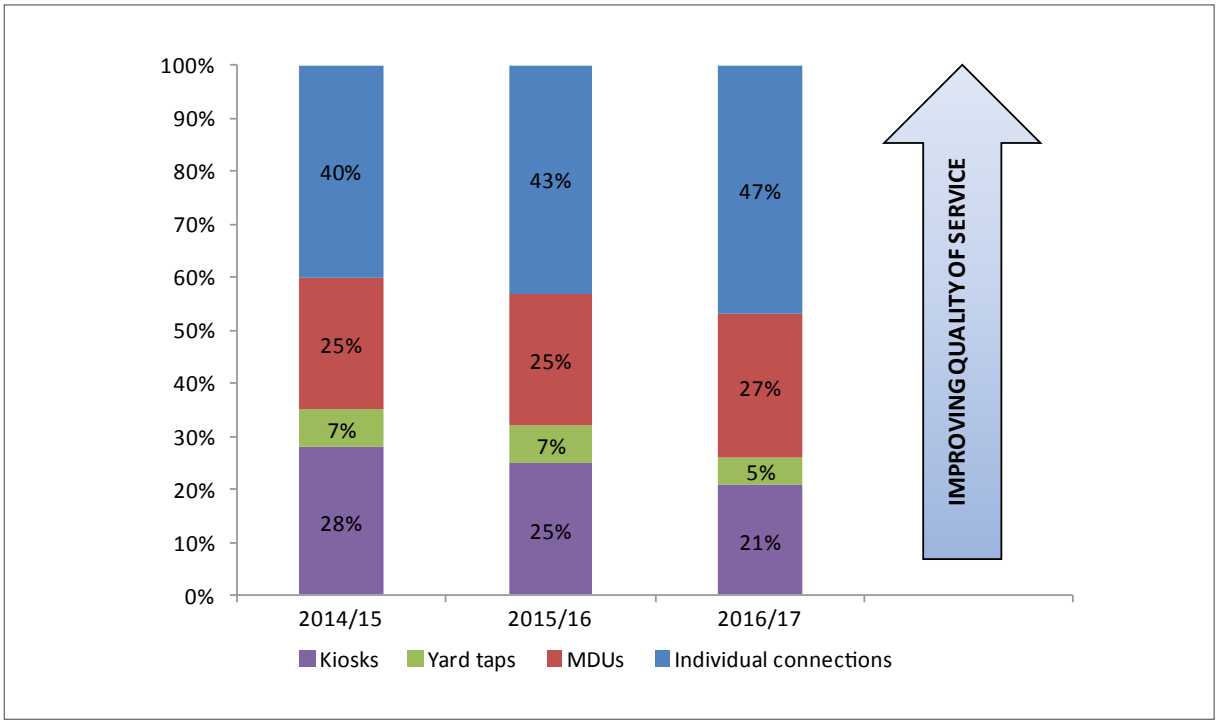


Figure 3.7 presents the proportion of population served by the different types of connections.

Figure 3.7: Water Coverage Breakdown per Connection Type



Service provision through household connections improved from 65% to 74% while shared connections declined from 35% to 26% during the two year period. Although this growth is commendable, using the cost-benefit analysis for the different infrastructure, it is clear that acceptance of the first step in the ladder of service provision (shared connection) may be the answer to meeting the desire of the poor to move to formalized service provision. However, proper management of water kiosks should be at the center of these pro-poor initiatives. The challenge for utilities is ensuring the right mix of infrastructure and safeguarding the 'fitness for purpose' principle in all undertakings.

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 Kitui and Bomet sewerage projects, sewerage services are now available in 32 urban centres spread across 26 Counties. The remaining 21 Counties do not have sewerage services within their jurisdiction, which implies that they wholly rely on on-site systems for sanitation services. Kapsabet-Nandi and Tavevo WSPs did not provide data on sewer services and performance on sewerage, therefore, the results do not include the areas covered under Kapsabet and Voi towns.

The average growth in sewerage coverage in the current period has been marginal at one (1) percentage point from 15% to 16% (Fig 3.8). A four percentage point difference between the growth in sewer connections, compared to the population served, was recorded resulting in an improvement in the average number of people served per sewer connection from 32 to 31. The sewer coverage for the Very Large utilities stands at 38%, which is 2 percentage points less than the 2015 MDG target of 40%. The number of sewer connections in absolute terms increased by 43,658 or 12.7% compared to the previous reporting period. The marginal growth in sewerage coverage goes against the aspirations of the sector where sewerage coverage of 80% is anticipated by the year 2030. To attain the targets under Vision 2030 annually, approximately 350,000 additional connections have to be made or 3.2 million additional people have to be served. The additional population of 459,437 served in the two years translates to 66% of the target. To mitigate against this slow growth and to exploit the window on a sanitation levy under the Water Act 2016 (section 109), Wasreb conducted a study on factors associated with willingness to pay (WTP) among customers of two water utilities in Kenya (Nakuru and Ruiru-Juja), for a sanitation surcharge to achieve safe sanitation in low income urban and peri-urban areas. The sanitation surcharge, in addition to introducing cost reflective user charges and cost accounting in sewerage, is expected to aid in the expansion of sewerage services in urban areas.

Figure 3.8: Sewerage Coverage in %

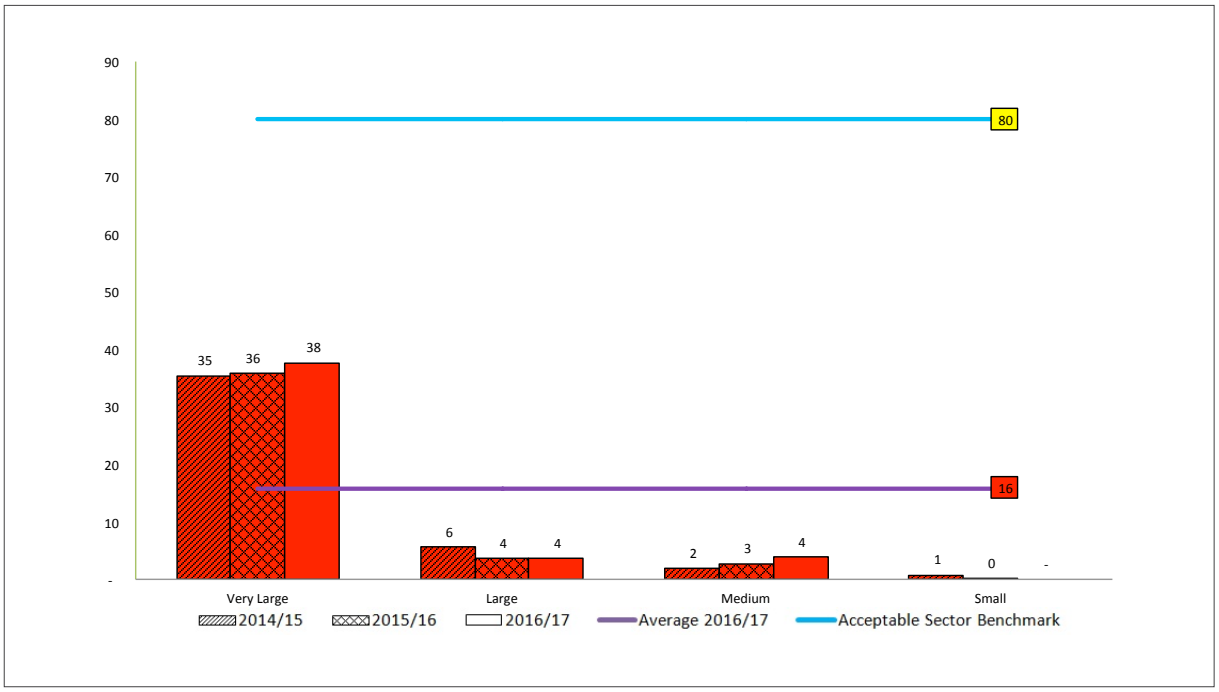
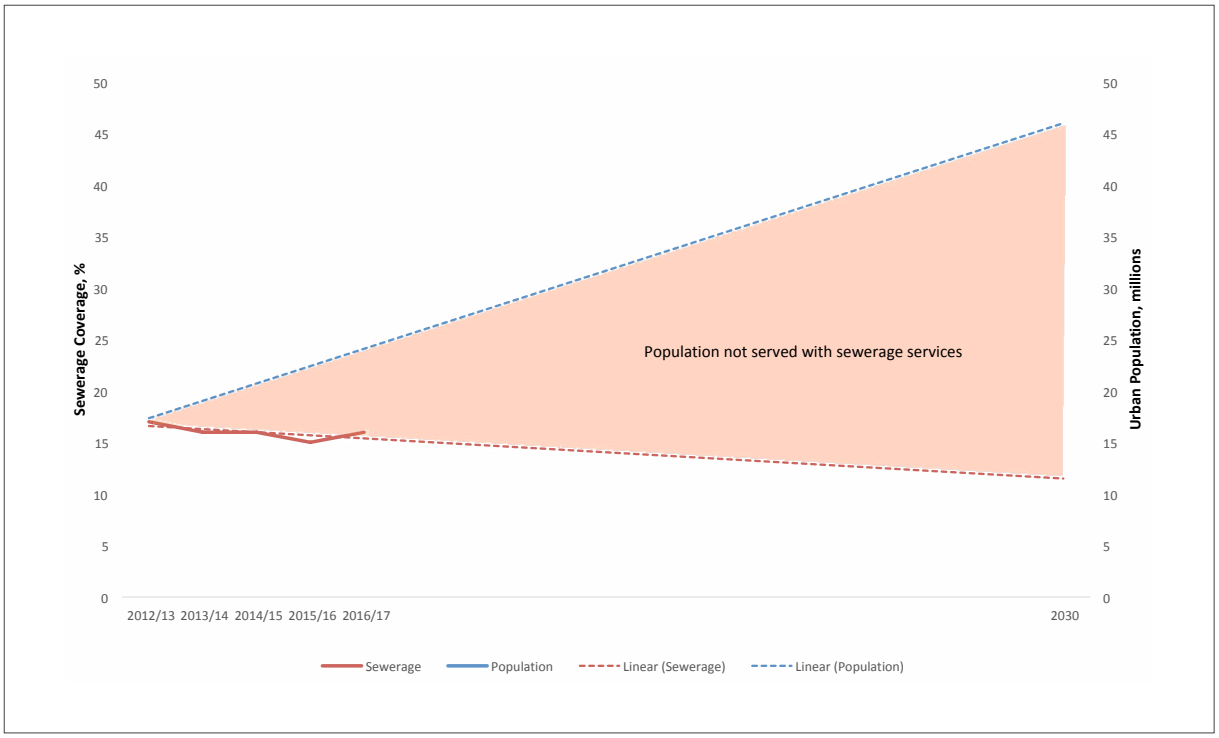


Figure 3.9: Trend in Sewerage Coverage in %



c) Drinking Water Quality

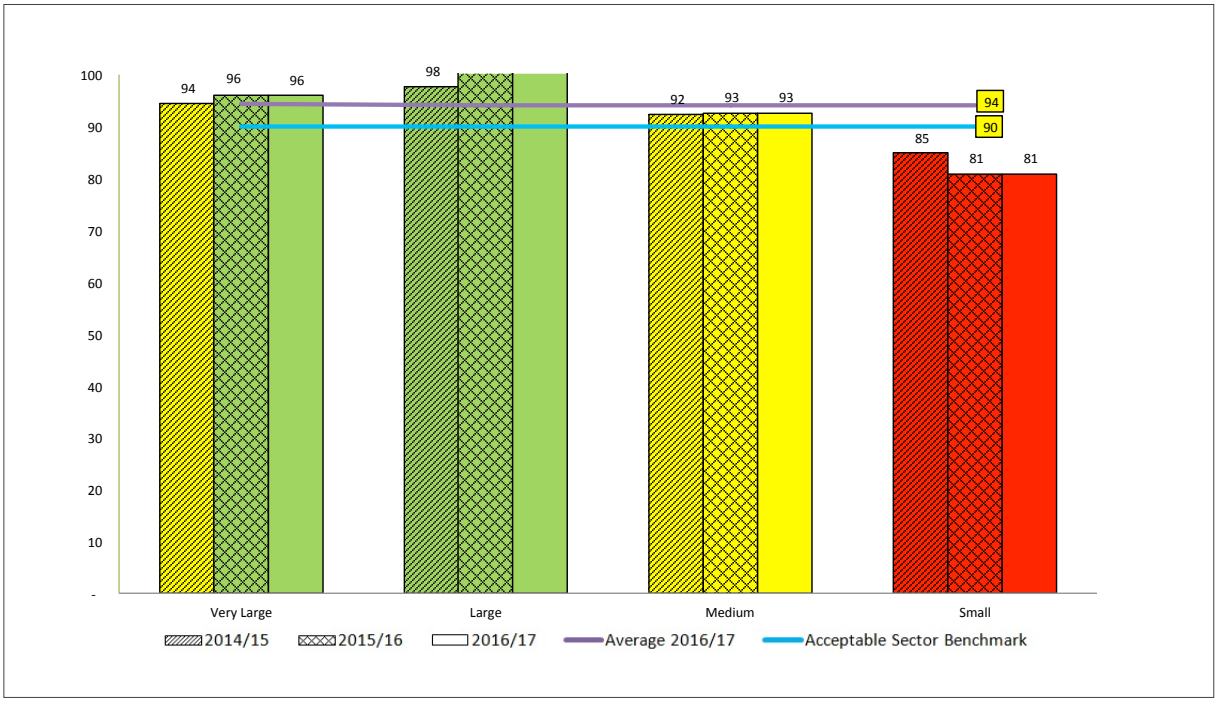
Drinking Water Quality (DWQ) measures the potability of water supplied by a utility. It is a critical performance indicator since it has a direct impact on the health of consumers. This is a weighted composite indicator measuring compliance with residual chlorine standards (40%) and bacteriological standards (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) weighted at 67%.

(ii) The number of samples within the required norm as a percentage of the total number of samples taken weighted at 33%.

Performance on this indicator improved from 92% in 2014/15 to 94% in 2016/17.

Figure 3.10: Drinking Water Quality in %



The improved performance in this indicator is attributed to an improved performance in respect to Residual Chlorine. While compliance with the number of samples improved, there was a decline in compliance levels. On the other hand, bacteriological standards showed a decline but compliance with standards remained constant. To ensure utilities supply potable water to their consumers, the Regulator will include in the requirements for licensing the minimum required resources for water quality monitoring for one to be licensed as a service provider.

A number of utilities continue to default in their submission of reports on water quality and therefore are not eligible for the full score despite their good performance in other KPIs. 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 assessing performance in this indicator. However, the Guidelines on Drinking Water Quality, 3rd Edition, 2004, recognize that the most effective means of ensuring water safety is through implementation of Water Safety Planning. This is a comprehensive risk management approach that includes all steps in the water supply chain from catchment to consumer. This risk management approach seeks to:

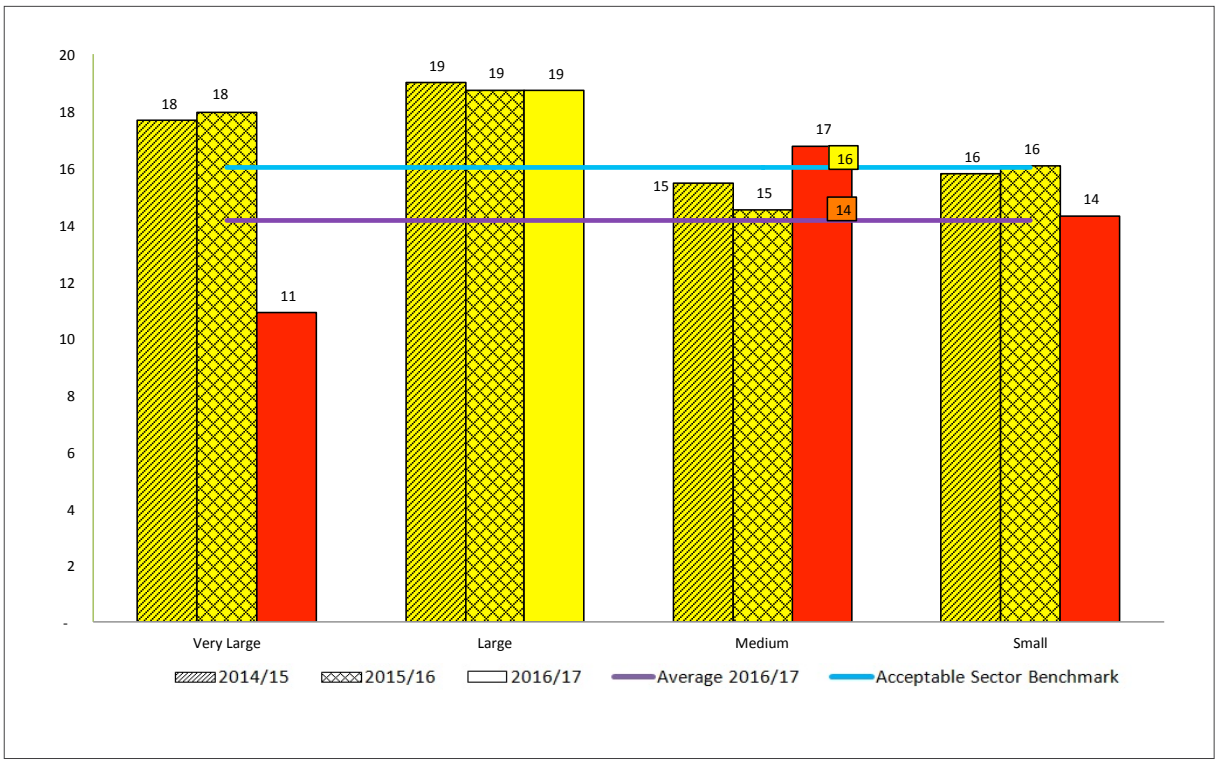
- prevent contamination at source
- remove/reduce contamination by treatment
- prevent re-contamination in storage/distribution
- prevent re-contamination in the household.

Wasreb is developing a guideline on water safety planning for utilities. Subsequently, utilities will be assessed on the extent of implementation of the requirements of the Water Safety Planning Guideline. This shift is also in line with Sustainable Development Goal (SDG) No 6 of ensuring proper management of water and sanitation.

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 3.11: Hours of Supply



Kiosk Operating Standards

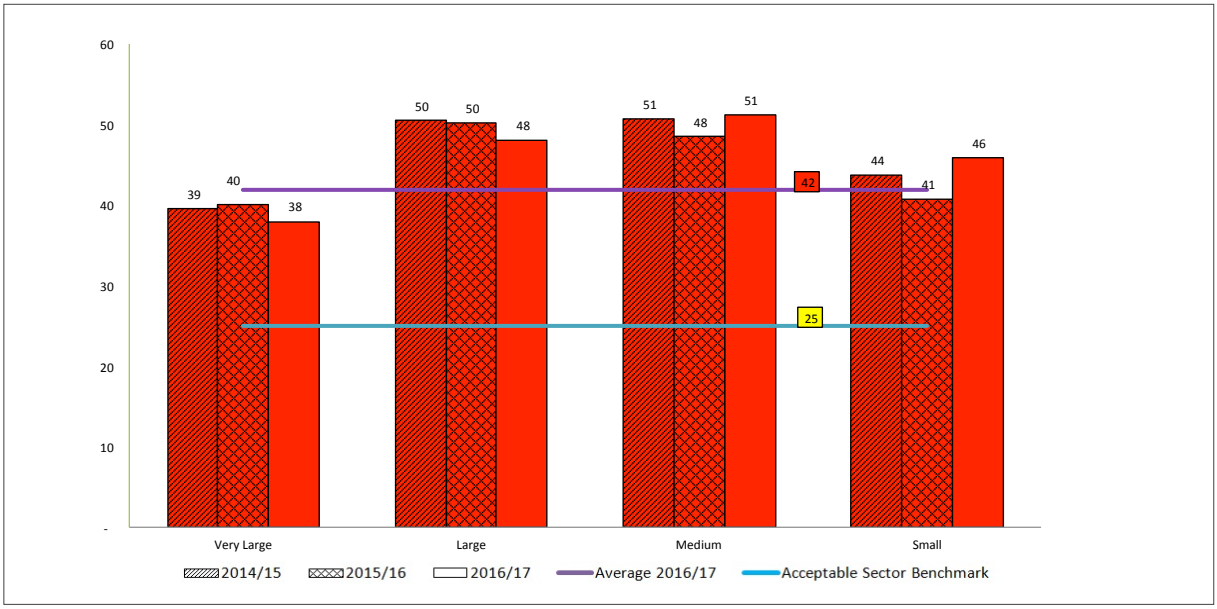
- *Accessibility of a water kiosk and availability of water during operating hours*
- *Operating requirements and ethics*
- *Eligibility of operators and contractual arrangements*
- *Maintenance obligations*
- *Compliance to approved tariffs*

In 2016/17, average daily service hours dropped from 18 to 14. This drop can be attributed to the drought experienced during the year. In Nairobi, average service hours dropped from 18 to 6. Considering that service hours is weighted against the number of active connections, this huge drop in the case of Nairobi, which constitutes 31% of the total number of active connections, drastically reduced the national average. As a result of this decrease in service hours, the combined per capita water consumption in litres per capita per day (l/c/d) for individual connections and kiosks decreased from an average of 43 to 37 l/c/d. Though this decreased level of consumption may seem acceptable, disaggregation of consumption between individual and shared connections reveals many inequalities. Whereas for individual connections the average per capita consumption is at an acceptable level of 46 l/c/d, for kiosks, the volumes are at a low of 9 l/c/d. Considering that 21% of the population access their services through kiosks, there is need to ensure that kiosk operations are streamlined and that water utilities give water kiosks a higher priority.

e) Non-Revenue Water

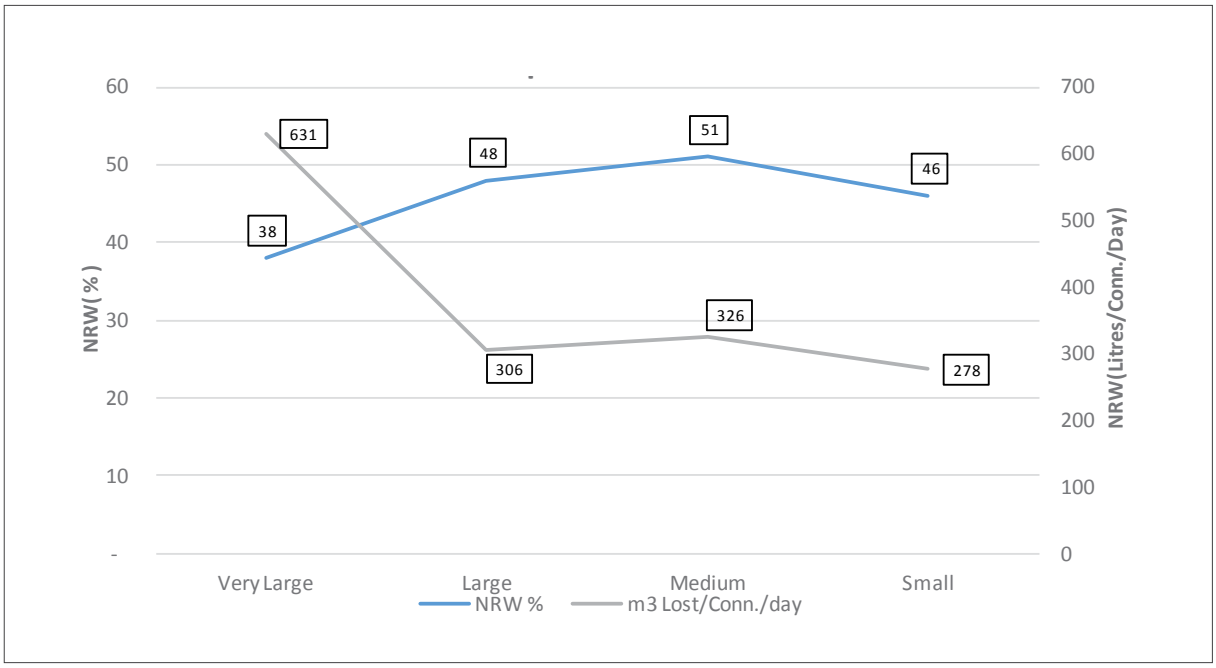
Non-Revenue Water is the difference between the amount of water put into the distribution system and the amount of water billed as authorized consumption. It comprises both commercial (apparent) losses and physical (real) losses. It is an operational indicator contributing to the sustainability question of utilities and therefore is a significant measure that facilitates evaluation of the efficiency of operations by the utilities.

Figure 3.12: Non-Revenue Water in %



In 2016/17, the NRW improved marginally from 43% to 42% when compared to 2014/15.

Figure 3.13: NRW in Terms of Litres Lost per Connection per Day



With a total turnover of Ksh 20.67 billion for the sector, an average NRW of 42% against a sector benchmark of 20%, then conservatively, the sector lost Ksh 7.8 billion due to NRW. Literally speaking, an equivalent of more than a 'Northern Collector Tunnel Project' was lost within a year. This should serve as a wakeup call for all sector players. It cannot be business as usual if this trend of losing significant resources is to be contained.

Wasreb has established that despite the rolling out of NRW Management Guidelines, the uptake and implementation of NRW Management Standards have been very low. Some basic fundamentals like establishing dedicated functions of NRW, resourcing, and facilitating them has not been done.

The use of the correct type of meters, pipes and fittings materials remains a thorny issue. Functionality of the meters is also a big question to be resolved besides use of estimated volumes that lack empirical basis. Utilities must now ensure that the procurement for meters, pipes and fittings is based on the correct specification and this must be confirmed at the time of delivery.

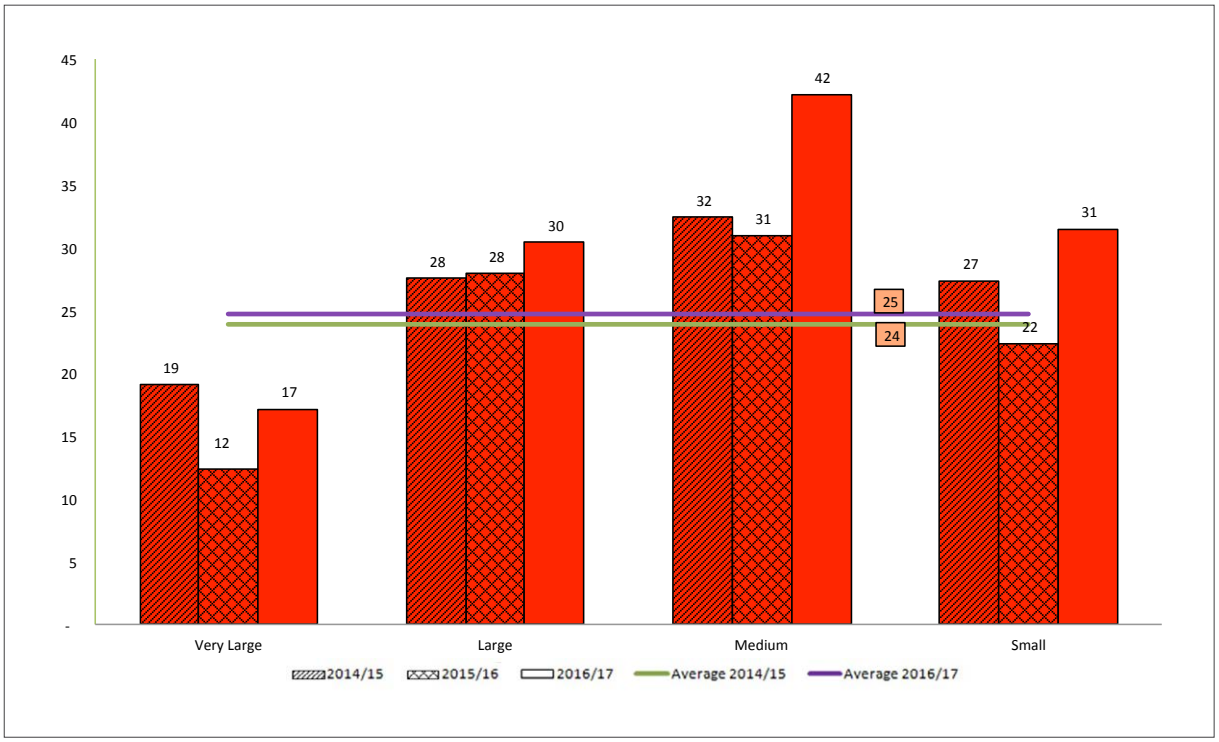
Further, utilities must improve on workmanship during installation of the meters, pipes and fittings by ensuring that only competent artisans are allowed to undertake such works. Practical training is therefore imperative as one measure of overcoming this endemic challenge. Utilities are encouraged to get into partnership with the Kenya Water Institute (KEWI) for capacity building.

There has been a continuing desire by many development partners to venture in the NRW arena with various models including Public Private Partnerships, Performance Based Financing, grants, and capacity building, among others. However, the Regulator is convinced that the solution to the NRW challenge is related to utility governance. Therefore, interventions by development partners may not help, as long as governance problems remain unfixed.

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 the 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 3.14: Dormant Connections



The decline in performance recorded in the previous period continued to be witnessed in the current year, with the performance declining from 24% in 2014/15 to 25% in 2016/17. 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 a result of more accurate reporting by Nairobi, which provided a figure of 6%.

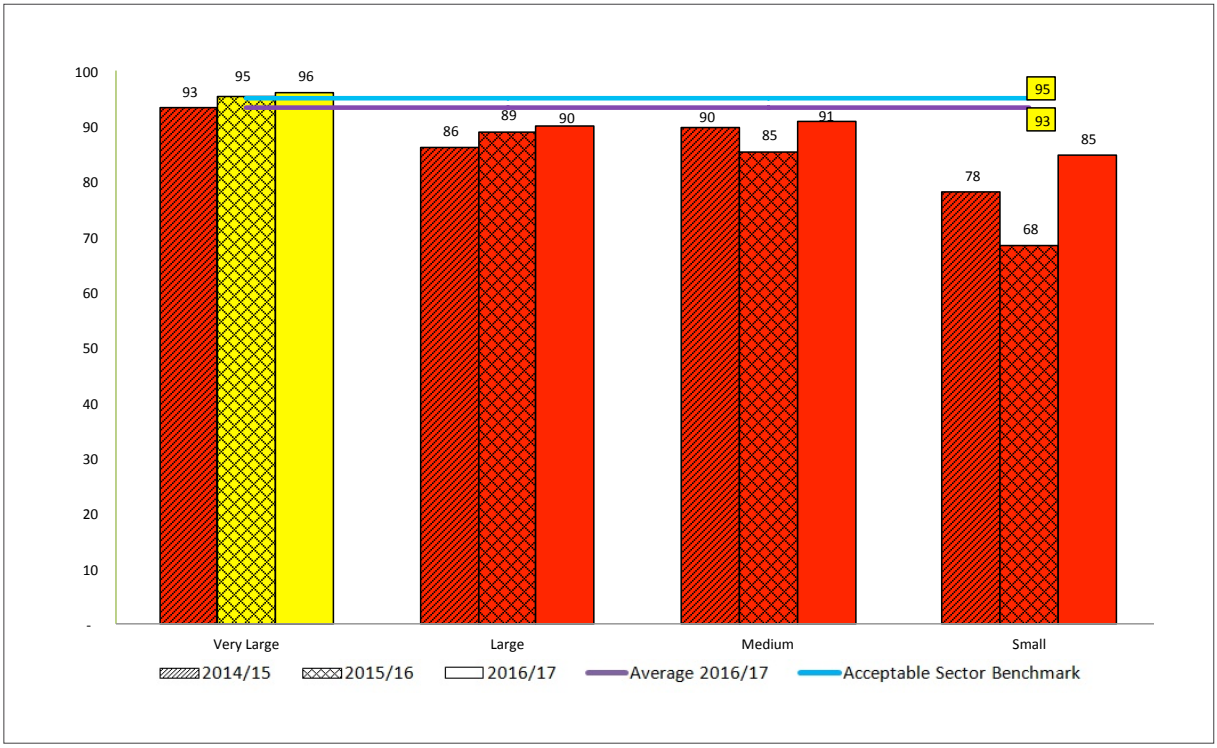
A high level of dormant connections could partly be due to integrity, where in some cases, disconnected customers collude with utility staff to get new account numbers. Records of a utility may therefore have dormant accounts that do not physically exist. Alternatively, some disconnected accounts, classified 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.

g) Metering Ratio

Metering ratio is the number of connections with functional meters expressed as a percentage of the total number of active water connections. It is an empirical way for a utility to ensure that consumers only pay for what they consume. It is expected that the functionality of these meters is occasionally ascertained by the utility by sampling them for calibration, or replacing the aged ones through adoption of a metering policy.

In 2016/17, the metering ratio increased by 3% from 90% to 93% which is 2 percentage points below the sector benchmark of 95%. Although the improvement in metering is commendable, this growth has not translated to a significant reduction in NRW, which is a pointer that NRW could have a deeper cause.

Figure 3.15: Metering Ratio

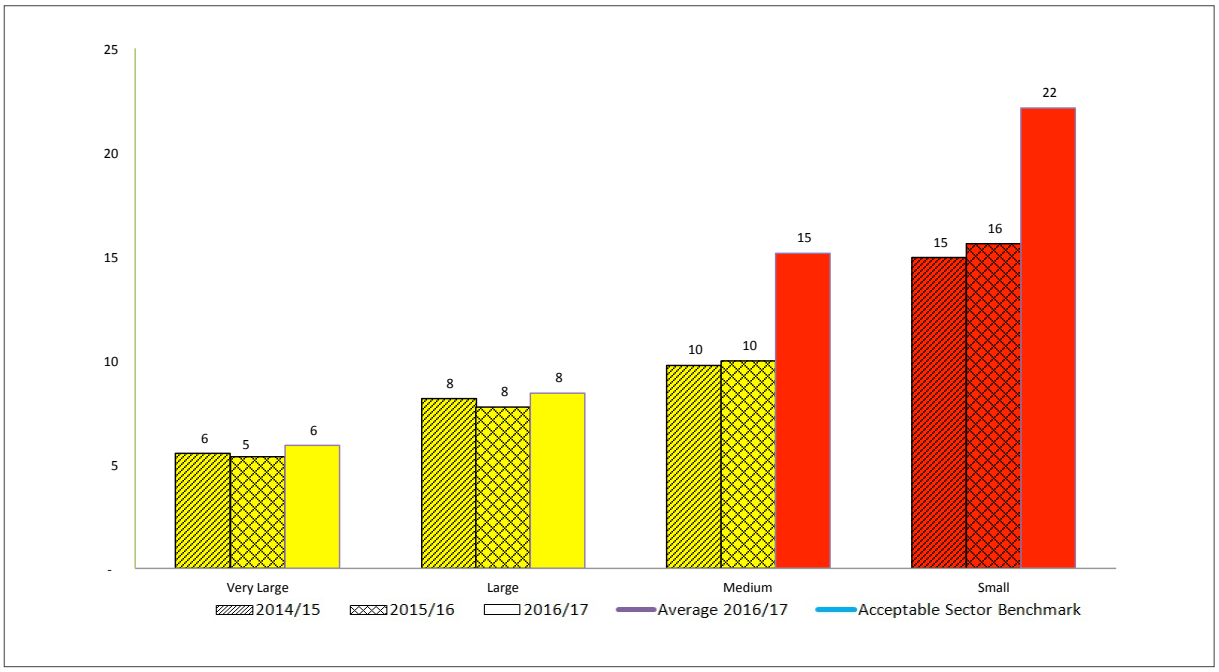


h) Staff Productivity (staff per 1,000 connections)

Staff Productivity refers to the number of staff in employment for every 1,000 connections (total active water and, where applicable, sewer connections). It measures the efficiency in staff utilization. Staff productivity is affected by factors such as size of a utility, the nature of human settlement (distances between connections and number of towns served), skills mix, and the extent of outsourcing for services and whether a utility provides water alone or water and sewerage services together, among others.

Therefore, there are different sector benchmarks depending on the category of the utility. For the year under review, the Very Large and Large categories were within the acceptable sector benchmark.

Figure 3.16: Staff Productivity



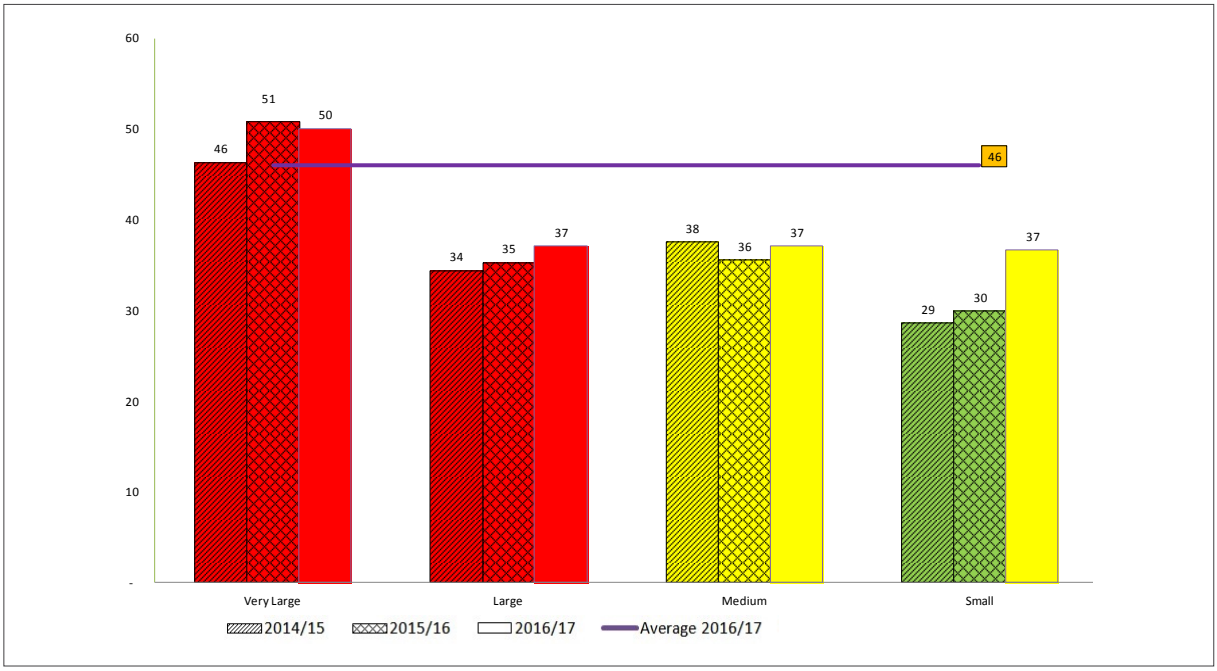
In absolute terms, the number of staff increased by 1,424 compared to an increase of 128,927 in the total number of active water and sewer connections. The number of staff therefore increased at a higher rate than the number of active connections for both water and sewer. This is further reflected in the ratio of personnel expenditure to O+M costs.

i) Personnel Expenditure as a Percentage of O+M costs

Personnel expenditures as a percentage of O+M Costs measures whether personnel related expenses are proportionate to overall O+M costs as defined by respective sector benchmarks.

> **STAFF PRODUCTIVITY IS AFFECTED BY FACTORS SUCH AS SIZE OF A UTILITY OR NATURE OF HUMAN SETTLEMENT**

Figure 3.17: Personnel Expenditure as a Percentage of O+M



Utilities in the Very Large and Large categories performed poorly in this indicator by being in the 'unacceptable' range of the sector benchmark. This performance indicts these utilities on account of disproportionate expenses on personnel to O+M costs. Wasreb has observed that a number of the Very large and Large utilities at the stage of tariff negotiation fail to disclose ongoing Collection Bargaining Agreements (CBAs) and quickly proceed to implement the same. The effect of this is that more resources go to emoluments and fewer resources are deployed to operations and maintenance. The long term effect of this is a gradual deterioration of services.

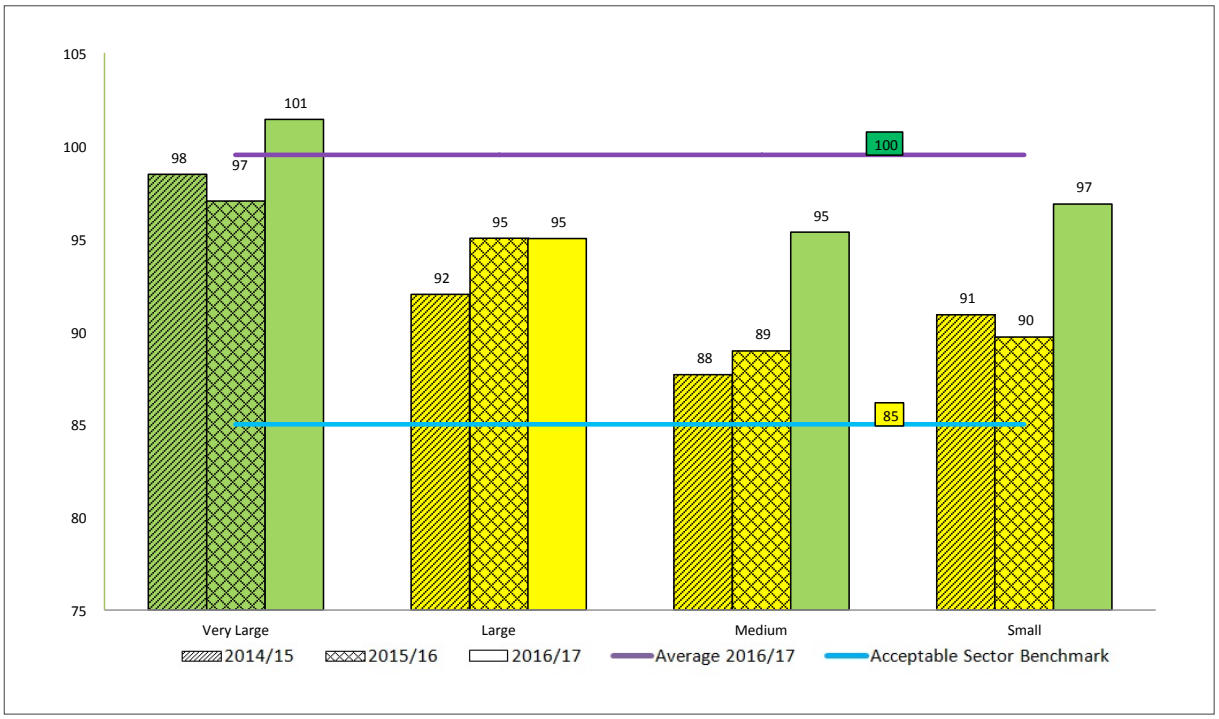
Wasreb cautions that the good performance exhibited here by the Medium and Small category utilities is an indication of either subsidies (eg payment of electricity bills by county governments) that are not disclosed or statutory deductions not remitted (NHIF, NSSF, Wasreb levy, WSB administration fees, WRA abstraction fees), among others.

Utilities are reminded that the Water Services sector is regulated with clearly established Key Performance Indicators that include staff costs. Wasreb shall not relent on its mandate to pursue utilities that consistently and progressively violate their potential to improve on service delivery through enhanced performance in the respective indicators. The tariff regulatory instrument, among others, shall be closely enforced for effectiveness on this indicator among others.

j) Revenue Collection Efficiency

Revenue Collection Efficiency refers to the total amount of money collected by a utility expressed as a percentage of the total amount billed over the same period. It has been used to measure the effectiveness of the revenue management system in a utility. Revenue collected, as opposed to amounts billed, is what impacts on a utility's direct ability to fund its operations.

Figure 3.18: Revenue Collection Efficiency



The performance in this indicator continued to improve with all categories of utilities achieving above the acceptable sector benchmark and an overall average of 100% in the period under review. Despite the good performance, there is a challenge of separating current bills from outstanding arrears. This has been attributed to billing systems used by the utilities. In order to remedy the situation, Wasreb has prescribed the minimum requirements for a billing system that will assist the utilities clearly separate arrears from current collections. Utilities should consider modifying their billing systems to meet these requirements.

k) Operation and Maintenance Cost Coverage

Operation and Maintenance (O+M) Cost Coverage is the extent to which a utility is able to meet its O+M costs from internally generated funds. 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.

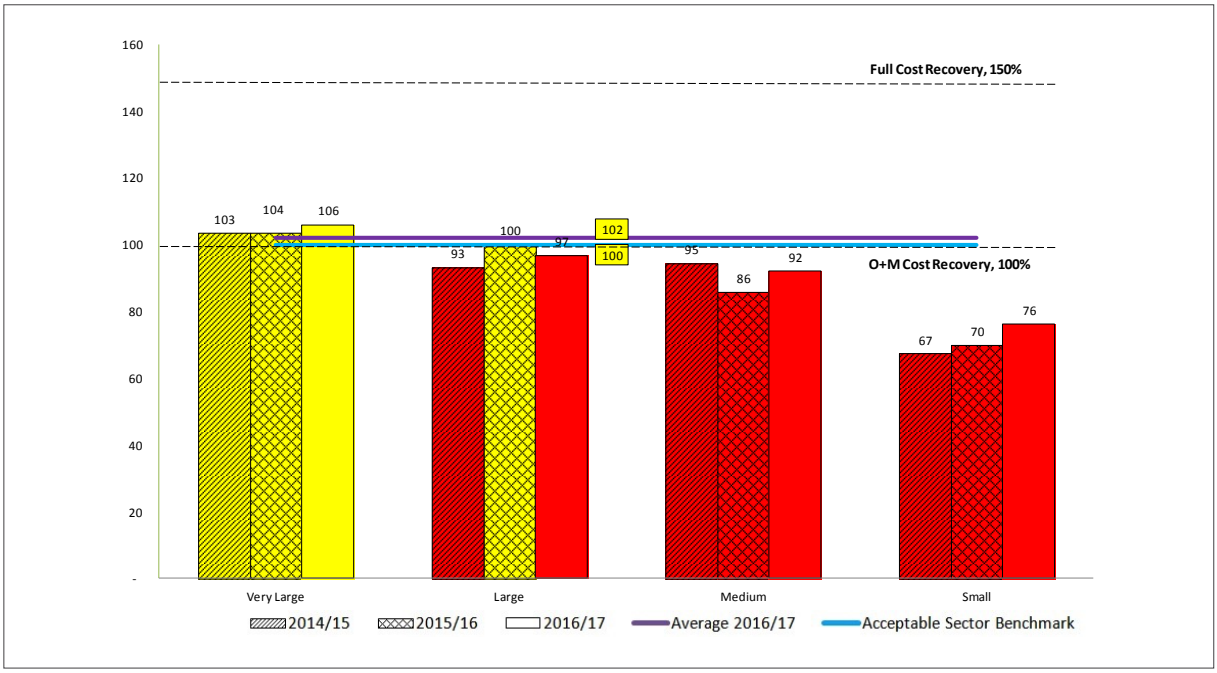
For a utility to be sustainable, the following levels of cost-coverage have been defined (Table 3.10):

Table 3.10: Levels of Cost Coverage and Cost Component

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

At over 150% O+M Cost Coverage, a utility is considered to have attained full cost recovery i.e. able to meet O+M costs, service debt and renew its assets.

Figure 3.19: O+M Cost



In the reporting period, only the Very Large category utilities managed an O+M coverage of slightly over 100%. Economies of scale are crucial for sustainable water service provision.

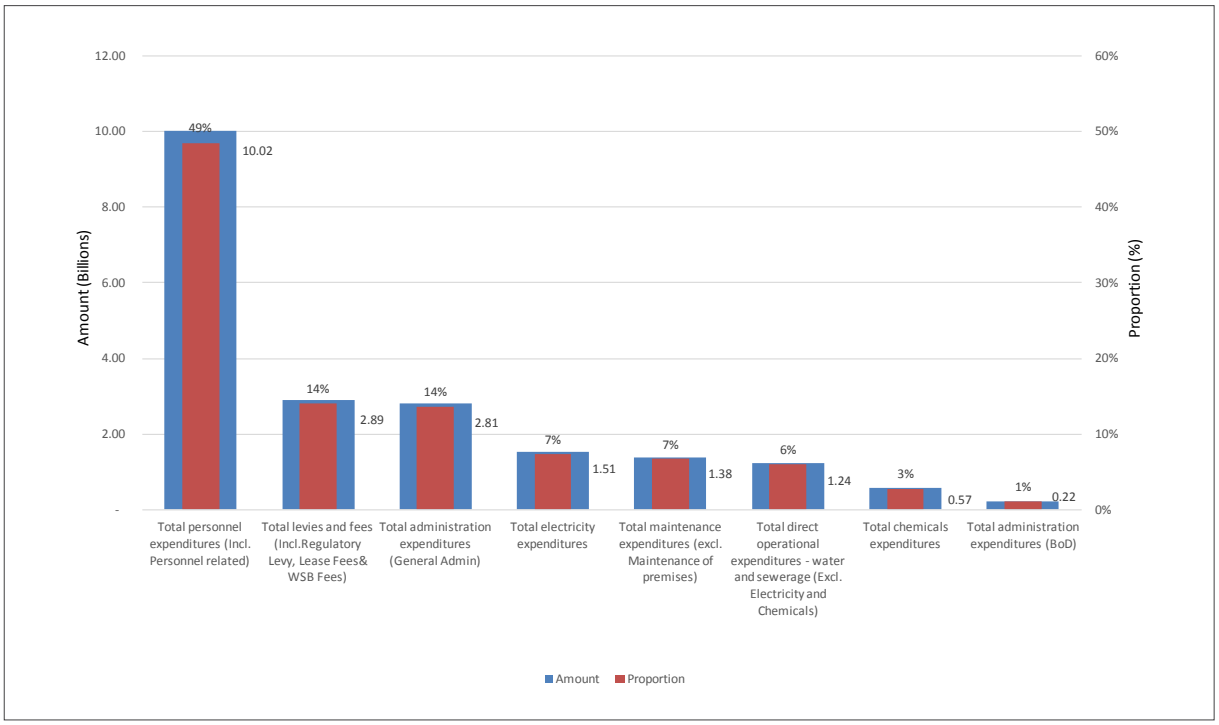
Compared with the previous reporting period, the overall performance in O+M Cost Coverage improved by one percentage point from 99% to 100%.

The marginal improvement in this indicator is a result of revenues increasing at a higher proportion (24%) compared to O+M costs (20%) due to the implementation of new tariffs by a number of utilities. It should, however, be noted that with a cost recovery below 110%, utilities may not be able to guarantee continuity in existing levels of service.

I) O+M Cost Breakdown

Cost distribution in a utility is a major factor in ensuring its financial sustainability. Wasreb has set benchmarks for some of these cost components e.g. personnel, BoD and maintenance. The breakdown of O+M costs into personnel, electricity, chemicals, levies and fees and other operational expenditures, provide 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 3.20 shows the aggregated O+M cost breakdown for all utilities.

Figure 3.20: Aggregated O+M Cost Breakdown for all Utilities



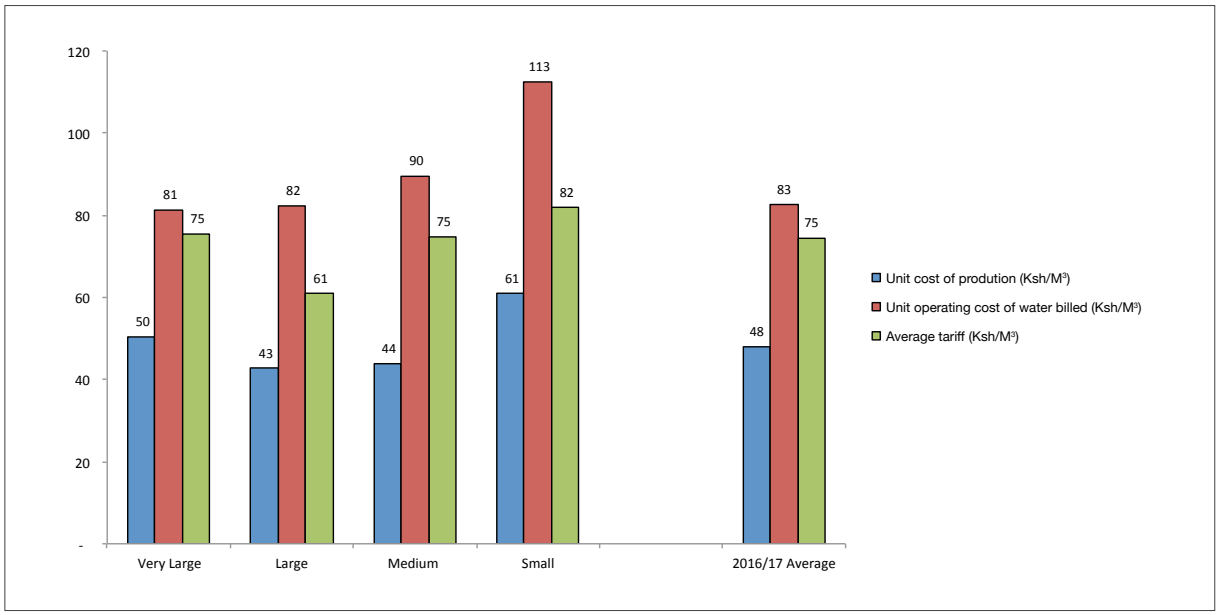
As illustrated, the main cost driver for O+M is personnel expenditure (49%). There was an increase in electricity and chemical costs by 9% and 27% respectively compared to the previous period. The payment of levies and fees has been on a declining trend with a decline of 20% for the period under review compared to the previous year. The unexplained costs, constituting 38%, comprise general administration expenditure, maintenance, BoD allowances and other direct operational expenses.

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 sector benchmark level of NRW of 25% as opposed to the current 42%, the unit cost of water billed would be expected to be Ksh 69 per cubic meter as opposed to the current Ksh 83 per cubic meter, as seen in Fig 3.21. This means that the difference of Ksh 14 per cubic meter goes towards paying for inefficiencies of utilities, instead of the development of infrastructure. At the current average tariff of Ksh 75 per cubic meter, consumers are paying Ksh 6 per cubic meter for inefficiencies and the balance of Ksh 8 per cubic meter is covered by subsidies or deterioration of service levels. A tariff that is less than the unit cost of water billed starves the utility of funds to put into asset renewal.

It is estimated that a utility requires to recoup at least 110% of its O+M costs to guarantee the quality of service. Decreasing self-financing is contrary to sector aspirations. It should be noted that tariff adjustments by Wasreb seek to drive utilities to full cost recovery while ensuring efficiency in operations. Therefore, utilities have zero option for inefficiency in their operations.

Figure 3.21: Tariff-Cost Comparison



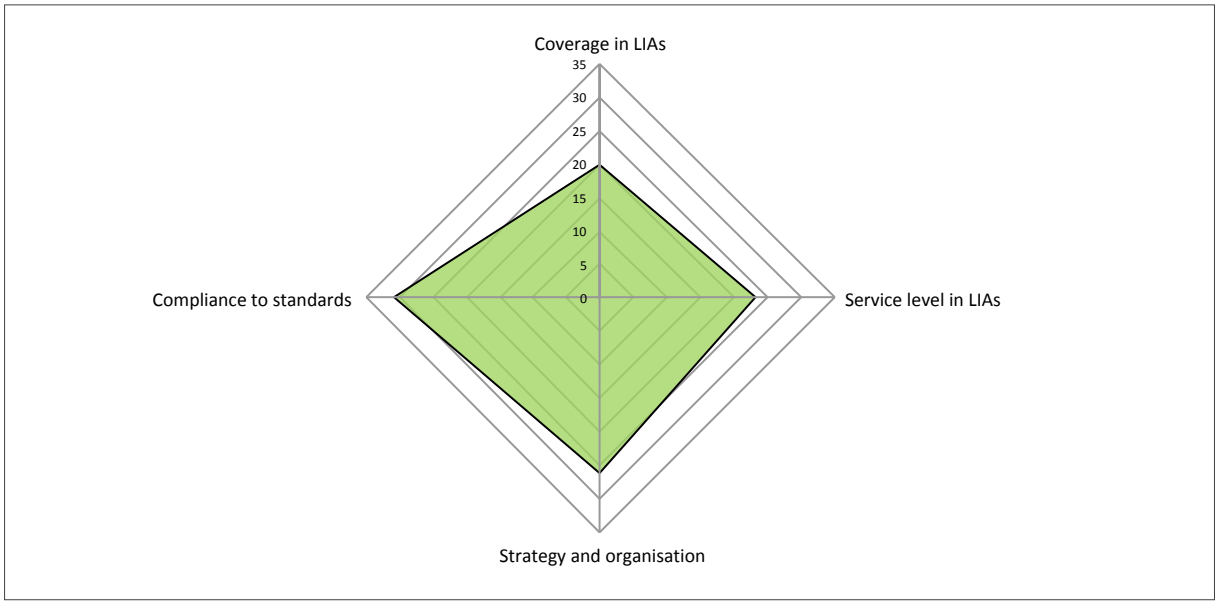
n) Water Services in Low Income Areas

The right to clean and safe water puts emphasis on marginalised and vulnerable groups within the society. Despite some utilities reporting acceptable performance at the global level, disaggregation of this data unmasks serious inequalities in services with the poor mainly bearing the brunt of the aggregation. Appreciating these inequalities in services, Wasreb has developed a tool for assessment of utility performance with respect to services in Low - Income Areas (LIAs). The tool not only monitors the level of pro-poor services but also gives guidance on improving services in these areas. The tool consists of four sub-indicators namely:

i) Service coverage in LIAs
ii) Service levels in LIAs
iii) Strategy and organisation with respect to service provision in LIAs
iv) Compliance to standards for water kiosks

The tool was piloted in 40 Very Large and Large WSPs out of which 28 submitted complete data. The remaining 12 WSPs either submitted incomplete data or no data at all. In a majority of cases where data was not submitted, the challenge was lack of disaggregated data for LIAs and the utilities not having a clearly defined strategy for operating and expanding water and sanitation infrastructure in LIAs. Figure 3.22 presents the performance in pro-poor parameters for the 28 utilities.

Figure 3.22: Performance in Pro-Poor Parametres

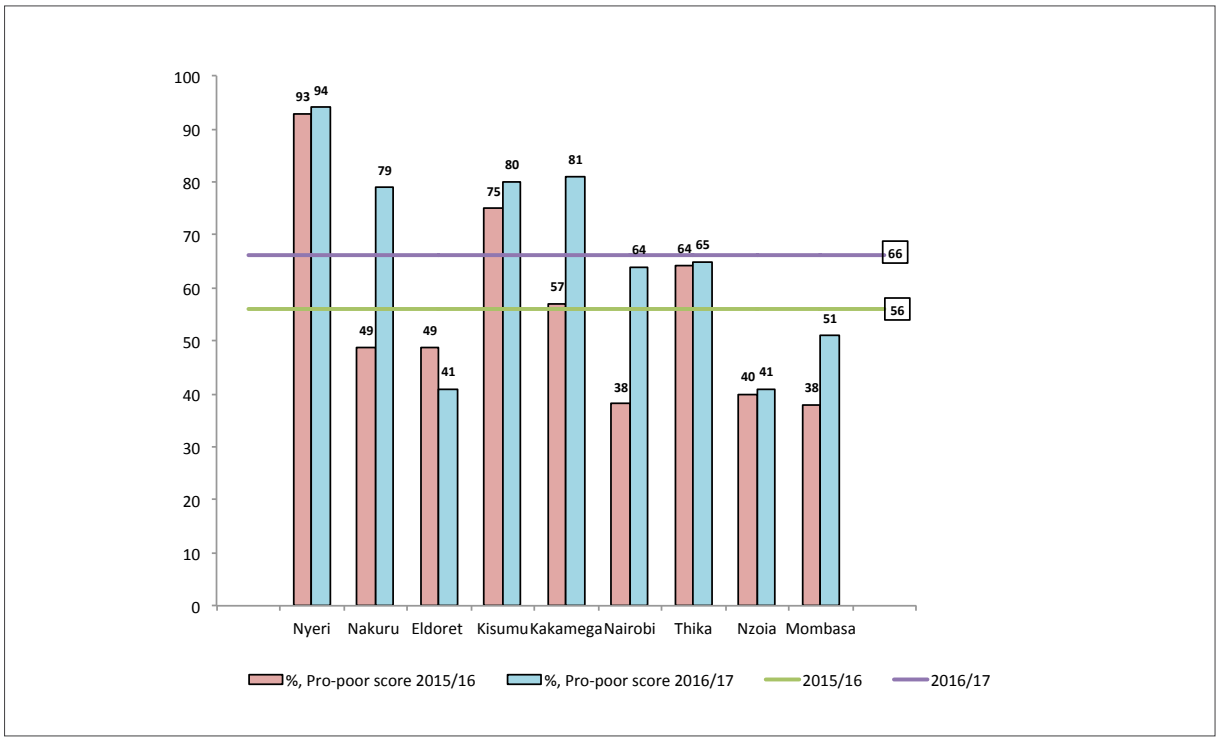


The axes represent percentages with large areas representing a favourable situation in regard to the associated indicator. Therefore, a diamond that fully covers the graph (100% on all axes) would indicate that the utility is doing very well with regard to pro-poor services.

In the current period, the best performing utility was Nyeri with a combined score of 94% while Nakuru Rural with a score of 26% was the least performing. Taking into account the performance of utilities at sub-indicator level, compliance to standards for water kiosks was the best-performed sub-indicator at 67%, followed by strategy and organisation (59%). On the other hand, service coverage in LIAs had the least score at 44%. Utilities are encouraged to improve coverage levels in the LIAs.

Figure 3.23 illustrates the baseline comparison for the 9 Very Large WSPs that were assessed in the two reporting periods.

Figure 3.23: Pro-Poor Baseline Comparison



Details of individual performances in the sub-indicators is provided in Annex 6.

Wasreb is in the process of developing new regulatory instruments to monitor the performance of utilities in LIAs. These include guidelines on pro-poor services and on kiosks management to support water utilities in efforts to extend services to LIAs.

3.5.5 Water Governance

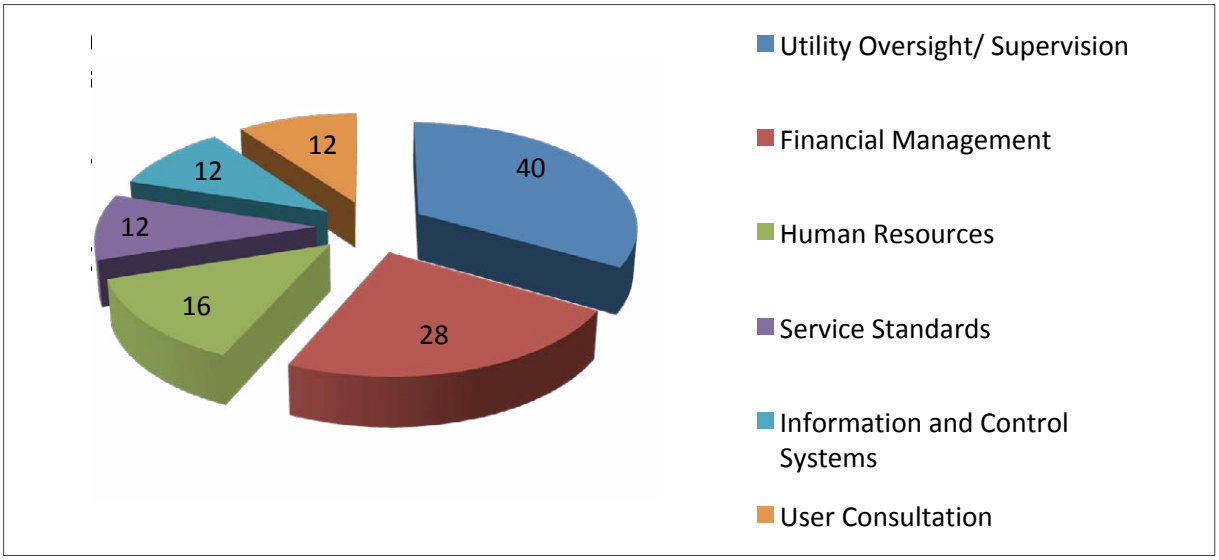
It is widely believed that the 'water crisis' is really a 'governance crisis'. Water governance refers to systems that are involved in decision-making about water management and water service delivery. Ultimately, water governance determines who gets what water, when and how.

Effective governance entails participatory approaches that are shaped by stakeholders at the local level. Wasreb has developed a governance indicator tool with emphasis on the following six sub-indicators:

- Utility oversight and supervision, measuring transparency, accountability in the manner the leadership exercises its mandate and public participation in the appointment of directors
- Information and control systems, measuring transparency and checks and balances in operational functions and compliance to set organisational systems
- Financial management, measuring compliance to the financial management infrastructure in the water services sector and effectiveness in using the tools to improve performance
- Service standards, measuring effectiveness in engaging consumers and deploying ICT to communicate with consumers to address their complaints or suggestions
- 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
- 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 of governance is for period 2015/2016 and was limited to 49 Very Large, Large and Medium WSPs. The utilities were invited to carry out a self-assessment using the tool and forward their results to Wasreb for verification. The tool comprised the six sub-indicators above, allocated different weights, with Utility Oversight and Financial Management allocated the highest weights (Fig. 3.24)

Figure: 3.24: Weights of Water Governance Sub-Indicators



Out of the 49 utilities who were invited, 29 complied with the self-assessment. However, a majority did not submit the requisite supporting documentation to enable verification of the scores awarded. In the final assessment, Wasreb only relied on the available documentation plus the inspection reports at Wasreb's disposal. Critical also was the report of the Auditor General for the previous year 2014-15. Unfortunately, some utilities sent truncated documents leaving out the opinion of the Auditor General which is a key aspect in the assessment of efficiency and compliance to financial rules and regulations.

Overall, there was a decline in governance scores of the utilities assessed under the current year compared to previous years (Fig 3.25). The average score stood at 40%. Apart from the sub-indicator on user consultation, WSPs performed dismally in the other five indicators (Fig 3.26).This decline in performance may be attributed to the transition issues in respective county governments. Remarkable improvement was noted in the state of websites established by utilities hence, more useful information made available to consumers.

A number of 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 on Assets as well as poor NRW scores. However, many also had qualification on problems with financial transactions which if the audit committees of these institutions were keen, they would have been rectified before being picked by the Auditor General.

Figure 3.25: Governance Score vs KPIs Score (%)

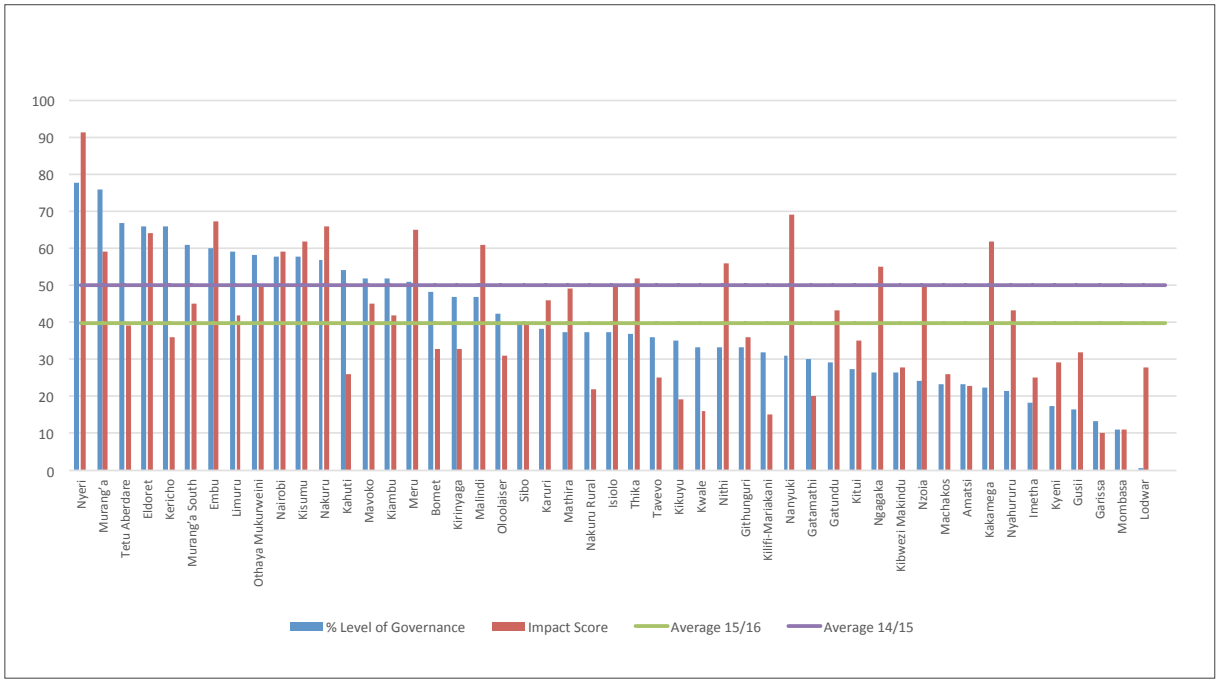
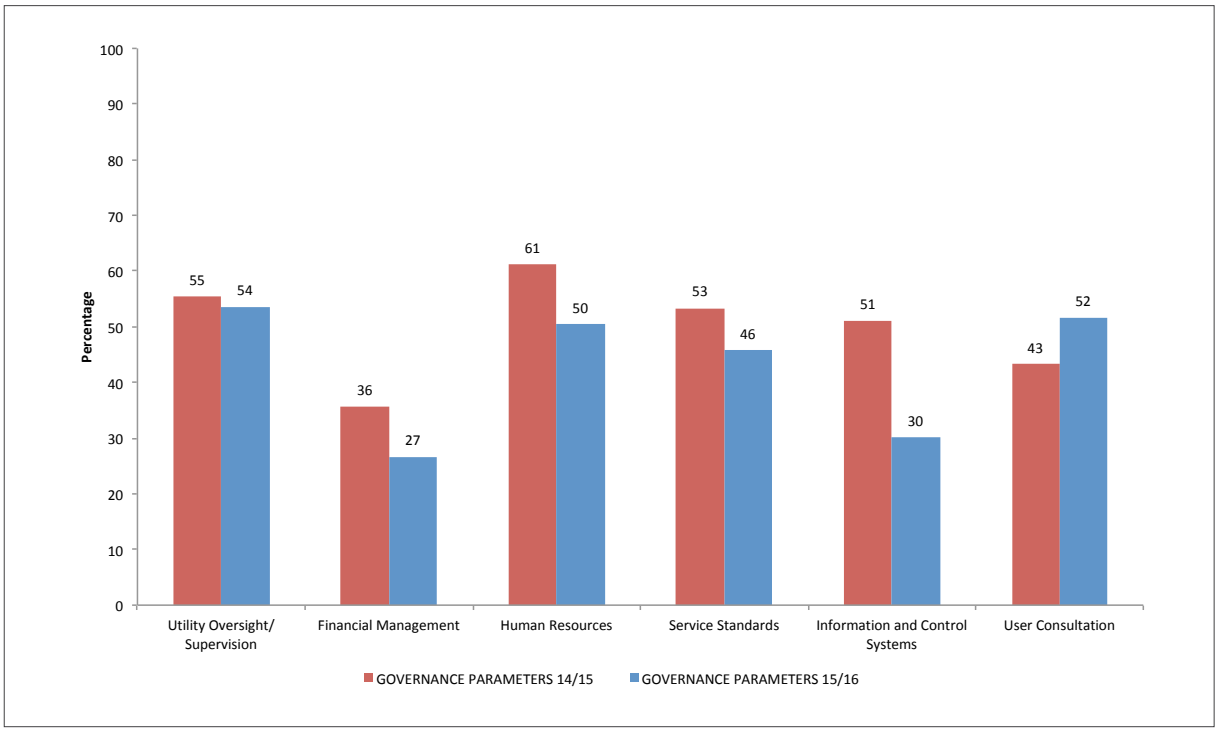


Figure 3.26: Baseline Comparison of Water Governance Sub-Indicators



Corporate governance assessment by Wasreb is meant to respond to governance lapses in WSPs, including educating stakeholders, providing guidance to the Board of Directors, undertaking surveillance and giving policy advice to the government.

Wasreb expects directors to discharge their duties diligently and in accordance with the law. While directors are not involved in day to day management of the company, they need to have a deep understanding and knowledge of their respective companies to discharge their obligations. Going forward, directors should ensure that those to whom functions have been delegated have discharged them effectively and for purposes they were intended. Directors should see to it that shareholder value is increased and they should keep the respective shareholders (county governments) informed about their WSPs, as required by the law.

Wasreb will rely on the governance assessment tool alongside other regulatory tools, to promote and uphold strong culture of compliance and good corporate governance in WSPs.

3.5.6 Creditworthiness Analysis

The purpose of the creditworthiness index is to provide an annual snapshot of the selected utilities' operational and financial performance. In this assesment, governance and social-economic factors are not considered.

The analysis presented in this report is based on the financial and operational data for the 2016/2017 financial year, as reported by utilities in WARIS. Where possible, the data is reported from financial statements audited by Office of the Auditor General. However, due to timing issues, much of the data is based on unaudited, most recent management accounts. Qualitative inputs have not been used in the Creditworthiness Index results.

The index is calculated from 25 weighted indicators outlined in Annex 7.

Table 3.11: Scoring Parameters

Score	Indicative Credit Worthiness Level	Description
>85	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 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 is equivalent to an 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 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.

41 utilities were rated in the current period (2016/17) out of which 25 scored BB and above. The performance of the 41 utilities including performance in the previous period is presented in Table 3.12.

Table 3.12: Creditworthiness Index

No	Utility Name	2014/15		2015/16		2016/17		Change
1	Ruiru Juja	69	A	66	A	72	AA	3
2	Thika	59	BBB	49	BB	67	A	8
3	Murang'a	67	A	62	A	61	A	-6
4	Nairobi	68	A	60	BBB	61	A	-7
5	Embu	63	A	73	AA	61	BBB	-2
6	Kisumu	55	BBB	58	BBB	60	BBB	5
7	Mavoko	54	BBB	49	BB	56	BBB	2
8	Nanyuki	49	BB	66	A	55	BBB	6
9	Meru	67	A	61	A	54	BBB	-13
10	Lodwar	44	BB	24	NO RATING	54	BBB	10
11	Nyeri	64	A	56	BBB	53	BBB	-11
12	Kikuyu	51	BBB	52	BBB	53	BBB	2
13	Nakuru Rural	59	BBB	30	NO RATING	51	BB	-8
14	Kirinyaga	55	BBB	50	BB	50	BB	-5
15	Gatundu	56	BBB	49	BB	50	BB	-6
16	Othaya Mukurweni	56	BBB	46	BB	50	BB	-6
17	Nzoia	53	BBB	46	BB	48	BB	-5
18	Eldoret	51	BB	53	BBB	47	BB	-4
19	Limuru	58	BBB	47	BB	46	BB	-12
20	Mombasa	49	BB	38	B	46	BB	-3
21	Nyahururu	61	BBB	50	BB	45	BB	-16
22	Isiolo	60	BBB	32	B	45	BB	-15
23	Kiambu	48	BB	50	BB	43	BB	-5
24	Naivasha	37	B	40	B	42	BB	5
25	Gusii	37	B	44	BB	41	BB	4
26	Mathira	41	BB	56	BBB	40	B	-1
27	Narok	38	B	36	B	40	B	2
28	Kibwezi Makindu	49	BB	44	BB	38	B	-11
29	Machakos	38	B	37	B	37	B	-1
30	Garissa	37	B	36	B	37	B	0
31	Kilifi Mariakani	47	BB	33	B	37	B	-10
32	Kakamega Busia	52	BBB	41	BB	36	B	-16
33	Oloolaiser	48	BB	40	B	36	B	-12
34	Murang'a South	40	B	30	NO RATING	35	B	-5
35	Nakuru	63	A	53	BBB	32	B	-31
36	Kericho	45	BB	36	B	32	B	-13
37	Malindi	54	BBB	31	B	32	B	-22
38	Kitui	39	B	34	B	31	B	-8
39	Tavevo	40	B	29	NO RATING	29	NO RATING	-11
40	Kwale	39	B	32	B	22	NO RATING	-17
41	Sibo	36	B	26	NO RATING	NO SCORE	NO RATING	n.d.

CHAPTER FOUR
INVESTMENT IN WATER SERVICES

HUGE FINANCIAL RESOURCES REQUIRED TO ADDRESS FUNDING GAP

The rising population, coupled by urbanisation and related changes in land use, continues putting a strain on water and sanitation services. The availability of water continues to diminish owing to climate change. To achieve 100% water coverage by 2030, the National Water Master Plan (NWMP) 2030 projects an investment of Ksh 1.8 trillion to meet the current gap. To meet the targets under this plan, water supply will require an investment of Ksh 1.3 trillion while 500 billion will be required for sanitation. The government projects to avail Ksh 592.4 billion for the duration of the NWMP. Whereas the Millennium Development Goals (MDGs) predominantly focused on access and infrastructure delivery, the Sustainable Development Goals (SDGs) have ushered in a paradigm shift to focus on sustainability and service delivery thereby setting higher and broader expectations.

The benefits from such investments are well documented but government budgetary allocation and donor funding are simply not sufficient to bridge the gap. This spells dire consequences for water and sanitation users, especially the poor.

There also appears to be no clear correlation between a continually growing development budget and the impact on the ground. This could be attributed to inadequate investment planning. There is need to shift from 'project driven sector development' to coherent national sector development planning. Stand-alone projects cannot close the last mile in a sustainable way. There is need for a comprehensive sector investment plan backed by adequate and predictable financing in order to realise the rights to water and sanitation.

4.1 CLOSING THE FINANCING GAP

To achieve the Vision 2030 goal for WSS, there is need to mobilize additional resources for the sector. Strong political will is required to improve governance and build technical and administrative capacity in the sector. Utilities are also expected to strive for technical and financial efficiency so that they can become creditworthy as a pre-condition for accessing blended financing. Underperforming utilities risk becoming a fiscal burden for government when they fail to meet their loan obligations.

For the sector to attain self-financing, utilities require to operate at greater than150% O+M cost recovery in order to offer a self-financing level of at least 30% that can facilitate loan repayment by the sector. Considering the budgetary constraints of treasury, it is very unlikely that government will provide more funds for the sector. Thus, it is important that the sector explores additional options for self-financing.

4.2 REGULATORY INTERVENTIONS

In order to ensure sustainability of the present service level and an acceleration of investments to meet the growing demand, the Regulator shall take the following measures:

i) The tariff process shall ensure that utilities operate at a minimum of 110 % cost recovery in order to guarantee availability of services
ii) Asset development for water extraction and production as well as extension to low income areas shall take priority
iii) Planned connection extensions must be accompanied by a clear forecast on water production in order to avoid increased water rationing
iv) All water utilities to gradually move above 150% cost coverage within the next five years and provide guarantees by the Board of Directors (BoD) that income above the 110% O+M cost shall be solely earmarked for investments
v) A key licence condition will be a long term investment program (10 years and above) backed by a predictable and sustainable financing plan.

It is expected that these measures will be embraced by county governments as owners of water utilities to assist in delivering of their constitutional mandate of asset development and water service provision.

4.3 PERFORMANCE ANALYSIS OF WSBS

This section looks at the performance of the WSBs with respect to impact of investments and financial indicators. The focus of the impact of investment is with respect to change in turnover (Table 4.1), water coverage, reduction of NRW and improvement in hours of supply. The focus of the financial indicators is with respect to:

- Operating costs of WSB as percentage of turn-over in WSB area
- Personnel expenditures as a percentage of total operating costs
- Board of Directors (BoD) expenditures as a percentage of operating costs

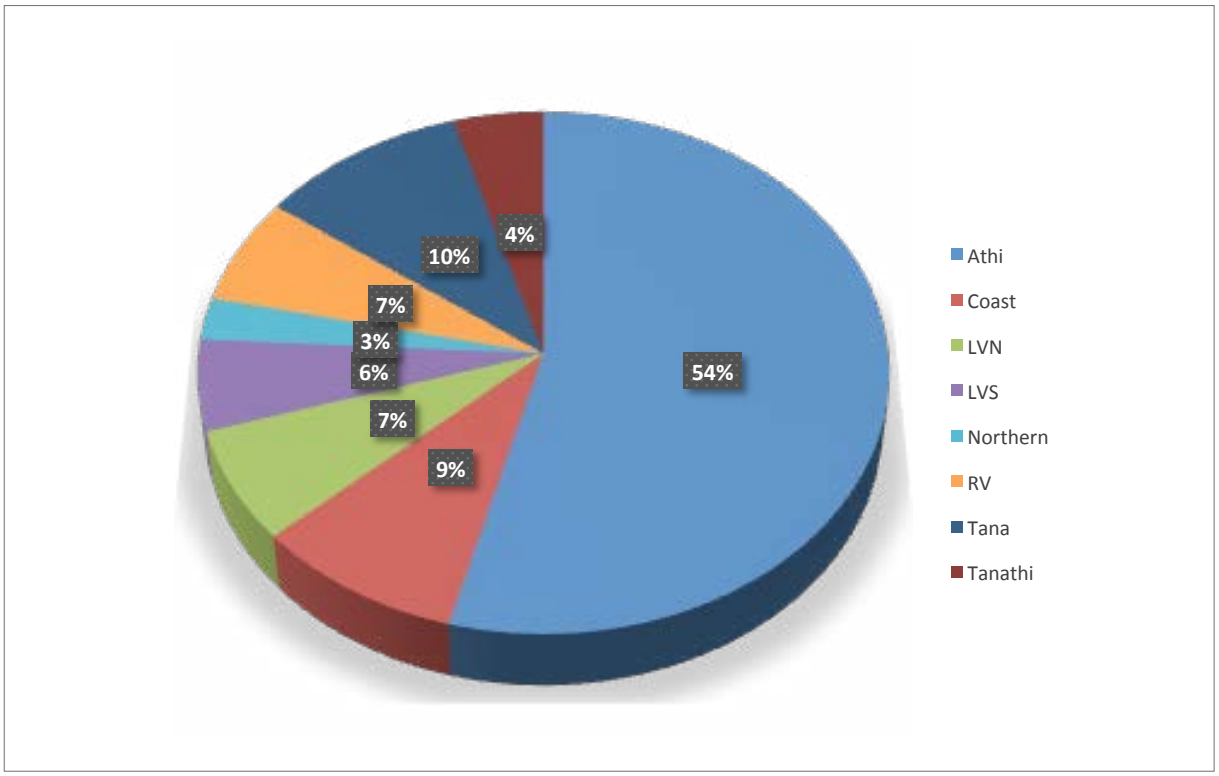
Table 4.1: Water Services Boards Turnover

WSB	Turnover 2014/15	Turnover 2015/16	Turnover 2016/17	% Change	% of total turnover
Athi	8,396	9,772	11,195	33	54
Coast	1,908	1,929	1,909	0	9
LVN	1,046	1,278	1,432	37	7
LVS	909	1,064	1,165	28	6
Northern	650	715	537	-17	3
RV	1,200	1,237	1,363	14	7
Tana	1,688	1,964	2,153	28	10
Tanathi	771	876	938	22	5
Total	16,568	18,835	20,692	14	100

4.3.1 Water Services Boards' Turnover

All the WSBs, except Northern and Coast, improved their turnover with LVN recording the highest at 37%. Athi continued to lead with the highest share at 54% turnover with Northern trailing at 3% (Fig 4.1).

Figure 4.1 Share of Turnover Among WSBs



4.3.2 Impact of Investments

To assess the impact of the investments by the WSBs, Wasreb carried out a comparison of the investments in the board area with the change in performance of the investment related indicators namely Water Coverage, Sewerage Coverage, NRW and Hours of Supply. This comparison is presented in Table 4.2.

Table 4.2: Impact of Investments by WSBs

WSB	Investments in WSB Area (in million Ksh)	Changes in water coverage	Changes in NRW	Changes in hrs of supply	Change in sewerage coverage,%
Athi	15,375	0	-2	-9	1
LVN	1,282	4	-2	-11	1
Northern	1,108	6	-5	-5	0
Rift Valley	1,500	4	-2	-5	2
Coast	4,223	-2	0	-1	-2
Tana	2,069	8	-4	-1	1
LVS	4,463	-2	-3	-1	4
Tanathi	4,436	0	-4	-15	1

Athi had the highest level of investment at Ksh 15,375 billion, representing 45% of total investments. Taking into account the fact that investments by the WSBs should translate to an improvement in quality of service rendered by the utilities, it is critical that WSBs track the impact of investments to ensure progressive realization of the right to water services. Table 4.2 presents the impact of WSB investments on the three investment related indicators.

4.3.3 Financial Indicators

Table 4.3 shows the sector benchmarks adopted for the financial indicators.

Table 4.3: WSB Performance Indicators and Sector Benchmarks

INDICATOR			Sector Benchmarks		
			Good	Acceptable	Not acceptable
Finnacial Indicators	Personnel expenditures as a % of total operating costs		<20%	70-20%	>70%
	BoD expenditures as a % of total operating costs		<2%	5-2%	>5%
	Operating costs of WSB as percentage of turn-over in WSB area	Turnover > 1.5 Ksh billion	<3.5%	10-3.5%	>10%
		Turnover ≥ 0.75 < 1.5 Ksh billion	<10%	20-10%	>20%
		Turnover < 0.75 Ksh billion	<15%	25-15%	>25%

a) Operating Costs of WSBs as Percentage of Turnover in WSB Area

Operating costs as a percentage of turnover in the WSB area measures the efficiency of a WSB in executing its functions. The operating costs of a WSB should be proportional to its turnover. Therefore, different benchmarks apply to each WSB, depending on the turnover. WSBs' expenditure as a percentage of their turnover is shown in Table 4.4.

Table 4.4: Operating Costs of WSBs as Percentage of Turnover in WSB Area

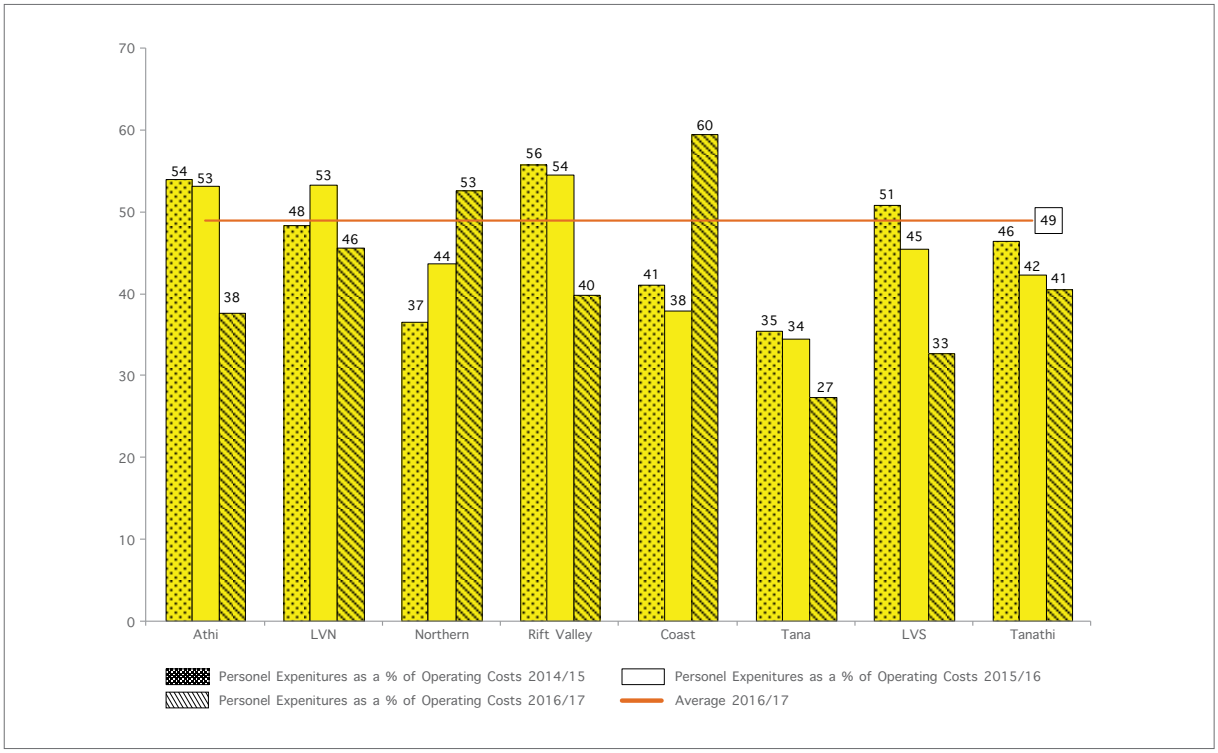
WSB	Operating Cost in 2014/15 in KSh million	Turnover 2014/15 in KSh million	Operating Cost as a % of Turnover 2014/15	Operating Cost in 2015/16 in KSh million	Turnover 2015/16 in KSh million	Operating Cost as a % of Turnover 2015/16	Operating Cost in 2016/17 in KSh million	Turnover 2016/17 in KSh million	Operating Cost as a % of Turnover 2016/17
Athi	308	8,044	4	337	9,772	3	537	11,195	5
LVN	151	1,046	14	171	1,278	13	220	1,432	15
Northern	107	626	17	119	715	17	115	537	21
Rift Valley	115	1,023	11	112	1,237	9	150	1,363	11
Coast	154	1,881	8	161	1,929	8	236	1,909	12
Tana	141	1,598	9	145	1,964	7	177	2,153	8
LVS	185	814	23	187	1,064	18	322	1,165	28
Tanathi	127	660	19	135	876	15	177	938	19

All the WSBs, except Coast, were within the acceptable level of the sector benchmark but there was a general decline for all the WSBs. In absolute terms, the cost of all the WSBs except Northern, increased compared to the previous period.

b) 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 4.2: Personnel Expenditures as a Percentage of Operating Costs



> THE OPERATING COSTS OF A WSB SHOULD BE PROPORTIONAL TO ITS TURNOVER.

A comparison of WSBs' personnel expenditure with their operating costs is presented in Table 4.5.

Table 4.5: Personnel Expenditure of the Utilities vs Operating Expenditure

WSB	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	Personel Expenditure in 2015/16 in KSh million	Operating Cost in 2015/16 in KSh million	Personel Expenditure as a % of Operating Costs 2015/16	Personel Expenditure in 2016/17 in KSh million	Operating Cost in 2016/17 in KSh million	Personel Expenditure as a % of Operating Costs 2016/17
Athi	166	308	54	179	337	53	202	537	38
LVN	73	151	48	91	171	53	100	220	46
Northern	39	107	37	52	119	44	61	115	53
Rift Valley	64	115	56	61	112	54	60	150	40
Coast	63	154	41	61	161	38	141	236	60
Tana	50	141	35	50	145	34	48	177	27
LVS	94	185	51	85	187	45	105	322	33
Tanathi	59	127	46	57	135	42	72	177	41

All WSBs were within the acceptable range for this indicator with all, except Northern and Coast, showing an improvement. In absolute terms, except for Rift Valley and Tana WSBs, all the other WSBs recorded an increase in the amount spent on personnel.

c) Board of Directors (BoD) 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 turnover 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 4.6.

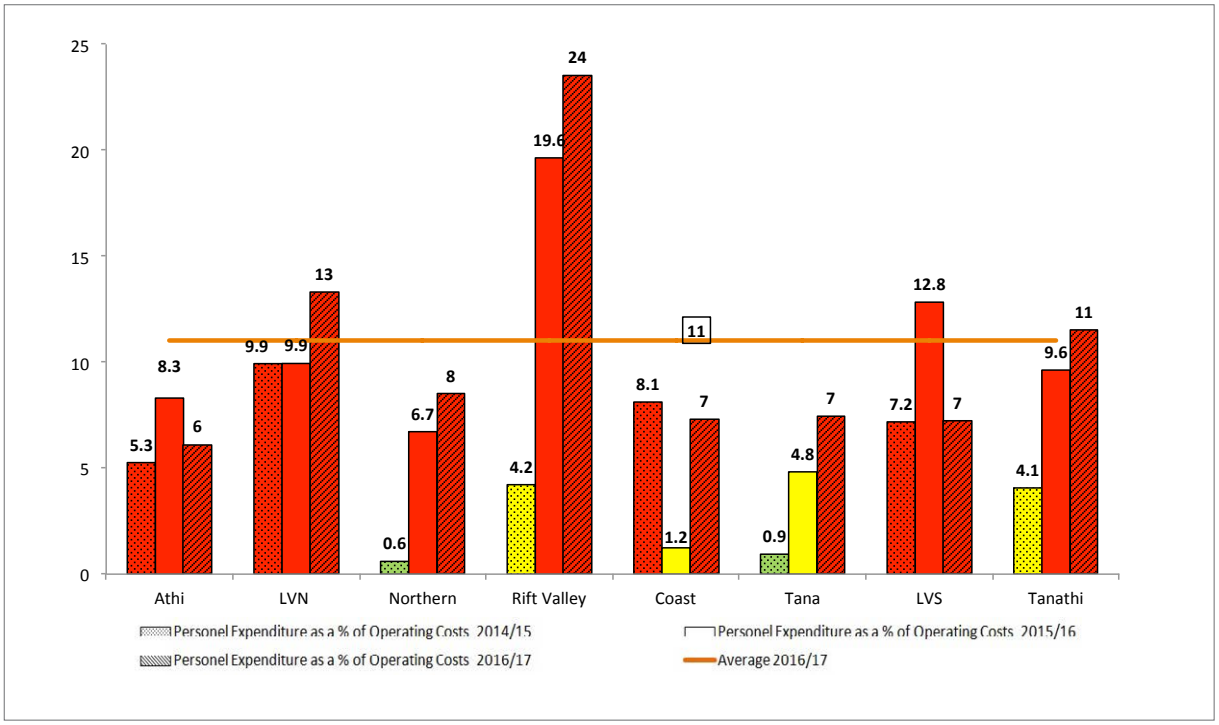
Table 4.6: BoD Expenditure of the WSBs vs Operating Expenditure

WSB	BoD Expenditure in 2014/15 in KSh million	Operating Cost in 2014/15 in KSh million	BoD as a % of Operating Costs 2014/15	BoD Expenditure in 2015/16 in KSh million	Operating Cost in 2015/16 in KSh million	BoD as a % of Operating Costs 2015/16	BoD Expenditure in 2016/17 in KSh million	Operating Cost in 2016/17 in KSh million	BoD as a % of Operating Costs 2016/17
Athi	16	308	5	28	337	8	33	537	6
LVN	15	151	10	17	171	10	29	220	13
Northern	1	107	1	8	119	7	10	115	8
Rift Valley	5	115	4	22	112	20	35	150	24
Coast	12	154	8	2	161	1	17	236	7
Tana	1	141	1	7	145	5	13	177	7
LVS	13	185	7	24	187	13	23	322	7
Tanathi	5	127	4	13	135	10	20	177	11

In terms of actual expenditures, all WSBs increased their expenditure on the BoD with Coast recording the highest increase of Ksh 15 million between the two years.

The huge variations between WSBs are highly unacceptable, considering that BoD remuneration is uniform across all WSBs, as defined by the State Corporations Guidelines. Variation between different WSBs can only be attributed to the varying activities of Boards and non-adherence to defined levels of expenditure. It points to poor corporate governance. To contain these costs, WSBs need to adhere to the schedules of planned board meetings and approved ceilings of BoD expenditure.

Figure 4.3: Board of Directors (BoD) Expenditures as a Percentage of Operating Costs

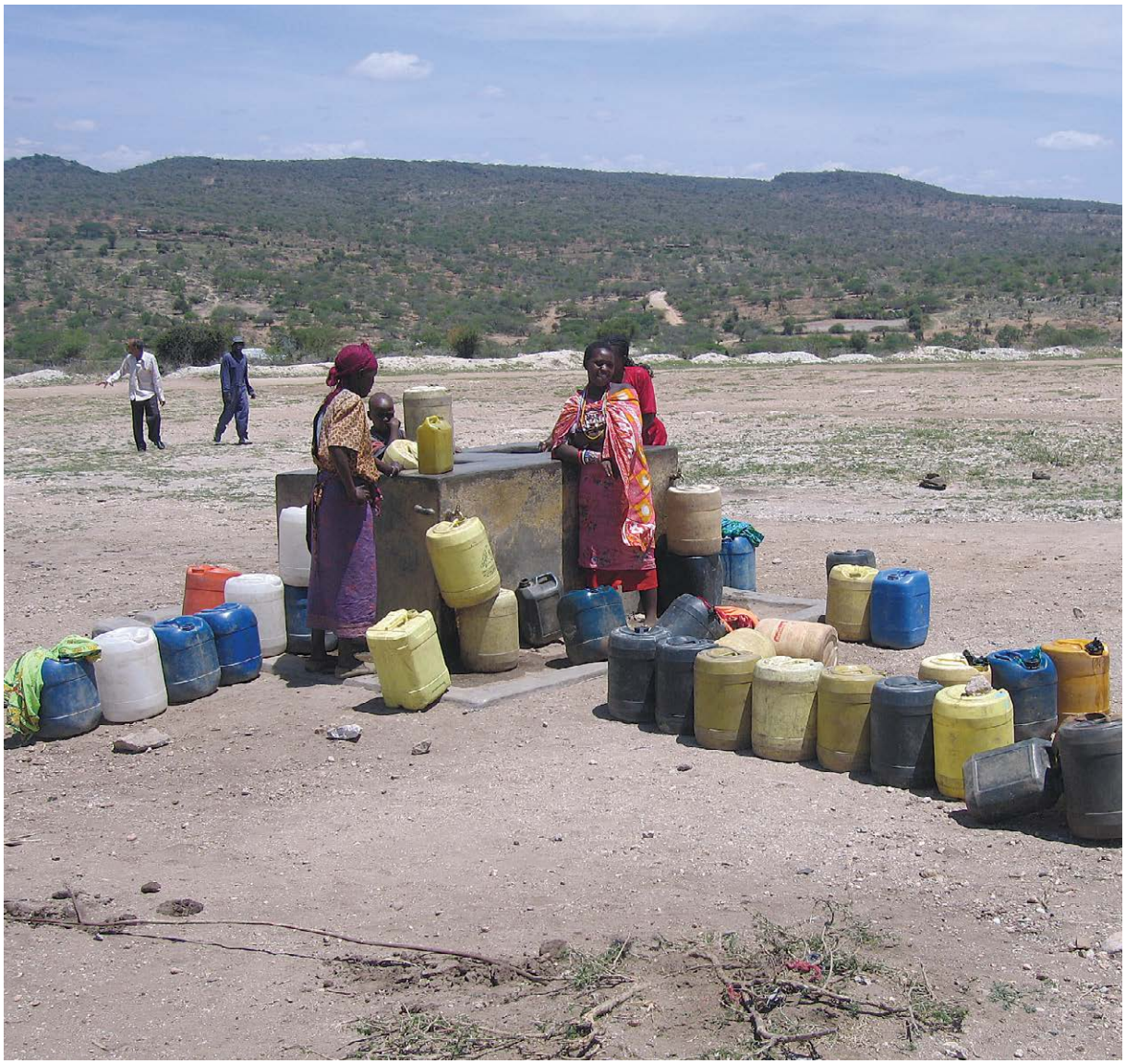


CHAPTER FIVE
WATER SERVICES IN COUNTIES

ROLE OF COUNTIES CRUCIAL IN FACILITATING UNIVERSAL ACCESS

Water and sanitation service provision was devolved to county governments as provided for in the constitution in the fourth schedule, part two article 11 (b). Despite many challenges at the formative stages of devolution, operationalization of the new Water Act 2016 now provides more clarity on the roles of various players in the sector, which now facilitates more focus and accountability.

One of the objectives of devolving water service provision was to fast track the realization of universal access, considering that this was qualified as a human right in the constitution. This right will only be realized when counties play their rightful role of overseeing the same at the grass roots. Counties are now expected to take the lead in formulating development plans, comprising both investment and financial indicators. They are also expected to constitute service delivery entities in compliance with prevailing standards of regulation and create an enabling environment for their performance. These entities are distinct water utilities whose performance impacts on the performance of counties themselves. In exercising their constitutional mandate, it is now incumbent upon county governments to consider the technical and financial capability of their water utilities.



5.1 SITUATION OF WATER SERVICES IN COUNTIES

The current population in the service area of regulated utilities is 21.9 million people out of the total projected population of 47.4 million Kenyans. This translates to 46.2% of the population. Wasreb is in the final leg of delineating boundaries of water utilities to provide more clarity, more focus and therefore more accountability. The Regulator has been dealing with only urban utilities, which are considered to be commercially viable. However, counties have an obligation under the water act 2016 section 94(2) to put in place 'measures for the provision of water services to rural areas which are considered not to be commercially viable'. This way, the government will be able to progress the right to water agenda as envisaged in the constitution. County governments should also ensure that gradually, all urban consumers and urbanizing areas receive formalized services in line with the commercial criteria set by the Regulator.

PROVISION OF SUBSIDIES

It is an important goal of the water services sector to have utilities that are commercially viable such that they are able to cover their O+M costs in the short term. A number of utilities have attained this objective and are also able to set aside resources for servicing debts and investments. However, there are those utilities that continue to rely on state subsidies to meet their O+M costs. This is not sustainable as evidenced by failure by some county governments to meet their subsidy obligations to utilities, even where it has been clearly agreed upon during the tariff setting process. It is incumbent upon respective county governments to ensure that their utilities operate within the framework of clear performance targets such that only deserving cases receive targeted subsidies after justifying tariffs.

Proper disclosure must be made by utilities, if the Regulator is to recommend any subsidy from the county government or even the national government. It is only then that consumers can be protected from unfair exploitation. Counties are expected to use the tariff process in their planning and in allocating resources to their utilities. Where utilities have been assessed and a subsidy recommended, the expectation from the Regulator is that respective counties will ensure the transfer of the same to the utilities in order to enhance service provision.

DATA ANALYSIS

Data utilized in county analysis is derived from submissions by regulated utilities only (both public and private) in the respective counties. It is worth noting that the utilities are not uniformly distributed across the various counties just like they are not of the same number in each county. 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 (Kshs/m^3)	Unit operating cost of water billed (Kshs/m^3)	Average tariff (Kshs/m^3)
001	Mombasa	1,159,806	Mombasa	97	43	85	5	31	72	Mombasa: 72	103	50	10	64	4	125	145	101
002	Kwale	798,079	Kwale	40	48	65	9	35	96	Kwale: 96	67	42	13	100	0	52	84	76
003	Kilifi	1,411,248	Malindi Kilifi Mariakani	84	64	93	16	29	83	Malindi: 82 Kilifi Mariakani: 85	99	38	9	98	0	66	105	81
004	Tana River	313,698	Hola	51	n.d.	n.d.	n.d.	n.d.	n.d.	Hola: n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
005	Lamu	123,426	Lamu	20	80	93	8	n.c.d.	118	Lamu: 118	96	36	11	100	0	32	50	55
006	Taita-Taveta	326,780	Tavevo	23	80	68	13	25	75	Tavevo: 75	93	59	12	99	0	39	95	66
007	Garissa	833,220	Garissa	20	59	27	22	n.d.	n.d.	Garissa: n.d.	n.d.	n.c.d.	14	60	5	n.d.	n.d.	n.d.
008	Wajir	885,216	Wajir	2	63	0	n.d.	45	6	Wajir: 6	55	55	130	63	0	83	187	11
009	Mandera	1,399,504	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.
010	Marsabit	363,150	Marsabit	14	n.d.	n.d.	n.d.	n.d.	n.d.	Marsabit: n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
011	Isiolo	160,785	Isiolo	41	67	93	15	52	99	Isiolo: 99	104	39	8	100	12	51	81	75
012	Meru	1,674,575	Imetha Meru Tuuru Kathita Kiirua	40	62	84	21	43	107	Imetha: 93 Meru: 116 Tuuru: 100 Kathita Kiirua: n.c.d.	105	38	14	97	5	48	70	60
013	Tharaka-Nithi	462,789	Nithi Murugi Mugumango Muthambi 4K	31	79	69	24	48	97	Nithi: 95 Murugi Mugumango: 101 Muthambi 4K: n.c.d.	95	43	6	100	0	21	31	28
014	Embu	590,739	Embu Ngandori Nginda Kyeni Ngagaka Embe	84	77	87	23	44	118	Embu: 116 Ngandori Nginda: 146 Kyeni: 88 Ngagaka: 113 Embe: 96	100	46	5	91	9	35	52	53
015	Kitui	1,205,291	Kitui Kiambere Mwingi	97	32	49	n.c.d.	23	62	Kitui: 63 Kiambere Mwingi: 55	82	58	11	72	0	81	164	97
016	Machakos	1,257,190	Mavoko Machakos Mwala Yatta Matungulu Kangundo Kathiani	77	48	67	7	33	102	Mavoko: 114 Machakos: 95 Mwala: 74 Yatta: 90 Matungulu Kangundo: 98 Kathiani: 65	100	41	11	99	17	138	213	168
017	Makueni	1,103,204	Kibwezi Makindu Wote Mbooni	40	28	60	13	36	90	Kibwezi Makindu: 95 Wote: 91 Mbooni: 66	85	n.c.d.	12	100	0	221	90	82
018	Nyandarua	773,115	Nyandarua Olkalou Ndaragwa Engineer Kikanamku Mawingo	23	36	21	n.c.d.	47	87	Nyandarua: 69 Olkalou: n.c.d. Ndaragwa: 117 Engineer: n.d. Kikanamku: n.d. Mawingo: n.d.	97	51	14	57	0	49	62	87
019	Nyeri	739,209	Nyeri Othaya Mukurweni Mathira Tetu Aberdare Naromoru	77	75	94	23	48	121	Nyeri: 145 Othaya Mukurweni: 101 Mathira: 99 Tetu Aberdare: 103 Naromoru: 78	99	38	5	90	12	42	58	65
020	Kirinyaga	594,849	Kirinyaga Rukanga	78	37	94	18	57	113	Kirinyaga: 114 Rukanga: 104	87	59	9	95	0	25	57	54
021	Murang'a	1,153,833	Murang'a South Murang'a Kahuti Gatamathi Gatanga	90	47	76	22	48	106	Murang'a South: 103 Murang'a: 122 Kahuti: 118 Gatamathi: 87 Gatanga: 87	95	52	6	88	3	37	64	64
022	Kiambu	1,987,092	Thika Gatundu Ruiru-Juja Kikuyu Kiambu Limuru Karuri Githunguri Kiamumbi	88	75	81	20	37	110	Thika: 126 Gatundu: 95 Ruiru-Juja: 115 Kikuyu: 97 Kiambu: 98 Limuru: 101 Karuri: 95 Githunguri: 85 Kiamumbi: 145	100	33	5	93	15	41	60	60
023	Turkana	1,056,130	Lodwar	7	51	70	n.c.d.	61	n.c.d.	Lodwar: n.c.d.	90	n.c.d.	11	97	0	25	22	40
024	West Pokot	654,522	Kapenguria	13	n.d.	n.d.	n.d.	n.d.	n.d.	Kapenguria: n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
025	Samburu	264,455	Samburu	16	42	90	11	41	24	Samburu: 24	90	n.c.d.	44	97	0	152	176	39
026	Trans-Nzoia	1,137,881	Nzoia	23	83	93	n.c.d.	41	98	Nzoia: 98	97	41	7	83	33	51	83	71
027	Uasin Gishu	1,163,880	Eldoret	37	74	93	15	48	156	Eldoret: 156	83	43	4	99	33	42	62	87
028	Elgeiyo Marak	461,471	Iten Tambach	12	25	87	15	42	91	Iten Tambach: 91	87	32	22	61	0	44	63	54
029	Nandi	946,450	Kapsabet Nandi Tachasis	10	69	40	24	32	94	Kapsabet Nandi: 91 Tachasis: 111	89	44	9	94	0	40	67	55
030	Baringo	682,198	Eldama Ravine	11	49	58	n.d.	n.d.	n.d.	Eldama Ravine: n.d.	n.d.	74	20	59	0	15	0	0
031	Laikipia	542,181	Nanyuki Nyahururu	33	80	93	22	45	115	Nanyuki: 125 Nyahururu: 105	99	39	6	94	37	63	93	98
032	Nakuru	2,095,009	Nakuru Nakuru Rural Naivasha	55	76	92	16	32	103	Nakuru: 104 Nakuru Rural: 102 Naivasha: 94	96	38	7	84	23	67	102	100
033	Narok	1,103,294	Narok	8	39	n.d.	16	n.d.	78	Narok: 78	n.d.	n.c.d.	16	98	0	14	129	0
034	Kajiado	978,175	Oloolaiser Nol Turesh Loitokitok Olkejuado Namanga	65	42	66	15	38	90	Oloolaiser: 101 Nol Turesh Loitokitok: 66 Olkejuado: 61 Namanga: 101	103	47	18	88	0	49	88	72
035	Kericho	909,591	Kericho Tililbei	41	54	74	23	46	98	Kericho: 105 Tililbei: 62	81	48	9	96	11	56	106	92
036	Bomet	903,573	Bomet	14	50	0	12	34	56	Bomet: 56	66	52	10	47	0	41	83	43
037	Kakamega	1,964,106	Kakamega	20	86	91	21	50	112	Kakamega: 112	101	43	4	95	15	39	68	69
038	Vihiga	719,117	Amatsi	35	15	92	13	26	67	Amatsi: 67	75	43	16	66	0	33	58	39
039	Bungoma	1,925,737	Nzoia	10	83	93	n.c.d.	41	98	Nzoia: 98	97	41	7	83	33	51	83	71
040	Busia	935,114	Busia	12	73	93	n.c.d.	46	75	Busia: 75	109	57	9	92	11	53	122	84
041	Siaya	1,039,962	Sibo	43	40	93	n.c.d.	31	60	Sibo: 60	66	56	10	88	0	42	95	52
042	Kisumu	1,196,276	Kisumu	37	66	91	24	32	105	Kisumu: 105	97	41	6	88	48	47	78	80
043	Homabay	1,192,745	Homabay	16	14	29	13	44	92	Homabay: 92	91	64	20	83	2	60	169	151
044	Migori	1,166,363	Migori Nyasare	25	20	32	8	25	60	Migori: 50 Nyasare: 112	67	39	14	79	0	52	81	40
045	Kisii	1,431,573	Gusii	53	40	93	n.c.d.	45	65	Gusii: 65	104	n.c.d.	10	100	13	64	72	45
046	Nyamira	723,242	Gusii	26	40	93	n.c.d.	45	65	Gusii: 65	104	n.c.d.	10	100	13	64	72	45
047	Nairobi	4,328,225	Nairobi Runda	100	81	93	6	56	105	Nairobi: 105 Runda: 118	104	38	6	100	50	55	81	72

The water services situation in the counties was assessed in line with the goals set out in the National Water Services Strategy (NWSS). With regard to utility performance, the overall goal of the strategy can be broadly looked at in terms of the three clusters of indicators as below:

- Quality of Service - Increasing access to sustainable water and sewerage services
- Operational Sustainability - Reducing NRW
- Economic Efficiency - Recovering O+M costs

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

Table 5.2: Distribution of Number of Water Utilities by Counties

No. of Utilities	1	2	3	4	5	6	8	96
No. of Counties	28	8	3	2	3	2	1	47

There are two counties that share a utility each i.e. Trans Nzoia and Bungoma; Kisii and Nyamira. The analysis includes six utilities that did not submit data or submitted but was not credible.

As can be seen from the Table 5.2 above, 28 counties have a regulated utility each. Two counties are served by cross-county utilities. These are Nzoia (serving Bungoma and Trans Nzoia) and Gusii (serving Kisii and Nyamira). The remaining counties have multiple utilities with Kiambu having the most regulated utilities at eight. All counties have at least a regulated utility, notwithstanding the varied levels of compliance. In this analysis, Mandera and Tana River counties did not submit data for the third year in a row.

It will be noted that although counties do not provide services directly to customers, they are directly responsible for the performance of their utilities. It is for this purpose that it has become important to present the situation of water services in the counties to enable tracking of the commitments under the NWSS.

Performance indicators at the county level have been evaluated on the strength of the ratio between active connections of a utility and the aggregated active connections for all utilities in a county as outlined below.

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

5.1.1 Access to Water Services

The proportion of county population within service areas of regulated utilities ranged from a low of 6% in Baringo to 100% in Mombasa and Nairobi. Water coverage in these regulated areas are within unacceptable levels save for Laikipia, Trans-Nzoia, Bungoma and Nairobi.

County governments are urged to explore the following interventions to improve on access:

- Put in place comprehensive investment and financing plans for their areas
- Shift from "project driven development" to strategic approach to progressively attain policy goals
- Ensure pro-poor orientation by the utilities.

5.1.2 Sewerage Coverage

The number of counties with a sewerage system in one or more of their urban centres is 26. The sewage systems in Bomet and Kitui are relatively new and data was not available in the current period. Nandi and Taita Taveta still have the operations of the sewer systems being handled by the county government while Garissa did not report. The remaining 21 counties have no sewerage systems, implying they wholly rely on onsite systems for sanitation management. The foregoing situation may not be sustainable taking into consideration the increasing rate of urbanization with the accompanying challenge of growth in informal settlements. In terms of sewerage coverage, Nairobi County led with a figure of 50%, followed by Kisumu at 48% and Laikipia at 37%. The lowest coverage among those with sewerage systems was Homa Bay at 2%, followed by Murang'a at 3% and Mombasa at 4%. On this front, county governments are called upon to go out of their way to ensure their urban areas have sewerage systems as is conventional in developed jurisdictions. This will not only improve the quality of life for their residents, but will also enhance the social economic development of the areas.

5.1.3 Reduction of NRW

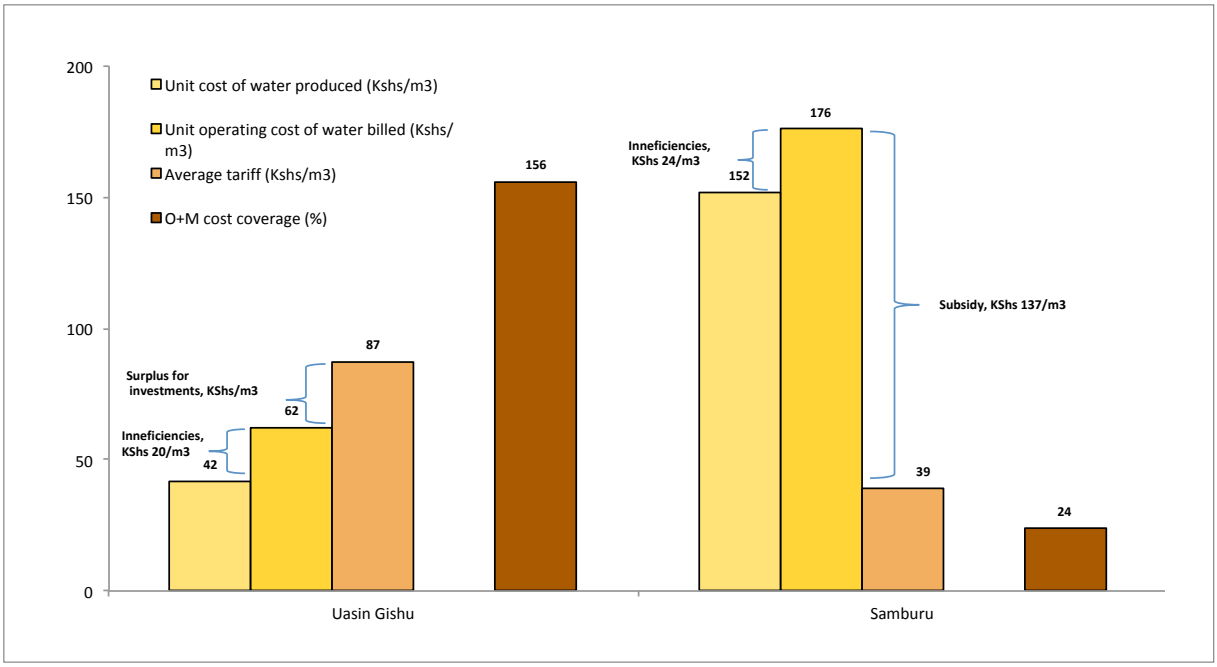
The NRW policy requires county governments to enact laws that penalize illegal water connections and water theft. The measures should be complimented by consumer awareness on the adverse implications of high NRW. Wasreb has provided NRW management standards to help sector players address this issue.

Elgeyo Marakwet County has the lowest NRW level at 32%, with the highest being Baringo at 74%. None of the counties achieved the acceptable benchmark of less than 25%. Compared to the previous period, the number of counties losing more than half the water produced remained constant at 12, implying that efforts to tackle NRW have not borne fruits. A level of more than 50% in NRW is counterproductive to the principles of commercialization, hence the need for counties to focus their attention to this challenge. The Regulator is conducting a study in nine utilities to establish factors inhibiting the successful implementation of the NRW standards by utilities.

5.1.4 Recovery of O+M Costs

The Water Act 2016 requires county governments to establish Water Service Providers on the basis of commercial viability. The Regulator has developed and disseminated standards for commercial viability to be employed in licensing of WSPs under the new legal framework. One requirement in the criteria is the ability of the utility to recover costs with the operating ratio being set at a minimum of 0.76 or 130% O+M cost coverage. A first step to cost recovery is putting in place a cost reflective tariff and ensuring its proper implementation. Uasin Gishu and Samburu demonstrate huge disparities in terms of cost of operations. While Uasin Gishu produces water at Ksh 42 per cubic meter, Samburu produces the same at Ksh 152. Yet the tariff for Samburu is less than half that of Uashi Gishu, as shown in Figure 5.1.

Figure 5.1: Disparities in Operating Environments



From the figure, it can be seen that Samburu has a unit cost of water produced which is almost four times that of Uasin Gishu with cost of inefficiencies being almost equal at Ksh 20 and 24 per cubic metre respectively. On the other hand, while Uasin Gishu has Ksh20 per cubic meter for investments, Samburu requires Ksh137 per cubic meter in form of subsidies to meet the costs of providing the service. In the absence of guaranteed subsidies, the sustainability of the utility is compromised and a decline in service quality will be a reality.

5.2 EMERGING ISSUES

Wasreb has identified a number of issues that have a bearing on the progressive realization of the rights to water and sanitation. They include:

- Declining resource base, requiring efforts to improve water availability
- Declining services (reliance on unregulated services, poor coverage)
- Decline in utility performance, requiring improved monitoring
- High water losses, requiring implementation of NRW standards
- Governance issues, requiring compliance with Companies Act 2015 (e.g on issue of holding AGMs)
- Utility unsustainability, requiring implementation of cost-reflective tariffs

These issues require interventions by county governments who are now responsible for water service provision.

CHAPTER SIX
CONCLUSION

PERFORMANCE REPORT CARD SHOULD INSPIRE ACTION

Performance assessment efforts for the water services sector are motivated by the desire to see improved services to consumers. The assessment is meant to take stock of where the sector is so that players can be guided on areas that require effort to facilitate the attainment of both national and global goals. By way of conclusion, it is recommended that focus is put on various areas as indicated below.

6.1 MITIGATE CLIMATE CHANGE

One of the factors necessary for improved services is the availability of water resources. Climate change and its variability continue to impact negatively on this factor. Current projections of climate change create uncertainties with regard to availability of water resources. In line with SDG 6, all actors should implement integrated water resources management at all levels, including trans-boundary cooperation as appropriate. Sound management of water resources is necessary to protect and preserve the resource for use by future generations.

6.2 FOCUS ON ACCESS

In the last five years, water coverage has increased by a paltry 4%. To reach the target under Vision 2030, the sector needs to grow at an average of 4% annually, which is more than three times the current rate. In most of the towns, the demand for water is higher than production. The bottleneck remains ensuring that all projects reach the last mile. Unfortunately, these projects are driven by stakeholders who tend to be overly focused on cost-intensive construction projects at the detriment of smaller ones that tend to be less prestigious. There is need to increase investments in infrastructure (raw water abstraction, treatment, bulk distribution, network extensions) including investments in low income areas.

6.3 INCREASE INVESTMENTS

The Annual Water Sector Review, 2015/16 indicates that sector development funding during the period was Ksh 29.542 billion. This is only 27.5% of the required funding which translates to approximately USD 6 per capita against a required funding of USD 25 (National Master Plan 2030). Financial lenders on the other hand need to know how loans will be paid back, hence require a long term financing model. Thus, investment planning should not be aggregation of projects; rather a strategic plan to progressively reach policy goals.

6.4 REDUCE WATER LOSS

Water losses are a big threat to the financial sustainability of the sector. They waste funds which could have been used to increase access and improve service delivery. At a total billing of Ksh 20.67 billion and the current NRW levels of 42%, the total value of the loss in 2016/17 can be estimated at a Ksh 7.8 billion, while allowing for the acceptable level of losses at 20%. Non-Revenue Water must be controlled as it is a direct expense to the customer and contradicts the country's aspiration to move towards higher living standards.

6.5 IMPROVE SUSTAINABILITY

Many underperforming utilities continue to operate on non-cost reflective tariffs.

Underperformance in utilities, with tariffs that do not cover cost, continues to hamper the journey to full cost recovery. At the current level of inefficiency and tariffs that do not cover the basic costs, an average of Ksh 27 per cubic meter is required either as an additional charge on the consumer or subsidy from the owner. Utility managers are obliged to explain to county authorities the need for cost recovery tariffs and the devastating effects of a persisting investment gap, which exacerbate the deterioration of services. Sector players are encouraged to explore efficient models of service provision, which includes utilising economies of scale to improve efficiency.

> "CURRENT PROJECTIONS OF CLIMATE CHANGE CREATE UNCERTAINTIES WITH REGARD TO AVAILABILITY OF WATER RESOURCES."

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 * 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 * Average No. of households served by a yard tap *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 * Average No. of households per small MDU * 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 * Average No. of households per medium MDU *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 * Average No. of households per large MDU * 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) * 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 WSP 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	Σ total no. of residual chlorine tests conducted of all the schemes within the WSP service area / Σ total no. of residual chlorine tests planned of all the schemes within the WSP service area * 100
		Compliance with residual Chlorine standards	Σ total no. of residual Chlorine tests within norm for all the schemes within the WSP service area / Σ total no. of residual Chlorine tests conducted for all the schemes within the WSP * 100
		Drinking Water quality, Residual Chlorine	0.6 * Compliance with planned no. of residual chlorine tests + 0.4 * Compliance with residual Chlorine standards
		Compliance with planned no. of bacteriological tests	Σ total no. of bacteriological tests conducted of all the schemes within the WSP service area / Σ total no. of bateriological tests planned of all the schemes within the WSP * 100
		Compliance with bacteriological standards	Σ total no. of bacteriological tests within norm for all the schemes within the WSP service area / Σ total no. of bacteriological tests conducted for all the schemes within the WSP * 100
		Bacteriological quality	0.6 * Compliance with planned no. of bacteriological tests + 0.4 * Compliance with bacteriological standards
		Drinking Water Quality	0.4 * Drinking Water quality, Residual Chlorine + 0.6 * 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*Number of active connections, zone 1) + (hrs*Number of active connection, zone 2) + (hrs*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	(Total personnel expenditures / Total O+M)*100.
	Operation and Maintenance Cost Coverage	"Total operating revenues A"	"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 exhauster services."
		"Total operating expenditures 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)*100
	Revenue Collection Efficiency	Total water and sewerage billing amount-A	Total amount of all bills on water and sewerage services during the reporting period of all the schemes within the WSP service area
		Total billing for other services-B	Total of all billing for other services of all the schemes within the WSP service area
		Total billing	A + B
		Total collection	Sum of all revenue collected of all the schemes within the WSP service area
		Collection Efficiency	(Total Collection/Total Billing)*100

ANNEX 3: METHODOLOGY FOR OPERATIONAL SUSTAINABILITY KPIs

KPI CLUSTER	Indicator	Indicator elements	Computation
OPERATIONAL SUSTAINABILITY	Non-Revenue Water	"Commercial Losses (Apparent Losses) A"	Unauthorized consumption (e.g. illegal connections) + Customer meter reading inaccuracies, Estimates and Data Handling errors
		Physical Losses B	Leakages on transmission and /or distribution pipes + Leakages and overflows at utility storage tanks + Leakage on service connections upto the point of cutomer use
		Non-Revenue Water	(A+B/ Vomule of water water produced)*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 WSP 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 WSP service area that are metered
		Drinking Water quality, Residual Chlorine	0.6 * Compliance with planned no. of residual chlorine tests + 0.4 * Compliance with residual Chlorine standards
		Metering Ratio	(Total number of active metered connections/Total number active of connections)*100
	Staff Productivity	The total number of staff divided by the total number of connections within the WSP service area	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	92	95	93
Eldoret	91	96	93
Mombasa	84	86	85
Nakuru	92	92	92
Kisumu	91	91	91
Thika	96	96	93
Nzoia	96	95	93
Nyeri	96	96	96
Kakamega	91	92	91
Gatundu	41	40	41
Embu	96	96	93
Murang'a South	96	96	93
Kirinyaga	95	95	95
Malindi	93	94	93
Othaya Mukurweni	94	96	95
Kilifi Mariakani	93	92	92
Mathira	96	96	93
Kericho	51	96	78
Ruiru-Juja	95	96	93
Nakuru Rural	96	96	93
Gusii	95	96	93
Murang'a	96	80	86
Bomet	-	-	-
Kahuti	96	50	68
Nanyuki	95	96	93
Tavevo	77	62	68
Nyahururu	96	96	93
Kwale	94	46	65
Tetu Aberdare	94	95	93
Imetha	68	96	84
Ngandori Nginda	96	96	n.c.d.
Meru	96	94	95
Garissa	66	-	27
Sibo	90	95	93
Mavoko	96	36	60
Kitui	95	-	38
Nithi	95	96	93
Oloolaiser	85	75	79
Kikuyu	96	82	88
Gatamathi	76	87	83
Isiolo	96	96	93
Kiambu	96	92	93
Kyeni	96	-	38
Limuru	93	80	85

UTILITY	DWQ - Residual Chlorine (%)	DWQ - Bacteriological Quality (%)	DWQ (%)
Tililbei	62	53	57
Karuri	94	94	93
Gatanga	-	-	-
Busia	96	96	93
Amatsi	95	90	92
Tuuru	-	96	57
Githunguri	85	89	88
Lodwar	69	70	70
Ngagaka	94	94	93
Kibwezi Makindu	88	45	62
Nol Turesh Loitokitok	96	35	60
Homabay	73	-	29
Machakos	96	67	78
Embe	96	96	93
Migori	94	-	38
Naivasha	95	95	93
Narok	n.d.	n.d.	n.d.
Nyandarua	85	-	34
Murugi Mugumango	n.d.	n.d.	n.d.
Kapsabet Nandi	74	-	29
Lamu	96	96	93
Kiambere Mwingi	96	96	93
Eldama Ravine	70	50	58
Olkejuado	n.d.	n.d.	n.d.
Samburu	94	88	90
Iten Tambach	86	87	87
Muthambi 4K	-	-	-
Olkalou	n.d.	n.d.	n.d.
Mwala	68	96	85
Rukanga	88	89	89
Namanga	61	-	24
Wote	96	92	93
Kathita Kiirua	45	70	60
Mbooni	-	-	-
Yatta	96	31	57
Naromoru	39	39	39
Matungulu Kangundo	-	39	23
Kiamumbi	96	64	77
Ndaragwa	-	-	-
Runda	96	96	93
Kathiani	96	56	72
Nyasare	-	8	5
Tachasis	93	85	88
Wajir	-	-	-

ANNEX 5: GOVERNANCE ASSESSMENT 2015/16

UTILITY	GOVERNANCE PARAMETERS						Totals	% Level of Governance	Impact Score
	Utility Oversight/ Supervision	Financial Management	Human Resources	Service Standards	Information and Control Systems	User Consultation			
	40	**28**	**16**	**12**	**12**	**12**	**120**	**100%**	**100%**
Nyeri	32	19	12	12	8	10	93	78	91
Murang'a	33	20	8	12	8	10	91	76	59
Tetu Aberdare	37	10	16	11	4	2	80	67	39
Eldoret	32	16	12	9	0	10	79	66	64
Kericho	39	7	16	5	8	4	79	66	36
Murang'a South	37	5	10	7	4	10	73	61	45
Embu	25	18	12	7	0	10	72	60	67
Limuru	24	18	14	9	4	2	71	59	42
Othaya Mukurweini	25	13	10	8	4	10	70	58	50
Nairobi	28	12	11	8	0	10	69	58	59
Kisumu	28	5	8	12	4	12	69	58	62
Nakuru	24	9	12	9	4	10	68	57	66
Kahuti	24	9	15	5	4	8	65	54	26
Mavoko	25	7	15	7	0	8	62	52	45
Kiambu	24	14	9	5	4	6	62	52	42
Meru	21	16	4	4	8	8	61	51	65
Bomet	24	3	6	5	8	12	58	48	33
Kirinyaga	21	8	6	5	4	12	56	47	33
Malindi	24	9	6	7	4	6	56	47	61
Oloolaiser	24	12	14	1	0	0	51	43	31
Sibo	20	6	13	5	4	0	48	40	40
Karuri	16	13	4	5	4	4	46	38	46
Mathira	25	3	7	8	0	2	45	38	49
Nakuru Rural	14	4	10	7	8	2	45	38	22
Isiolo	20	8	4	1	4	8	45	38	50
Thika	22	5	3	4	4	6	44	37	52
Tavevo	20	2	4	5	4	8	43	36	25
Kikuyu	20	7	4	5	4	2	42	35	19
Kwale	24	5	4	1	4	2	40	33	16
Nithi	20	3	8	1	4	4	40	33	56
Githunguri	12	13	6	5	4	0	40	33	36
Kilifi-Mariakani	16	3	9	0	4	6	38	32	15
Nanyuki	25	3	9	0	0	0	37	31	69
Gatamathi	20	5	4	5	0	2	36	30	20
Gatundu	20	3	4	0	4	4	35	29	43
Kitui	16	3	9	1	4	0	33	28	35
Ngagaka	20	7	4	1	0	0	32	27	55
Kibwezi Makindu	16	7	0	1	4	4	32	27	28
Nzoia	12	4	2	5	4	2	29	24	50
Machakos	0	7	8	1	4	8	28	23	26
Amatsi	12	3	8	1	4	0	28	23	23
Kakamega	4	2	2	7	4	8	27	23	62
Nyahururu	13	4	3	0	4	2	26	22	43
Imetha	16	0	2	0	4	0	22	18	25
Kyeni	12	1	8	0	0	0	21	18	29
Gusii	8	3	8	1	0	0	20	17	32
Garissa	0	2	5	1	4	4	16	13	10
Mombasa	0	3	4	4	0	2	13	11	11
Lodwar	0	0	0	1	0	0	1	1	28
Ruiru-Juja	X	X	X	X	X	X	X	X	X

ANNEX 6: PRO-POOR ASSESSMENT

INDICATORS	Pro-poor indicator in the Kenyan Water Sector					% Score (100)	Weighted Score (1480)
	Water coverage in low income areas	Level of services in low income areas	Strategy and organisation	Compliance to standards for water kiosks	Totals (84)		
	8	16	32	28	84		
Nyeri	7	16	28	28	79	94%	1390
Kisumu	7	14	30	16	67	80%	1230
Ruiru-Juja	8	12	25	20	65	77%	1210
Kakamega	7	11	26	24	68	81%	1180
Nakuru	6	13	23	24	66	79%	1160
Nyahururu	5	14	24	24	67	80%	1150
Embu	5	14	23	11	53	63%	1010
Meru	6	9	19	20	54	64%	960
Thika	4	11	24	16	55	65%	930
Nanyuki	4	11	18	20	53	63%	910
Malindi	4	10	17	20	51	61%	870
Nairobi	4	7	23	20	54	64%	840
Murang'a	2	6	28	20	56	67%	760
Oloolaiser	3	9	10	22	44	52%	740
Mavoko	4	6	10	26	46	55%	740
Mathira	1	8	17	28	54	64%	740
Gusii	2	4	23	28	57	68%	730
Murang'a South	3	6	19	18	46	55%	700
Mombasa	2	3	32	14	51	61%	650
Kericho	2	10	15	2	29	35%	570
Kirinyaga	3	8	10	6	27	32%	550
Nzoia	1	4	18	18	41	49%	530
Kilifi Mariakani	2	4	13	18	37	44%	530
Eldoret	0	4	16	21	41	49%	490
Lamu	2	4	7	19	32	38%	480
Nakuru Rural	4	4	7	7	22	26%	460
Tavevo	0	5	4	20	29	35%	390
Kwale	0	1	8	18	27	32%	290

ANNEX 7: CREDITWORTHINESS ASSESSMENT GUIDE

Indicators	Definition	Source	Weight	4	3	2	1	0
Economic Indicators								
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	WARIS	3	0-20	20-40	40-60	60-80	80-100
Operational Indicators								
Sewerage Coverage	Number of people served with Sewerage Services/ Population of area	WARIS	1	100	90-100	80-90	70-80	<70
Water coverage	Number of people served with Water Supply Services/ Population of area	WARIS	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	WARIS	5	<20%	20-30%	30-40%	40-50%	>50%
No of staff per 1000 connections	Number of Staff Members/(Total number of Connections/1000)	WARIS	3	<5	6	7	8	>8
Financial Indicators								
Revenue Indicators								
Total revenue (Excl Grants)	Total revenue from water & sewerage sales & other income	WARIS	0	N/A	N/A	N/A	N/A	N/A
Revenue Diversification	The difference between the % residential revenue and %institutional	WARIS	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.	WARIS	8	>50%	35-50%	20-35%	5-20%	<5%
Cost Indicators								
Total Opex	Total Operational & Maintenance Expenditure	WARIS	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	WARIS	3	>8%	6-8%	6-4%	0-4%	>0%
Electricity as % of opex	Total Electricity Costs divided by total operations and maintenance expenditure	WARIS	2	<10%	10-15%	15-20%	20-25%	>25%
Employee Costs costs/Total Opex	The Salary Costs as a % of Total OPEX	WARIS	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	WARIS	4	>130%	120-130%	110-120%	100-110%	<100%
Grant dependency for opex	The proportion of OPEX financed by income from Grants	WARIS	3	0%	0-10%	10-15%	15-20%	20-25%
Profitability Indicators								
EBITDA/Revenue	Earnings Before Interest Tax, Depreciation & Amortization	WARIS	5	>25%	20-25%	15-20%	10-15%	<10%
Annual Operational surplus/deficit	Total Revenue Less Total O&M Costs incurred	WARIS	0	N/A	N/A	N/A	N/A	N/A
Profit/loss for year		WARIS	0	N/A	N/A	N/A	N/A	N/A
Liquidity & Solvency Indicators								
Liquidity reserves as % of annual operating expenses	Cash & Near Cash Reserves/ Annual Operating Expenses *12	WARIS	5	>25%	20-25%	15-20%	10-15%	<10%
Liquidity ratio	Cash & Near Cash Reserves/ Current Liabilities	WARIS	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)	WARIS	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	WARIS	10	>0	<0	<0	<0	<0
Debt:Equity Ratio	Total Debt/Total Equity	WARIS	5	<20%	20-30%	25-30%	30-35%	>35%
Debtor Days: average number of days it takes WSP to collect monies billed	Net billed amount outstanding/ Total annual operating revenues excluding grants and transfers *365	WARIS	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	WARIS	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 provison%	WARIS	5	Provision for all debt older than 60	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	WARIS	5	95% and above	93% to 94%	90% to 92%	85% to 89%	Less than 85%
Collection effiecency :Utilities ability to collect billed accounts	Total amount collected as % of the total amount billed	WARIS	5	95% and above	93% to 94%	90% to 92%	85% to 89%	Less than 85%
Total			**100**	**4.0**	**3.0**	**2.0**	**1.0**	**-**

ANNEX 8: UTILITIES RANKING 2015/16

Indicator / Utilities	DWQ (%)	Non-Revenue Water (%)	Water Coverage (%)	Hours of Supply (hrs./d)	Staff Productivity (no. staff/K 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
Very Large Utilities												
Nyeri	96	18	91	24	3	41	104	142	100	**182**	**1**	**1**
Nakuru	93	37	93	17	5	29	94	109	92	**131**	**2**	**5**
Eldoret	93	50	75	15	4	49	98	145	100	**128**	**3**	**7**
Kisumu	93	49	67	24	4	29	95	106	100	**125**	**4**	**8**
Kakamega	93	49	83	20	5	47	96	112	94	**124**	**5**	**9**
Nairobi	93	39	81	18	6	58	98	103	100	**118**	**6**	**11**
Thika	92	32	97	21	5	33	87	100	80	**105**	**7**	**15**
Mombasa	59	50	53	5	9	39	95	77	64	**22**	**8**	**80**
Large Utilities												
Nanyuki	93	35	93	23	4	47	87	140	100	**138**	**1**	**2**
Murang'a	93	34	98	24	5	41	89	129	100	**135**	**2**	**3**
Embu	93	46	77	24	5	38	100	134	100	**135**	**3**	**4**
Meru	96	19	61	21	8	35	119	115	100	**129**	**4**	**6**
Malindi	93	34	74	22	7	28	110	79	100	**122**	**5**	**10**
Nithi	93	46	81	24	7	48	94	104	100	**112**	**6**	**12**
Ngagaka	68	52	97	22	6	50	96	125	97	**110**	**7**	**13**
Ngandori Nginda	n.c.d.	n.c.d.	79	24	5	49	94	155	83	**106**	**8**	**14**
Othaya Mukurweni	95	62	74	23	7	43	98	102	76	**100**	**9**	**17**
Mathira	93	60	42	20	5	45	96	108	94	**97**	**10**	**19**
Murang'a South	93	64	46	21	6	46	99	100	98	**90**	**11**	**24**
Mavoko	93	40	66	9	8	24	98	107	100	**90**	**12**	**25**
Gatundu	42	43	64	21	6	55	109	100	100	**86**	**13**	**30**
Sibo	93	55	36	19	13	21	99	46	92	**80**	**14**	**35**
Tetu Aberdare	67	54	64	24	7	54	106	111	99	**79**	**15**	**36**
Kericho	93	48	54	23	7	46	86	106	98	**71**	**16**	**39**
Nyahururu	92	42	82	20	8	43	88	103	100	**71**	**17**	**40**
Kitui	93	60	35	16	7	18	83	65	100	**70**	**18**	**43**
Gusii	93	38	43	15	7	41	100	57	86	**64**	**19**	**46**
Oloolaiser	86	35	53	13	17	29	98	98	100	**62**	**20**	**48**
Kahuti	52	67	44	20	9	50	94	113	80	**48**	**23**	**60**
Imetha	84	50	70	18	23	46	105	68	76	**51**	**21**	**56**
Tavevo	41	40	76	12	12	26	76	99	n.c.d.	**49**	**22**	**57**
Nakuru Rural	93	63	22	10	12	35	96	96	21	**44**	**24**	**64**
Gatamathi	80	69	36	23	9	57	96	87	57	**40**	**25**	**67**
Kikuyu	71	47	36	10	9	31	98	92	96	**39**	**26**	**70**
Kwale	50	46	47	8	12	27	86	97	100	**31**	**27**	**75**
Kilifi Mariakani	86	46	41	9	13	31	98	94	85	**31**	**28**	**77**
Garissa	26	56	56	n.c.d.	13	30	74	105	73	**19**	**29**	**81**
Medium												
Embe	93	52	57	17	7	52	97	99	100	**104**	**1**	**16**
Isiolo	93	34	60	12	8	48	104	93	100	**100**	**2**	**18**
Karuri	24	22	51	13	7	23	83	103	100	**92**	**3**	**22**
Limuru	83	33	47	17	6	35	96	99	95	**85**	**4**	**31**
Kiambu	86	33	34	16	9	25	91	88	100	**83**	**5**	**34**
Githunguri	65	53	10	14	10	27	96	75	100	**73**	**6**	**38**
Naivasha	93	43	72	13	15	32	78	87	94	**67**	**7**	**44**
Bomet	86	57	73	12	11	29	113	50	37	**66**	**8**	**45**
Kyeni	38	59	30	18	7	37	59	116	84	**58**	**9**	**50**
Lodwar	49	n.c.d.	50	19	9	35	87	100	95	**56**	**10**	**52**
Kibwezi Makindu	65	26	35	14	10	39	89	97	100	**56**	**11**	**53**
Machakos	78	48	37	11	10	39	94	93	100	**52**	**12**	**55**
Gatanga	0	43	26	6	6	55	99	89	92	**49**	**13**	**58**
Amatsi	92	36	14	13	18	30	59	77	42	**46**	**14**	**62**
Tililibei	74	57	57	20	14	34	89	54	11	**42**	**15**	**65**
Tuuru	27	70	41	17	14	56	78	109	100	**37**	**16**	**72**
Nol Turesh Loitokitok	59	65	15	18	24	46	79	94	92	**30**	**17**	**78**
Small Utilities												
Muthambi 4K	40	n.c.d.	92	23	6	44	89	n.c.d.	100	**95**	**1**	**20**
Namanga	24	36	52	12	7	27	95	103	97	**92**	**2**	**21**
Tachasis	70	29	59	24	9	44	95	103	94	**90**	**3**	**23**
Kiambere Mwingi	93	40	14	14	20	23	111	57	100	**87**	**4**	**26**
Rukanga	90	39	93	23	9	57	80	107	100	**87**	**5**	**27**
Murugi Mugumango	22	48	62	24	7	64	116	97	100	**87**	**6**	**28**
Engineer	0	n.c.d.	75	24	7	43	71	142	0	**86**	**7**	**29**
Kathita Kiirua	60	38	66	23	53	34	90	114	100	**85**	**8**	**32**
Naromoru	37	44	92	22	15	60	100	73	99	**84**	**9**	**33**
Matungulu Kangundo	93	41	4	16	14	39	81	131	100	**73**	**10**	**37**
Nyasare	93	39	22	19	14	45	78	134	92	**71**	**11**	**41**
Kapsabet Nandi	63	40	75	20	9	30	82	102	78	**70**	**12**	**42**
Nyandarua	34	50	10	17	22	40	92	55	98	**62**	**13**	**47**
Iten Tambach	87	32	22	14	16	23	100	61	60	**61**	**14**	**49**
Wote	93	n.c.d.	19	8	15	46	93	73	100	**57**	**15**	**51**
Homabay	24	58	14	13	12	26	99	104	0	**55**	**16**	**54**
Narok	68	44	36	16	23	20	81	65	98	**48**	**17**	**59**
Mwala	61	52	15	12	21	27	107	61	19	**47**	**18**	**61**
Yatta	61	35	10	18	15	47	87	52	100	**45**	**19**	**63**
Migori	93	50	22	7	21	20	75	56	83	**40**	**20**	**66**
Kikanamku	14	40	42	21	7	69	72	154	0	**40**	**21**	**68**
Kathiani	72	n.c.d.	27	10	39	30	84	93	100	**39**	**22**	**69**
Ndaragwa	0	n.c.d.	67	21	20	33	0	116	0	**38**	**23**	**71**
Lamu	n.d.	n.d.	76	8	n.d.	40	n.d.	n.d.	n.d.	**37**	**24**	**73**
Kapenguria	52	n.c.d.	20	19	8	n.c.d.	n.d.	n.c.d.	9	**34**	**25**	**74**
Samburu	48	39	45	8	35	24	35	18	95	**31**	**26**	**76**
Mbooni	45	n.c.d.	23	5	27	16	43	42	100	**30**	**27**	**79**
Marsabit	42	n.c.d.	20	8	67	12	40	38	0	**19**	**28**	**82**
Olkejuado	53	n.c.d.	10	12	18	50	60	31	n.c.d.	**12**	**29**	**83**
Under Special Regulatory Regime												
Nzoia	93	43	77	22	6	43	100	105	76	**X**	**X**	**X**
Ruiru-Juja	93	27	85	22	3	22	99	113	100	**X**	**X**	**X**
Kirinyaga	95	59	30	18	9	52	87	105	95	**X**	**X**	**X**

ANNEX 9: GENERAL DATA 2015/16

UTILITY	Total Population in Service Area	Total PopulationServed	Total no. of connections (active+inactive)	Total No.ActiveConnections	No. of towns served	Turnover (KSh million)	Total Water Produced in m^3 (000)	Domestic + Kiosks billed volume	Domestic + Kiosks billed volume in m3 (000)	Total billed volume in m3 (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 2016
Very Large (≥35,000 conns.)															
Nairobi	4,066,608	3,277,377	562,324	562,324	1	8,404	200,352	69,228,745	69,229	122,103	39	167	58	3,162	Valid
Eldoret	421,879	314,956	80,114	82,713	2	628	13,735	5,622,240	5,622	6,880	50	119	49	325	Valid
Mombasa	1,100,268	582,298	69,063	42,445	1	825	14,819	5,955,761	5,956	7,475	50	70	28	388	Expired
Nakuru	477,748	443,283	41,540	50,552	4	825	12,166	5,247,288	5,247	7,606	37	75	32	230	Expired
Thika	220,027	214,410	33,355	42,068	1	510	12,820	4,559,138	4,559	8,718	32	164	58	212	Valid
Kisumu	425,965	286,415	31,974	43,153	5	550	11,086	2,820,919	2,821	5,606	49	106	27	166	Valid
Kakamega	420,702	349,810	34,972	33,538	6	260	6,064	3,354,884	3,355	3,092	49	47	26	177	Expired
Nyeri	148,662	143,576	30,788	34,477	1	413	5,985	3,490,047	3,490	4,882	18	114	67	104	Valid
Nzoia	440,927	337,776	32,385	31,473	6	323	7,288	2,063,457	2,063	4,131	43	59	17	189	Expired
Large (10,000-34,999 conns.)															
Gatundu	266,421	171,600	33,210	25,566	1	109	7,910	4,274,765	4,275	4,474	43	126	68	144	No RTA
Malindi	304,063	225,324	28,579	23,553	1	330	6,877	3,465,695	3,466	4,569	34	84	42	154	Expired
Kirinyaga	450,865	137,448	28,468	17,992	1	134	5,679	2,008,129	2,008	2,347	59	113	40	170	Valid
Murang'a South	497,902	227,447	27,565	20,827	1	107	6,125	2,104,612	2,105	2,232	64	74	25	130	Expired
Othaya Mukurweni	179,695	132,726	26,078	16,279	1	110	6,059	1,969,775	1,970	2,326	62	125	41	112	Expired
Mathira	151,149	60,194	23,171	13,446	1	102	3,892	1,152,950	1,153	1,555	60	177	52	62	Valid
Embu	185,044	142,862	22,204	24,432	2	295	6,598	2,735,604	2,736	3,535	46	127	52	119	Valid
Kilifi Mariakani	849,318	347,829	25,452	17,207	3	416	8,171	1,984,827	1,985	4,382	46	64	16	217	Expired
Nakuru Rural	477,732	107,249	22,179	12,043	1	186	8,892	1,636,430	1,636	3,254	63	227	42	142	Valid
Nanyuki	92,342	85,485	15,455	21,150	1	285	4,130	1,566,291	1,566	2,702	35	132	50	78	Expired
Gusii	742,631	321,258	15,150	15,167	7	86	2,328	875,778	876	1,435	38	20	7	109	No RTA
Kericho	179,841	97,635	11,857	18,554	4	192	3,606	2,295,498	2,295	1,875	48	101	64	136	Valid
Nyahururu	79,667	65,017	14,618	17,299	1	178	3,406	876,306	876	1,975	42	144	37	139	Expired
Ruiru-Juja	193,771	164,971	18,171	18,132	2	221	4,467	3,244,471	3,244	3,244	27	74	54	58	Valid
Kahuti	164,824	72,680	18,215	8,535	1	58	5,463	1,296,103	1,296	1,777	67	206	49	87	Expired
Murang'a	82,734	80,824	12,393	14,737	1	200	2,292	965,569	966	1,508	34	78	33	79	Valid
Imetha	151,357	105,313	16,203	5,976	1	36	1,327	450,101	450	658	50	35	12	136	No RTA
Kwale	310,843	146,558	15,633	9,744	1	130	3,110	1,302,323	1,302	1,691	46	58	24	113	Expired
Tavevo	64,143	48,566	14,620	10,959	3	229	5,821	2,779,343	2,779	3,504	40	328	157	133	No RTA
Kitui	754,176	262,379	14,053	10,846	1	109	3,166	805,626	806	1,257	60	33	8	76	Expired
Tetu Aberdare	75,905	47,155	13,366	10,993	1	58	2,345	973,050	973	1,088	54	136	57	79	Expired
Ngandori Nginda	97,806	77,332	13,204	10,624	1	40	n.c.d.	1,814,494	1,814	2,650	n.c.d.	n.c.d.	64	55	Expired
Garissa	158,554	88,935	12,381	9,424	1	170	4,999	1,655,981	1,656	2,189	56	154	51	123	Expired
Meru	140,681	85,573	11,255	11,473	2	173	2,430	2,306,789	2,307	1,969	19	78	74	91	Valid
Sibo	430,891	155,966	12,356	6,473	5	46	1,830	585,847	586	831	55	32	10	82	Expired
Mavoko	190,241	125,866	7,678	10,322	1	210	1,634	737,107	737	975	40	36	16	84	Valid
Oloolaiser	312,756	164,846	10,662	7,202	3	160	2,741	1,540,281	1,540	1,777	35	46	26	121	Valid
Nithi	84,078	68,439	10,392	7,253	1	44	1,329	599,770	600	724	46	53	24	48	Expired
Gatamathi	137,245	49,853	10,302	6,745	1	47	2,744	596,789	597	862	69	151	33	58	No RTA
Kikuyu	302,851	109,899	10,214	6,474	1	72	1,618	433,597	434	861	47	40	11	58	Expired
Ngagaka	74,474	72,156	10,126	6,814	1	32	1,414	565,709	566	677	52	54	21	41	No RTA
Medium (5,000-9,999 conns.)															
Machakos	220,415	81,290	6,013	6,586	2	87	1,112	152,554	153	579	48	37	5	64	Expired
Isiolo	64,242	38,570	7,435	7,966	1	62	1,087	581,654	582	722	34	77	41	63	Expired
Limuru	247,445	115,115	7,477	8,518	1	91	1,371	694,807	695	924	33	33	17	53	Expired
Kyeni	83,079	24,605	8,593	4,921	1	26	1,040	430,091	430	430	59	116	48	33	No RTA
Tililibei	187,011	106,081	8,378	3,481	1	30	1,260	281,015	281	540	57	33	7	49	Valid
Tuuru	321,964	131,433	8,258	4,173	1	26	1,567	371,492	371	466	70	33	8	59	No RTA
Gatanga	129,165	33,187	7,991	6,522	1	34	2,168	952,830	953	1,237	43	179	79	39	No RTA
Karuri	151,214	76,457	7,688	6,145	1	78	1,244	785,672	786	976	22	45	28	44	Expired
Kiambu	103,986	35,175	5,602	6,569	1	98	1,615	570,826	571	1,078	33	126	44	56	Expired
Githunguri	202,880	19,897	7,501	3,548	1	42	1,008	293,272	293	474	53	139	40	34	Expired
Amatsi	243,049	38,720	7,363	3,568	2	33	1,650	563,775	564	1,055	36	117	40	64	Valid
Lodwar	68,275	34,335	7,344	7,126	2	50	1,596	150,455	150	1,219	n.c.d.	127	12	66	No RTA
Bomet	120,159	88,254	6,925	6,925	1	73	4,060	1,734,532	1,735	1,735	57	126	54	74	Valid
Kibwezi Makindu	293,523	102,999	6,856	5,395	1	60	1,282	732,241	732	949	26	34	19	56	Expired
Nol Turesh Loitokitok	225,718	33,705	6,399	3,178	1	114	4,121	1,248,851	1,249	1,433	65	335	102	76	No RTA
Embe	48,105	27,334	5,054	2,820	1	27	894	367,716	368	433	52	90	37	20	Expired
Naivasha	159,210	115,184	3,504	4,205	1	98	1,134	407,980	408	650	43	27	10	64	Valid
Small (<5,000 conns.)															
Nyandarua	66,674	6,649	4,402	1,497	1	15	437	195,021	195	220	50	180	80	33	Expired
Kapsabet Nandi	65,403	49,166	4,376	4,263	1	33	872	350,329	350	524	40	49	20	37	No RTA
Homabay	182,139	25,516	3,873	3,998	1	56	1,349	518,045	518	568	58	145	56	48	Expired
Murugi Mugumango	33,893	20,861	4,343	4,267	1	11	2,874	1,205,828	1,206	1,505	48	377	158	29	No RTA
Migori	168,620	36,800	4,342	2,911	3	24	779	174,212	174	389	50	58	13	60	No RTA
Lamu	23,189	17,646	3,956	2,794	1	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	No RTA
Narok	82,555	29,900	3,496	2,511	1	38	627	169,532	170	350	44	57	16	57	Expired
Kiambere Mwingi	433,346	62,505	3,345	2,065	2	52	622	272,758	273	372	40	27	12	42	Expired
Samburu	41,635	18,664	2,984	2,682	1	16	456	210,358	210	277	39	67	31	95	Expired
Olkejuado	53,051	5,234	2,804	1,193	1	7	156	59,470	59	116	n.c.d.	n.c.d.	31	22	No RTA
Muthambi 4K	23,133	21,228	2,660	2,660	1	11	753	474,144	474	595	n.c.d.	97	61	17	No RTA
Kapenguria	81,156	16,327	2,556	1,329	1	n.d.	305	n.d.	n.d.	n.d.	n.c.d.	51	n.d.	11	No RTA
Iten Tambach	54,046	11,930	2,375	1,957	1	14	400	167,462	167	272	32	n.c.d.	38	31	Expired
Mwala	86,786	13,139	2,306	1,657	1	11	214	38,708	39	102	52	45	8	34	No RTA
Yatta	163,285	15,864	2,252	2,143	1	14	248	85,100	85	161	35	43	15	33	No RTA
Rukanga	7,762	7,216	1,963	1,706	1	6	252	132,958	133	154	39	96	50	15	Expired
Kikanamku	51,109	21,678	1,792	1,551	1	5	392	186,000	186	235	40	50	24	11	No RTA
Ndaragwa	15,199	10,137	1,739	1,013	1	3	n.c.d.	42,125	42	77	n.c.d.	n.c.d.	11	20	No RTA
Namanga	20,195	10,535	1,695	1,616	1	8	402	212,414	212	259	36	105	55	11	No RTA
Wote	73,797	13,653	1,324	1,261	1	16	172	52,098	52	133	n.c.d.	n.c.d.	10	19	No RTA
Mbooni	65,919	15,056	1,265	1,058	1	4	8	4,884	5	6	n.c.d.	1	1	29	No RTA
Engineer	17,077	12,745	1,189	1,176	1	3	541	356,136	356	577	n.c.d.	n.c.d.	77	8	No RTA
Runda	12,126	10,440	1,130	1,125	1	97	897	566,430	566	580	35	n.c.d.	149	30	Expired
Kiamumbi	9,826	9,636	1,129	1,022	1	15	278	217,900	218	218	21	n.c.d.	62	10	No RTA
Naromoru	6,699	6,172	1,113	1,061	1	7	227	82,988	83	127	44	101	37	16	No RTA
Nyasare	101,275	22,081	1,056	812	1	5	151	51,742	52	92	39	n.c.d.	6	11	Valid
Marsabit	49,208	9,676	1,038	791	1	4	96	197,000	197	211	n.c.d.	27	56	53	No RTA
Matungulu Kangundo	242,420	8,673	1,030	722	1	16	174	91,899	92	102	41	55	29	10	No RTA
Kathiani	23,077	6,323	999	586	1	9	130	44,268	44	130	n.c.d.	56	19	23	No RTA
Tachasis	27,170	15,919	769	769	1	2	298	162,960	163	213	29	51	28	7	Valid
Kathita Kiirua	31,998	21,055	647	647	1	13	569	173,711	174	351	38	74	23	34	No RTA
TOTALS	**21,089,994**	**11,654,051**	**1,630,054**	**1,485,473**	**134**	**18,847**	**449,603**	**168,758,332**	**168,758**	**259,218**	**43***	**106***	**40***	**9,957**	
***Weighted Average**															

Water Services Regulatory Board

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