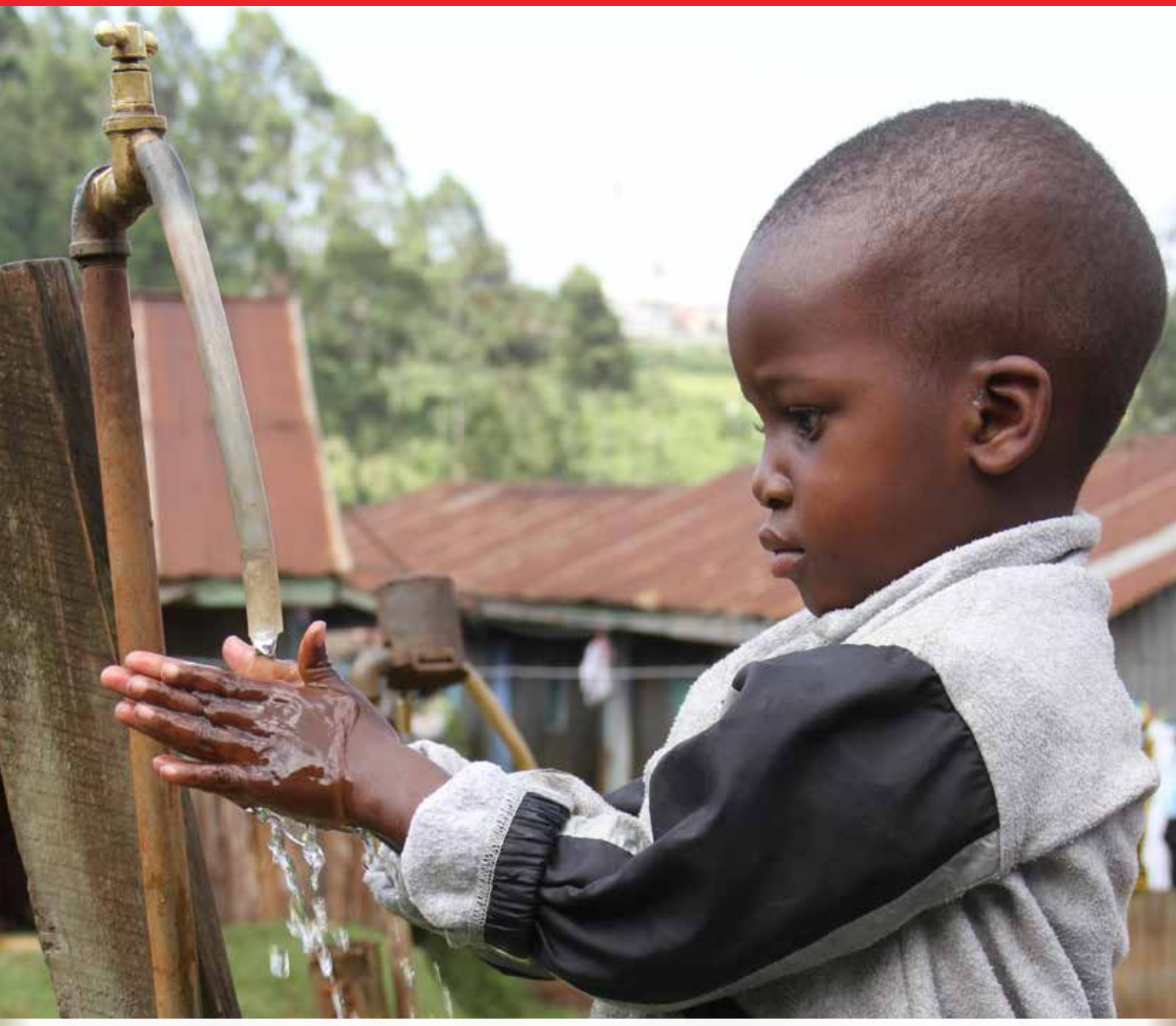
ISSUE NO
12/2020

IMPACT

A Performance Report of Kenya's Water Services Sector - 2018/19



KENYA VISION 2030

CERTIFIED ISO 9001:2015 COMPANY

WASREB
Water Services Regulatory Board

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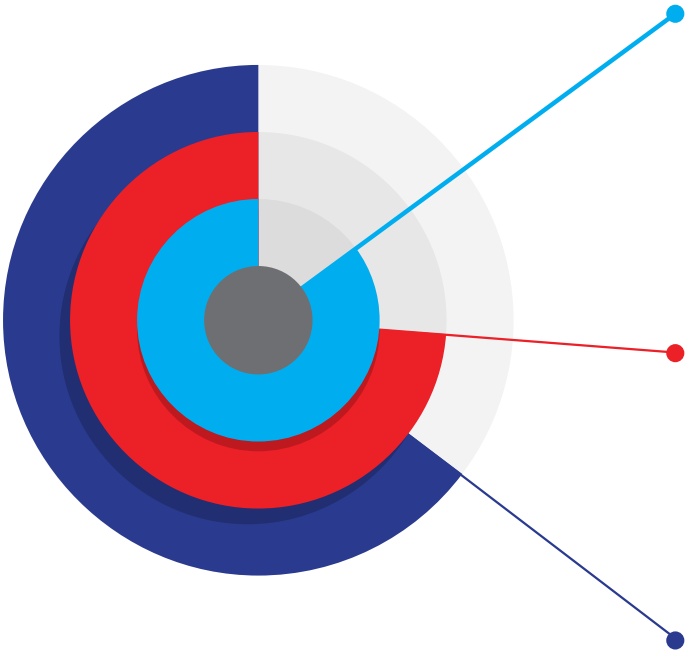
Content

WASREB
Water Services Regulatory Board

ABOUT US



VISION

A proactive and dynamic water services regulator

MISSION

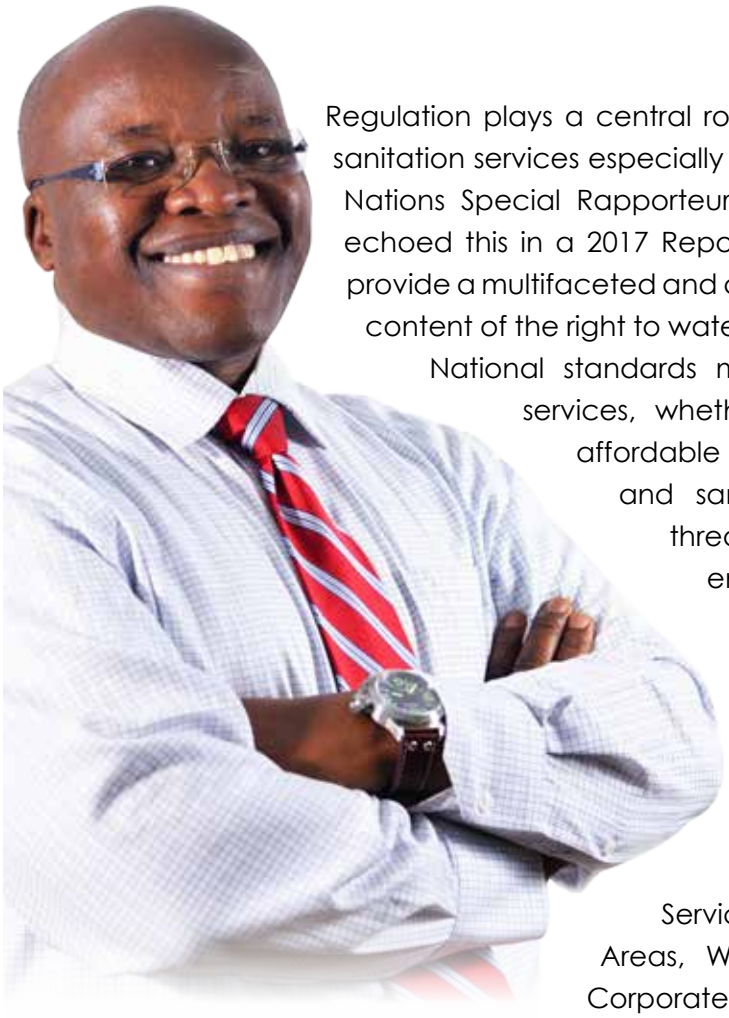
To provide a regulatory environment that facilitates efficiency, effectiveness and equity in the provision of water services in line with the human right to water and sanitation

MOTTO

Water Services for All

FOREWORD

"The right to water, 10 years on…10 years to 2030…"



Regulation plays a central role in advancing the rights to water and sanitation services especially in terms of verified outcomes. The United Nations Special Rapporteur on the rights to water and sanitation echoed this in a 2017 Report, which observes that, regulation must provide a multifaceted and contextual interpretation of the normative content of the right to water in line with the human rights framework. National standards must ensure that water and sanitation services, whether privately or publicly provided, are affordable for all, including the poorest, that water and sanitation tariffs do not compromise or threaten the realization of other rights. To ensure the compliance with the human rights framework, the Regulator continues to develop and roll out a number of guidelines that are geared towards streamlining service provision and ensure the protection of the rights of the consumer. Some of these include; Business Planning, Water and Sanitation Services Provision in Rural and Underserved Areas, Water Safety Planning, Water Vending, Corporate Governance and Pro-Poor Water and Sanitation Services Guidelines.

To meet human rights standards, regulatory decision-making processes must ensure genuine public participation in key decisions. Both individuals and groups have the right to participate actively, freely and in a meaningful way in the process of setting service standards that may affect their enjoyment of the rights to water and sanitation. The year saw WASREB holding 30 public consultation meetings for licensing of Water Service Providers.

To enhance good corporate governance practices in water service delivery, the Regulator held regional workshops with utilities and counties, aimed at building capacities of utility managers and Boards of directors, as well as, County executives on tenets of good governance. The culmination of these workshops will be a national governance dialogue to be held later in the year.

The Sustainable Development Goal six (6), as well as, the national vision, aim to ensure availability and sustainable management of water and sanitation for all by the year 2030. It is now exactly 10 years to this goal and as we move towards 2030, this report will be a yardstick to track attainment of this target.

In this edition of *Impact* 12, we review the performance of the water services sector for the financial year 2018/19. The report indicates a marginal improvement in water coverage while for sewerage, access despite the one percentage point increase, is still lower than the level 10 years ago.

There was a drop in number of utilities assessed from 88 to 87. Furthermore, two Very Large utilities have not been ranked as a result of flouting regulations especially governance. 49 utilities representing 56% recorded improvement in performance as compared to 40 (45%) in the last reporting period. A total of 39 utilities either recorded stagnation or decline. The top 10 positions were taken by the Very Large (6 No.) and Large (4 No.) utilities. There was growth in three (3) utilities which graduated to the Very Large category. This is particularly encouraging considering that these two size categories serve 88% of the total population and control 94% of the sector turnover.

Cost coverage for the sector improved by six percentage points mainly attributed to increased self-financing. Going forward, WASREB is convinced that aside from increasing self-financing, the game changer in the sector will be increased public funding, coupled with enhanced fund effectiveness. 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. The success of the Performance Based Financing (PBF), as well as, the Kenya Pooled Water Fund (KPWF) will provide impetus in this endeavor.

I also hasten to add that to accelerate the drive towards Vision 2030, we need to increasingly focus on soft and hard approaches for water and sanitation and balance between infrastructure investment and management investment. This might help in narrowing the gap between water and sanitation development and reorient ourselves to the final goal for water and sanitation interventions – Public Health!

Finally, this is a performance report and therefore I wish to congratulate utilities that continue to do well and hope that the momentum that has been realised will be sustained within an environment of compliance. I also call on all stakeholders to realise that good governance and sustainable development are key national values. It is therefore incumbent on all of us in the water sector to be guided by these principles in any actions we take to guarantee human dignity, equity, social justice, inclusiveness and non-discrimination.

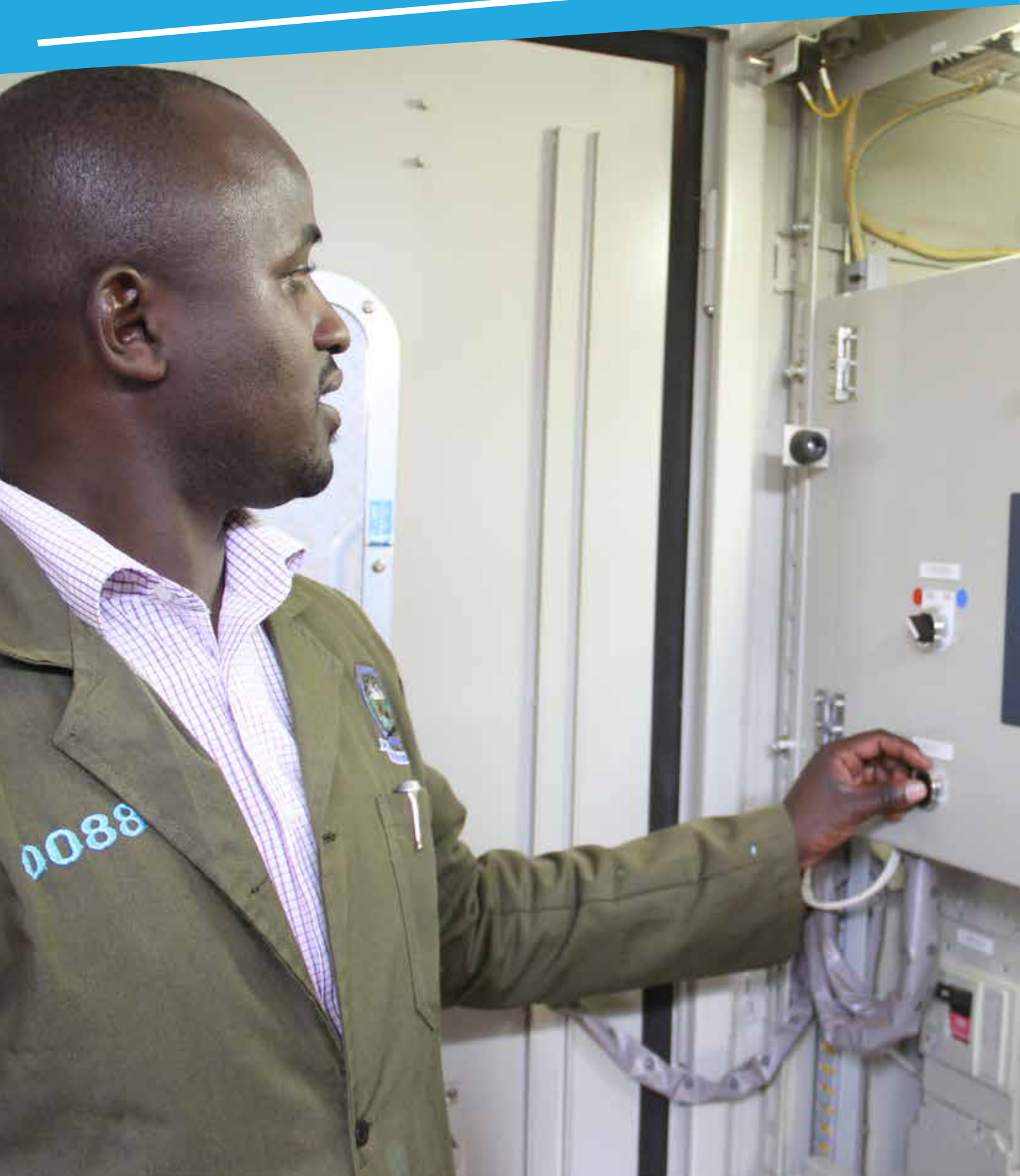
The inequality in water and sanitation service provision must end!!

Eng. Robert Gakubia

CEO, WASREB

CHAPTER 1

BACKGROUND



STREAMLINING WATER AND SANITATION SERVICES PROVISION FOR BETTER PERFORMANCE

Countdown to Universal Access – the Journey to 2030

That the Water Act 2016 Section 72 1 (a) bestows upon Water Services Regulatory Board the powers to determine and prescribe national standards for the provision of water services and asset development for water service providers is in no doubt. The Regulator has made inroads in setting new standards and developing new guidelines, while aligning with the provisions of the new law in an effort to streamline the sector towards robust growth.

1.1 Creating Viable Investments

The question of creating investments that will give a positive return in the future is the current issue in the water sector. Is it worth investing in the sector that is mostly service by nature than commercial? World Bank, a key development partner of Water Sector Institutions (WSIs) observes that, Kenya's national development plan to make basic water and sanitation available to all by 2030 is a step in the right direction. The Bank has supported the country through the years of reforms that started in 2002 to date.

Building on the 2009 tariff reform led by WASREB, with support from partners, WASREB has worked with utilities to develop ways to finance new infrastructure with their own revenues on a sustainable basis. This involved earmarking surplus revenues to improve water assets. A revenue-backed lending structure, through which utilities would be able to borrow against future surplus revenues, was developed with technical support. International Finance Corporation (IFC) and a local bank were involved in loan appraisals. While private financing did not initially materialize due to uncertainty over the ownership of assets and cash flows, this initial work outlined and demonstrated a model for future financing activities.

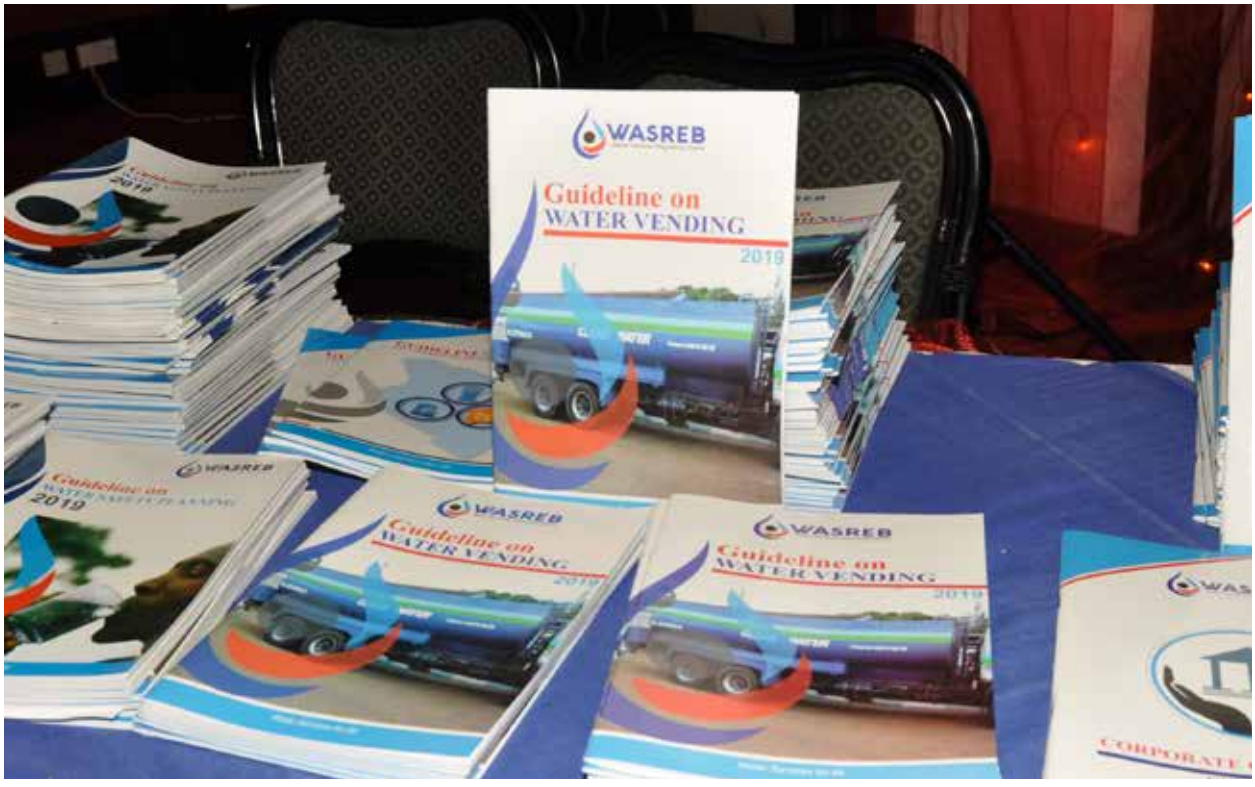
Water Service Providers from all categories are encouraged to tap on this lifeline to increase their investments for sustainability.

1.1.1 Collaboration between National and County Governments in Asset Development

The constitution creates two levels of government, at national and county levels. Given the shared role in water service provision, with regulation and development of national public works retained at national level and service provision at county level, considering the relations between national and county governments, there is dire need for effective coordination at these two different levels.

County governments in certain cases have had a problem appreciating the role of national institutions in devolved functions, like water service provision. Indeed, they have severally challenged certain provisions of the Water Act 2016, which is the legal framework upon which the mandate of national institutions is based. Regulation has stood out as one of the most contentious issues in the Act. In some cases, County governments have proceeded to enact their own Water Acts with little recognition for the national law. Thus, there is definite need to take measures to restore harmony in the sector.

Towards this end, WASREB initiated the County Engagement Strategy, an initiative whose objective is to create synergy between the two levels of government in driving the water services agenda. Clarity on roles and areas of convergence is required to ensure that both National and County Governments exploit their complimentary roles. Understanding of the gains of the sector reforms which precede devolution is key if past gains are to be preserved. Some of the gains the sector has made which need to be appreciated and preserved include, commercialization and professionalization of services, establishment of credible WSPs and ring-fencing of revenues. Instead of re-inventing the wheel, County Governments should seek to build on these past gains to effectively deliver services to the consumers.



Counties should drive their WSPs which have not reached an O+M coverage of 100% by way of subsidy on a reducing balance, application of a tariff adjustment and collaboration with relevant financing partners in supporting such utilities. Further, County Governments need to ensure that all income above 100% O+M costs is ring-fenced by utilities. This ringfencing shall

ensure progressive growth of utility income to cover 150% O+M costs in order to accommodate infrastructure renewal and repayment of debts. Equally, the National Government being responsible for resource mobilization, should work with the County Governments in setting investment priorities in order to reach the highest possible fund effectiveness. A detailed information system for funding infrastructure investments for the use of created assets should be established to allow for tracking of all investments and their effectiveness.

1.1.2 Explore Alternative Financing

The current sector funding is estimated at less than 40% of the sector requirements. Further, concessionary and grant funding from development partners in the sector is estimated at almost 90% which implies that the sector experiences an unnecessarily high external dependency. The foregoing situation is not only untenable, but also puts at risk the attainment of sustainable and universal water and sanitation coverage, envisioned in Vision 2030 and the the Sustainable Development Goals (SDGs). The sector therefore needs to explore alternative modes of financing water and sanitation development, to fill in the gap and not least enhance sustainability.

Some of the financing options that may be available for the sector include both public and private funds, as well as, use of Public Private Partnerships (PPP) mechanisms. The greatest potential for the sector lies in being able to leverage on the its self-financing potential to attract more finance. For this, the extent of revenue diversification in a utility measured in terms of the extent of cross-subsidy and the ability and willingness of the middle and upper-income classes to contribute is key in making the sector more attractive for investors (development partners and commercial banks).

Aside from increasing resources, investments must be better targeted to deliver better outcomes. For this, sector-wide development and financing plans, as well as, adequate information and reporting systems on investments, are needed. The practice of many counties to allocate budgets according to the number and size of wards and not the needs and priority of projects has to be reviewed. Further, counties should support their utilities in the tariff setting process. On its part, WASREB has developed a framework for Alternative Financing that is intended to guide utilities in raising funds for water and sanitation development. The success of the ongoing initiatives such as the Kenya Pooled Water Fund (KPWF) and the Performance Based Financing (PBF) will provide impetus in this area.

Forms of Alternative Finance

1. **Public Funds**
   - Revolving Funds
   - End User Fees (Tariffs)
   - Government Grants and Loans
2. **Private Funds**
   - Private Capital
   - Rebates
   - Commercial financing
   - Bonds
   - Commercial Loans
   - Project and Financial Aggregation (Pooling)
3. **PPP Financing Mechanism**

1.2 Rural Regulation and Services to the Marginalized

The development of the rural water sub-sector is undermined by the absence of robust data on basic coverage, functionality and haphazard infrastructural investments. Tracking of progress towards SDGs will remain a challenge in the absence of credible data as a baseline. It is equally impossible to estimate the investments required and measure related achievements.

As a first step, WASREB has mapped all low-income areas within the services areas. The process of developing new regulatory instruments to monitor the performance of utilities in low income areas is complete, with development of the Guideline on Provision of Water Services in Rural and Underserved Areas and the Guideline on Pro-poor Services.

1.2.1 Guideline on Rural Regulation

In preparing the Guideline for Provision of Water Services in Rural and Underserved Areas, WASREB has set a precedent in bringing the rural water supply systems under regulation. Voluntary community management of small-scale water systems has been the de facto practice in rural Kenya for decades, however, there is a growing evidence base critiquing the appropriateness of this model, not only in Kenya, but in many countries that are plagued by high levels of non-functionality and limited access in rural areas.

Cognizant of the central role that rural water supply systems play towards the progressive realization of the right to water, it is imperative that professionalization in management of these systems is embraced, while ensuring that investments are well targeted to realise the desired impact.

Specifically, the Guideline seeks to:;

- Ensure that water service standards are adhered to in terms of quality, cost and customer service in order to guarantee health and safety of consumers
- Regularize rural water service in order to streamline, professionalize and formalize operations
- Update the databank in WASREB as part of monitoring the progressive realization of the right to water, and
- Enable the County Governments to operationalize section 94 of the Water Act 2016 that requires the devolved governments to focus on areas that are not commercially viable under the guiding principle of ensuring water services rendered to the public indiscriminately.

The launch of the Guideline provides the counties with a clear framework for regularization of services in areas not currently covered by regulated utilities.

1.2.2. Pro-Poor Water and Sanitation Services Guideline

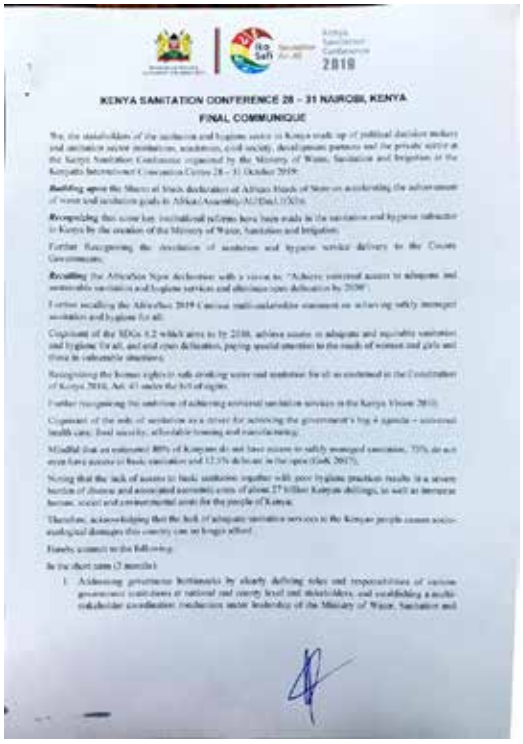
A majority of the Water Service Providers acknowledge the importance of improving and extending services to underserved areas, also referred to as the Low-Income Areas (LIAs). This desire is undermined by current organizational structures and capacities, as well as, knowledge level at the utilities which in certain cases is inadequate for tackling the challenge in the LIAs. Providing water and sanitation services to low-income customers requires a clear strategy both in terms of capacity and structure at the utility level.

The Guidelines therefore seeks to inform the utilities that greater progress in access to water and sanitation can only be achieved by extending services to the underserved or the poor in the LIAs. In addition, utilities must appreciate that with the constitutional provisions on the rights to water and sanitation they have no choice but to reach the poor regardless of the difficulties they might face in the extension of services to these areas.

The intention of the Guideline is to bring a paradigm shift in utility focus and help in understanding that serving the underserved (poor) in the LIAs must have an equal priority, like serving the already connected customers. Pro-poor orientation must move higher on the priority list of most of the utilities. With the Guideline, WASREB underlines its commitment to support the utilities in their quest to move to universal access.

1.3 Inclusive Sanitation

Sewered sanitation is currently available to only about 3.9 million people in 26 counties with 61% of this being within the Nairobi City County. This therefore implies that 21 counties lack any systems for waste management. The foregoing therefore underscores the crucial role played by non-sewered or onsite sanitation services. Consequently, all links of the sanitation chain need to be operated and managed sustainably to ensure continued service provision that protects both public health and the environment. To achieve safely managed sanitation services as per the Sustainable Development Goal 6, sanitation practitioners and providers are adopting a Citywide Inclusive Sanitation (CWIS) approach that seeks to ensure that everyone benefits from adequate sanitation service delivery outcomes embracing the principles of safety, equity, and sustainability.



KENYA SANITATION CONFERENCE 28 – 31 NAIROBI, KENYA

FINAL COMMUNIQUE

Citywide inclusive sanitation aims to help cities develop comprehensive approaches to sanitation improvement and means that: human waste is safely managed along the whole sanitation service chain; effective resource recovery and re-use are considered; a diversity of technical solutions is embraced for adaptive, mixed and incremental approaches; and onsite and sewerage solutions are combined, in either centralized or decentralized systems, to better respond to the realities found in developing country cities.

Building on the recommendations of the Sanitation conference held last year, the country needs to accelerate the implementation of the recommendations arising from the conference. The recommendation which mainly call for increased focus on non-sewered sanitation were split into short (three months), medium term (six months) and long term (12 months).

In the short term (three months)
1. Addressing the governance bottlenecks by clearly defining roles and responsibilities at both national and county level 2. Work collaboratively to create public awareness and implementation of a paradigm shift to accelerate access to adequate and sustainable sanitation and hygiene through cost effective and innovative approaches 3. Engage with National Treasury to have a separate budget line as well as increase budget for sanitation
In the Medium term (six months)
1. Consolidate and strengthen monitoring and evaluation systems at national and county levels 2. Amend existing policy, legal and regulatory frameworks to incorporate non-sewered sanitation 3. Advocate with National Treasury and Parliament for review of the PPP Act to allow the private sector into the sanitation space 4. Engage with County Governments to establish coherent service delivery models for both sewered and non-sewered sanitation services.
In the Long term (12 months)
1. Consolidate and strengthen monitoring and evaluation systems at national and county levels 2. Establish a sanitation department in the Ministry of Water, Sanitation and Irrigation 3. Establish a monitoring framework for the commitments 4. Implementation of the Presidential Directives

1.4 Sector Financing

Sustainable financing for both capital and recurrent expenditure is critical for a sustainable water and sanitation sector. In Kenya, only a small percentage of the Water Service Providers is currently able to meet both their O+M costs and part of the required capital expenditure from their internally generated funds.

For Operations and Maintenance, a majority of the WSPs rely on internal resources generated from tariffs, with some relying on operational subsidies from their respective County Governments to meet their O+M costs.

The sector has not been able to generate sufficient resources internally for capital expenditure; thus, large infrastructure works, required to extend coverage and improve the quality of services, have been financed by development partners through Concessionary loans with or without GoK counterpart funds. The sector has also on a smaller scale adopted the subsidy linked Results Based Financing (RBF) mostly targeting last mile connectivity projects.

Though the allocation to the Water Sector from the consolidated fund has increased over time, it has remained below the projected water and sanitation sector requirements. The National Water Master Plan (2014) estimates the investment needs for the sector at Kshs. 1,288 and 477 Billion to finance the Water and Sanitation coverage gaps respectively, yet the GoK is estimated to only be able to fund the Water and Sanitation capital budget with Kshs. 562 Billion and 31 Billion respectively resulting in a funding gap of Kshs. 2,259 Billion.

There is need to adopt alternative financing mechanisms such as commercial and blended financing, as well as, improve the internal efficiencies in the WSPs in order to bridge the

funding gap. Alternative financing can only succeed on the back of well governed and creditworthy utilities. Utilities must therefore adopt good governance and good financial management practices while paying due regard to the established sector requirements, this will improve cash flows that can be leveraged on to access alternative financing.

The Private Sector can also play a critical role in closing the financing gap in the sector. In order to attract private financing, there is need for the sector to have investment ready projects at the WSP Level. This will ensure that once a financing opportunity arises, the WSPs can present their proposals in good time. It is imperative that before a loan (Concessionary or otherwise) is acquired at either the National level or County-WSP level, it must be established that it can be sustainably repaid from the tariffs of the WSP. Otherwise alternative grant financing shall be sought to enhance debt coverage and avert potential default.

Furthermore, the need for collaboration between the County and National Governments or their agents, in project identification and financing cannot be overemphasized, because asset development is essentially tied to affordability of services reflected in the tariffs charged.

In the same regard, the amount of debt due for repayment from the sector is mounting with significant principal repayments on loans from development partners falling due in this decade and the next. However, repayment on these loans is currently lagging behind, mostly attributed to projects not meeting the intended outputs/ outcomes. This may be due to implementation of projects without last mile connectivity; scaling down of projects during implementation; disputed value for money for the projects implemented; as well as, affordability issues arising from poor economic situation of the targeted customers.

County Governments also play a key role in ensuring that their WSPs operate on justified cost reflective tariffs. This will improve the performance of the utilities, as well as, generate funds for additional capital works; asset renewal and debt repayment where applicable. The indexation of approved tariffs by WASREB has presented an enabling environment for WSPs to borrow against their approved tariffs, with the knowledge that inflation related adjustments will not eat into the available cash flow for debt repayment.

1.5 Regulatory Tools

Article 21(2) of the Constitution obliges the State and its organs to take legislative, policy and other measures, including the setting of standards, to achieve the progressive realisation of the rights guaranteed under Article 43, including the right to clean water in adequate quantities and to reasonable standards of sanitation. Further, the Water Act under Section 72(1) mandates WASREB to determine, prescribe, enforce and monitor compliance to implementation of the national standards for provision of water and sanitation services. In furtherance of these aspirations, the Regulator has developed a number of guidelines to assist the different actors in water and sanitation services provision to effectively deliver on their mandates.

Some of the guidelines that have been developed and disseminated are highlighted below:

1.5.1 Water Safety Planning

Water supplies continually face challenges on water quality due to human activities, coupled with climatic variations. Water quality testing by utilities has been largely relied upon for water quality assurance. However, end point testing is not sustainable enough to guarantee water safety due to lack of clarity on what went wrong, where and when. To deal with this challenge, water providers are embracing Water Safety Planning (WSP), which is a comprehensive risk assessment and risk management approach encompassing all steps in the water supply system/chain from catchments to points of consumption. In doing this, Water Safety Planning has four main objectives along the supply chain. These are:

- Minimize contamination at source
- Reduce or remove contamination during treatment
- Prevent contamination during storage and distribution and
- Prevent contamination during consumer storage, handling

Implementation of water safety planning will in addition to ensuring improved quality, build confidence of consumers on the water supply system.

1.5.2 Water Vending

Water vending is the formal or informal reselling or onward distribution of utility water or water from other sources by small scale vendors for domestic use. It is the most common mode of water service provision to the largely unserved customers; both within pockets of service areas of regulated utilities and also outside of that, where there are no regulated utilities at all. It is largely empirical that water vendors play a significant role in meeting prevailing demand deficit and therefore come in to supplement the existing water service provision gaps in the short to medium terms. The largely underlying concerns however remains that of quality of the commodity and the tariff hence, vending becomes a big issue. These concerns have to be addressed in order to mitigate against the negative effects on the health of customers and the environment, together with consumer protection against exploitation tendencies. It is for this reason that WASREB developed the Guideline on Water Vending in order for the sector to have orderliness and sanity in the context of water safety planning value chains and social economic development. This Guideline outlines different water vending systems, their risks assessments and the appropriate control measures to be observed by parties involved.

The objective of this Guideline therefore, is to regulate the quality of water supplied to citizens by all actors beyond the directly regulated entities by WASREB, through delegated regulatory powers. This shall be achieved through formalization of water service provision by all water vendors who are on board but are not formally regulated in any way in the context of the water sector. This is the requirement of the Water Act 2016.

With implementation of the Water Vending Guideline, using the recommended multisectoral participatory approach synergized by enforcement by both County Governments and other complementary State Agencies, the following are expected to be propagated and realized;

- Additional database of the different modes of water vending
- Defined downstream relationship licensing mechanism hence sectoral orderliness
- Instilled sense of primary self-regulation through vendor associations
- Ultimate consumer protection through linkage of quality and safe water to approved tariff of licensed utilities
- Inventory of all water sources within jurisdictions of formally regulated utilities
- Inventory of approved water sources and vendors servicing in a utility territory
- Harmonized water tariffs in utility service areas hence indirect consumer protection
- Taking of full responsibility on water quality indirectly supplied within WSP specific areas of jurisdiction, courtesy of their empowerment to randomly check, sample and test water supplied by vendors

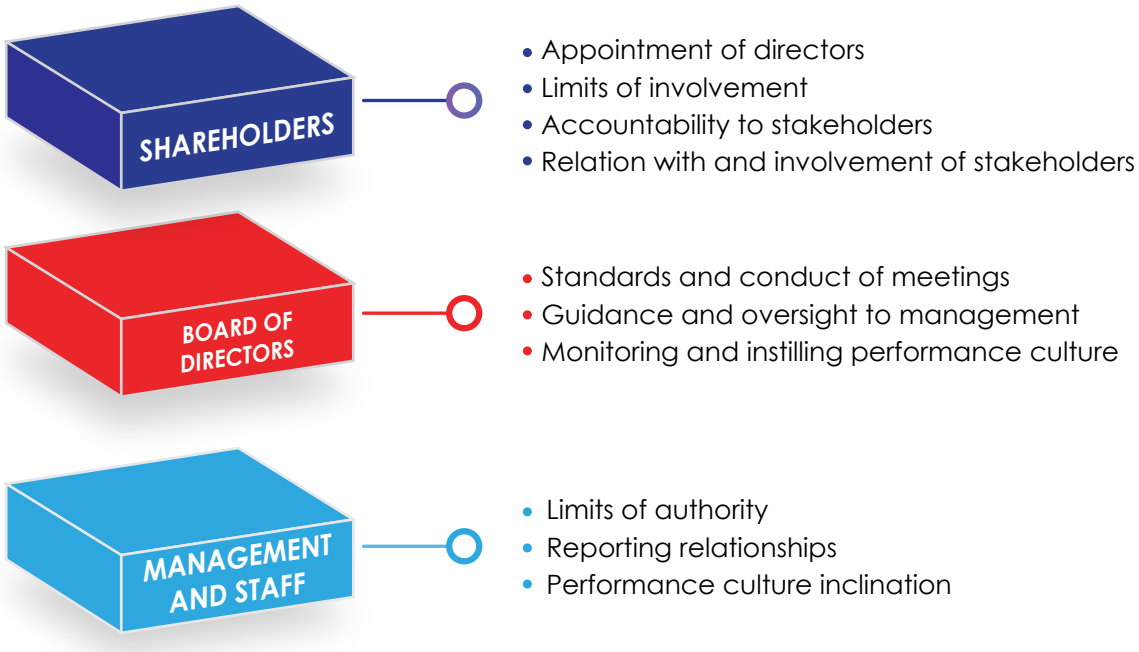
- Taking full responsibility by vendors for their water quality to ensure their potential continued stay in the water business
- Potential equal business opportunities through moderated rates without undercutting
- Bearing responsibility on their personnel health and hygiene
- Formalization of vendors activities as part of the water sector's regulatory purview

It is hoped that proactive implementation of this Guideline by the directly regulated utilities shall ultimately ensure that water service standards shall be strictly adhered to in terms of quality, cost and customer service in addition to guaranteeing the health and safety of all consumers. County Governments are particularly encouraged to facilitate this through enforcement mechanisms.

1.5.3 Corporate Governance

The objective of this Guideline is to improve how utilities are led, managed, their understanding of governance, clarifying power, autonomy and oversight. The Guideline seeks to establish structures and systems desired to guarantee economical, efficient and sustainable provision of water and sanitation services. The Guideline clearly outlines the roles of the key actors in the service provision chain namely Shareholders, Board of Directors and Management and staff.

The 'What' of Corporate Governance Guideline



CHAPTER 2

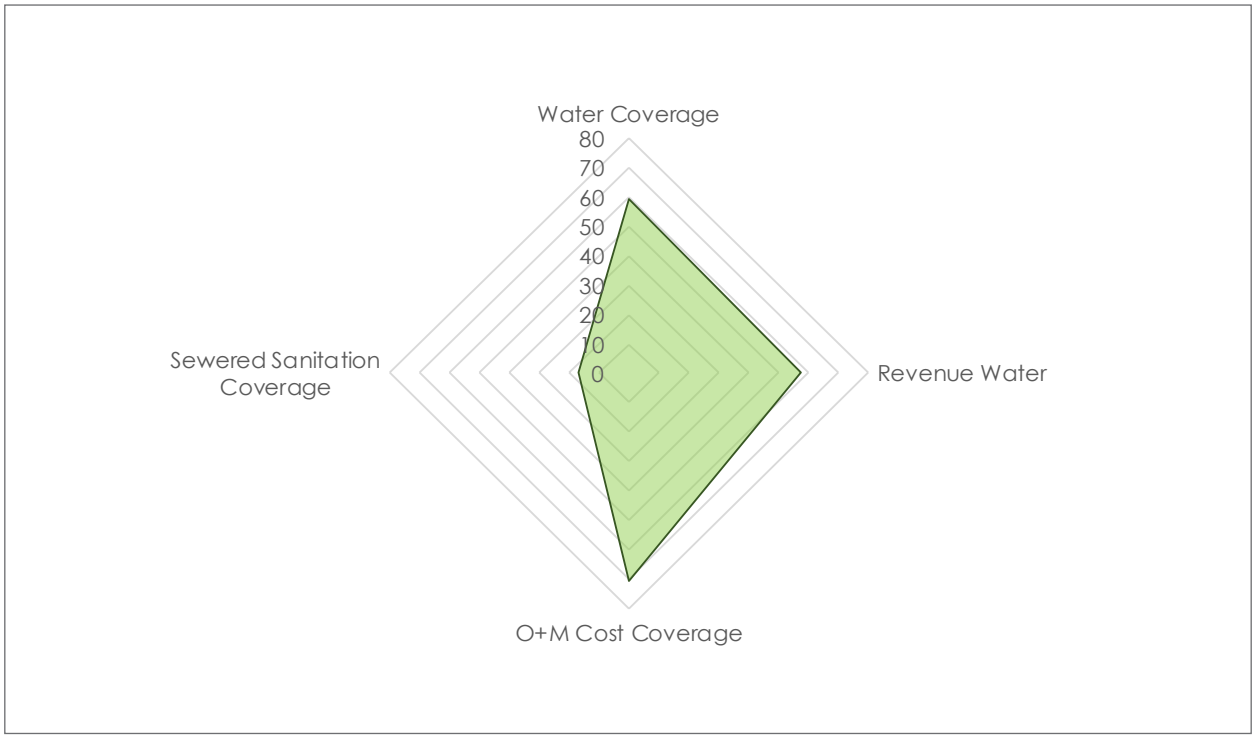
SECTOR DEVELOPMENT

''Yes, there is progress but not at the desired pace...''

The targets under Vision 2030 are universal access to both water and sanitation. The Sustainable Development Goal number 6 puts even more stringent requirement of not just having access, but safely managed access to the services.

With respect of the targets above, the Figure 2.1 presents the status of national goals.

Figure 2.1: Status of National Goals, %



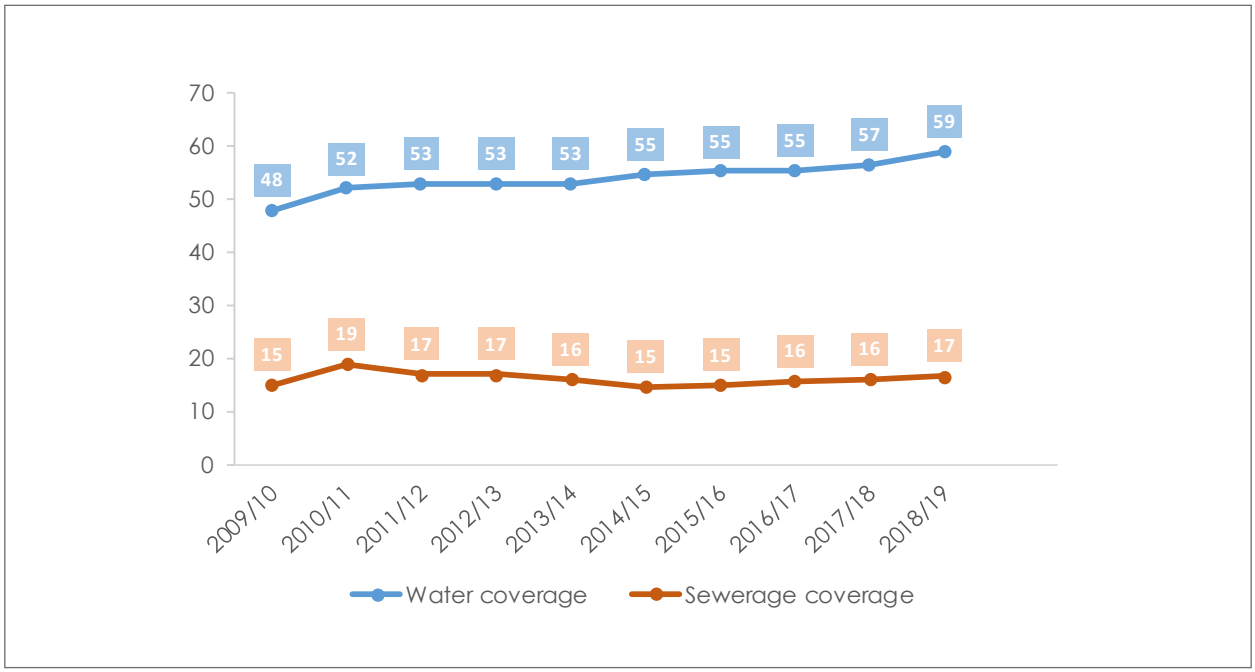
It is evident from above that the sector requires a paradigm shift in action if the national targets are to be realised.

2.1 Water Coverage

Water coverage currently stands at 59% in urban and urbanising areas. The trend in coverage has been growing albeit slowly, with a growth of only four percentage points in the last five years. To get to the national target of universal by 2030, the required annual growth is at least four percentage points, but this is only to the extent of the areas with WSPs. The effort required would even be greater considering that WSPs currently serve only 49% of the national population.

It is estimated that an average of 200,000 new households have to be served additionally to reach the target of universal access by 2030.

Figure 2.2: Trend in Water and Sewerage Coverage



2.2 Access to Sewered Sanitation

Sewerage coverage currently stands at 17% which is a marginal increase from the figure of 16% recorded last year. It will be noted that access to sewerage services has been declining with a figure of 19% having been recorded in 2010. This development is attributed to the rapid increase in population, which is not matched by corresponding investment in sewerage services development.

As in the case of water supply, all urban area require some form of water borne system to manage waste water. The national target is 100% coverage for the urban population by 2030 which translates to a required growth in sewer connections of approximately 350,000 which is equivalent to 3.2 million people or 820,000 households annually. It is clearly evident that the resource requirements to attain the 2030 target are enormous and the sector should explore other low-cost options and the adoption of Citywide Inclusive Sanitation (CWIS) approach that combines regulation of both sewered and non-sewered sanitation service provision. Figure 2.3 presents the core functions, as well as, outcomes under a CWIS framework.

Figure 2.3: Citywide Inclusive Sanitation Service Framework

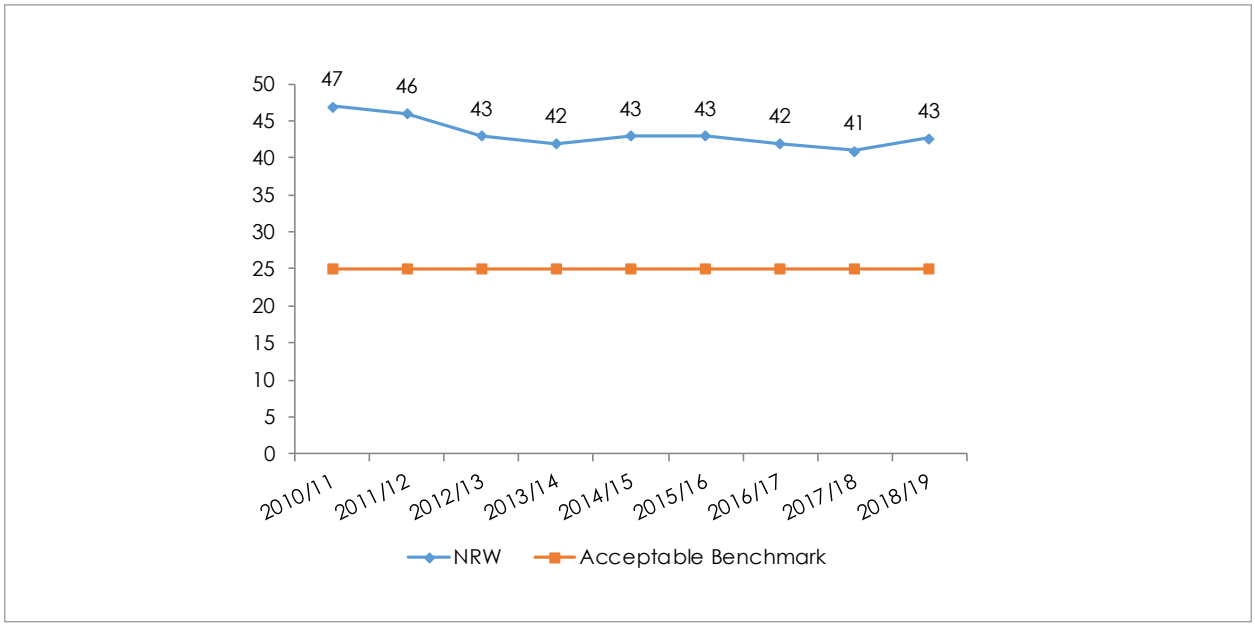
CORE CWIS OUTCOMES	**EQUITY** Services reflect fairness in distribution and prioritization of service quality, prices, deployment of public finance/ subsidies	**SAFETY** Services safeguard customers, workers and communities from safety and health risks by reaching *everyone* with safe sanitation	**SUSTAINABILITY** Services are reliably and continually delivered based on effective management of human, financial and natural resources
CORE CWIS FUNCTIONS	**RESPONSIBILITY** Authority(s) execute a clear public mandate to ensure safe, equitable and sustainable, sanitation services for all	**ACCOUNTABILITY** Authority's(ies') performance against its mandate is monitored and managed with data, transparency, and incentives	**RESOURCE PLANNING AND MANAGEMENT** Resources–human, financial, natural, assets–are effectively managed to support execution of mandate across time/space

2.3 Non-Revenue Water Management

The right to water in our constitution, as well as, the SDG target 6.4 envisages a world where there is increased water use efficiency while ensuring there is fresh water supplies. This target addresses the issue of water scarcity and the importance of increasing water-use efficiency and therefore Non- Revenue Water management in our context. NRW management here being a measure of the value of water to the economy and societal development.

Reduction of NRW to 20%, in line with sector benchmark, can help reduce the current service provision gap without the need to build new infrastructure or exploit new water sources, in the short to medium term. In addition, reducing water losses has potential to increase revenues for utilities while also reducing unit operating costs and thus unlocking savings that can be used to expand access and improve service delivery.

Figure 2.4: NRW Trend



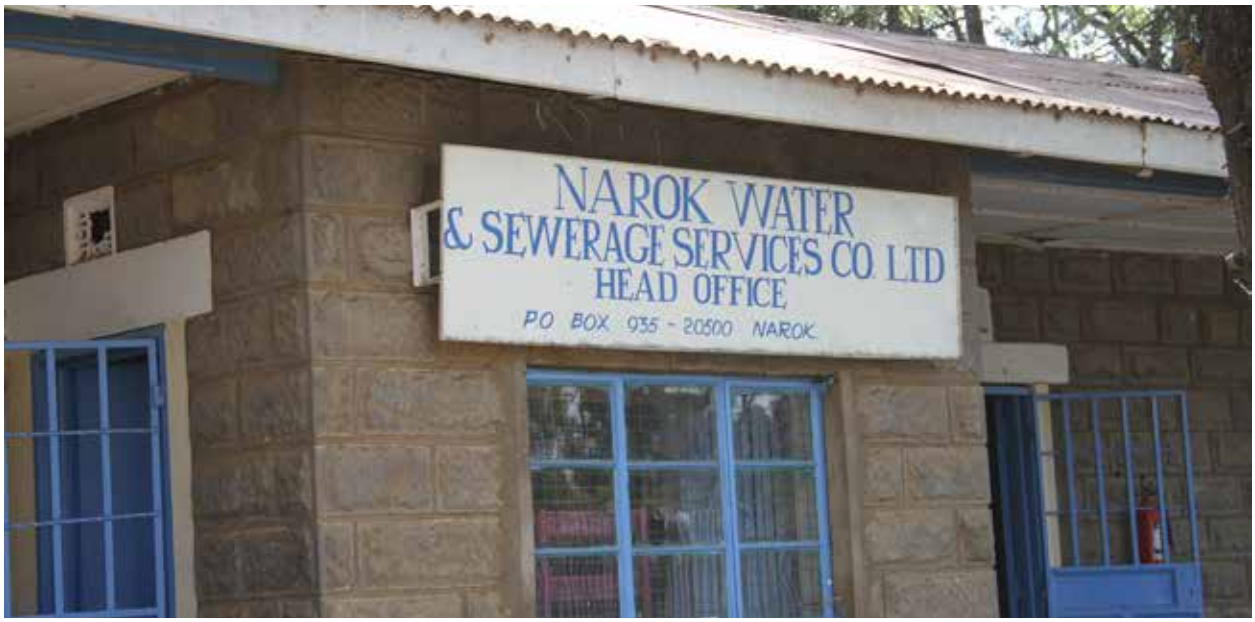
It will be noted that a lot of effort towards reduction of water loses has been put in by key players in this area led by the National Government. Unfortunately, despite all these efforts, levels of NRW have not only remained relatively stagnant but also unsatisfactory at between 41% (2017/18) and 47% (2010/11) for the last 11 years with the current level being 43% (2018/19) excluding Nairobi Water. (Figure 2.4). The data for Nairobi was excluded in computing the national average because of the failure of the utility to justify certain elements of their production data that rendered it incredible.

At the current level of NRW of 43% and a sector turnover of Kshs. 21 Billion, the sector loses approximately Kshs. 15.8 Billion or Kshs. 8.9 Billion when 20% acceptable level of loss is considered. This amount is an increase of 27% from the figure of Kshs. 7 Billion in 2017/18 and mainly as a result of the rise in NRW of two percentage points and the 7% increase in turnover.

It is important to note that the sector has benefited from huge infrastructural developments and rehabilitations in the recent past. These investments however, run the risk of not delivering the desired impact if adequate focus is not given to the addressing the issues at the centre of NRW management.

In an effort to re-orient and steer the sector towards proactive NRW management, the Regulator is undertaking the following actions;

1. Revising the NRW Management Guidelines to include management leadership, goodwill and also a utility-wide approach;
2. Institutionalizing the NRW management function and systems in WSPs through the license; and
3. Entrenching proactive management of NRW by WSPs through tariff conditions that include allocation of justified resources and setting appropriate targets



2.4 Performance of Utilities

Utility performance is crucial to ensuring the availability and sustainability of water and sanitation services provision. Like in the previous periods, utilities were ranked on the basis of nine KPIs as shown in Table 2.1.

Table 2.1: Progress on Key Performance Indicators

Key Performance Indicators	2017/18	2018/19	Trend
Water Coverage, %	57	59	↑
Drinking Water Quality, %	95	96	↑
Hours of Supply, hrs/day	13	14	↑
Non- Revenue Water, %	41	43	↓
Metering Ratio, %	95	94	↓
Staff Productivity, Staff per 1000 Connections	7	7	→
Personnel expenditure as % of O+M Costs, %	50	50	→
Revenue Collection Efficiency, %	94	92	↓
O+M Cost Coverage, %	99	105	↑
Sewered Sanitation Coverage, % *	16	17	↑
Sanitation Coverage, % *	80	81	→
Sector Benchmarks: good acceptable not acceptable benchmark varies			

** Not used in ranking*

2.4.1 Utility Ranking

On the basis of the performance assessment outlined, Nyeri took the top position opening up a commendable lead of 32 points. The 2nd and 3rd ranked WSPs were Eldoret and Nakuru

respectively. Kapenguria and Kwale were the lowest ranked utilities. Kakamega and Nzoia WSPs as a result of governance challenges, were not ranked in the current period.

Table 2.2: Overall Top and Bottom Ten Utilities

TOP TEN UTILITIES 2018/19				BOTTOM TEN UTILITIES 2018/19		
Rank	**Utility**	**Score (Max 200)**		**Rank**	**Utility**	**Score (Max 200)**
1	Nyeri	177		73	Tuuru	30
2	Eldoret	145		74	Gusii	28
3	Nakuru	144		75	Mbooni	26
4	Meru	142		76	Chemususu	24
5	Murang'a	137		77	Busia	23
6	Ruiru-Juja	134		77	Kilifi Mariakani	23
6	Embu	134		79	Nol Turesh Loitokitok	20
8	Nanyuki	131		80	Sibo	12
9	Thika	126		81	Kwale	11
10	Ngandori Nginda	122		81	Kapenguria	11

Appreciating that utilities operate under different conditions; certain aspects of their performance may be affected differently as a result of the prevailing environment. Consequently, effort may be commendable even though it does not propel a utility to the top. Utilities can also drop in position despite enjoying a favourable operating environment. Recognition of effort is therefore captured by comparing a utility position at present against itself at an earlier position. However, in order to depict consistency in performance improvement or continued decline, the improvement or decline in performance considered utility performance over two reporting periods that is, 2017/18 and 2018/19. In addition, to be considered as having improved, a utility must have attained a score of at least 50% over the two-year period.

Table 2.3: Top Improvers and Bottom Losers

TOP IMPROVERS				BOTTOM LOSERS			
WSP	**Score 2017/18**	**Score 2018/19**	**Variance**	**WSP**	**Score 2017/18**	**Score 2018/19**	**Variance**
Naivasha	83	101	**19**	Busia	45	23	**-21**
Embu	127	134	**7**	Nyahururu	118	93	**-25**
Naromoru	98	104	**6**	Rukanga	145	120	**-25**
Tachasis	114	117	**3**	Ndaragwa	62	35	**-27**
Kibwezi Makindu	74	76	**3**	Ruiru-Juja	163	134	**-29**
Isiolo	109	110	**1**	Karuri	106	75	**-31**
Kiambere Mwingi	85	86	**1**	Murang'a South	91	60	**-31**
				Gusii	60	28	**-31**
				Nyasare	88	55	**-33**
				Embe	102	67	**-35**

Using the criteria outlined above, only seven WSPs recorded improvement in performance in the current period.

CHAPTER 3

DETAILED PERFORMANCE REVIEW

Utility Efficiency is key to attaining Targets

3.1 Introduction

Utilities remain the key special purpose vehicles for service provision. Considering that water service provision is a monopoly, duty bearers must at all times ensure that service providers demonstrate incremental improvements in service quality. The need for accuracy and consistency in data is key, if evidence-based interventions are to be made. This aspiration for data accuracy backed up with a robust system for data collection has driven the regulator to recognize utilities that have demonstrated compliance with set standards in reporting. The Regulator on the other hand will continue to use comparative performance assessment and ranking to spur competition between utilities. *Impact* uses the approach of scoring, ranking and reporting on utility performance over a given period.

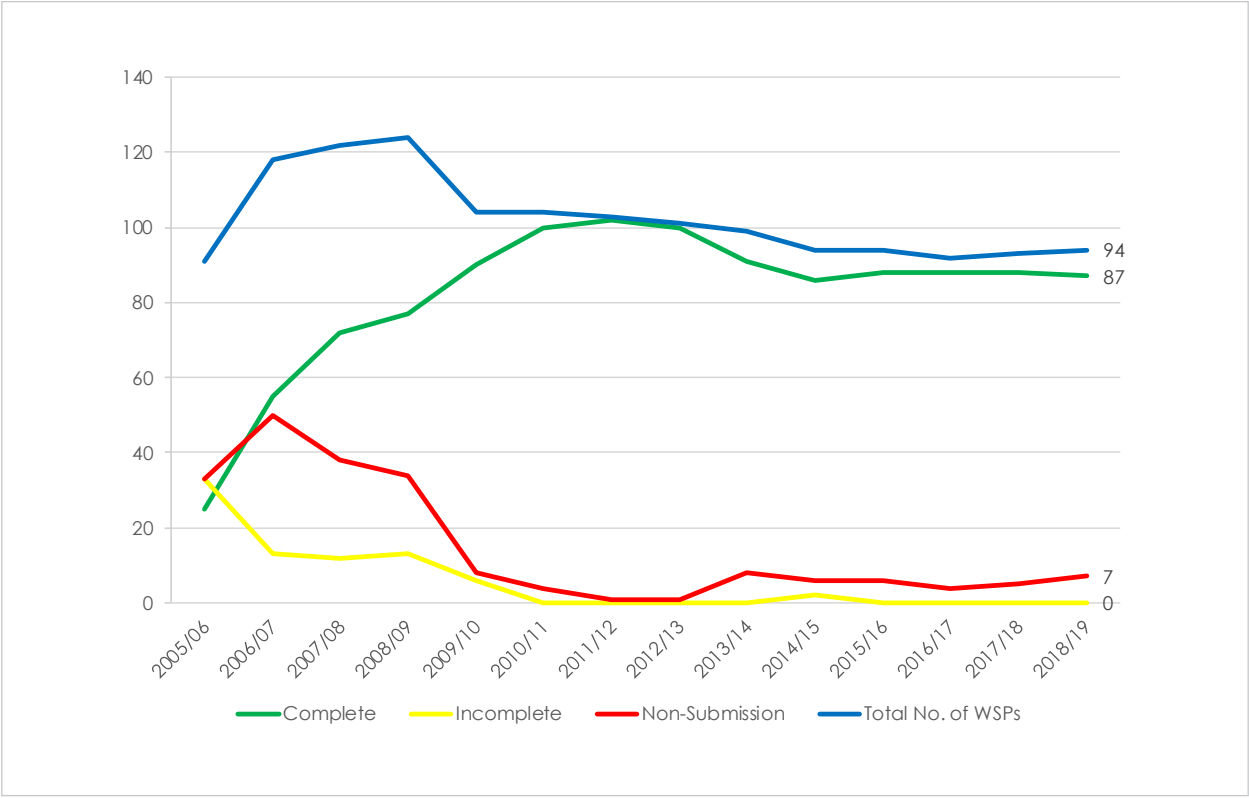
The Regulator collects and analyzes performance of the utilities using a number of indicators, however for ranking, nine KPIs have been selected. The nine KPIs are Water Coverage, Drinking Water Quality, Hours of Supply, O+M Cost Coverage, Personnel Expenditure as a % of O+M Costs, Revenue Collection Efficiency, Non-Revenue Water, Staff Productivity and Metering Ratio.

3.2 Data Collection

The Water Regulation Information System (WARIS) is the Regulator's tool for data collection. To ensure accuracy in the data collected, further corroboration is carried out using data from other sources. These data sources include; inspection reports, tariff applications and the quarterly monitoring and evaluation reports from the utilities.

For the period under review, 84 public and three private utilities submitted data for analysis. Compliance with data submission was at 87%. Engineer, Kathita Kiirua, Kikanamku, Marsabit, Olkejuado and Samburu WSPs despite having reported previously, did not submit data in the current period. In the Private category, Tatu City WSP is the new entrant having obtained a license to provide services within Tatu City complex. In terms of counties, it is of concern that four counties namely; Mandera, Marsabit, Samburu and Tana River have WSPs that have not reported consecutively in the last three years.

Figure 3.1: Trend in Data Submission by Utilities



The representation of the data for the various utilities assessed is presented in Table 3.1.

Table 3.1: General Data on Utilities 2018/19

WSP	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 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)	Total no. of staff	Validity of Tariff as at June 2019
Very Large (≥35,000 conns.)														
Nairobi	4,640,674	3,585,866	593,424	560,154	1	8,647	180,157	57,529	90,726	n.c.d.	138	44	3,440	Expired RTA
Eldoret	410,210	363,092	110,785	83,271	1	660	15,123	7,356	8,679	43	114	56	314	Expired RTA
Mombasa	1,190,771	544,485	86,326	44,189	1	667	11,283	4,181	5,640	50	57	21	367	Valid
Nakuru	528,158	481,595	61,034	54,034	1	963	12,486	5,810	8,513	32	71	33	245	Valid
Thika	237,362	229,842	58,316	49,994	1	754	15,005	5,788	11,147	26	179	69	259	Valid
Kisumu	461,001	333,799	58,281	54,080	1	815	10,003	3,458	6,878	31	82	28	328	Valid
Nzoia	499,399	425,211	49,501	43,306	6	391	8,609	2,051	4,584	47	55	13	275	Valid
Nyeri	161,846	159,760	49,317	41,657	1	454	6,867	4,210	5,812	15	118	72	231	Expired RTA
Kakamega	406,308	370,046	49,317	39,919	2	244	5,366	2,893	3,458	36	40	21	180	Expired RTA
Murang'a South	545,536	261,245	45,231	35,196	1	145	5,766	2,084	2,778	52	60	22	144	Expired RTA
Gatundu	287,407	172,314	39,265	25,934	1	133	7,513	4,326	4,830	36	119	69	157	Expired ETA
Ruiru-Juja	209,037	204,856	37,098	31,415	2	580	10,508	6,059	6,978	34	141	81	160	Expired RTA
Embu	194,641	180,645	35,800	32,991	1	335	8,168	3,637	4,631	43	124	55	121	Expired RTA
Kericho	393,904	274,505	35,668	24,001	2	188	4,554	1,679	2,328	49	45	17	191	Expired RTA
Large (10,000-34,999 conns.)														
Kirinyaga	471,786	172,706	33,169	21,988	1	147	6,166	1,963	2,429	61	98	31	159	Expired RTA
Kilifi Mariakani	928,423	475,095	33,110	23,600	3	477	9,762	3,288	4,749	51	56	19	211	Valid
Othaya Mukurweni	184,042	143,686	31,350	20,041	1	140	5,986	2,231	2,886	52	114	43	109	Expired RTA
Malindi	389,888	271,535	31,112	22,043	1	452	6,846	3,750	4,917	28	69	38	209	Valid
Mathira	154,805	62,424	26,542	14,621	1	105	2,989	969	1,550	48	131	43	59	Valid
Nakuru Rural	528,138	329,848	24,820	15,523	2	266	8,487	1,887	3,535	58	70	16	152	Valid
Tavevo	374,789	77,542	21,818	13,416	3	244	5,054	2,017	2,807	44	179	71	169	Valid
Kahuti	177,807	89,023	21,741	11,757	1	64	3,343	778	1,130	66	103	24	77	Expired RTA
Gusii	803,334	268,470	21,540	15,220	7	126	1,696	495	734	57	17	5	128	Valid
Nanyuki	101,486	95,787	21,223	19,490	1	263	4,359	1,468	2,796	36	125	42	124	Expired RTA
Murang'a	89,252	81,629	20,492	18,149	1	160	2,423	1,033	1,813	25	81	35	121	Valid
Kikuyu	326,708	280,444	20,003	11,490	1	95	2,247	563	1,301	42	22	6	70	Expired RTA
Nyahururu	110,755	85,318	18,232	15,585	2	225	3,255	1,093	2,065	37	105	35	160	Expired RTA
Meru	152,251	106,292	17,910	14,191	1	161	2,946	1,827	2,339	21	76	47	102	Expired RTA
Garissa	176,685	113,308	17,656	11,416	1	317	6,172	2,847	3,411	45	149	69	140	Expired RTA
Kwale	335,724	189,391	16,344	11,548	1	120	4,166	1,417	1,492	64	60	21	115	Valid
Bomet	130,157	78,561	16,113	9,837	1	110	4,674	893	2,175	53	163	31	89	Valid
Ngandori Nginda	102,882	94,132	15,605	13,606	1	58	2,568	737	1,625	37	75	21	68	Expired ETA
Kitui	806,816	355,757	14,969	9,123	1	121	3,532	916	1,333	62	27	7	120	Expired RTA
Sibo	466,330	217,601	14,308	9,564	5	92	3,242	-	1,078	67	41	-	106	Expired RTA
Mavoko	203,327	151,798	14,237	12,940	1	128	812	380	536	34	15	7	80	Expired RTA
Tetu Aberdare	89,979	38,423	12,804	10,836	1	62	2,775	880	1,725	38	198	63	75	Expired RTA
Machakos	231,850	123,938	12,720	10,136	1	122	1,166	13	723	38	26	0	74	Expired RTA
Oloolaiser	357,008	200,165	12,650	8,030	3	148	2,513	1,644	1,675	33	34	23	119	Expired RTA
Nithi	91,877	86,635	11,917	9,218	1	60	3,157	849	1,242	61	100	27	53	Expired RTA
Gatamathi	148,060	59,047	11,909	7,805	1	53	2,765	642	931	66	128	30	59	Expired ETA
Ngagaka	78,337	76,770	11,618	7,857	1	28	1,107	546	655	41	40	19	30	Expired ETA
Isiolo	67,078	51,427	11,345	10,008	1	85	1,705	1,009	1,193	30	91	54	66	Expired RTA
Imetha	163,808	71,442	11,199	4,054	1	46	1,308	546	655	50	50	21	102	Expired ETA
Kiambu	112,178	73,291	10,929	8,981	1	137	2,672	1,137	1,611	40	100	43	61	Expired RTA
Limuru	266,940	146,927	10,104	9,740	1	92	1,678	643	1,273	24	31	12	60	Expired RTA
Karuri	163,126	85,512	10,074	7,331	1	80	1,523	680	1,037	32	49	22	51	Expired RTA
Medium (5,000-9,999 conns.)														
Kyeni	87,389	27,485	9,937	5,475	1	12	1,040	457	522	50	104	46	31	Expired RTA
Gatanga	139,345	39,467	9,538	8,492	1	36	1,875	663	1,048	44	130	46	70	Expired RTA
Githunguri	218,864	26,703	9,536	4,785	1	50	1,059	463	610	42	109	48	37	Expired ETA
Amatsi	265,724	28,866	9,495	3,386	2	45	1,531	610	1,072	30	145	58	69	Expired RTA
Lodwar	73,890	43,694	8,965	8,414	2	67	3,323	363	2,045	38	208	23	80	Expired ETA
Tuuru	348,447	108,391	8,790	3,488	1	22	1,884	345	450	76	48	9	63	Expired ETA
Nol Turesh Loitokitok	253,769	52,694	8,384	5,485	1	77	4,563	885	974	79	237	46	61	Expired ETA
Homabay	197,294	85,481	8,070	5,373	1	57	1,090	381	506	54	35	12	113	Expired RTA
Kibwezi Makindu	318,874	110,803	7,904	5,439	1	73	1,175	621	833	29	29	15	56	Valid
Busia	310,654	107,505	7,570	6,060	3	39	1,207	80	125	90	31	2	49	No RTA
Narok	91,000	41,105	6,469	4,495	1	97	1,304	585	940	28	87	39	80	Expired RTA
Embe	50,601	30,639	6,422	3,366	1	30	960	395	496	48	86	35	35	Expired RTA
Migori	201,346	48,992	6,351	4,632	3	20	619	236	355	43	35	13	52	Expired ETA
Naivasha	190,828	168,634	6,348	6,089	1	124	1,263	540	861	32	21	9	86	Valid
Kapsabet Nandi	71,259	55,638	5,465	4,911	2	40	1,093	236	616	44	54	12	51	Expired ETA
Kirandich	34,138	31,225	5,053	4,126	1	20	741	-	400	46	65	-	27	No RTA
Small (<5,000 conns.)														
Kiambere Mwingi	462,580	82,678	4,980	3,410	2	65	1,020	445	611	40	34	15	41	Expired RTA
Chemususu	79,252	39,038	4,825	2,331	1	12	813	201	246	70	57	14	29	Expired ETA
Murugi Mugumango	37,037	19,955	4,707	3,963	1	12	2,271	1,320	1,595	30	312	181	24	Expired ETA
Lamu	27,902	23,445	4,590	2,633	1	43	848	455	455	46	99	53	48	Valid
Iten Tambach	58,713	29,491	4,173	4,052	1	22	941	321	640	32	87	30	51	Expired RTA
Nyandarua	73,495	12,782	4,097	2,675	1	23	623	288	329	47	134	62	50	Expired RTA
Ol Kalou	97,849	36,842	3,011	2,680	1	29	438	203	269	39	33	15	24	Expired RTA
Muthambi 4K	25,277	13,740	2,809	2,153	-	8	648	373	510	21	129	74	15	Expired ETA
Kapenguria	88,940	16,786	2,478	1,365	1	8	291	89	128	56	48	14	39	Expired ETA
Wote	80,171	23,192	2,402	1,986	1	32	418	136	248	41	49	16	52	Expired ETA
Rukanga	8,116	7,146	2,007	1,650	-	7	186	122	142	24	71	47	15	Valid
Namanga	15,499	9,585	1,901	1,231	1	9	245	172	172	30	70	49	13	Expired ETA
Ndaragwa	16,754	4,744	1,878	952	-	2	71	65	71	n.c.d.	41	38	20	Expired ETA
Naromoru	7,090	7,017	1,865	1,661	1	12	274	135	195	29	107	53	23	No RTA
Yatta	171,758	19,354	1,467	1,432	1	21	324	98	220	32	46	14	31	Expired ETA
Mwala	91,287	8,301	1,429	887	1	11	76	24	47	39	25	8	23	Expired ETA
Matungulu Kangundo	254,995	8,372	1,420	812	1	14	171	87	96	44	56	29	11	Expired ETA
Kiamumbi	10,600	10,582	1,233	1,137	-	21	326	251	256	21	84	65	10	Expired RTA
Kathiani	24,275	11,153	1,201	955	-	10	123	41	86	30	30	10	22	Expired ETA
Mbooni	71,610	14,000	1,198	654	1	-	30	16	16	45	6	3	19	Expired ETA
Wajir	20,005	12,603	1,159	1,115	1	-	1,620	374	1,134	30	352	81	200	No RTA
Nyasare	110,828	36,027	1,133	712	-	5	137	70	88	36	10	5	10	Valid
Runda	12,946	10,980	1,120	1,105	-	50	723	548	564	22	180	137	22	Expired RTA
Tachasis	29,601	21,508	943	943	-	2	305	174	220	28	39	22	8	Valid
Tatu City	4,000	4,000	28	28	-	28	95	-	82	0	65	-	10	No RTA
TOTALS	**23,430,887**	**13,831,827**	**2,071,277**	**1,655,823**	**112**	**21,017**	**452,246**	**163,074**	**246,678**	**247**	**90**	**32**	**11,500**	

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

3.3 Categorisation of Utilities

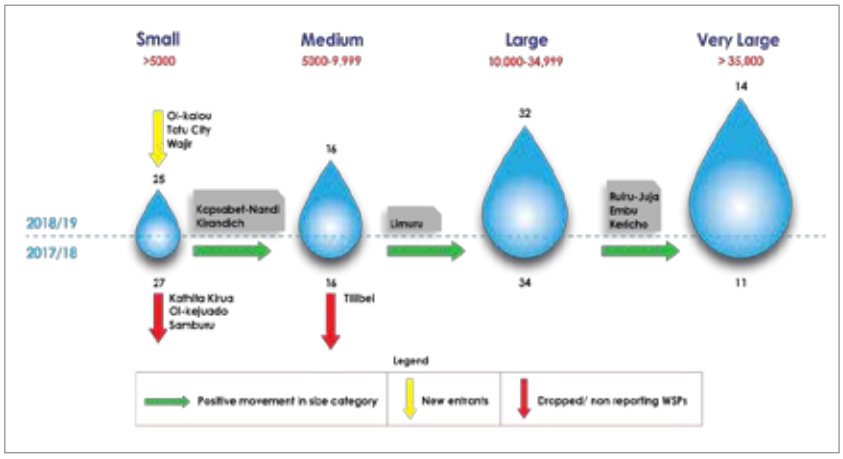
Utilities are categorised based on two aspects namely, size and ownership structure. The size is determined by the total number of connections for both water and sewer while ownership is given by the owner of the asset, in this case, either public or private. This categorization seeks to ensure a fair comparison in performance.

The number of connections is significant as it dictates the potential business size of the company. However, this potential in certain instances is undermined by unacceptable high levels of dormant connections. Some of the utilities where more than half of the connections are dormant, include Amatsi (64%), Imetha (64%), Tuuru (60%), Mombasa (59%); Chemususu (52%). Mathira (50%) and Githunguri (50%). Compared to the previous period, Amatsi, Imetha and Mombasa have continued to register an increase in the proportion of dormant connections. Using the current ratio of number of people served per connection, the potential population that these dormant connections could serve, is equivalent to the current population served within the city of Nairobi. Looking at the correlation between this indicator and the level of NRW, all the WSPs except Amatsi, Githunguri and Mathira have losses exceeding 50% which may point to a positive correlation between the level of dormant connections and NRW.

> Taking the case of Tuuru with a dormant connection ratio of 60% and NRW of 76%, the WSP is effectively operating at about 12% efficiency.
>
> Factoring in efficiency in revenue collection of 84% implies that the utility is operating at less than 10% of its potential which is a completely unsustainable business scenario.

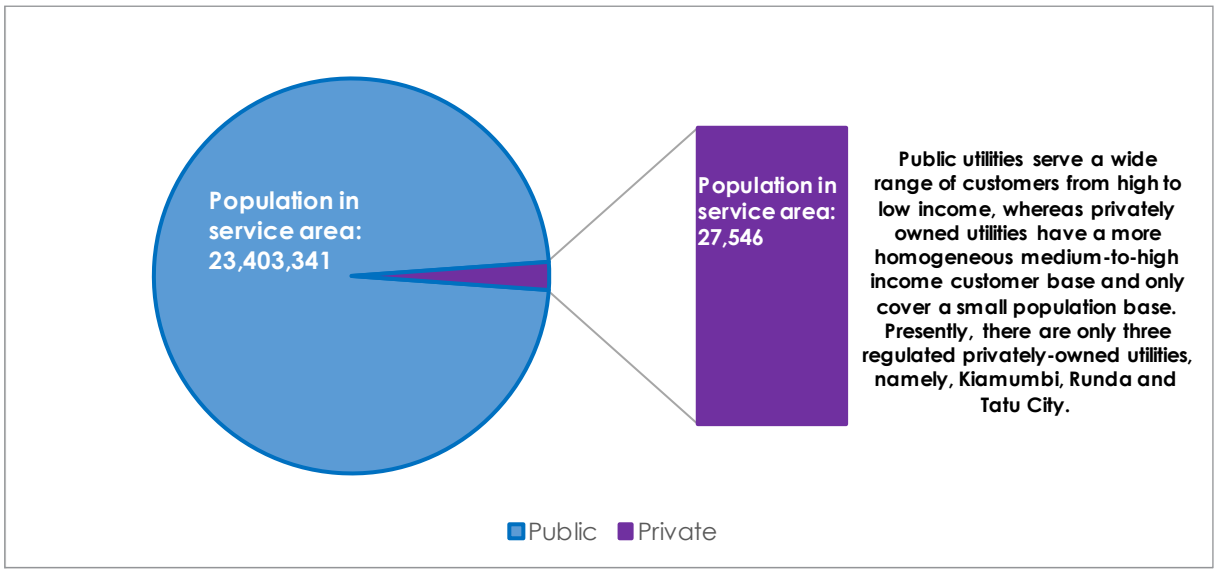
Using the total number of registered connections for both water and sewer, utilities have been categorised as Very Large, Large, Medium and Small as per the thresholds indicated (Figure 3.2). In total, six WSPs graduated to higher size categories, with the transition being attributed to growth in business except for the case of Kericho which is as a result of clustering with Tililbei WSP.

Figure 3.2: Movement in Size Categories



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. Public utilities serve a wide range of customers from high to low-income, whereas privately owned utilities have a more homogeneous medium- to high-income customer base and only cover a small population base.

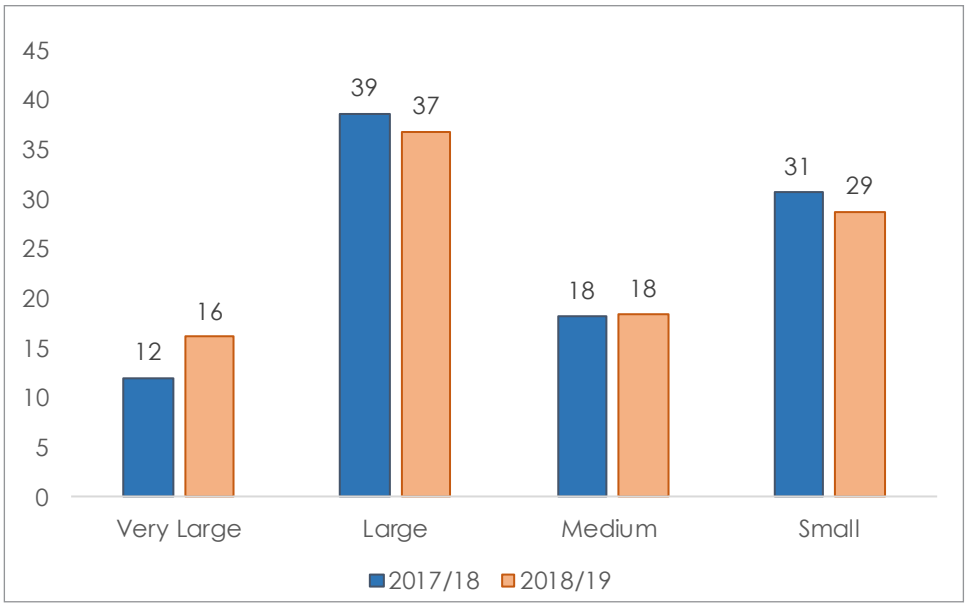
Figure 3.3: Categorization by Ownership



3.4 Market Share and Movement in Utility Category

Compared to the previous year, it is only the Very Large category that registered an increase from 12% to 16%, the Large and Small categories registered a decline of two percentage points each while Medium remained constant.

Figure 3.4: Proportion of Utilities in Size Categories



This is a positive development in that the WSPs are growing to eventually take advantage of the economies of scale .

Figure 3.5: Market Share by Utility Size

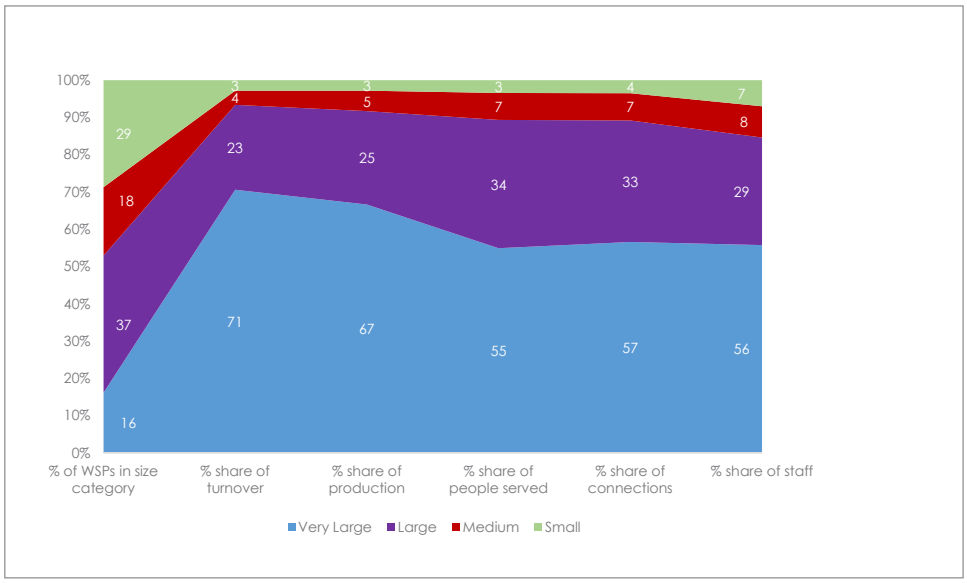
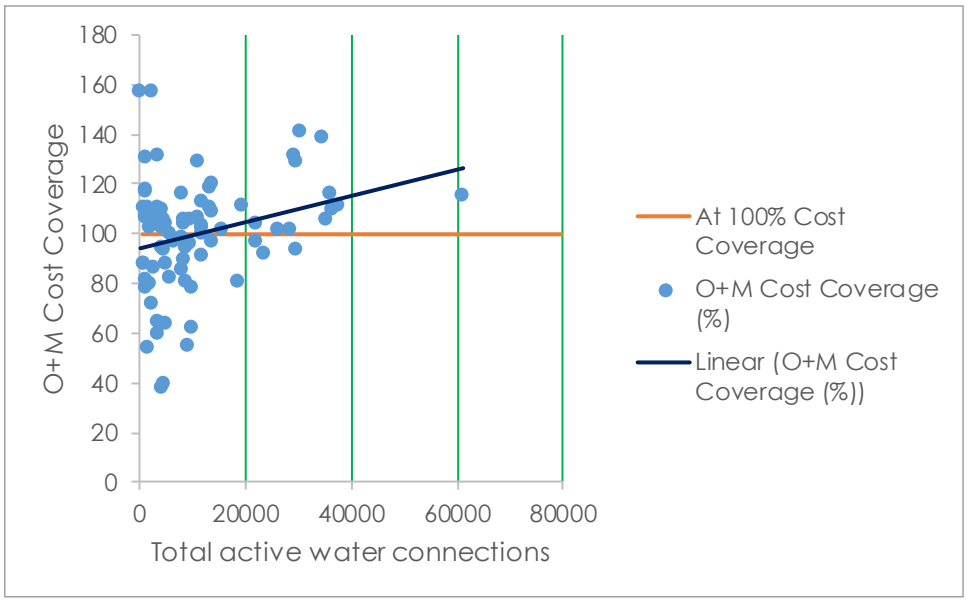


Figure 3.5 indicates that the number of utilities in the category of Very Large and Large represent 53% of all regulated utilities in the sector. This is an increase of one percentage point when compared to the previous year. They account for the largest share of business (94% of the total turnover, 92% of the total water produced and 89% of the people served). In addition, utilities in these two size categories exhibit a higher proportion in terms of O+ M cost coverage as shown in Figure 3.6.

Figure 3.6: Relation of Active Connections to O+M Cost Coverage



Commercial viability of the utilities is key in ensuring sustainability of the services offered. Under the Water Act 2016, utilities are to be licensed on the basis of commercial viability. Large utilities perform better on the overall and are unlikely to require subsidies to meet their operational costs. In turn, they are likely to put less pressure for support from the County Governments, who own them. From Figure 3.6, the breakeven point using 100% cost coverage corresponds to about 18,000 connections. County Governments are encouraged to cluster small utilities including rural/community water projects for financial sustainability instead of handing them over to communities.

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 3.2.

Table 3.2: 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 using the three indicator clusters is shown in Figure 3.7.

Figure 3.7: KPI Performance by Cluster

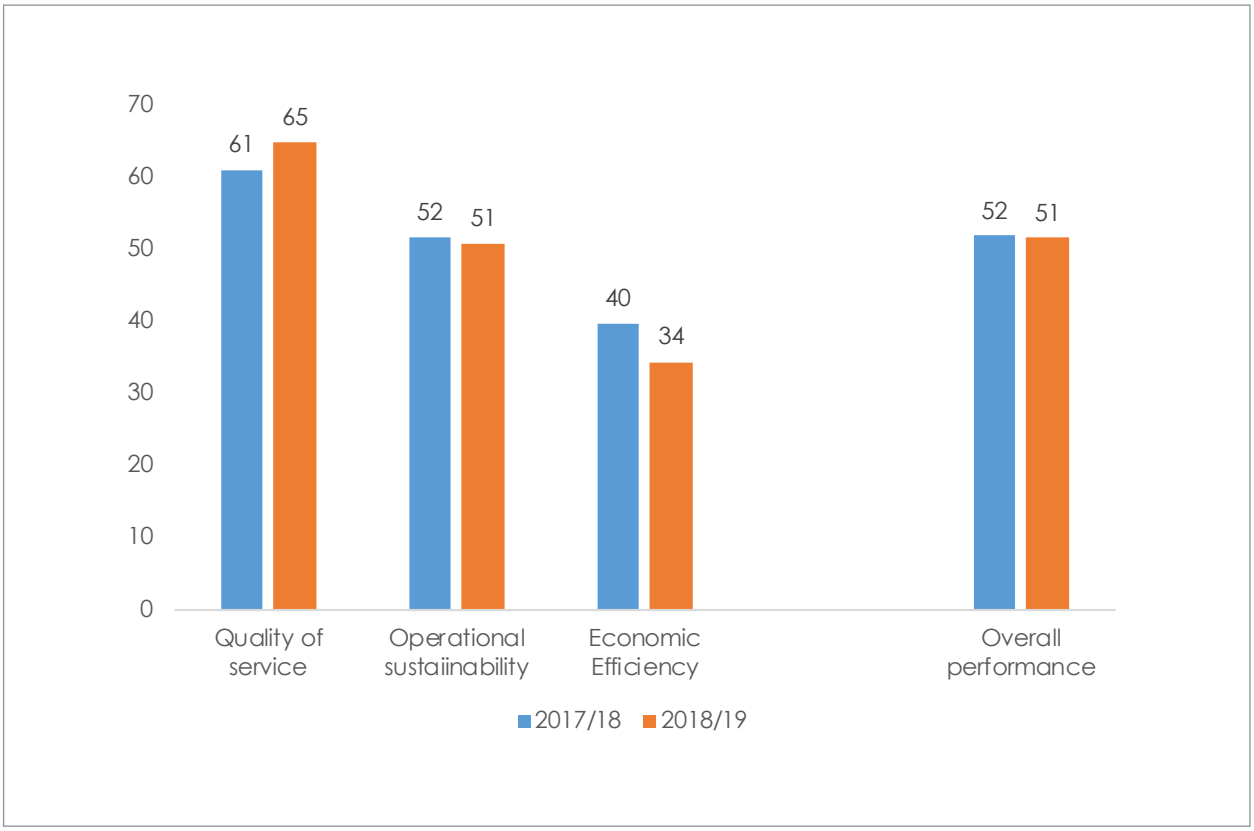


Table 3.3 presents the individual ranking of the 84 publicly-owned utilities based on the scoring regime outlined in Table 3.2.

Table 3.3: 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.)	Revenue Collection Efficiency (%)	Personnel expenditures as % of total O+M costs	O+M Cost Coverage (%)	Metering Ratio (%)	Total score	Ranking by category	Overall Ranking
Very Large Utilities												
Nyeri	96	15	99	24	6	95	44	141	100	177	1	1
Eldoret	96	43	89	21	4	109	35	116	100	145	2	2
Nakuru	93	32	91	19	5	96	34	111	100	144	3	3
Ruiru-Juja	93	34	98	n.c.d.	5	90	24	130	100	134	4	6
Embu	93	43	93	24	4	90	37	131	100	134	4	6
Thika	87	26	97	21	5	87	48	138	100	126	6	9
Kisumu	93	31	72	24	6	84	35	110	100	105	7	16
Gatundu	93	36	60	19	6	89	61	102	100	93	8	21
Nairobi	91	n.c.d.	77	6	6	94	64	105	99	76	9	32
Kericho	92	49	70	17	8	93	41	81	99	73	10	37
Murang'a South	90	52	48	20	4	75	50	106	98	60	11	51
Mombasa	74	50	46	5	8	95	48	94	97	34	12	69
Large Utilities												
Meru	96	21	70	22	7	102	48	119	100	142	1	4
Murang'a	93	29	91	24	7	92	56	110	100	137	2	5
Nanyuki	96	36	94	23	6	91	47	109	100	131	3	8
Ngandori Nginda	n.c.d.	37	91	24	5	100	52	121	100	122	4	10
Isiolo	93	30	77	15	7	89	50	104	100	110	5	13
Ngagaka	92	41	98	20	4	90	50	116	88	110	5	13
Kiambu	96	40	65	16	7	101	37	97	100	108	7	15
Nithi	89	61	94	24	6	89	48	106	100	94	8	20
Nyahururu	93	37	77	22	10	89	48	103	100	93	9	21
Othaya Mukurweni	86	52	78	23	5	98	46	112	88	91	10	24
Tetu Aberdare	93	38	43	23	7	94	52	106	100	91	10	24
Tavevo	93	44	21	14	13	96	25	97	100	88	12	27
Kahuti	93	66	50	21	7	92	45	113	91	83	13	29
Malindi	85	28	70	23	9	103	41	97	92	81	14	30
Limuru	93	24	55	n.c.d.	6	95	41	90	83	79	15	31
Mathira	77	48	40	20	4	96	45	103	94	76	16	32
Karuri	88	32	52	12	7	94	29	98	100	75	17	36
Mavoko	60	34	75	2	6	92	39	81	100	68	18	40
Nakuru Rural	95	58	62	12	10	99	40	102	60	67	19	42
Kitui	93	62	44	12	13	97	24	55	87	65	20	44
Kikuyu	63	42	86	11	6	90	31	100	75	62	21	49
Kirinyaga	93	61	37	16	7	82	52	104	99	58	22	54
Garissa	16	45	64	22	12	45	30	129	66	54	23	60
Machakos	93	38	53	12	7	85	42	105	47	54	23	60
Oloolaiser	66	33	56	16	15	90	41	85	100	50	25	62
Imetha	38	50	44	21	25	97	54	110	61	48	26	64
Bomet	89	53	60	12	9	63	30	63	90	34	27	68
Gatamathi	83	66	40	23	8	87	57	99	59	32	28	71
Gusii	93	57	33	n.c.d.	8	89	48	79	44	28	29	74
Kilifi Mariakani	78	51	51	9	9	87	33	92	100	23	30	77
Sibo	89	67	47	n.c.d.	11	59	29	96	74	12	31	80
Kwale	84	64	56	10	10	77	33	92	84	11	32	81
Medium												
Naivasha	93	32	88	21	14	100	48	106	100	101	1	18
Kibwezi Makindu	93	29	35	14	10	90	41	101	100	76	2	32
Lodwar	66	38	59	19	10	94	45	106	99	76	2	32
Kyeni	0	50	31	18	6	119	58	83	93	70	4	38
Embe	85	48	61	18	10	91	52	111	100	67	5	43
Amatsi	93	30	11	13	20	83	32	60	61	60	6	51
Githunguri	85	42	12	14	8	83	32	88	100	59	7	52
Kapsabet Nandi	25	44	78	n.c.d.	10	100	55	64	98	58	8	54
Gatanga	65	44	28	16	8	92	60	95	70	49	9	63
Narok	63	28	45	20	18	82	37	94	83	44	10	65
Migori	n.d.	43	24	9	11	75	21	40	89	39	11	66
Homabay	71	54	43	12	21	68	23	64	89	34	12	69
Tuuru	56	76	31	n.c.d.	18	84	56	132	97	30	13	73
Busia	91	90	35	7	8	82	n.d.	n.d.	72	23	14	77
Nol Turesh Loitokitok	39	79	21	19	11	79	44	n.c.d.	72	20	15	79
Small Utilities												
Rukanga	93	24	88	22	9	80	64	110	99	120	1	11
Tachasis	93	28	73	24	8	91	46	107	98	117	2	12
Naromoru	0	29	99	22	14	104	49	103	100	104	3	17
Muthambi 4K	0	21	54	23	7	60	37	157	100	98	4	19
Lamu	93	46	84	10	18	89	29	87	100	93	5	21
Murugi Mugumango	0	30	54	24	6	92	60	103	100	90	6	26
Kiambere Mwingi	93	40	18	14	12	95	31	65	99	86	7	28
Matungulu Kangundo	27	44	n.c.d.	17	14	96	40	88	100	70	8	38
Ol Kalou	n.d.	39	38	20	9	98	n.c.d.	n.c.d.	100	67	9	43
Yatta	57	32	11	6	22	94	24	111	98	64	10	46
Namanga	n.d.	30	62	6	11	104	n.c.d.	n.c.d.	51	64	10	46
Nyandarua	56	47	17	17	19	89	37	106	97	63	12	47
Kathiani	72	30	46	10	23	72	27	131	92	62	13	49
Wajir	51	30	63	n.c.d.	n.c.d.	100	n.c.d.	n.c.d.	100	57	14	55
Nyasare	85	36	33	8	14	91	41	111	100	55	15	56
Mwala	93	39	9	12	26	92	44	78	84	55	15	56
Iten Tambach	70	32	50	16	13	100	46	94	84	55	15	56
Kirandich	63	46	n.c.d.	n.d.	7	95	23	38	67	55	15	56
Ndaragwa	63	n.c.d.	28	n.c.d.	21	100	32	82	0	35	19	67
Wote	60	41	29	10	26	96	45	80	85	32	20	71
Mbooni	14	45	20	5	29	100	64	88	88	26	21	75
Chemususu	50	70	49	8	12	102	71	72	30	24	22	76
Kapenguria	91	56	19	n.c.d.	29	56	44	54	50	11	23	81
Not Ranked												
Kakamega	93	36	91	21	5	112	58	102	99	XXX	XXX	XXX
Nzoia	88	47	85	n.c.d.	6	84	39	116	57	XXX	XXX	XXX

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

Top and Worst Performers

Nyeri led with a score of 177 points which was a big improvement from the previous year score of 163. Eldoret and Nakuru took up the second and third positions with scores of 145 and 144 respectively.

The worst performers in the bottom three positions for the current period are Kapenguria and Kwale at position 81, Sibo at position 80 and Nol-turesh Loitokitock at position 79. These three worst performers had scores of 11, 12 and 20 respectively, out of a possible score of 200 points. The worst performers in the Very Large, Large, Medium and Small categories are Mombasa (ninth year in a row), Kwale, Nol-Turesh Loitokitok and Kapenguria respectively. Mombasa however, marginally improved its score from 28 to 34. Further, the number of utilities recording a performance above the national average dropped from 47% to 46% and consequently the number of utilities attaining at least 50% of the score dropped from 26% to 25%. This scenario points to a skewed quality of service between the very well performing WSPs and the weak ones. This is an indictment of the rights to water and sanitation where norms and standards is the driving force.

The regulator will continue to enforce the license conditions to ensure that efficiency is entrenched in utility operations and customers are able to reap the benefits accruing from these efficiencies.

Privately Owned

In the privately-owned category, Tatu City despite being a new entrant, took the top position with a score of 135 points.

Table 3.4: 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.)	Revenue Collection Efficiency (%)	Personnel expen-ditures as % of total O+M costs	O+M Cost Coverage (%)	Metering Ratio (%)	Total score	Ranking by cate-gory	Overall Ranking
Tatu City	77	14	100	24	357	96	55	158	100	**135**	**1**	**1**
Kiamumbi	83	21	100	24	9	100	n.c.d.	118	100	**131**	**2**	**2**
Runda	93	22	85	16	20	85	33	107	100	**126**	**3**	**3**

3.5.2 Performance against Sector Benchmarks

The three ranges of sector benchmarks classified as 'good, acceptable and not acceptable' (Table 3.2) are used 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 3.1 to determine the cut-off score. Table 3.5 provides the performance of utilities in relation to the sector benchmarks and the number of utilities within each performance range.

Table 3.5: Assessment of KPIs against Sector Benchmarks

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	14	6	25	2	29	12	45	2	37
Acceptable	7	32	21	45	37	20	22	6	15
Not Acceptable	64	45	31	35	21	50	19	78	35
n.d.	0	3	1	1	0	1	0	0	0
n.c.d.	2	1	9	4	0	4	1	1	0
TOTAL	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**
% of utilities within sector benchmark	**24%**	**44%**	**53%**	**54%**	**76%**	**37%**	**77%**	**9%**	**60%**

In terms of overall performance, collection efficiency is the KPI where most utilities (66) have reached the 'acceptable range' of sector performance while NRW is still the least performed KPI with only eight WSPs being within the acceptable range. Five KPIs have at least 50% of the WSPs meeting the "acceptable range" of sector benchmark. These are Service Hours, O+M Coverage, Collection Efficiency, Staff Productivity and Metering Ratio. Compared to the previous period, five KPIs recorded an improvement in the number of WSPs attaining the sector benchmark while a decline was recorded in four. On the basis of cluster of indicators, the highest performance is on Quality of Service at 65% followed by operational sustainability at 51% and the least was Economic Efficiency at 34%. Although the performance in Quality of Service indicators is particularly encouraging a corresponding improvement is required

in the other two clusters, if this level of service is to be sustained. The Regulator on its part will continue to give incentives for good performance while the licensing requirement provides an opportunity to sanction poor performance.

3.5.3 Performance over Time

Utilities operate mainly different conditions or with respect to condition of infrastructure, a situation that may in the short-term impact their performance. Being cognizant of these realities, the Regulator employs performance improvement over time 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. The Tables 3.6 and 3.7 show the performance over time of publicly and privately-owned utilities respectively.

Table 3.6: Performance Over Time of Publicly-Owned Utilities

Rank	WSP	Score 2017/18	Score 2018/19
1	Nyeri	163	177
2	Eldoret	108	145
3	Nakuru	127	144
4	Meru	112	142
5	Murang'a	154	137
6	Ruiru-Juja	163	134
6	Embu	127	134
8	Nanyuki	127	131
9	Thika	114	126
10	Ngandori Nginda	119	122
11	Rukanga	145	120
12	Tachasis	114	117
13	Isiolo	109	110
13	Ngagaka	116	110
15	Kiambu	59	108
16	Kisumu	116	105
17	Naromoru	98	104
18	Naivasha	83	101
19	Muthambi 4K	105	98
20	Nithi	110	94
21	Nyahururu	118	93
21	Lamu	92	93
21	Gatundu	72	93
24	Othaya Mukurweni	82	91
24	Tetu Aberdare	65	91
26	Murugi Mugumango	99	90
27	Tavevo	46	88
28	Kiambere Mwingi	85	86
29	Kahuti	49	83
30	Malindi	79	81
31	Limuru	83	79
32	Kibwezi Makindu	74	76
32	Lodwar	46	76
32	Nairobi	94	76
32	Mathira	81	76
36	Karuri	106	75
37	Kericho	92	73
38	Matungulu Kangundo	55	70
38	Kyeni	46	70
40	Wajir	n/a	69
41	Mavoko	66	68
42	Nakuru Rural	42	67

Rank	WSP	Score 2017/18	Score 2018/19
42	Ol Kalou	n/a	67
42	Embe	102	67
45	Kitui	75	65
46	Yatta	38	64
46	Namanga	83	64
48	Nyandarua	50	63
49	Kikuyu	59	62
49	Kathiani	69	62
51	Murang'a South	91	60
51	Amatsi	33	60
53	Githunguri	58	59
54	Kirinyaga	57	58
54	Kapsabet Nandi	54	58
56	Nyasare	88	55
56	Mwala	33	55
56	Iten Tambach	33	55
56	Kirandich	47	55
60	Garissa	16	54
60	Machakos	50	54
62	Oloolaiser	57	50
63	Gatanga	41	49
64	Imetha	58	48
65	Narok	43	44
66	Migori	49	39
67	Ndaragwa	62	35
68	Bomet	48	34
69	Homabay	15	34
69	Mombasa	28	34
71	Wote	39	32
71	Gatamathi	43	32
73	Tuuru	34	30
74	Gusii	60	28
75	Mbooni	18	26
76	Chemususu (Formerly Eldama Ravine)	24	24
77	Busia	45	23
77	Kilifi Mariakani	33	23
79	Nol Turesh Loitokitok	17	20
80	Sibo	29	12
81	Kwale	16	11
81	Kapenguria	12	11
XX	Nzoia	63	XXX
XX	Kakamega	118	XXX

To be recognized as an improver, a utility must have shown improvement over two reporting periods and the score must be at least 50 points. On this basis, Eldoret, Naivasha and Matungulu Kangundo are the top three improvers, while Embe, Nyasare and Gusii are the greatest losers.

Table 3.7: Performance Over Time of Privately-Owned Utilities

Rank	WSP	Score 2017/18	Score 2018/19
1	Tatu City	n/a	135
2	Kiamumbi	128	131
3	Runda	111	126

In the Private category, both Kiamumbi and Runda improved in performance with notable improvement being recorded by Runda water company.

Table 3.8 indicates that the overall performance for utilities has improved compared to the previous reporting period. Whereas in 2017/18, 45% of the utilities improved their performance, there was a significant increase in this proportion in the current period to 56%. Consequently, the average performance improved from 36% to 38%.

Table 3.8: Number and Percentage of Utilities Recording Improvement

Year	No. of Utilities	No. of Improvers	% of Improvers	Average Score
2017/18	88	40	45	36
2018/19	87	49	56	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.

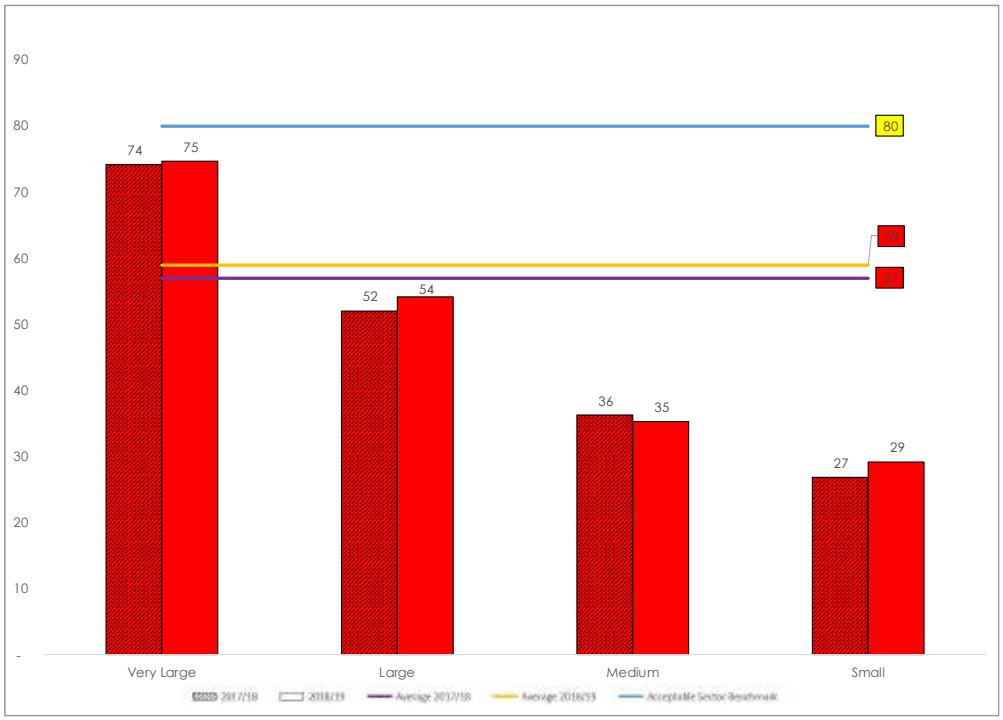
In the current period, the population in the service area of the 87 utilities was 23.43 million. At an average of 3.9 members per household, this represents 6.00 million households. Out of these, the utilities were able to serve 13.83 million, representing 3.55 million households.

The average Water Coverage was 59% compared to 57% in the previous reporting period (Figure 3.8). This change translates to an additional 894,827 people, representing 229,442 households. The average for Very Large utilities was 75%, just five (5) percentage points short of the sector benchmark of 80%. For the Small utilities the average slightly increased to 26%.

The number of new water connections has increased by only 36,081. This reflects an insignificant growth of 18% of the annual required average growth of 200,000 connections to be able to meet the target of universal access under the Vision 2030. This growth in connections was only a third of what was recorded in the previous period despite the population served being five percent higher. Accordingly, the average number of people served per connection

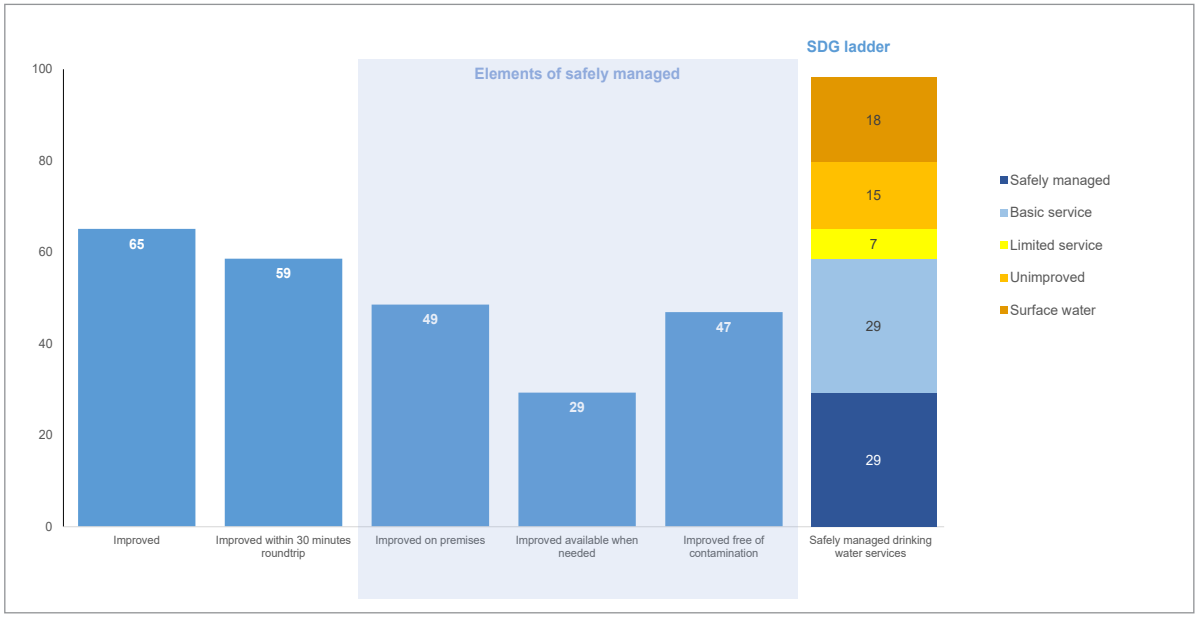
increased from 10.8 to 11.2 indicating a shift to aggregation of connection or a declining quality of service. Also recording a decline is the per capita consumption which dropped from 34 to 32 litres per capita per day.

Figure 3.8: Water Coverage by WSP category, %



SDG 6.1 has defined different service levels to enable tracking of progress towards goal number six. Figure 3.9 presents the proportion of the total population that is within the five different service levels namely; Surface water, Unimproved, Limited, Basic and Safely managed.

Figure 3.9: Proportion of Population using Safely Managed Drinking Water Services



The target under SDG 6.1a is 'By 2030 achieve universal and equitable access to safe and affordable drinking water for all' with the indicator being the proportion of population using safely managed drinking water services. In the current period 29% of the population in the service areas of the WSPs have access to safely managed services. This figure is three percentage points higher than the figure of 26% reported in 2017/18.

The improvement above is attributed to an increase in population using services which are available when needed from 34% (2017/18) to 45% (2018/19.

b) Sewered Sanitation Coverage

Sewered sanitation 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 sanitation services to consumers.

The sewered sanitation coverage in the current period improved marginally to 17% (Figure 3.10). The number of sewer connections increased by four percent, which was one percentage point decline from the previous period. On the other hand, the population served increased by 6% which implies that the growth in coverage can be attributed to an increase in number of people served per connection from 9.1 to 9.3. This is similar to the case of water coverage where there is an increasing shift to service through shared connections. The sewer coverage for the Very Large utilities declined to 35% from 38% in the previous period, implying a further shift from the 2015 target of 40%. The number of sewer connections in absolute terms increased by 16,057 compared to 19,452 in the previous reporting period.

It will however be noted that sewerage services are only available in 32 urban centres spread across 26 Counties. This means that 21 counties do have urban centres that solely rely on onsite solutions for the management of waste water.

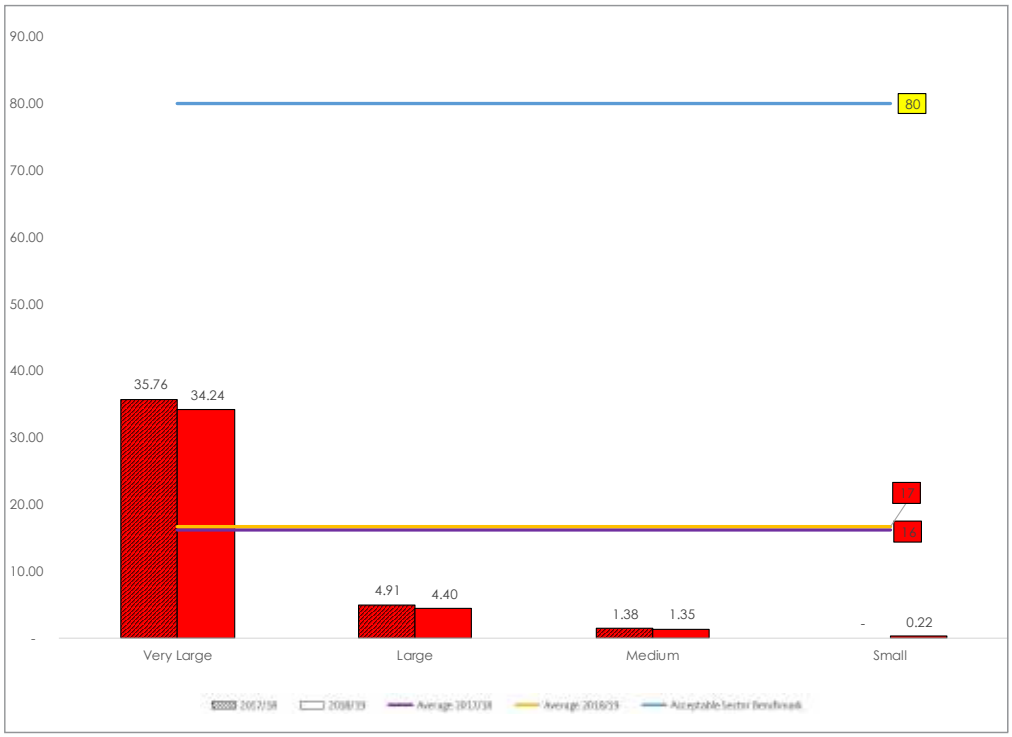
To ensure increased focus on non-sewered sanitation, the East and Southern Africa Water and Sanitation Regulators Association has developed the tools below to assist member countries effectively deliver their mandates in this area;

1. Regulation strategy and framework for inclusive urban sanitation service provision incorporating non-sewered sanitation
2. Guidelines for Citywide Inclusive Sanitation (CWIS) Planning
3. Guidelines for Inclusive Urban Sanitation Service Provision (Incorporating Non-Sewered Sanitation Services)
4. Guidelines for Sanitation Services Tariff Setting and Inputs for Tariff Models

The respective countries will be required to adapt/adopt the guidelines to fit the country context.

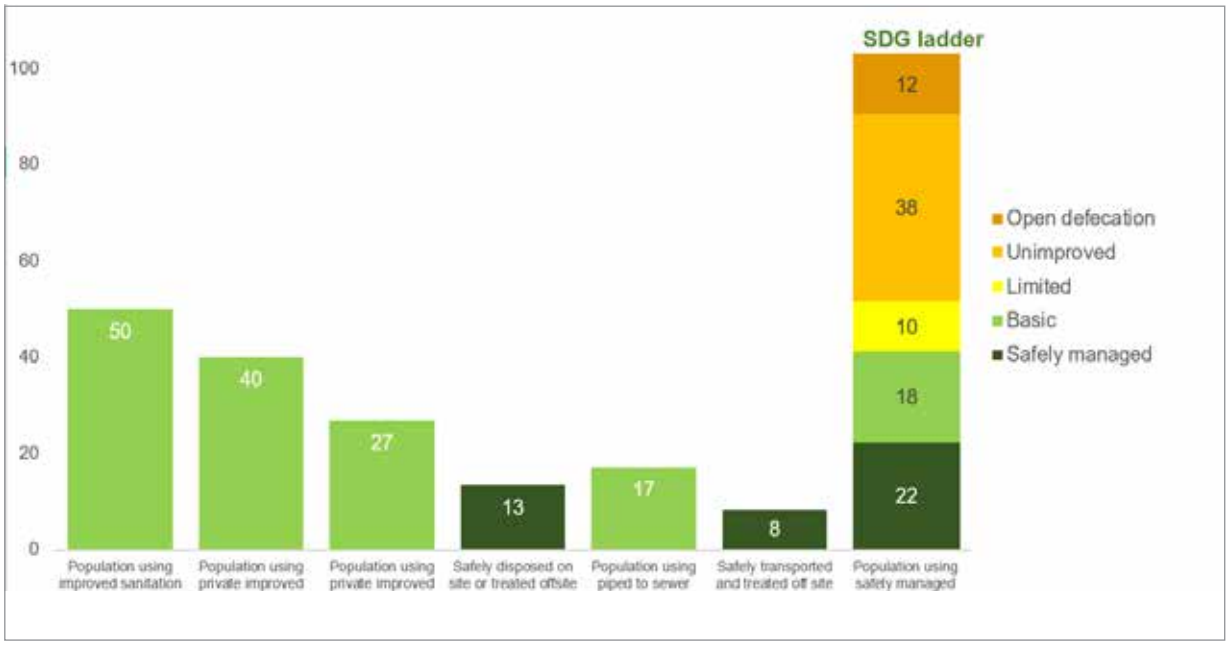
To ensure uptake of some of the recommendations in the guidelines, the Regulator will progressively build-in some of these in the assessments of the WSPs.

Figure 3.10: Sewered Sanitation Coverage by WSP category, %



To assess the adequacy of waste water management in line with the requirements of SDG 6.3.1, Figure 3.11 presents the SDG ladder with respect to sanitation.

Figure 3.11: Sanitation Ladder



c) Drinking Water Quality

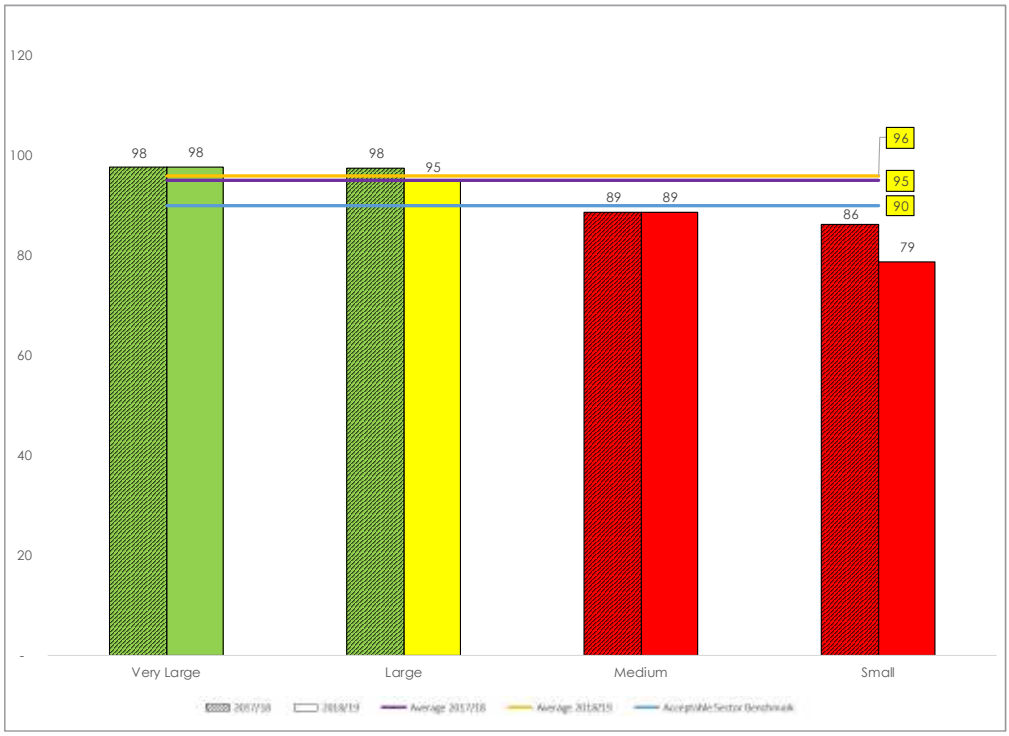
Drinking Water Quality (DWQ) measures the potability of the water supplied by a utility. It is a critical performance indicator since it has a direct impact on the health of consumers. This is a weighted composite indicator measuring compliance with residual chlorine standards (40%) and bacteriological 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 total number of samples taken weighted at 33%.

The performance on this indicator increased marginally from 95% to 96% in 2018/19 which is within the acceptable range of sector performance.

Figure 3.12: Drinking Water Quality, %



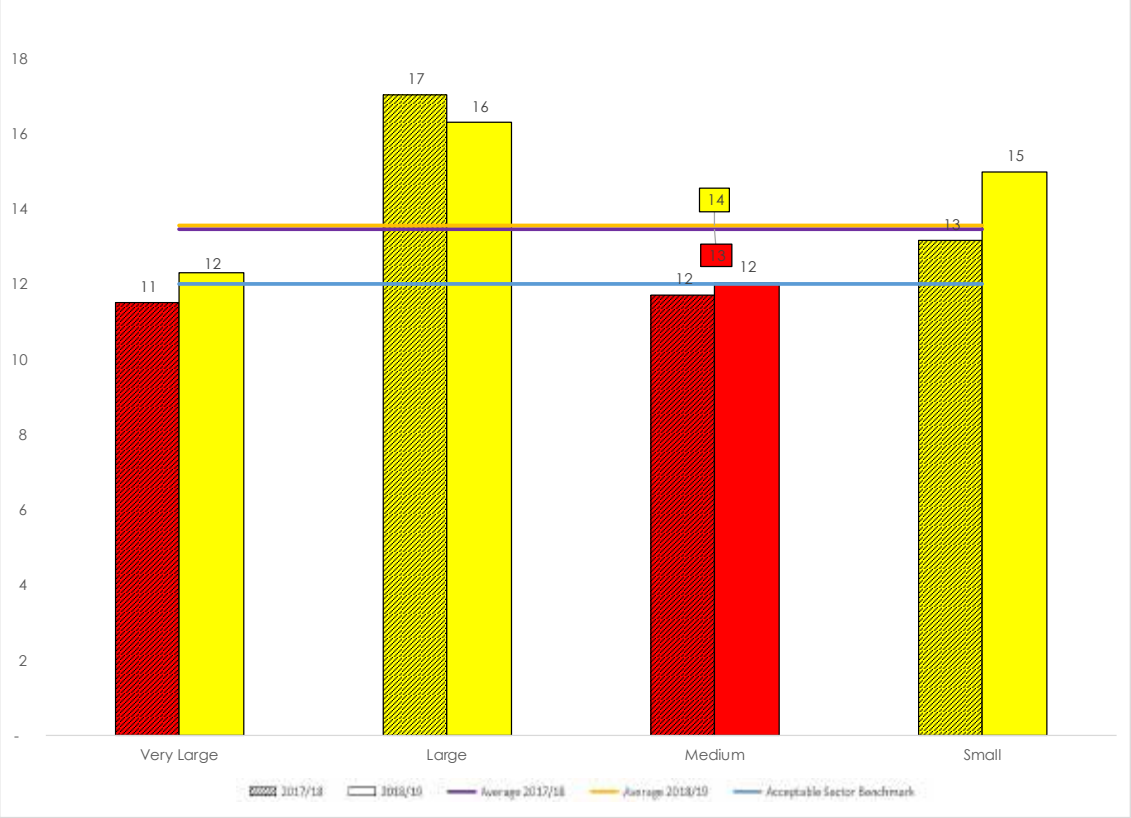
It will be noted that, for the sub-indicators, an improvement in residual Chlorine was noted while a decline was recorded for Bacteriological. For Residual Chlorine, this can be attributed to an improvement in compliance with the sampling schedules since compliance recorded a slight decline. For Bacteriological, both the sampling efficiency, as well as, compliance recorded a decline in the current period. The license issued to the WSPs includes a requirement for the utilities to put in place a water safety plan within the first year of issuance.

A breakdown of utility performance in the two components of the DWQ sub-indicators is provided in Annex 4.

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 3.13: Hours of Supply, No.

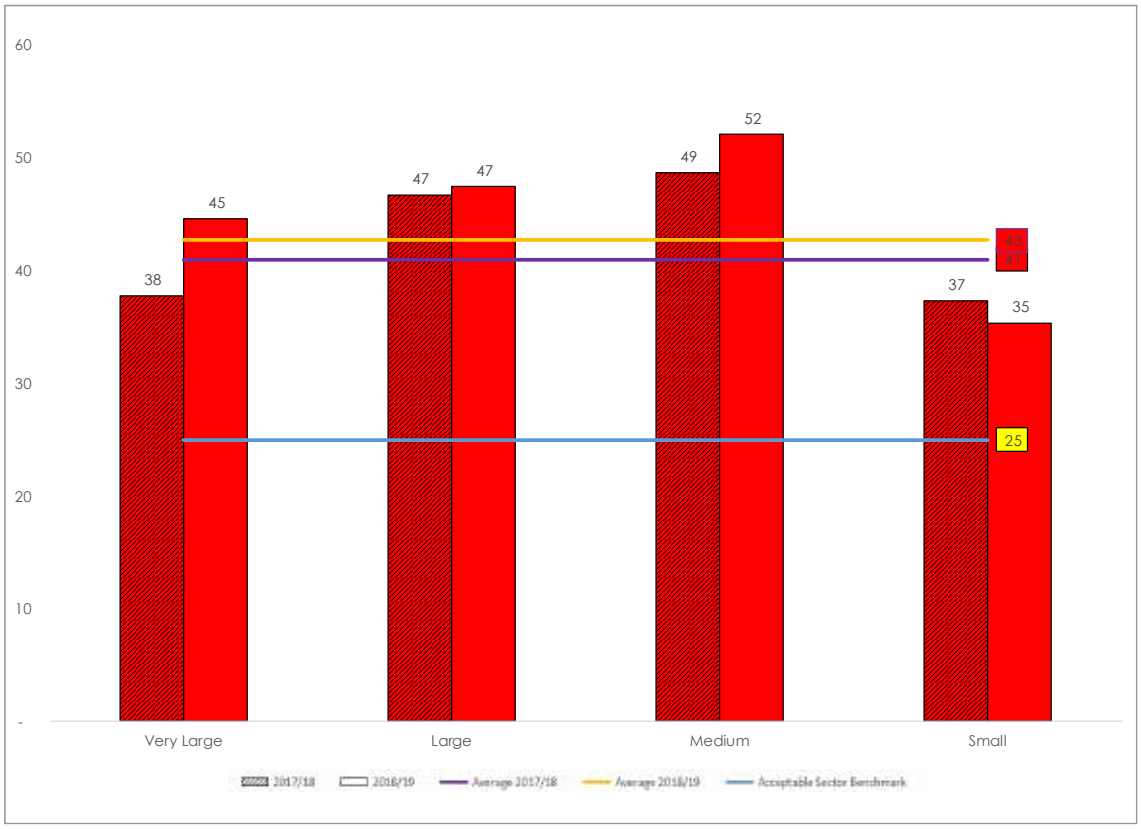


In 2018/19, average daily service hours marginally improved from 13 to 14. All the size categories improved on their performance except in the Large category. This drop for the Large category is as a result of the graduation of three WSPs namely Embu, Kericho and Ruiru-Juja to the Very Large category. It will be noted that all the three WSPs reported hours of supply greater than 20 in the previous period. This marginal improvement in reliability however did not translate to increased consumption since the per capita consumption decreased from 34 litres per capita per day to 33 litres per capita per day. At an average household size of 3.9, this consumption translates to 3.9 cubic metres per month which implies a majority of the households still consume below the lifeline block of $6M^3$.

e) Non-Revenue Water

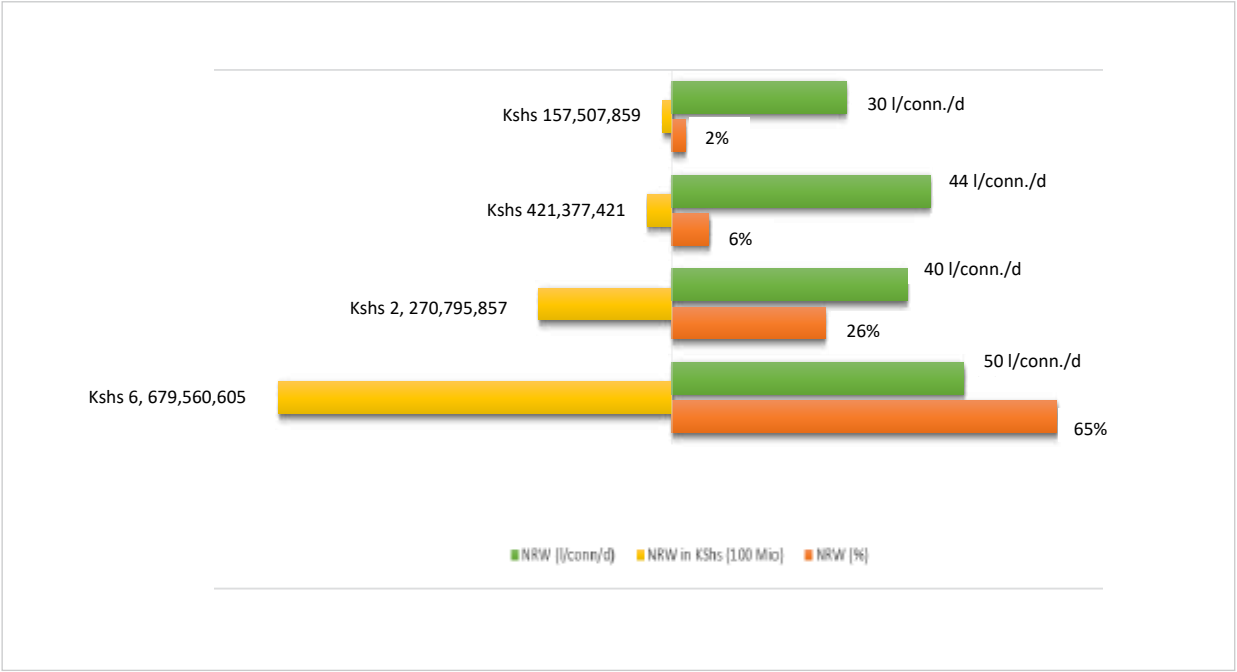
Non-Revenue Water is the difference between the amount of water put into the distribution system and the amount of water billed/unbilled as authorized consumption. It comprises of both commercial (apparent) losses and physical (real) losses. It is an operational indicator contributing to the sustainability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

Figure 3.14: Non-Revenue Water, %



In the current period, NRW increased from 41% to 43% when compared to 2017/18.

Figure 3.15: Breakdown of NRW



In financial terms at the current average of NRW at 43% and the sector turnover of Kshs. 22.63 Billion, against a sector benchmark of 20%, then conservatively, the sector is losing slightly more than Kshs. 8.9 Billion. On the other hand, in terms of volume the amount lost annually after allowing for the 20% acceptable level of loses is 115 million cubic metres. This is adequate to serve Nairobi County with a daily demand o 750,000M^3/day for five months. It is therefore apparent the impact of this loss is substantial and thus concerted efforts are required from all actors to deal with this challenge.

To deal with this challenge, the Ministry issued the NRW management standards meant to provide a practical approach to deal with NRW at the utility level. The standards consisted of a Manual, Guidelines and Handbook. In an audit carried out by the Regulator in nine select utilities, it was found out that the uptake of these standards was not satisfactory. The foregoing therefore, prompted the Regulator together with key stakeholders to review these standards with an aim of incorporating lessons learnt from the last five years of implementation.

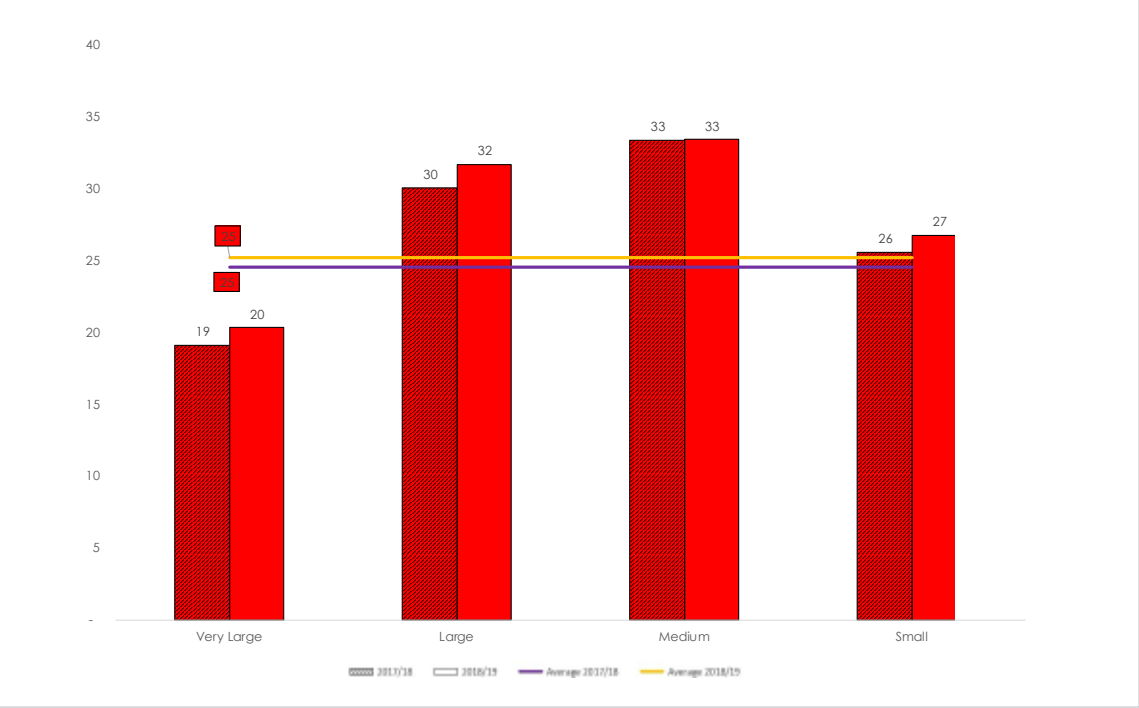
Other initiatives to deal with NRW include implementation of Performance-based Contracts (PBC) for NRW. This support from the World Bank and the 2030 Water Resources Group aims to further enhance measures to deal with NRW through creating a shift of incentives by linking investments to agreed set of performance Indictors. PBCs are currently under implementation in six utilities that expressed willingness in the project and met the requirements set by the Regulator for this support.

f) Dormant Connections

This indicator is computed as the number of connections equivalent to accounts that have been disconnected or have not received water for more than three months, expressed as a percentage of total water connections. It is an indicator of a utility's management capacity to deliver quality services to its customers. Where the percentage of dormant connections is high, the utility is either not able to provide services to all its registered customers or it provides services of inferior quality.

A high level of dormant connections could also be due to integrity in the utility where disconnected customers collude with Utility staff to get new account numbers with a view to evading the payment of outstanding bills.

Figure 3.16: Dormant Connections, %



In the reporting period, the proportion of dormant connections increased from 26% to 27%. The highest proportion of dormant connections is within the Large and Medium categories with the level being 33% and 32% respectively. This implies utilities in these categories operate at less than 70% of their ready market. A high level of dormant connection could partly be due to poor governance. This increase in number of connections may be linked to the increase in level of NRW and points to governance challenges in the utilities. This situation if not contained, leads to loss of business and gives way to the mushrooming of informal providers, subsequently decreasing revenue.

The greatest contributors to the poor performance on this indicator with dormant connections higher than 50% are: Amatsi (64%), Imetha (64%), Tuuru (60%), Mombasa (59%), Chemususu (52%), Mathira (50%) and Githunguri (50%).

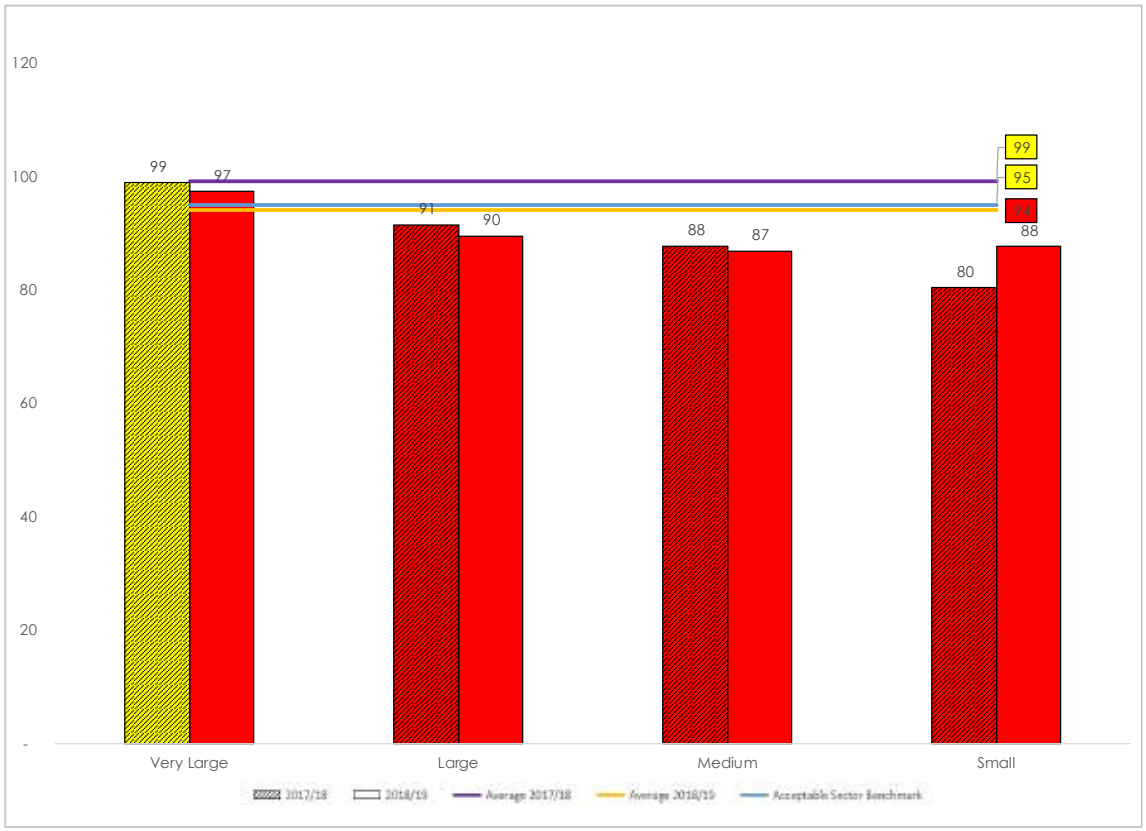
As a license condition, utilities are required to undertake a Customer Identification Survey (CIS) once every two years and ensure their customer databases are updated regularly.

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 2018/19, metering level recorded a marginal decrease of one percentage point to from 95 to 94 %. Considering that NRW also increased during the period points to meter inaccuracies as a contributor. It is expected that utilities will continue to ensure that meters are properly functioning in order to effectively deal with NRW.

Figure 3.17: Metering Ratio, %



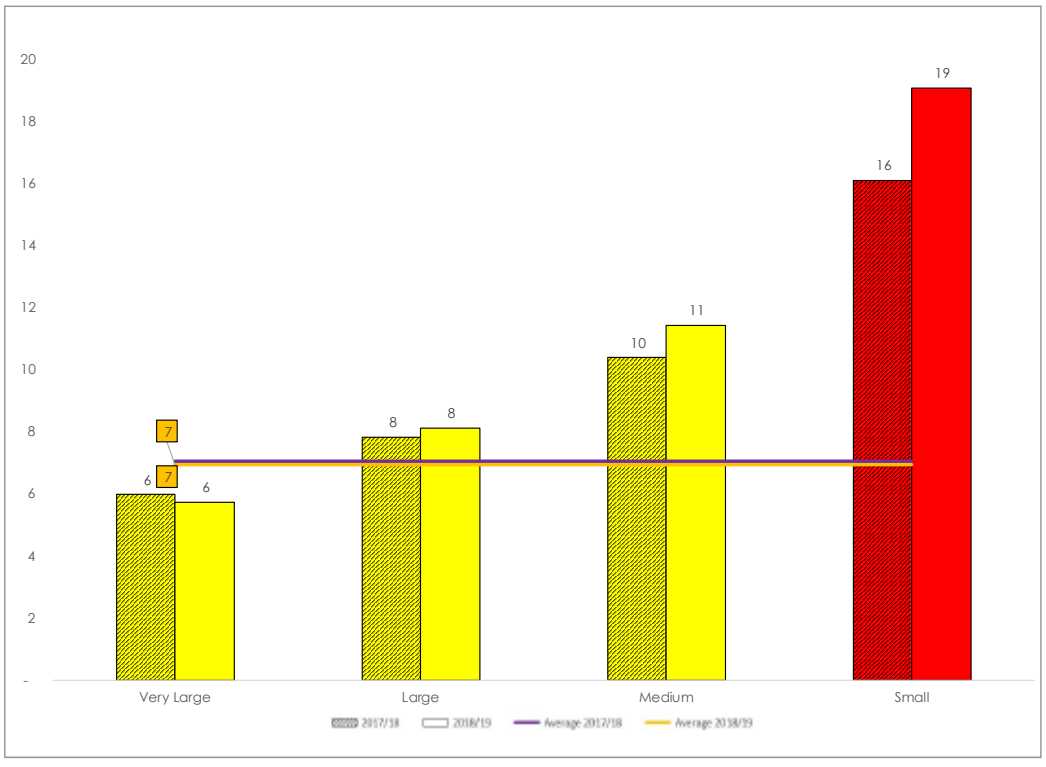
h) Staff Productivity (staff per 1,000 connections)

Staff Productivity refers to the number of staff in employment for every 1,000 connections (total registered water and, where applicable, sewer connections). It measures the efficiency 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, among others.

In assessing staff productivity, the expectation is that big utilities should benefit from economies of scale. Therefore, there are different sector benchmarks depending on the size category of the utility. For the year under review, although the average performance was maintained, notable deteriorations were recorded in the medium and small categories of utilities.

For the third year, performance in this indicator remained at seven staff per 1,000 connections. In absolute terms, the number of staff increased by only 222 (2%) while the connections increased by 52,138 (3.25%). Except for the Small category all the size categories have been able to maintain an acceptable level of staff, a scenario that can be attributed to economies of scale. Utilities in the Very Large category however, need to ensure that this performance in staff productivity is in consonance with the proportion of costs incurred for personnel as compared to the total O+M costs which is outside the acceptable levels of sector performance.

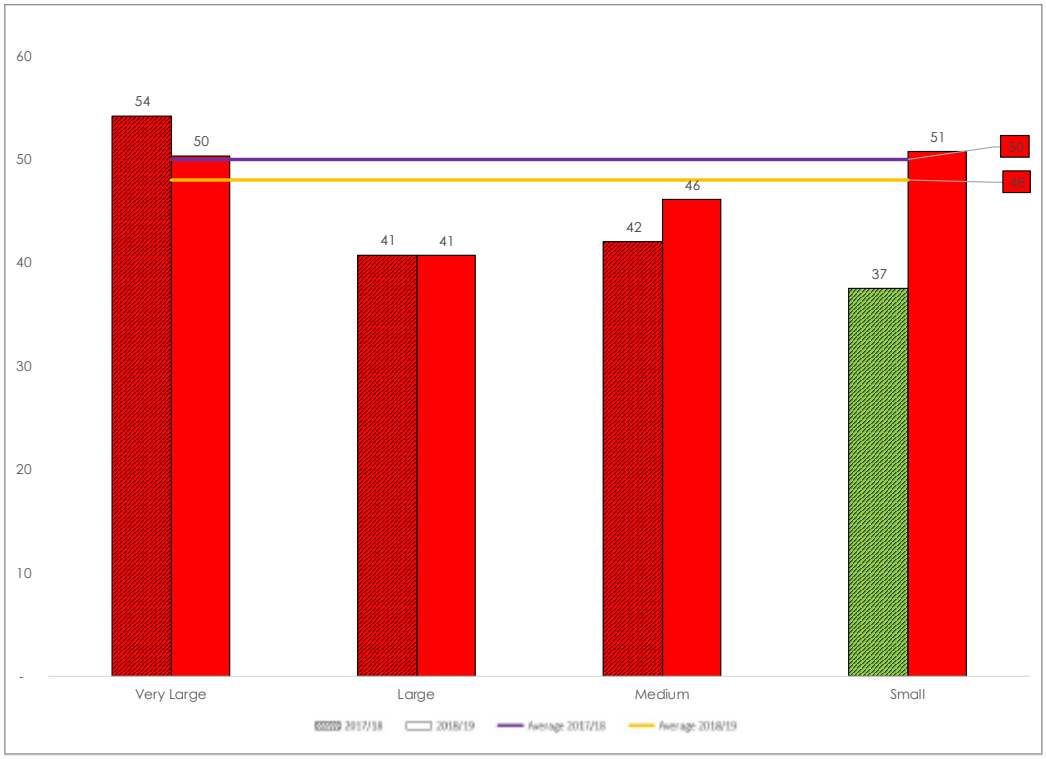
Figure 3.18: Staff Productivity, Staff No. per 1,000



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 the respective sector benchmarks.

Figure 3.19: Personnel Expenditure as a Percentage of O+M, %



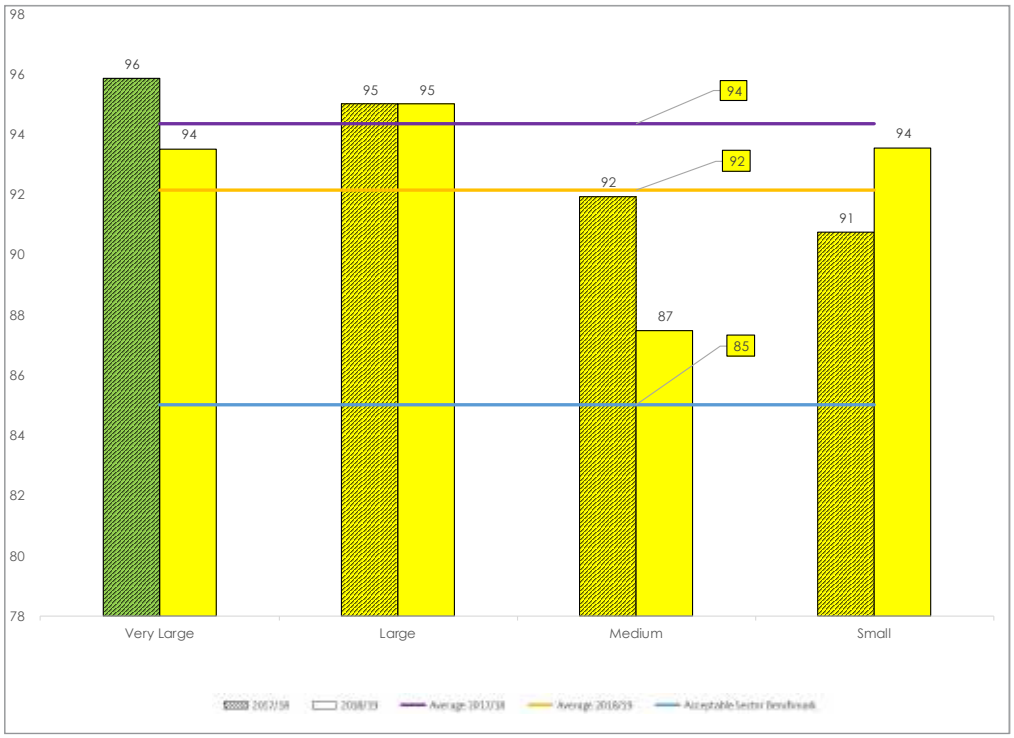
Performance in this indicator continued to decline from 48% in 2017/18 to 50% in 2018/19. Although the Very Large category recorded a decline, this performance was outweighed by the declining performance in the other three size categories. Very Large utilities, especially, must seek to reverse the situation where half of the resources go towards meeting personnel expenses. Left unchecked, this situation may stifle resources for other operations hence compromising on the quality of service rendered. Utilities with approved tariffs are expected to grow their expenses as per the agreed projections in the tariff and WASREB will closely monitor to ensure that other aspects of utility operations are not compromised.

The Regulator has issued guidelines on remuneration level at the utility level guided by the level of business. Furthermore, the model Human Resource guidelines are expected to provide guidance to WSPs on proper management of the human capital and also provide guidance in negotiations during Collective Bargaining Agreements (CBAs).

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 3.20: Revenue Collection Efficiency, %



Overall performance in this indicator declined from 94% in 2017/18 to 92% in 2018/19, with performance in the two years being well above the acceptable sector benchmark of 85%. It is worth noting that all categories of utilities were above the sector benchmark for this indicator. This is may be attributed to the adoption of numerous payment options and increase in pay points. Considering that most utilities have not been able to separate arrears from current collections, the drop may be attributed to the level of arrears having gone down.

k) Operation and Maintenance Cost Coverage

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

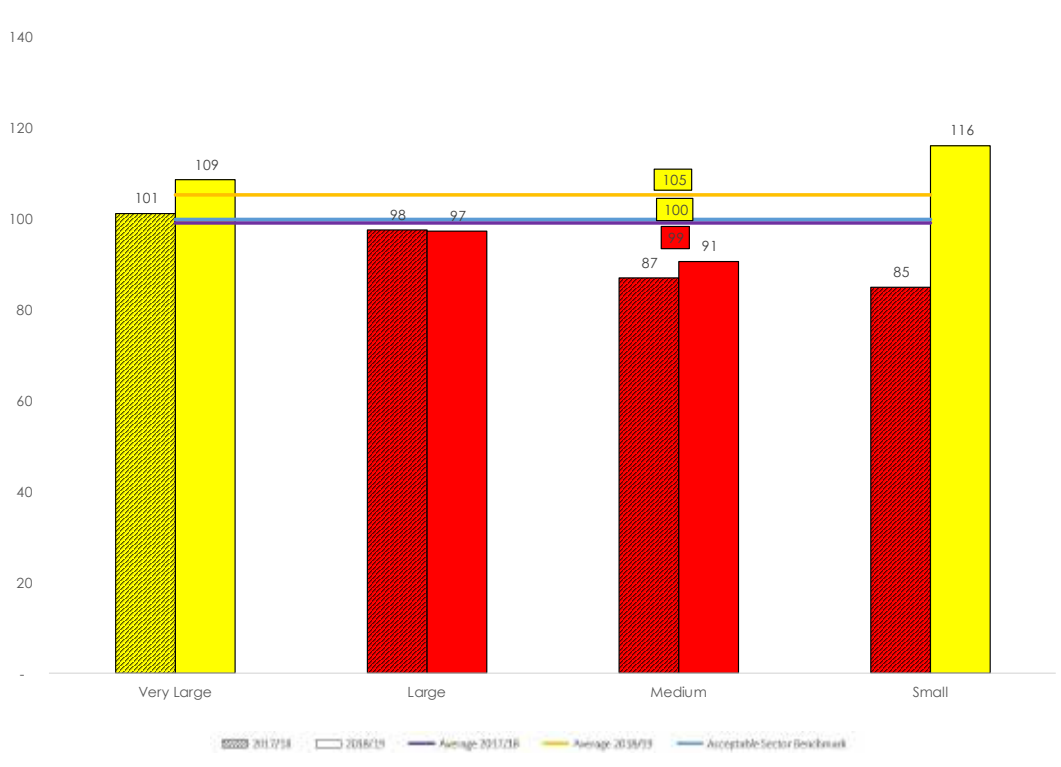
For a utility to be sustainable, the following levels of cost-coverage have been defined (Table 3.9):

Table 3.9: Levels of Cost Coverage and Cost component

% O+M Cost Coverage	Cost Components
100%	O+M Cost
101-149%	O+M Cost + 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, that is, able to meet O+M costs, service debts and renew its assets.

Figure 3.21: O+M Cost Coverage



There was a marked improvement in the O+M coverage among all the categories of WSPs, with the exception of the Large category which declined by one percentage point. The Small category recorded the highest improvement of 31 percentage points. The current sector average however remains unsatisfactory, compared to the sector requirement of between 130% and 150% required to cover justified O+M costs, undertake new capital works, renew its assets and pay debts.

Various factors may be contributing to this unsatisfactory level of O+M Cost coverage. Key among these are:

a) The accounting treatment of loans repayable to Water Works Development Agencies (WWDAs). Majority of the infrastructure assets acquired through debt are in the books of the WWDAs, thus WSPs account for the loan repayments to WWDAs as recurrent costs, therefore overstating the actual O+M costs of the WSP. There is therefore need for policy to address the issues of transfer of assets and accompanying liabilities;

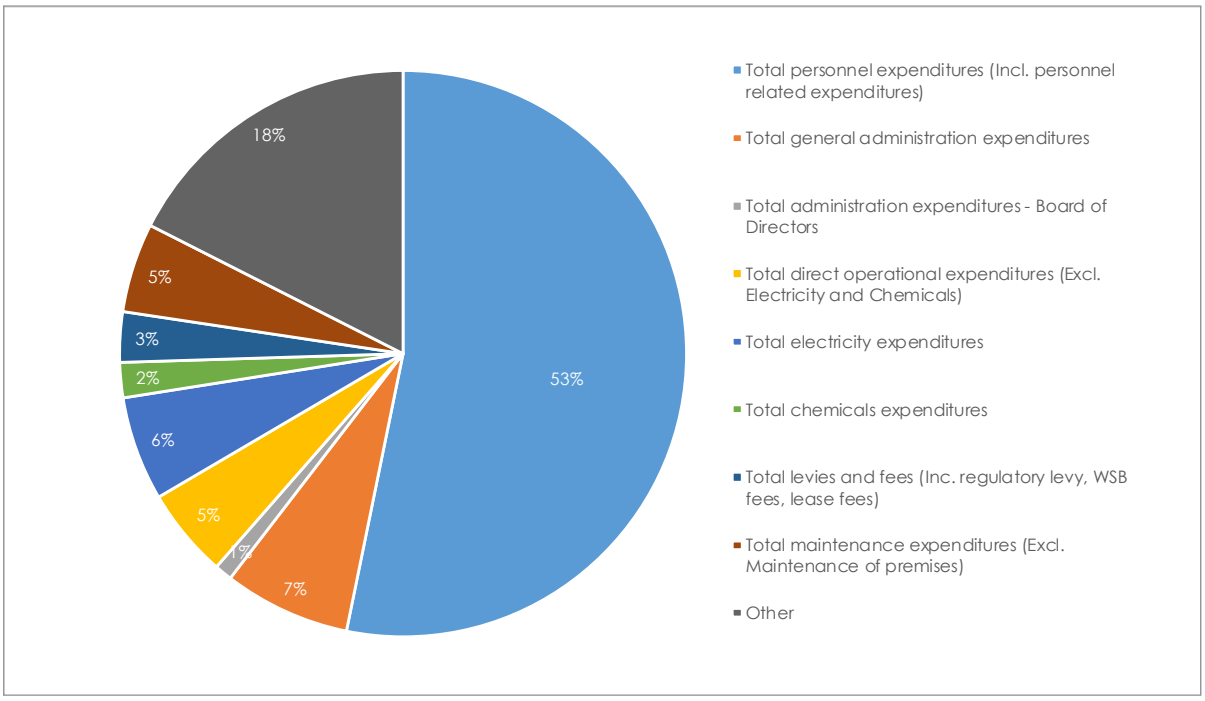
b) Failure to apply for justified tariffs on time. Many utilities have been delaying applying for their justified tariffs thus, compromising their continued ability to adequately cover their justified O+M Costs. There is need for the County Governments to ensure that all their WSPs are operating on justified tariffs;

c) The abnormally high Staff Expenditure (section i) in the sector is resulting to the low O+M Cost Coverage. Most of the WSPs appear to be diverting funds intended for capital works and/ or debt repayment to uncontrolled staff expenditure.

I) O+M Cost Breakdown

Cost distribution in a utility is a major factor in ensuring its financial sustainability. The Regulator has set benchmarks for some of these cost components, example; Personnel, BoD and Maintenance expenses among others. The breakdown of O+M costs into personnel, electricity, chemicals, levies and fees and other operational expenditures, provides crucial 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 3.22 shows the aggregated O+M cost breakdown for all utilities.

Figure 3.22: Aggregated O+M Cost Breakdown for All Utilities



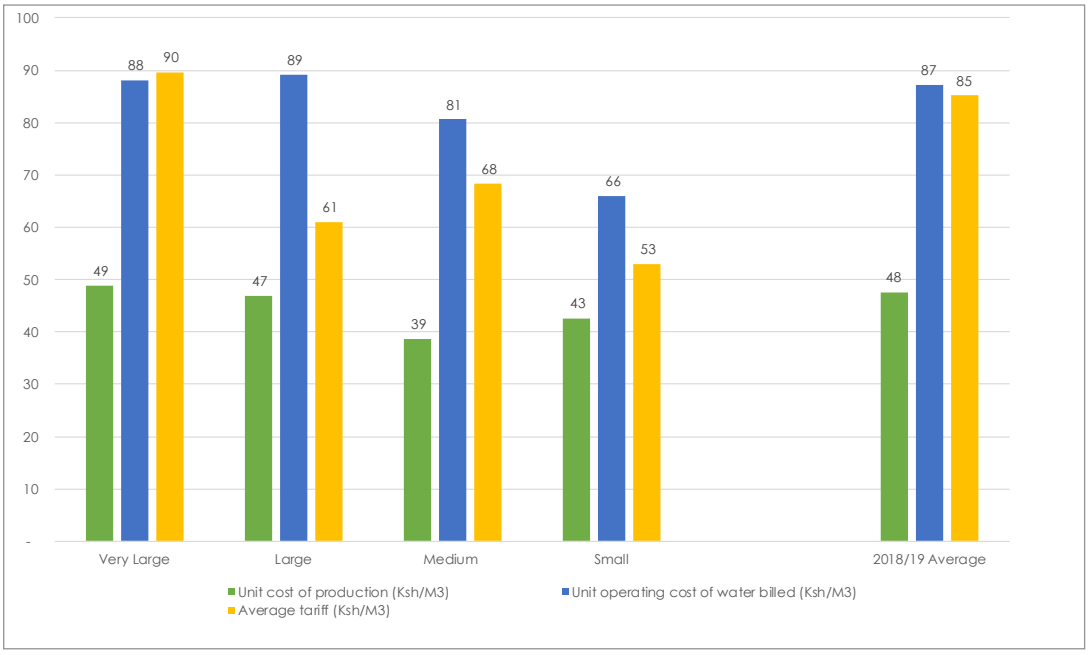
As illustrated, the main cost drivers for O+M are: personnel expenditure (53%) an increase of one percentage points in the previous period. There was a one percentage point decrease both in electricity and chemical costs to 6% and 2% respectively. The amount of levies and fees payable declined significantly from 13% to 3% mainly as a result of the termination of licensee remuneration fee previously paid to the Water Services Boards, (now Water Works Development Agencies, WWDAs). The continued decline of maintenance expenditures is worrying, since this has a direct implication on the efficiency of utilities to provide services. The license issued to the WSPs requires all WSPs to improve their technical capabilities by developing and implementing comprehensive asset maintenance schedules. The Regulator shall closely monitor these commitments in an effort to improve the quality of services to the consumers.

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 the 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 of NRW of 20% as opposed to the current 43%, the unit cost of water billed would be expected to be Kshs. 63 per cubic meter as opposed to the current Kshs. 87 per cubic meter, as seen in Fig 3.22. This means that the difference of Kshs. 24 per cubic meter goes towards paying for inefficiencies of the utilities, instead of the development of infrastructure. At the current average tariff of Kshs. 85 per cubic meter consumers are paying Kshs. 22 per cubic meter for inefficiencies and the balance of Kshs. 2 per cubic meter is covered by subsidies or decline in quality of service. A tariff that is less than the unit cost of water billed starves the utility of funds to put into asset renewal.

When compared to the previous reporting period, whereas there was a slight increase in unit cost of production, the unit cost of water billed and the average tariff increased by 9% and 8% respectively in the current period. Considering that the revenue collection efficiency was 92%, the amount of actual revenue per cubic metre is Kshs. 78. This development is not desirable as it compromises the sustainability of the sector. At the current collections, the utility is recouping about 90% of its costs against a sector standard of 110% if current level of service is to be guaranteed. The increase in the average tariff implies improved self-financing of the sector which is supported by the increase in O+M cost coverage.

Figure 3.23: Tariff-Cost Comparison



n) Water Services in Low Income Areas

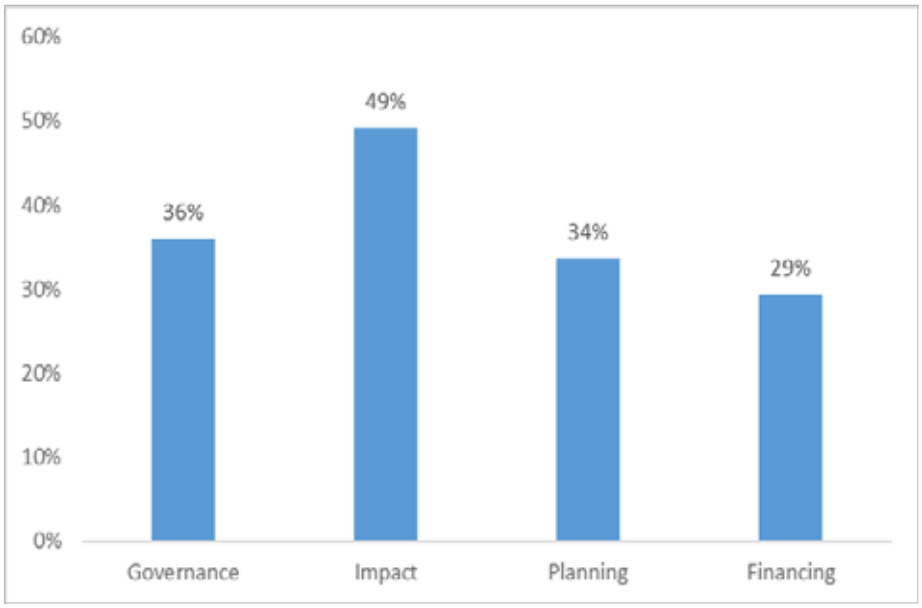
Tremendous gains have been recorded in the last 15 years into the sector reforms which has seen increased formalization, as well as, professionalization of services resulting in improved access to both water and sanitation services. Greater progress in access to water and sanitation will be achieved if utilities focus more efforts in extending services to the underserved or the poor who live-in Low-Income Areas (LIAs). The increasing urbanization and rapid growth of LIAs within urban centres adds to utility pressure to extend services to these areas. The Pro-poor Water and Sanitation Services Guideline has been developed to support utilities in creating/bringing a paradigm shift in their focus to LIAs. Whilst most Water Service Providers acknowledge the importance of improving and extending services to underserved areas, current organizational structures and capacities, as well as, knowledge level at the utilities still need strengthening to tackle the challenges and secure sustainable services for the poor. The provision of water services to low-income customers also requires a clear strategy which is context specific.

Appreciating that access to water and sanitation services in urban areas is highly unequal and unfair, the situation will continue unless deliberate actions are taken to address the same. The Regulator, for the third year, has continued to assess utility efforts with respect to improving services in these marginalized areas. Ensuing from the development of the guideline, the tool has been further refined to put more emphasis to impact rather than process. The following are the four dimensions assessed with their corresponding weights.

- **Governance (30%)**: The sub-indicator has three components namely: Adoption of a pro-poor policy; establishment of a pro-poor unit; Board representation/ constitution
- **Access and service levels (30%)**: Level of access (water); Level of access (sanitation); Growth in access over time; Service levels with focus on rationing programmes
- **Planning (20%)**: Availability of LIAs specific plans (development and implementation); Mapping (Baseline and regular updating); Pro-poor business model
- **Financing (20%)**: LIA budget drawn from the plan; Resource provision (disbursements) vis a vis budget; Equitable allocation of financing

For the reporting period 2018/19 a total of 52 utilities submitted complete data on their pro-poor performance compared to 36 utilities in the previous period, a clear indication that utilities are increasingly prioritizing service inequalities within their jurisdictions. The Pro-poor Water and Sanitation Services Guideline developed with the support of the Water and Sanitation for the Urban Poor (WSUP), seeks to explain the broader picture of how utilities should operate to meet their objective of universal coverage, as well as, providing guidance on the appropriate mix of service delivery options with the aim of streamlining operations in the LIAs. Figure 3.24 presents the aggregated performance in Pro-poor parameters for the 52 utilities.

Figure 3.24: Performance in Pro-poor Parameters



In the current period, the best performing utility for the second year in a row is Nakuru with score of 87% while Nol Turesh Loitokitock with a score of 3% was the least performing. On the basis of aggregated performance of the utilities at sub-indicator level, Impact was the best performed at 49% followed by Governance and Planning at 36% and 34% respectively. Financing was the least performed at 29%. It is expected that improved governance, planning and resource allocation will improve utility performance leading to greater impact.

3.5.5 Governance Assessment

Good governance of the water sector remains a priority at national level and county level in the quest to ensure the progressive realisation of the right to water and sanitation.

For the fourth year, WASREB continued to implement the governance assessment tool to measure utility adherence to national governance standards. The year 2018/19 being the first year after elections, continued to witness a lot of dynamics in many WSPs characterized by abrupt changes in leadership and management. Arising from the changes in utility leadership there was an attendant need for enhancement of the capacity.

Challenges also continued to be faced in the implementation of the Water Act 2016 with devolved units yet to appreciate the place of national standards, shared monitoring and improving enforcement outcomes in the Water Service Providers. The goal of governance assessment is to entrench good practices with the aim of ensuring efficiency in service provision. The six sub-indicators of the tool and the inherent challenges in these areas are enumerated below:

a) Utility Oversight and Supervision

The challenge in this area remains:

- Maintaining the appointment of board of directors as open and competitive so as to have the right calibre of professionals meritoriously appointed to the board of directors to offer oversight and strategic vision;
- Improving on the role of the general meeting as a useful governance tool to foster improved performance by the board of directors;
- Exploiting the dual role of constitutional functional owner and main shareholder by the County Government to improve performance by sheltering from short term political interests and tempering with the vision to create a well governed efficient and effective autonomous service providers.

b) Information and Control Systems

This parameter looks at transparency in operational functions and compliance to set organisational systems. The main item is whether the utility prepares a budget based on the approved tariff and conditions and whether the annual stakeholder forum is effectively held and which issues are laid before the citizenry in the forum. From the analysis, this is a weak area in the utilities thus needs improvement.

c) Financial Management

This parameter monitors whether the utility efficiently complies to financial rules and regulations. From the analysis this remains a weak area for many WSPs. The use of the internal audit system

needs to be strengthened by the management and board of directors. Similarly, the fact that a utility does not apply for a tariff adjustment due to local county factors, has ensured that this area remains a challenge in the vision to create commercially viable water service provision.

d) Service Standards

This parameter mainly focuses on customer service and complaints resolution. It is affected greatly by the quality of the infrastructure provided, competence of the personnel in understanding their mandate and the culture of the utility. The role of the County Government as function holders and a shareholder in setting the ethical tone in service delivery in the whole county, will foster adherence to the service standards of any utility.

e) Human Resources

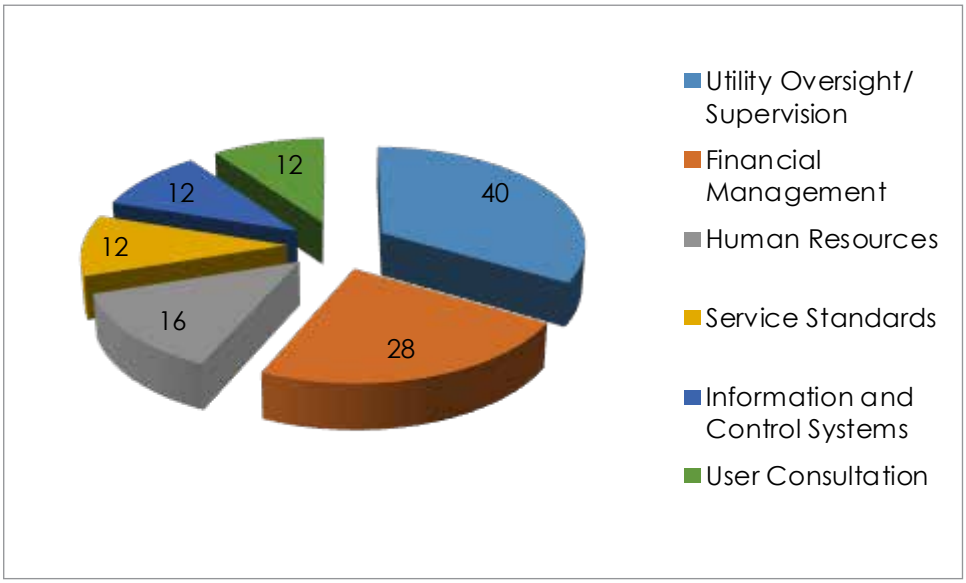
The technical competence criteria for WSPs is set in LN 137 of 2012 and utilities are required to have Human Resource Policy that foster efficiency, ensure fairness and equity. This is an ongoing challenge in most utilities and especially driving a performance-based employment culture in creating a viable utility. The Regulator has developed the Model Human Resources Guideline for the utilities coupled with the licensing process is expected to lead to better performance in this aspect.

f) User Consultation

This parameter measures the participation of the local community in the decision-making process and this is a crucial issue in the provision of water services, as it gets buy in on investment decisions, catchment protection, infrastructure protection, prevention of illegal connections and prompt payment of water bills. It also enables the utility to project its role in the community as an important player committed to improving the wellbeing of the community. Unfortunately, this parameter has also fallen victim to the election cycle.

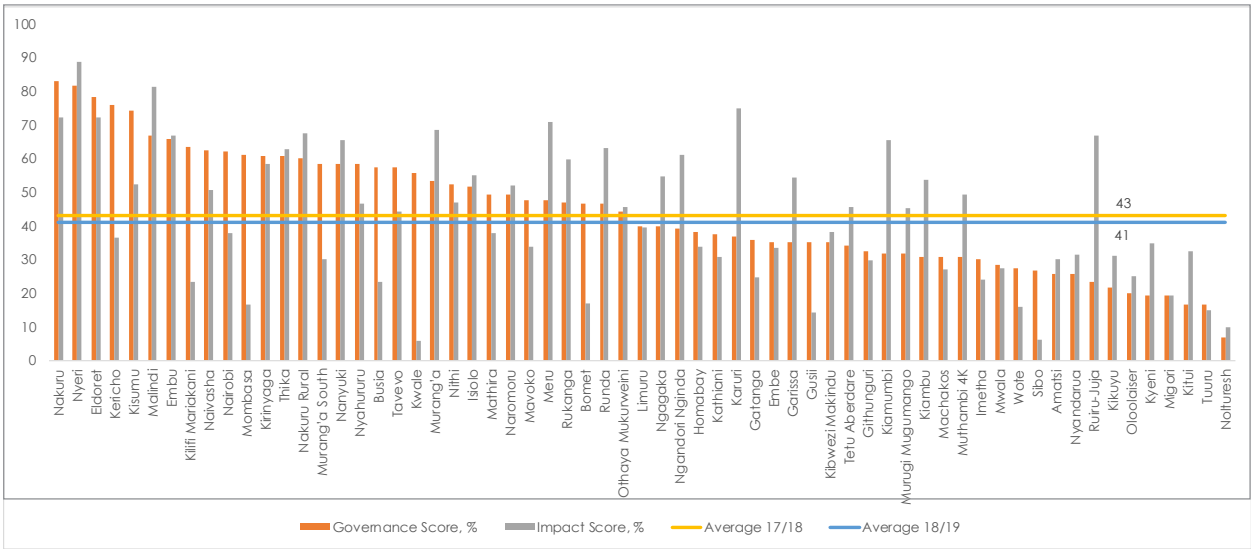
The six sub-indicators have been allocated different weights with utility Oversight and Financial Management allocated the highest weights (Fig. 3.25)

Figure: 3.25: Weights of Water Governance Sub- Indicators



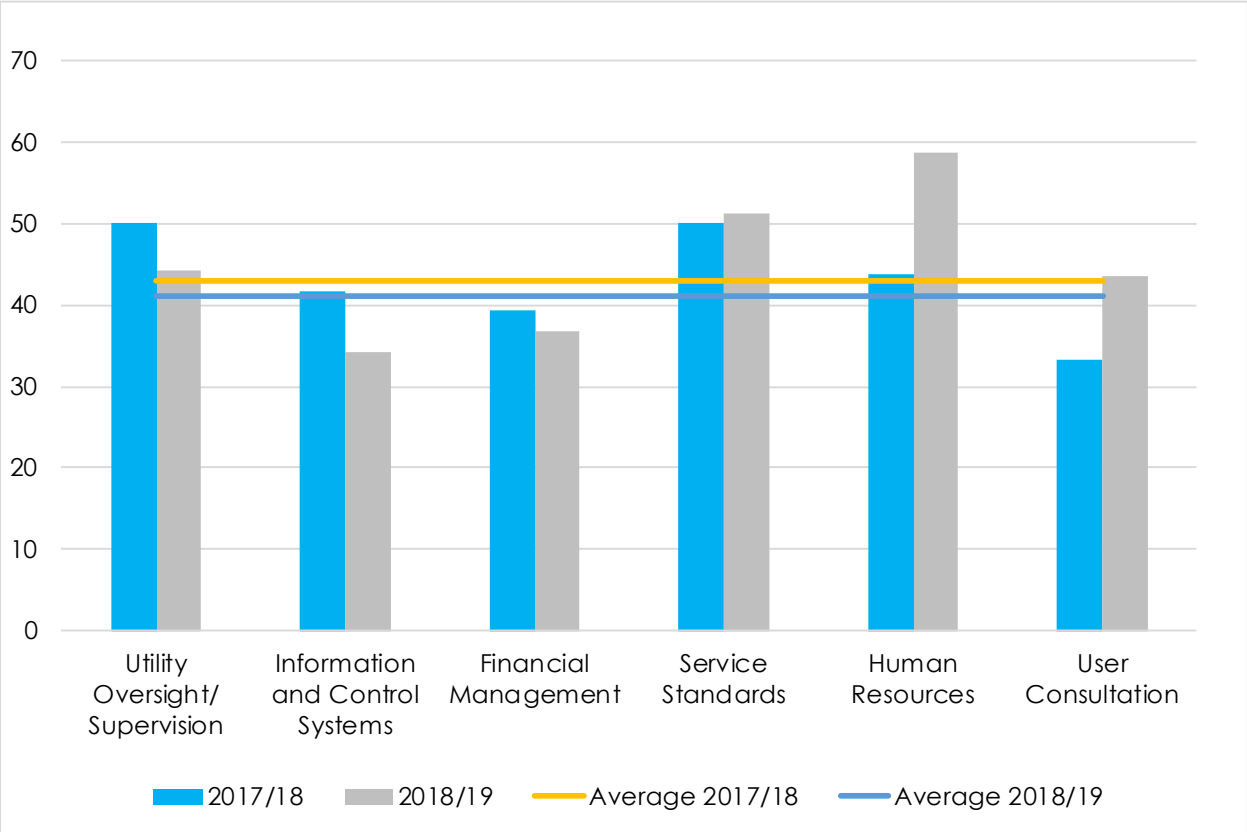
Governance assessment in the current period targeted all utility size categories. However, only 70 representing 80% reported. The performance of these 70 utilities compared to the technical performance is provided in Figure 3.26. This figure does not show Gatamathi, Gatundu, Kahuti, Lodwar, Narok, Kakamega and Nzoia WSPs due to non-compliance.

Figure 3.26: Governance Score Vs KPIs Score, %



A comparison of the six dimensions over the two reporting periods is provided in Figure 3.26. The figure shows a decline in performance on the three foundational parameters namely Utility Oversight, Financial Management and Information and Control Systems. These three sub-indicators carry two thirds of the total weight and are meant to build firm structures and systems within the utility which should subsequently translate to improved performance in the other areas.

Figure 3.27: Governance Performance Comparison



3.5.6 Creditworthiness Analysis

This section provides a snapshot of indicative creditworthiness of selected utilities based on their operational and financial performance for the period 2018/19. For ease of reference, the well-known rating symbols (AAA, BB, etc.) have been used for the credit worthiness index. The Social- Economic and Governance indicators have not been used in this assessment. The analysis presented in this report is based on the financial and operational data for the 2018/2019 financial year as reported in WARIS and the unaudited financial statements for 2018/19.

The index is calculated from 23 weighted indicators outlined in Annex 7.

Table 3.10: CWI 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 out of which 27 scored BB and above, an improvement from last year where only 25 attained this level.

Table 3.11: CWI Performance Summary

Score	>85	71 to 85	61 to 70	51 to 60	41 to 50	31 to 40	≤ 30
Number of Utilities	0	0	5	5	17	9	5
Rating	AAA	AA	A	BBB	BB	B	No Rating

The performance of each the 41 utilities assessed including performance in the previous period is presented in Table 3.12.

Table 3.12: Creditworthiness Index

Utility	2018-19		2017-18		Change in Score
Embu	69	A	68	A	1
Nyeri	67	A	57	BBB	10
Nakuru	63	A	51	BB	12
Ruiru Juja	63	A	67	A	-4
Murang'a	61	BBB	72	AA	-11
Nairobi City	53	BBB	38	B	16
Mavoko	53	BBB	44	BB	9
Gatundu	52	BBB	50	BB	2
Othaya Mukurweni	52	BBB	44	BB	8
Kakamega Busia	51	BBB	45	BB	6
Meru	50	BB	51	BBB	-1
Eldoret	49	BB	49	BB	0
Kikuyu	48	BB	52	BBB	-4
Kisumu	48	BB	56	BBB	-8
Thika	47	BB	51	BBB	-4
Limuru	47	BB	44	BB	3
Kibwezi Makindu	45	BB	39	B	6
Garissa	45	BB	41	B	4
Nzoia	45	BB	59	BBB	-14
Mathira	44	BB	64	A	-20
Kiambu	44	BB	32	B	12
Narok	44	BB	48	BB	-4
Lodwar	43	BB	46	BB	-3
Nanyuki	42	BB	53	BBB	-11
Malindi	41	BB	31	B	10
Naivasha	41	BB	51	BBB	-10
Isiolo	41	BB	39	B	2
Sibo	39	B	29	NO RATING	10
Mombasa	38	B	39	B	0
Machakos	38	B	40	B	-2
Kirinyaga	36	B	51	BB	-15
Nyahururu	36	B	51	BB	-15
Gusii	33	B	36	B	-4
Kitui	33	B	35	B	-2
Oloolaiser	32	B	34	B	-2
Murang'a South	32	B	43	BB	-11
Tavevo	30	NO RATING	28	NO RATING	2
Kericho	29	NO RATING	37	B	-8
Nakuru Rural	28	NO RATING	47	BB	-19
Kilifi Mariakani	28	NO RATING	29	NO RATING	-1
Kwale	23	NO RATING	24	NO RATING	-1

The analysis was also carried out in terms of the most improved/ declined in the reporting period. Nairobi was the most improved having moved from a "B" to "BBB". On the other hand, the worst decline was recorded by Mathira with a drop from "A" to "BB". The results are presented in the tables below.

Table 3.13: Improvers

TOP IMPROVERS					
Utility	2018/19		2017/18		Change in Score
	Total Score	Rating	Total Score	Rating	
Nairobi	53	BBB	38	B	16
Nakuru Urban	63	A	51	BB	12
Kiambu	44	BB	32	B	12
Malindi	41	BB	31	B	10
Sibo	39	B	29	NO RATING	10

Table 3.14: Bottom Losers

BOTTOM LOSERS					
Utility	2018/19		2017/18		Change in Score
	Total Score	Rating	Total Score	Rating	
Mathira	44	BB	64	A	-20
Nakuru Rural	28	NO RATING	47	BB	-19
Nyahururu	36	B	51	BB	-15
Kirinyaga	36	B	51	BB	-15
Nzoia	45	BB	59	BBB	-14

CHAPTER 4

PROGRESSION OF WATER SERVICES IN COUNTIES

Counties must lead the way in advancing Access to Services

The Constitution of Kenya seeks to advance Kenya's democratic space by establishing and entrenching devolution. Counties therefore have a mandate to ensure the participation of communities in governance at the local level.

In advancing the progressive realization of this right, synergy is required from various players at policy, regulatory and county levels. The National Government has set a target of ensuring water and improved sanitation to all by the year 2030. Since the provision of water services is a devolved function, the responsibility of ensuring efficient and economical water services delivery is allocated to County governments. In furtherance of these objectives, the constitution expects both levels of government to take policy, legislative and other measures, to ensure that these rights are progressively realized (Art. 21(1)). Collaboration between the two levels of government is therefore critical in ensuring the realization of the progressive right to water and sanitation services.

> The constitution makes general provisions relating to the Bill of Rights to "preserve the dignity of individuals and communities and to promote social justice". Under the Bill of Rights, every person has a right to clean and safe water in adequate quantities.

4.1 Situation of Water Services in Counties

The population in the service area of the regulated utilities is 23.4 million out of the total national population of 47.6 million. This translates into 49.1% of the population which is an increase of five percentage points from the figure of 44.2% reported during the previous period. This may be explained by increased migration to the urban areas mainly as a result of the stimulus created by devolution. In the past the focus of regulation has largely been on urban utilities which are considered to be commercially viable.

Despite this attention on the urban areas, it shall be noted that counties have obligations under section 94(2) of the Water Act 2016 to put in place 'measures for provision of water services to rural areas which are considered not to be commercially viable'. In advancing this responsibility, WASREB in consultation with counties has already developed guidelines for water and sanitation services provision in rural and underserved areas (Guideline on Provision of Water Services in Rural and Underserved Areas in Kenya) intended to assist counties spearhead progressive road maps towards meeting this obligation. Piloting of this Guideline in five counties that expressed interest namely Kisii, Laikipia, Lamu, Mandera and Migori is ongoing. The selection was based on an expression of interest solicited from counties and rural WSPs. It is only through uniform standards that the government shall be able to progressively realize the rights to water and sanitation as envisaged in the Constitution.

WASREB is convinced that with the support and collaboration of County Governments, all forms of service provision should be formalized through regulation. This way, consumers in urban, as well as, those in rural areas including areas considered marginalized, shall systematically and gradually be brought under service provision that is in line with national standards.

4.2 Provision of Subsidies for O+M Costs

There is general acknowledgement in the sector that not all utilities are expected to be commercially viable in the first instance. Commercial viability is gained over time and the pricing regime during tariff setting appreciates this scenario.

During the reporting period, only 21 counties (48%) were able to meet their O+M costs on the basis of data from 30 utilities within these counties. This implies that counties still have a very big role to play in nurturing their utilities into commercially viable entities. It is worth noting that four counties (Tana River, Mandera, Marsabit and Samburu) had no data submitted by their utilities, a situation that counters the tracking of the progressive realization of the rights to water and sanitation.

The threshold for commercial viability is the utilities' ability to meet their O+M costs on the minimum prior to being able to set aside resources for debt service and ultimately reach full cost recovery through meeting their investment needs from internally generated funds. In determining these cost components, the Regulator undertakes due diligence in the analysis of tariff applications by the utilities and only justified costs are allowed. To be able to do this, full disclosures of expenditures, as well as, revenues is required from the utilities and the counties.

Where, after this analysis the O+M cost is not met, the Regulator recommends payment of specific subsidies that are targeted at specific activities within the utility. This happens while levels of inefficiencies have been reasonably addressed.

It is a well-known fact that it is not sustainable for service provision entities to perpetually rely on state subsidies in order to meet their primary costs. The water services sector should have utilities that in the short term are able to cover their O+M costs and progressively move to full cost recovery, if gains realized so far with sector reforms are to be sustained. Whereas it is appreciated that there are certain situations where utilities in the short term must rely on state subsidies to meet their O+M costs, this however is not tenable as evidenced by the continuous failure by some County Governments to meet their subsidy obligations despite agreeing to do so in the tariff review process.

The water service sector has all along been characterised and accustomed to working within a framework of clear performance targets. It is incumbent upon respective County Governments in their oversight function to ensure that their utilities sustain this momentum through the existing governance and performance frameworks. This shall ensure that only deserving cases receive targeted subsidies after procedurally justifying tariffs. In addition, the concerned County Governments should also always meet their subsidy obligations where expressly agreed upon through justified tariff approval. To this end, counties need to understand that service provision is their constitutional mandate only that they have delegated that responsibility to their autonomous special purpose vehicles in the name of the utilities.

Besides counties providing the targeted subsidies where applicable as recommended by WASREB, they are also expected to work with their respective utilities in resource allocation considering that they are responsible for service planning within their areas. These resources could either be those generated internally or allocated from the county revenues.

4.3 Counties Data Analysis

County data is analysed based on submissions by the regulated utilities only (both public and private) in the respective counties. These formal utilities are not uniformly distributed across the various counties and they therefore exhibit a diversity of characteristics, including their categories, numbers, capacities among others, in each of the counties. In future, the analysis shall also include direct submissions of rural water data by the counties themselves.

Table 4.1: 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	1,208,333	Mombasa	99	46	74	5	48	94 Mombasa: 94	95	50	8	97	9	70	133	118
002	Kwale	866,820	Kwale	39	56	84	10	33	92 Kwale: 92	77	64	10	84	0	39	105	80
003	Kilifi	1,453,787	Kilifi Mariakani Malindi	91	57	80	16	37	95 Kilifi Mariakani: 92 Malindi: 97	94	42	9	96	0	65	110	96
004	TanaRiver	315,943	Tana River	51	n.d.	n.d.	n.d.	n.d.	n.d. Tana River: n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
005	Lamu	143,920	Lamu	19	84	93	10	29	87 Lamu: 87	89	46	18	100	0	66	124	94
006	Taita-Taveta	340,671	Tavevo	100	21	93	14	25	97 Tavevo: 97	96	44	13	100	0	55	96	87
007	Garissa	841,353	Garissa	21	64	16	22	30	129 Garissa: 129	45	45	12	66	6	47	73	93
008	Wajir	781,263	Wajir	3	63	51	n.c.d	429	503 Wajir: 117	100	30	179	100	0	57	25	n.d.
009	Mandera	867,457	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	459,785	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	268,002	Isiolo	25	77	93	15	50	104 Isiolo: 104	89	30	7	100	12	50	70	71
012	Meru	1,545,714	Meru Imetha Tuuru	43	43	93	18	50	118 Meru: 119 Imetha: 110 Tuuru: 132	99	44	12	92	2	40	64	66
013	Tharaka-Nithi	393,177	Nithi Murugi Mugumango Muthambi 4K	39	78	68	24	49	109 Nithi: 106 Murugi Mugumango: 103 Muthambi 4K: 157	86	45	6	100	0	16	25	24
014	Embu	608,599	Embu Ngandori Nginda Ngagaka Kyeni Embe	84	80	93	23	42	126 Embu: 131 Ngandori Nginda: 121 Ngagaka: 116 Kyeni: 83 Embe: 111	92	43	5	98	6	35	51	58
015	Kitui	1,136,187	Kitui Kiambere Mwingi	97	35	93	13	26	59 Kitui: 55 Kiambere Mwingi: 65	96	57	13	90	0	79	175	96
016	Machakos	1,421,932	Mavoko Machakos Yatta Mwala Matungulu Kangundo Kathiani	69	33	75	7	39	92 Mavoko: 81 Machakos: 105 Yatta: 111 Mwala: 78 Matungulu Kangundo: 88 Kathiani: 131	89	36	9	98	11	147	211	179
017	Makueni	987,653	Kibwezi Makindu Wote Mbooni	48	31	80	13	43	93 Kibwezi Makindu: 101 Wote: 80 Mbooni: 88	92				0	80	110	96
018	Nyandarua	638,289	Nyandarua OlKalou Ndaragwa	29	29	53	16	51	128 Nyandarua: 106 OlKalou: 180 Ndaragwa: 82	94	41	15	84	0	61	79	81
019	Nyeri	759,164	Nyeri Othaya Mukurweni Mathira Tetu Aberdare Naromoru	79	69	90	23	46	125 Nyeri: 141 Othaya Mukurweni: 112 Mathira: 103 Tetu Aberdare: 106 Naromoru: 103	96	36	6	95	10	40	54	64
020	Kirinyaga	610,411	Kirinyaga Rukanga	79	37	93	17	53	104 Kirinyaga: 104 Rukanga: 110	82	60	7	99	0	28	66	60
021	Murang'a	1,056,640	Murang'a South Kahuti Murang'a Gatamathi Gatanga	100	48	91	21	53	107 Murang'a South: 106 Kahuti: 113 Murang'a: 110 Gatamathi: 99 Gatanga: 95	87	52	6	97	2	32	61	60
022	Kiambu	2,417,735	Thika Gatundu Ruiru-Juja Kikuyu Kiambu Limuru Karuri Githunguri Kiamumbi Tatu City	76	67	92	17	38	120 Thika: 138 Gatundu: 102 Ruiru-Juja: 130 Kikuyu: 100 Kiambu: 97 Limuru: 90 Karuri: 98 Githunguri: 88 Kiamumbi: 118 Tatu City: 158	90	32	6	97	10	45	59	68
023	Turkana	926,976	Lodwar	8	59	66	19	45	106 Lodwar: 106	94	38	10	99	0	19	31	33
024	West Pokot	621,241	Kapenguria	14	19	91	n.c.d	44	54 Kapenguria: 54	56	56	29	50	0	55	125	63
025	Samburu	310,327	Samburu	16	n.d.	n.d.	n.d.	n.d.	n.d. Samburu: n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
026	Trans-Nzoia	990,341	Nzoia	29	85	88	n.c.d.	39	116 Nzoia: 116	84	47	6	57	36	43	77	85
027	Uasin Gishu	1,163,186	Eldoret	35	89	93	21	35	116 Eldoret: 116	109	43	4	100	32	48	71	76
028	Elgeiyo Marakwet	454,480	Iten Tambach	13	50	70	16	46	94 Iten Tambach: 94	100	32	13	84	0	28	39	35
029	Nandi	885,711	Kapsabet Nandi Tachasis	11	76	68	4	54	65 Kapsabet Nandi: 64 Tachasis: 107	100	40	10	98	2	50	80	50
030	Baringo	666,763	Kirandich Chemususu	17	62	52	3	34	46 Kirandich: 38 Chemususu: 72	97	58	9	54	0	46	109	48
031	Laikipia	518,560	Nanyuki Nyahururu	41	85	93	23	48	106 Nanyuki: 109 Nyahururu: 103	90	36	8	100	38	67	100	100
032	Nakuru	2,162,202	Nakuru Nakuru Rural Naivasha	58	79	93	15	36	109 Nakuru: 111 Nakuru Rural: 102 Naivasha: 106	97	42	6	89	15	61	100	105
033	Narok	1,157,873	Narok	8	45	63	20	37	94 Narok: 94	82	28	18	83	0	94	114	103
034	Kajiado	1,117,840	Oloolaiser Nol Turesh Loitokitok Namanga	56	42	62	17	43	101 Oloolaiser: 85 Nol Turesh Loitokitok: n.c.d. Namanga: 343	87	61	13	86	0	35	85	83
035	Kericho	901,777	Kericho	44	70	92	17	41	81 Kericho: 81	93	49	8	99	8	39	118	81
036	Bomet	875,689	Bomet	15	60	89	12	30	63 Bomet: 63	63	53	9	90	0	44	92	51
037	Kakamega	1,867,579	Kakamega	22	91	93	21	58	102 Kakamega: 102	112	36	5	99	11	52	69	71
038	Vihiga	590,013	Amatsi	45	11	93	13	32	60 Amatsi: 60	83	30	20	61	0	49	70	42
039	Bungoma	1,670,570	Nzoia	13	85	88	n.c.d.	39	116 Nzoia: 116	84	47	6	57	36	43	77	85
040	Busia	893,681	Busia	35	35	91	7	n.d.	n.d. Busia: n.d.	82	n.c.d.	8	72	2	n.d.	n.d.	n.c.d.
041	Siaya	993,183	Sibo	47	47	89	n.c.d	29	96 Sibo: 96	59	67	11	74	0	36	98	86
042	Kisumu	1,155,574	Kisumu	40	72	93	24	35	110 Kisumu: 110	84	31	6	100	48	83	112	118
043	Homabay	1,131,950	Homabay	17	43	71	12	23	64 Homabay: 64	68	54	21	89	0	113	227	113
044	Migori	1,116,436	Migori Nyasare	28	27	48	9	23	46 Migori: 40 Nyasare: 111	78	41	12	90	0	84	124	56
045	Kisii	1,266,860	Gusii	63	33	93	n.c.d	48	79 Gusii: 79	89	57	8	44	13	103	224	172
046	Nyamira	605,576	Gusii	33	33	93	n.c.d	48	79 Gusii: 79	89	57	8	44	13	103	224	172
047	Nairobi	4,397,073	Nairobi Runda	100	77	91	6	64	105 Nairobi: 105 Runda: 107	94	50	6	99	51	51	98	95
	National	47,564,296		53.3	58.4	96.0	14.0	50.4	105	92.2	42.7	6.9	94.4	16.5	84.4	139	135

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

The distribution of the number of utilities in the counties is outlined in Table 4.2 and includes those that did not submit their data even after intensive follow up by WASREB.

Table 4.2: Distribution of Number of Water Utilities by Counties

Number of Utilities	1	2	3	5	6	10	95
Number of Counties	27	8	7	3	1	1	**47**

All the forty-seven (47) counties have at least a regulated utility although they all vary in their different levels of compliance. Twenty-seven (27) counties have one regulated utility each. Like in the past periods, four counties are served by two cross-county utilities. These are Nzoia (serving Bungoma and Trans Nzoia) and Gusii (serving Kisii and Nyamira). Kiambu county had the highest number of regulated utilities at ten (10) (eight public and two private), followed by Machakos at six.

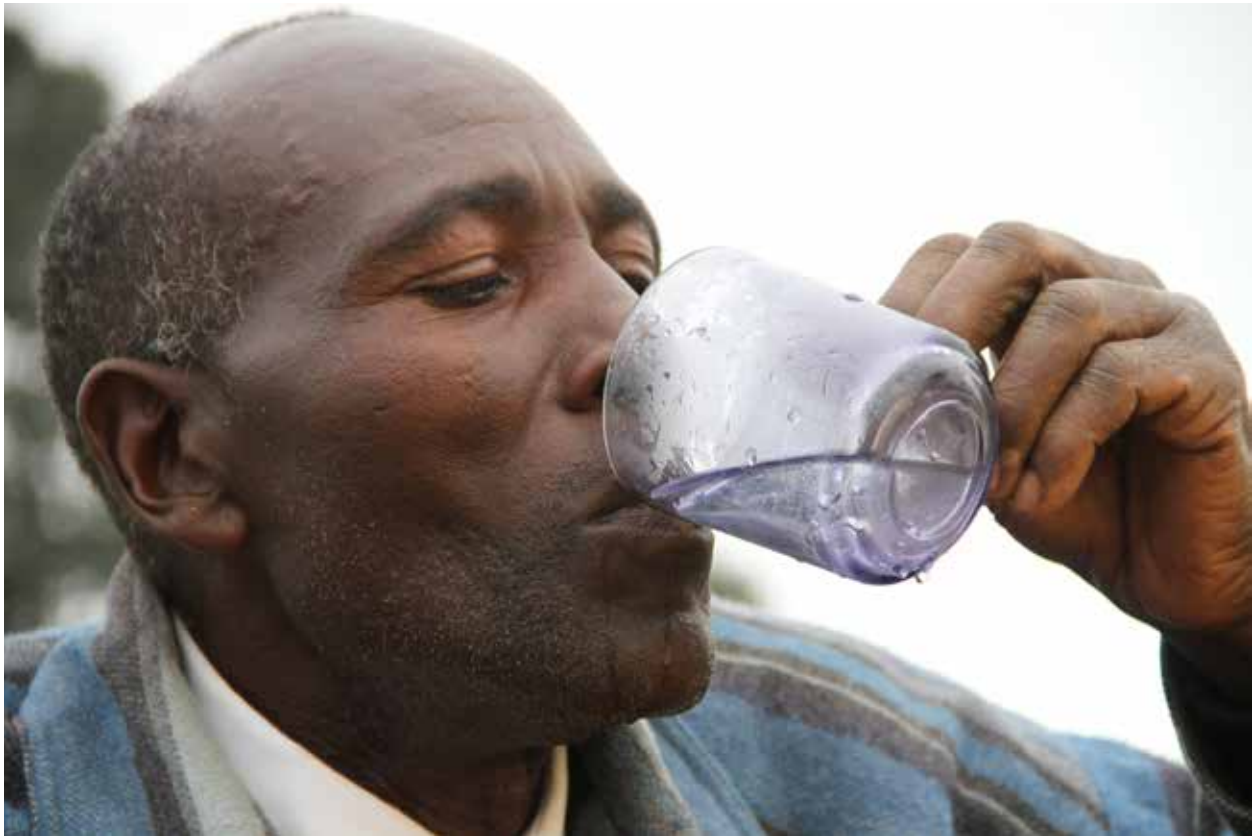
4.3.1 Access to Water Services

During this reporting period, the proportion of county population within service areas of the regulated utilities continued to be almost the same with the previous period with lows of 3% for Wajir, Turkana and Narok both at 8% while on the other hand Mombasa, Murang'a and Nairobi have all the county population within the areas of WSPs.

Access to water services is a key dimension under the right to water, regrettably only seven counties (16%), down from eight, achieved at least 80% which is the acceptable level of performance in this indicator. They were led by Uasin Gishu at 89% followed by Bungoma, Laikipia and Trans Nzoia all at 85%. Three counties namely; Vihiga at 11% (decline from 16%), West Pokot at 19% (improvement from 11%) and Taita Taveta at 21% (improvement from 18%) continued to be at the bottom of this indicator from the previous period. The case of Vihiga is particularly worrying considering it regressed by five percentage points between the two periods.

A majority of the counties (84%) therefore, have a long way to go in order to achieve the acceptable level on this indicator. Under the human right framework, access is the primary indicator for the state to measure the progressive realization of the right to water.

While it is noted that the counties indeed invested on water projects across their jurisdictions, in certain cases these have not been accounted for in this report simply because they were outside the purview of regulation. It is for this reason that counties are expected to regularize services within areas currently not covered by utilities to allow for accountability and tracking of progress. This shall be better undertaken using the framework established in the Guideline for Provision of Water Services in Rural and Underserved Areas, which is to be implemented by the counties in collaboration with WASREB among other players.



4.3.2 Sewered Sanitation Coverage

Sewered sanitation in Kenya has remained perennially low largely because of inadequate prioritization by the key actors and also buttressed by the high capital investment requirements. Devolution on the other hand, has led to increased rate of urbanization which calls for counties to rethink their sanitation investments seriously, if they are to adequately address the needs of this growing population. This is because of the potential risks this portends to public health and environment if not adequately managed. It calls for an inclusive approach that combines both sewered and non-sewered approaches.

While it is noted that there are several sewerage systems that were in the process of being developed during the reporting period, it is of concern that some of those that have recently been developed have not been reported on by the concerned utilities. These included Kitui and Bomet counties for the second year in a row. It is imperative that utilities in these counties should subsequently report on their sewer system operations even though they have few connections. The counties that have sewer projects currently under development include Baringo, Kirinyaga, Mandera, Marsabit, Nyandarua, Tharaka-Nithi, Kajiado and West Pokot among others. Beyond these, the counties are challenged to explore and mobilize resources to also put up non-sewered sanitation systems in their jurisdictions to enhance access.

Where the counties are directly operating sewer system, they have been advised during utilities licensing processes to hand them over to their respective utilities for proper operation and maintenance and accountability for better impact on service provision.

During this period, Nairobi county continued to be the best performer in sewered sanitation coverage at 51% (up from 50%), followed by Kisumu at 48% (down from 49%), Laikipia at 38% (up from 36%), Bungoma and Trans Nzoia at 36% (up from 34%), as well as, Uasin Gishu at 32%.

4.3.3 Reduction of Non-Revenue Water

NRW levels continue to be at unacceptably high levels across all the counties despite resources having been spent in the upstream process of abstraction, treatment and distribution in the service provision chain. This poses a great risk to the extent that it undermines not only the progressive realization of the right to water enshrined in the constitution, but also the operational sustainability of the respective water utilities from the principle of commercialization. The issues of concern are that the reasons contributing to the high levels of NRW are not technical but largely commercial and governance. This means that with minimal resources, these losses can be reduced to acceptable levels. This calls for goodwill from all the actors including staff, utilities, counties and development partners among others.

Regulatory instruments to support NRW management have been in existence now for the last five years, however it seems there is a lot that requires to be done to effectively deal with these high level of loses. In particular, the counties are strongly advised and encouraged to exercise due oversight on their utilities including strengthening enforcement mechanisms in the county water legal framework, if the efforts in place are to yield any encouraging results. WASREB on its part, continues to intensify NRW management efforts through imposing conditions in both licenses and tariffs as one means of institutionalizing NRW management function at respective utilities.

In the reporting period, 14 counties as was in the previous period, recorded water losses in excess of 50% as shown in Table4.3.

Table 4.3: Counties with NRW exceeding 50%

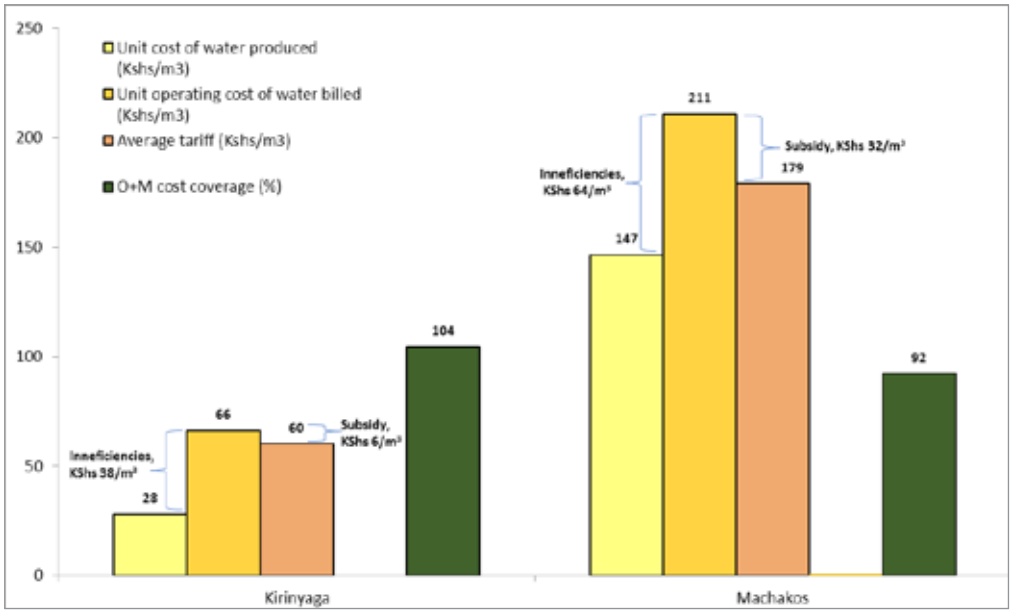
S/N	County	NRW, %	S/N	County	NRW, %
1	Siaya	67	8	Nyamira	57
2	Kwale	64	9	West Pokot	56
3	Kajiado	61	10	Homabay	54
4	Kirinyaga	60	11	Bomet	53
5	Baringo	58	12	Murang'a	52
6	Kitui	57	13	Mombasa	50
7	Kisii	57	14	Nairobi	50

4.3.4 Recovery of O+M costs

O+M costs coverage by utilities is the most critical indicator and criteria for establishing their commercial viability as per the commercial viability standards. This criteria is a measure of a utility's ability to recover costs with the minimum threshold being at least 130% coverage of O+M costs. The driving factor for the threshold is the tariff determination which both the county and the utilities are strongly advised to adhere to especially with respect to their implementation and enforcement, once approved as per the provision of the law. This is because it is through justified tariff determination that counties can have a clear basis for any subsidies. This is important to ensure that subsidies are properly targeted and are linked to the performance of the utility.

During the reporting period, Kirinyaga county recorded the lowest unit cost of water production at Kshs. 28 while Machakos recorded the highest at Kshs. 147. The unit operating cost of water billed was Kshs. 66 for Kirinyaga and Kshs. 211 for Machakos, while average tariff was Kshs. 60 and Kshs. 179 respectively. This means there are per unit inefficiency costs of Kshs. 38 and Kshs. 64 that demand unit subsidies of Kshs. 6 and Kshs 32 for both Kirinyaga and Machakos counties respectively (See Figure 5.1). There is therefore a direct relationship between levels of inefficiencies and demand for operational subsidies that counties must always contend with for their utilities. Otherwise, the concerned counties must proactively oversight their utilities as appropriate, using the governance framework and tools available, if operational inefficiencies are to be addressed to guarantee quality service.

Figure 4.1: Disparities in Operating Environments



4.3.5 Personnel Expenditure as percentage of O+M costs

Staff productivity measured in terms of staff per 1,000 connections has been used as an indicator to measure utility efficiency in the use of staff. This seeks to address under-utilization of staff on account of probable abuse in employment arising from non-adherence to sector standards both in terms of quality and numbers. Further to this, personnel expenditure relative to O+M costs is a yardstick available to contain negligence of other aspects of operations for example, maintenance infrastructure at the expense of paying staff. The benchmarks on this indicator depends on the size of a utility with large utilities expected to benefit from economies of scale having lower proportions.

Just like in the last period, Nairobi county was the worst performing in this indicator at 64% against the sector benchmark of 20%. It was followed by Kakamega at 58%, Nandi at 54% while Murang'a and Kirinyaga had 53%. On the flip side, Migori and Homa Bay were the better performers at 23% followed by Taita Taveta at 25%, Kitui at 26% closely followed by Lamu and Siaya at 29%.

4.4 Progressively Dynamic Issues

The Regulator being the custodian of the country's data on the progressive realization of the right to water and sanitation continues to guide the sector towards improved performance by utilities across the various counties. The Regulator appreciates that meaningful progress can only be realized if the counties being duty bearers, play a leading role in service delivery. County Governments are charged with ensuring coordination and participation of communities in governance at the local level.

Thus, they have a direct role in the establishment and management of structures (utilities) and systems that facilitate the provision of water services. This role includes the provision of resources while on the other hand, demanding accountability and results from the actors.

It is against this background that the Regulator developed and implemented the County Engagement Strategy, an initiative whose objective is to reach out to the counties on their specific but unique needs, with the intention of creating synergies between the two levels of governments. The County Engagement Strategy focuses on enhancing and fast-tracking development and service provision agenda.

In particular, WASREB is concerned with the following issues among others and strongly advises and encourages counties to give special attention to;

- Alignment of the county legal frameworks with the provisions of the Water Act 2016;
- Reduction of Non-Revenue Water, a big proportion which is attributed to governance malpractices including lack of leadership and goodwill by various players;
- Monitoring of utilities through adequate oversight through implementation of robust performance management frameworks;
- Coordinated investment planning by ensuring utility needs are integrated in the countywide Investment plan;
- Formalization of all forms of water service provision within counties so as to guarantee the health and safety of consumers. This shall be guided by the Guideline for Provision of Water Services in Rural and Underserved Areas; and
- Provision of agreed subsidies to enable utilities to meet their obligations.

CHAPTER 5

CONCLUSION

***"We have not inherited this earth from our forefathers, we have loaned it from our children."* Lester Brown.**

The Time to Act is Now!

The launch of this report 10 years to 2030, signals an important dispensation; we have entered the Vision 2030 and SDG 6 decade and therefore the countdown has begun in earnest. The finish line is close and any action taken must be seen to be pushing us closer to this goal. Despite the separation of roles outlined in the legal mandate, our focus should be seen to converge. In support of this, more emphasis should be put in the areas outlined below.

5.1 Embracing Resilience

Climate change will have far reaching effects on drinking water supplies. Apart from quantity aspects, climate change exacerbates many forms of water pollution. As interventions are being put to address the Impacts of weather variability and climate change, there is need to review resilience of the water supply systems as a means of adaptation and to mitigate these impacts. Further, the sector needs to address the following among others:

- Review policies on water storage and flood control;
- Manage water demand among competing needs and
- Improve operation and maintenance to reduce wastage.

The realities of climate change are here with us and the sector should not be seen to be reactive in its approach but rather, take action in anticipation of these challenges.

5.2 Securing a High Fund Effectiveness

It is appreciated that the gap between the available financial resources for the sector against the investment requirements remains huge. Further, a big proportion of this funding which is currently estimated at more than 90% comes from development partners. This calls for the sector to ensure that investments are well targeted and highly effective. Additionally, the sector policy should ensure that progressively, the funding increases in line with international commitments while increasing the proportion financed through internally generated funds. Under the SDG 6 reporting framework, the commitment is to allocate at least 5% of the annual national budget for water supply, sanitation and hygiene [not less than Kshs. 100 Billion in our case].

5.3 Paying Attention to Non-sewered Sanitation

It is estimated that poor sanitation costs Kenya approximately Kshs. 27 Billion each year. Investments in sanitation therefore, would give high returns quantified both in monetary and non-monetary terms. At the current population of 47.6 million, this is equivalent to USD 6 per person, per year, which is higher than the current investments per capita on water and sanitation combined.

Access to sewerage services has declined over time with the current figure of 17% being lower than the figure reported 10 years ago of 19%. This is mainly due to population increase at a higher rate than that of service expansion, as well as, the rapid urbanization in most of the areas. Some of the factors that have contributed to this state of affairs include:

- Inadequate investment, competing needs for Government – below 1% of GDP and 3% of National Budget
- Sanitation Value chain has been neglected in terms of service delivery and regulation
- Priority has been to water supply – now sanitation component is being imbedded to development plans
- Non targeted investments – greatest impact would be on densely populated urban areas which also happen to be where the low-income populace live
- Inherent institutional weaknesses – overlaps and mandates

To deal with the above challenges, the sector requires conscious efforts in the sanitation sector which include:

- A strong and functional, policy, legal, institutional and regulatory framework;
- A strong regulatory framework to address the full chain of non sewered sanitation;
- Inclusive urban sanitation approach that combines both sewered and non sewered sanitation services
- A holistic strategy/approach in the form of a citywide/county wide inclusive sanitation

5.4 Reducing Water Losses

The progressive realization of the right to water enshrined in the constitution is going to be achieved only with the proactive and effective management of the water losses. This means that all players must deliberately play their roles in concerted ways if any meaningful gains in NRW reduction are to be realized. In particular, there is no other option especially where no significant resources are required to address water losses, apart from people changing their attitude and practices on NRW management. At the current NRW level of 43% and sector turnover of Kshs. 22.15 Billion, the sector is losing approximately Kshs. 8.9 Billion after factoring in the acceptable level of losses. It is therefore evident that NRW starves the sector of the scarce resource which can be harnessed, to significantly improve access levels. In support of this fight, the Regulator is developing an online system for anonymously reporting on NRW with the rallying call of "Operation Okoa Maji".

5.5 Management of Water Resources

As the demand for water services continues to increase, so will the demand for water resources increase. This implies that greater efforts will be required in water resources management and development. This calls for increased coordination in planning and financing, both at the regional and national levels, through a basin management approach that respects natural boundaries, so as to ensure a need-based allocation of the resources. SDG target 6.5 assesses the degree of integrated water resources management implementation with the country reporting a figure below 50% in the last SDG report (2016/17). Therefore increased efforts is required from all actors if sustainable progress is to be realized.

5.6 Enhancing Inclusivity

The current population served by the regulated WSPs is just about 50% implying that the rest of the population is still reliant on services that are not regulated. The Guideline on Water and Sanitation Services in Rural and Underserved Areas in Kenya aims to drive the objective of uniform standards under the rights to water and sanitation. It is therefore incumbent upon the counties and WSPs to ensure implementation of this guideline in order to guarantee the health and safety of consumers by ensuring that operators adhere to standards in terms of quality, cost and customer service.

In furtherance of this obligation, the Regulator in partnership with the counties will require all water system operators to register and obtain licenses for their operations. The initiative has already started in the county of Nairobi.

5.7 Improving Governance

Preservation and enforcement of proper governance standards is crucial to the stability of the sector. Having institutions that are properly run ensures productivity, which in turn contributes progressively to sustainability. Sustainable institutions are more effective in discharging their mandate and are less dependent on subsidies. Thus, it would be in the interest of County Governments to embrace the Regulator's corporate governance standards and actively promote their adherence. WASREB commits to joint monitoring of utilities to ensure they adhere to prescribed service standards through a collaborative framework that facilitates transparency through proper reporting, while making the activities of each player predictable for a more robust sector.

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	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	(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
		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	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	95	88	91
Eldoret	96	96	96
Mombasa	74	74	74
Nakuru	95	96	93
Thika	96	82	87
Kisumu	91	96	93
Nzoia	78	95	88
Nyeri	96	96	96
Kakamega	94	96	93
Murang'a South	80	96	90
Gatundu	91	96	93
Ruiru-Juja	94	96	93
Embu	96	96	93
Kericho	96	90	92
Kirinyaga	95	94	93
Kilifi Mariakani	78	77	78
Othaya Mukurweni	92	82	86
Malindi	96	78	85
Mathira	96	64	77
Nakuru Rural	95	96	95
Tavevo	95	92	93
Kahuti	96	96	93
Gusii	96	96	93
Nanyuki	96	96	96
Murang'a	96	96	93
Kikuyu	49	73	63
Nyahururu	96	96	93
Meru	96	96	96
Garissa	39	-	16
Kwale	82	85	84
Bomet	96	85	89
Ngandori Nginda	96	96	n.c.d.
Kitui	95	96	93
Sibo	87	91	89
Mavoko	94	38	60
Tetu Aberdare	95	96	93
Machakos	95	96	93
Oloolaiser	96	46	66
Nithi	88	89	89
Gatamathi	92	77	83
Ngagaka	90	94	92
Isiolo	96	96	93
Imetha	94	-	38
Kiambu	96	96	96

Utility	DWQ - Residual Chlorine (%)	DWQ - Bacteriological Quality (%)	DWQ (%)
Limuru	96	93	93
Karuri	93	85	88
Kyeni	-	-	-
Gatanga	86	52	65
Githunguri	83	86	85
Amatsi	95	96	93
Lodwar	72	62	66
Tuuru	-	94	56
Nol Turesh Loitokitok	96	0	39
Homabay	96	54	71
Kibwezi Makindu	96	96	93
Busia	95	88	91
Narok	95	42	63
Embe	96	78	85
Migori	-	-	-
Naivasha	96	92	93
Kapsabet Nandi	62	-	25
Kirandich	94	43	63
Kiambere Mwingi	96	93	93
Chemususu	88	24	50
Murugi Mugumango	-	-	-
Lamu	96	96	93
Iten Tambach	90	56	70
Nyandarua	82	38	56
Ol Kalou	n.d.	n.d.	n.d.
Muthambi 4K	-	-	-
Kapenguria	96	89	91
Wote	83	45	60
Rukanga	93	93	93
Namanga	n.d.	n.d.	n.d.
Ndaragwa	42	78	63
Naromoru	-	-	-
Yatta	77	44	57
Mwala	96	96	93
Matungulu Kangundo	67	-	27
Kiamumbi	65	96	83
Kathiani	96	56	72
Mbooni	36	-	14
Wajir	72	37	51
Nyasare	69	96	85
Runda	96	96	93
Tachasis	95	94	93
Tatu City	92	67	77

ANNEX 5: GOVERNANCE ASSESSMENT

UTILITY	GOVERNANCE PARAMETERS												Totals		% Level of Governance	
	Utility Oversight/ Supervision		Information and Control Systems		Financial Management		Service Standards		Human Resources		User Consultation					
	40		12		28		12		16		12		120		100%	
	17/18	18/19	17/18	18/19	17/18	18/19	17/18	18/19	17/18	18/19	17/18	18/19	17/18	18/19	17/18	18/19
Nakuru	35	39	8	8	21	24	6	11	10	16	2	1	82	99	68	**83**
Nyeri	32	38	12	4	21	20	12	12	8	12	12	12	97	98	81	**82**
Eldoret	33	40	4	4	20	20	6	11	16	7	6	12	85	94	71	**78**
Kericho	38	36	8	8	17	11	6	12	12	12	4	12	85	91	71	**76**
Kisumu	34	36	8	8	18	18	12	7	12	8	10	12	94	89	78	**74**
Malindi	18	26	12	8	18	16	7	7	5	13	12	10	72	80	60	**67**
Embu	35	30	4	4	10	12	7	11	6	12	10	10	72	79	60	**66**
Mombasa	23	28	8	8	7	13	8	7	8	7	4	10	58	73	48	**61**
Kilifi Mariakani	29	28	12	8	16	8	12	12	5	8	2	12	76	76	63	**63**
Naivasha	22	30	4	4	14	13	7	11	2	7	6	10	55	75	46	**63**
Nairobi	24	24	4	4	14	18	8	8	6	16	4	4	60	74	50	**62**
Thika	19	17	8	8	19	19	8	7	9	12	2	10	65	73	54	**61**
Kirinyaga	29	33	8	0	17	8	5	6	8	16	10	10	77	73	64	**61**
Nakuru Rural	31	26	4	8	12	11	5	7	7	12	2	8	61	72	51	**60**
Nyahururu	40	32	8	4	6	9	6	7	6	8	2	10	68	70	57	**58**
Nanyuki	26	33	4	0	10	8	6	7	13	14	8	8	67	70	56	**58**
Murang'a South	30	27	8	4	10	9	6	7	10	13	6	10	70	70	58	**58**
Tavevo	13	21	8	8	18	15	5	9	8	8	2	8	54	69	45	**58**
Busia	9	32	0	4	6	7	1	5	0	13	0	8	16	69	13	**58**
Kwale	20	25	8	8	17	7	5	3	1	12	0	12	51	67	43	**56**
Murang'a	22	23	8	4	10	8	6	7	9	12	6	10	61	64	51	**53**
Nithi	17	23	4	8	11	4	4	4	6	16	2	8	44	63	37	**53**
Isiolo	29	15	0	4	10	12	6	11	6	12	2	8	53	62	44	**52**
Mathira	27	23	4	4	10	7	9	11	12	8	10	6	72	59	60	**49**
Naromoru	n/a	29	n/a	4	n/a	5	n/a	5	n/a	12	n/a	4	0	59	n/a	**49**
Meru	26	12	4	4	8	12	7	11	8	12	10	6	63	57	53	**48**
Mavoko	21	20	0	0	10	15	6	4	12	16	2	2	51	57	43	**48**
Bomet	26	20	4	4	14	18	6	6	3	4	2	4	55	56	46	**47**
Runda	n/a	15	n/a	8	n/a	14	n/a	5	n/a	12	n/a	2	0	56	n/a	**47**
Rukanga	10	24	4	8	14	12	5	6	8	6	0	0	41	56	34	**47**
Gatundu	32	9	4	0	10	17	1	9	8	13	2	8	57	56	48	**47**
Othaya Mukurweini	24	16	8	0	14	12	5	7	14	12	12	6	77	53	64	**44**
Limuru	2	2	4	4	10	18	6	6	6	16	2	2	30	48	25	**40**
Ngagaka	20	16	4	0	7	11	5	7	6	12	2	2	44	48	37	**40**
Ngandori Nginda	n/a	16	n/a	4	n/a	8	n/a	9	n/a	8	n/a	2	0	47	n/a	**39**
Homabay	34	24	4	0	8	7	1	5	7	8	2	2	56	46	47	**38**
Kathiani	n/a	16	n/a	0	n/a	8	n/a	5	n/a	8	n/a	8	0	45	n/a	**38**
Karuri	1	0	4	8	8	14	5	6	6	12	2	4	26	44	22	**37**
Gatanga	n/a	8	n/a	4	n/a	9	n/a	6	n/a	8	n/a	8	0	43	n/a	**36**
Gusii	2	17	8	4	9	8	5	1	8	6	4	6	36	42	30	**35**
Kibwezi Makindu	14	14	4	8	15	14	6	1	4	3	2	2	45	42	38	**35**
Embe	11	16	0	4	8	7	5	5	4	8	0	2	28	42	23	**35**
Garissa	n/a	5	n/a	4	n/a	8	n/a	11	n/a	4	n/a	10	0	42	n/a	**35**
Tetu Aberdare	13	16	4	0	7	4	6	5	5	8	10	8	45	41	38	**34**
Githunguri	1	0	4	4	7	12	5	7	2	12	0	4	19	39	16	**33**
Murugi Mugumango	n/a	20	n/a	4	n/a	9	n/a	1	n/a	0	n/a	4	0	38	n/a	**32**
Kiamumbi	n/a	18	n/a	4	n/a	13	n/a	3	n/a	0	n/a	0	0	38	n/a	**32**
Kiambu	2	5	4	8	9	7	6	5	4	8	2	4	27	37	23	**31**
Muthambi 4K	n/a	13	n/a	0	n/a	9	n/a	1	n/a	6	n/a	8	0	37	n/a	**31**
Machakos	n/a	15	n/a	0	n/a	5	n/a	3	n/a	12	n/a	2	0	37	n/a	**31**
Imetha	n/a	5	n/a	4	n/a	11	n/a	5	n/a	11	n/a	0	0	36	n/a	**30**
Mwala	n/a	17	n/a	0	n/a	5	n/a	1	n/a	11	n/a	0	0	34	n/a	**28**
Wote	n/a	12	n/a	0	n/a	5	n/a	5	n/a	11	n/a	0	0	33	n/a	**28**
Sibo	10	10	0	0	6	8	5	6	2	6	2	2	25	32	21	**27**
Amatsi	9	8	4	4	3	4	1	7	4	8	0	0	21	31	18	**26**
Nyandarua	n/a	9	n/a	8	n/a	4	n/a	7	n/a	3	n/a	0	0	31	n/a	**26**
Ruiru-Juja	2	3	4	9	15	4	6	5	4	7	0	0	31	28	26	**23**
Kikuyu	10	0	4	0	9	8	6	4	4	14	2	0	35	26	29	**22**
Oloolaiser	17	2	0	0	9	8	6	5	5	9	2	0	39	24	33	**20**
Kyeni	n/a	12	n/a	4	n/a	6	n/a	1	n/a	0	n/a	0	0	23	n/a	**19**
Migori	n/a	2	n/a	4	n/a	7	n/a	1	n/a	7	n/a	2	0	23	n/a	**19**
Tuuru	4	0	4	4	16	11	1	1	0	4	4	0	29	20	24	**17**
Kitui	10	0	4	4	5	4	5	5	2	7	2	0	28	20	23	**17**
Nolturesh	n/a	2	n/a	2	n/a	2	n/a	0	n/a	2	n/a	0	0	8	n/a	**7**
Kahuti	24	n/a	8	n/a	14	n/a	5	n/a	9	n/a	2	n/a	62	0	52	**0**
Gatamathi	17	n/a	0	n/a	10	n/a	6	n/a	13	n/a	10	n/a	56	0	47	**0**
Narok	9	n/a	4	n/a	5	n/a	5	n/a	6	n/a	0	n/a	29	0	24	**0**
Lodwar	1	n/a	0	n/a	1	n/a	6	n/a	2	n/a	0	n/a	10	0	8	**0**
Kakamega	34	XX	0	XX	10	XX	7	XX	11	XX	10	XX	72	XX	60	XX
Nzoia	18	XX	8	XX	14	XX	5	XX	1	XX	2	XX	48	XX	40	XX
	19.353	17.703	4.9412	4.1094	11.431	10.313	5.7843	6.1406	6.6863	9.375	3.9608	5.2344	39.117647	49.76	43.464052	41.471

ANNEX 6: PRO-POOR ASSESSMENT

RANK	PRO-POOR PARAMETERS / UTILITY	GOVERNANCE	IMPACT	PLANNING	FINANCING	TOTALS	WEIGHTED SCORE	WEIGHTED SCORE 2018-19 (%)
1	Nakuru	14	28	14	12	68	1780	87%
2	Nyeri	16	24	11	14	65	1700	83%
3	Nairobi	14	21	10	10	55	1450	71%
4	Naivasha	8	24	12	9	53	1380	68%
5	Kericho	14	16	14	10	54	1380	68%
6	Nanyuki	5	25	11	12	53	1360	67%
7	Eldoret	12	23	6	8	49	1330	65%
8	Thika	6	24	8	12	50	1300	64%
9	Murang'a	12	25	9	0	46	1290	63%
10	Nyahururu	16	22	5	0	43	1240	61%
11	Embu	6	26	4	8	44	1200	59%
12	Machakos	10	24	8	0	42	1180	58%
13	Kisumu	8	14	14	10	46	1140	56%
14	Narok	6	20	12	4	42	1100	54%
15	Limuru	6	22	2	8	38	1040	51%
16	Mathira	8	14	10	8	40	1020	50%
17	Bomet	4	19	6	10	39	1010	50%
18	Isiolo	8	21	4	0	33	950	47%
19	Mombasa	12	11	0	10	33	890	44%
20	Kirinyaga	12	8	10	4	34	880	43%
21	Karuri	6	19	4	2	31	870	43%
22	Malindi	6	13	8	6	33	850	42%
23	Imetha	6	18	1	4	29	820	40%
24	Garissa	11	13	0	4	28	800	39%
25	Homabay	10	11	6	2	29	790	39%
26	Ruiru Juja	8	15	4	0	27	770	38%
27	Nyandarua	4	12	10	4	30	760	37%
28	Kakamega	8	12	0	4	24	680	33%
29	Kapsabet Nandi	7	13	2	2	24	680	33%
30	Kikuyu	1	20	2	0	23	670	33%
31	Kiambu	6	15	2	0	23	670	33%
32	Meru	5	14	4	0	23	650	32%
33	Muthambi 4K	4	12	8	0	24	640	31%
34	Nzoia	1	16	3	2	22	610	30%
35	Tetu Aberdare	7	9	2	4	22	600	29%
36	Naromoru	4	11	7	0	22	590	29%
37	Kathiani	8	9	4	0	21	590	29%
38	Oloolaiser	12	1	7	2	22	570	28%
39	Kibwezi Makindu	0	17	0	2	19	550	27%
40	Sibo	6	11	1	1	19	550	27%
41	Tavevo	4	11	5	0	20	550	27%
42	Mavoko	0	14	6	0	20	540	26%
43	Mwala	0	15	4	0	19	530	26%
44	Ngandori Nginda	4	9	1	6	20	530	26%
45	Kwale	0	8	4	8	20	480	24%
46	Tuuru	4	9	4	0	17	470	23%
47	Wote	2	12	0	2	16	460	23%
48	Kilifi Mariakani	0	10	4	0	14	380	19%
49	Gatamathi	4	5	3	2	14	370	18%
50	Amatsi	2	0	4	4	10	220	11%
51	Migori	0	0	0	4	4	80	4%
52	Nol Turesh Loitokitok	0	2	0	0	2	60	3%

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	KNBS	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**	-

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