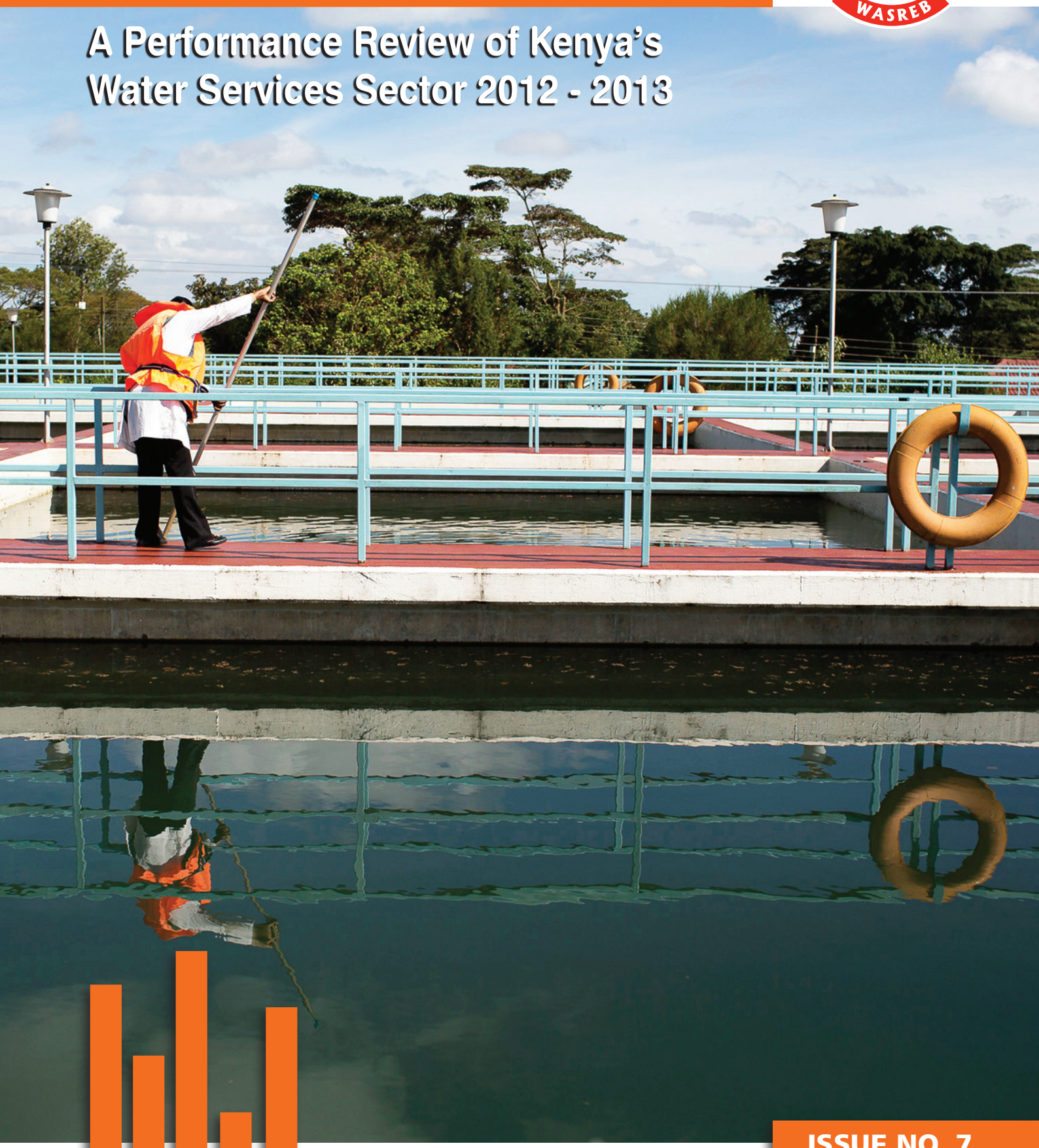
IMPACT

2014

WATER SERVICES REGULATORY BOARD
WASREB

A Performance Review of Kenya's Water Services Sector 2012 - 2013



ISSUE NO. 7

KENYA VISION 2030

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A Performance Review of Kenya's Water Services Sector 2012 - 2013

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KENYA VISION 2030

WATER SERVICES REGULATORY BOARD
Water services for all Kenyans

Water Services Regulatory Board

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CONTENTS

ABBREVIATIONS & ACRONYMS

BOD	Board of Directors
CoK	Constitution of Kenya
DWQ	Drinking Water Quality
ECS	Enforcement and Compliance Strategy
ESAWAS	Eastern and Southern Africa Water and Sanitation Regulators Association
GWQEM	Guidelines on Water Quality and Effluent Monitoring
KPIs	Key Performance Indicators
KSh	Kenya Shillings
LIAs	Low-Income Areas
L/c/d	Litres per capita per day
LVN	Lake Victoria North
LVS	Lake Victoria South
MDGs	Millennium Development Goals
MoU	Memorandum of Understanding
NGOs	Non-Governmental Organizations
NRW	Non-Revenue Water
NWSS	National Water Services Strategy
NWSB	Northern Water Services Board
O+M	Operation and Maintenance
QMS	Quality Management System
RTA	Regular Tariff Adjustment
SRR	Special Regulatory Regime
SPA	Service Provision Agreement
SSRWSS	Small Scale Rural Water Supply Systems
UBSUP	Upscaling Basic Sanitation for the Urban Poor
WAGs	Water Action Groups
WARIS	Water Regulation Information System
WaSBIT	Water Services Board Investment Planning and Monitoring Tool
Wasreb	Water Services Regulatory Board
WSB	Water Services Board
WSP	Water Service Provider
WSS	Water Supply and Sanitation
WSTF	Water Services Trust Fund

The Water Services Regulatory Board

Vision

To be a model regulator of water services

Mission

To regulate water services in line with the human right to water and sanitation

Motto

Water services for all Kenyans

FOREWORD

There has been tremendous transformation in the water services sector within the last ten years of reforms. Significant improvement has been realised in the management of resources and services to the benefit of citizens.

Water services have witnessed a clear separation of policy making, which is the sole responsibility of the state department of water; regulation, which is the responsibility of the regulator (Wasreb); and service provision, which is the responsibility of eight regional Water Services Boards. In their capacity as asset holders, the latter appointed over 100 Water Service Providers (WSPs), as their agents, for actual service delivery. Commercialization has ensured that utilities meet the minimum standards for water service provision, and that they can be held accountable for services that meet quality, affordability, and sustainability criteria. Realisation of the right to water can only be achieved if the sector is operating under uniform norms and standards on quality, service delivery, cost recovery and consumer protection.

Now that water services have been devolved, Wasreb urges county governments to adopt and strengthen the model of socially responsible commercialization by having water service providers who are autonomous.

Ring-fencing of revenues is a critical ingredient of this strategy. It is a precondition for gradually achieving full cost recovery in water services. This is essential for the long-term sustainability of service provision. Full cost-recovery is also important in facilitating the expansion and enhancement of water services so that the human right to water can progressively be realised. Therefore, ring-fencing of revenues, which is one of the main achievements of the water sector reforms, should be safeguarded under devolved services.

Since the reforms were implemented, funding for the sector has increased more than six fold. It is, however, worrying that this growth in funding has not been matched with commensurate increase in access levels. Improving access therefore calls for much more than increase in funding. It entails ensuring that resources are properly targeted, and demonstrating good value for money. In this regard, there is need to inculcate a culture of strategic thinking and planning to improve the quality of decision making in water utilities.

The concerns raised above are core to Wasreb's performance monitoring programme whose output is *Impact* report, produced annually. This edition of *Impact* covers the period 2012/13 and analyses the performance of a total of 100 commercial Water Service Providers (WSPs) and 8 Water Services Boards (WSBs). The overall population in the service areas of the WSPs is

roughly 21.1 million, with 18.4 million in service areas of urban WSPs and 2.7 million in service areas of rural WSPs.

The report shows that performance has improved for most of the Key Performance Indicators (KPIs) during the period but is yet to reach acceptable sector benchmarks. NRW continues to pose a challenge to the sustainability of the sector with an estimated KSh 11.4 billion lost in the current period. If this amount was saved, it would go a long way in improving service delivery.

The report indicates that the attainment of national targets for water continues to be a major challenge for both urban and rural areas. Players within the sector should explore innovative approaches including leveraging on existing technology to utilise investments already made. In this issue of *Impact*, we present some interesting work done in Kitui County in this regard (Annex 4).

In the Bill of Rights, citizens have the right to safe water and basic sanitation. This obliges National and County Governments, as duty bearers, to take necessary measures for the progressive realization of the right and demonstrate the same to the public. This obligation seeks to guarantee everyone a minimum level of service. To fulfil this obligation, there is need for clear national policy and legislation to foster collaboration between National and County Governments. As the custodian of public interest, regulation is instrumental in independently monitoring the progressive realisation of this obligation.

In the last decade, water sector reforms have improved service provision to consumers and attracted increased investments, including the ability of Government and Development Partners to finance these investments. This huge potential and increased dynamism must be sustained even under the new dispensation.

I would like to congratulate WSPs who, through unrelenting commitment, sheer will and focus, have improved their performance. I hope the gains and momentum realised by the reforms will be sustained by county governments. I believe the experience derived from the water services sector can be used to explore how other services can be commercialised for the benefit of Kenyans.

I wish to acknowledge all our partners for their contribution, support and goodwill towards the sector, notably towards the development of regulation in the country. I wish to single out the German Federal Government through GIZ for their invaluable support towards the production of this report.

I invite our stakeholders to use the information provided in the report to uphold transparency and accountability in the operations of the water services sector.

Eng. Robert Gakubia
CEO, Wasreb

CHAPTER ONE:
INTRODUCTION

1 INTRODUCTION

The regulation of Kenya's water services is vested in the Water Services Regulatory Board, Wasreb. As the national regulator, Wasreb oversees the implementation of policies and strategies relating to the provision of water and sanitation services. It sets rules and enforces standards that guide the sector towards ensuring that consumers are protected and have access to efficient, affordable and sustainable services. In this regard, Wasreb monitors and regularly reports on the performance of WSPs and WSBs.

The Water Act 2002 mandates Wasreb to gather, collate and disseminate information on water services. The right to water and sanitation is now entrenched in the Constitution. So, there is need for duty bearers to report on what they are doing. Reporting on the progressive realisation of the right to water is therefore a state obligation. It ensures that decision-making is informed and that there is transparency and accountability to the public. Performance ranking, naming and faming is able to stimulate comparative competition among WSPs and WSBs to provide better services to consumers.

The annual performance report on water services, *Impact*, is the regulator's main tool of public reporting. The report relies on data collected annually from WSPs and WSBs through the IT-based Water Regulation Information System (WARIS). This edition of *Impact* covers the period 2012/13 and analyses the performance of a total of 100 WSPs and 8 WSBs. Sixty five (65) of the WSPs are urban while 35 are rural. Taking into consideration the progressive realization of the right to water and sanitation and the need for uniform standards, scoring regimes for both urban and rural WSPs have been harmonised in the current reporting period. This seeks to ensure that standards of service are uniform regardless of the operating environment.

In view of the new governance structure, and appreciating that water services have been devolved to counties, *Impact* 7 has taken into consideration the new institutional framework and provided a summary of the status of water services in counties (Annex 1).

The report is structured in six chapters as follows: Chapter Two provides an overview of sector performance and highlights key performance issues during the reporting period. Chapter Three on the Regulatory Environment then provides insights into regulatory governance, substance and key developments in the water services sector. A detailed account of the performance of WSPs is presented in Chapter Four. Chapter Five provides detailed information on the performance of WSBs. Chapter Six concludes by giving a snapshot of key issues emerging from the performance analysis and gives recommendations on the way forward.

CHAPTER TWO:
PERFORMANCE OVERVIEW

2 PERFORMANCE OVERVIEW

2.1 INTRODUCTION

The population in the area covered by the report is 21,079,094. Out of this, 18,354,984 live in areas served by urban WSPs while 2,724,110 live in areas serviced by rural WSPs. The demarcation of service areas of urban WSPs is not aligned to the administrative boundaries of urban areas since the WSPs serve both urban and 'urbanising' areas.

In 2012/13, Water Coverage stood at 54% in urban and 'urbanising' areas, posing a major challenge in attaining the target of 80% by 2015, given the average annual increase of 1 (one) percentage point. In the same period, urban sanitation coverage stood at 73%. With the average annual increase of 4 percentage points, the sector target of 77.5% by 2015 as set by the National Water Services Strategy seems within reach (though challenges with regard to reliability of on-site sanitation data still remain).

Water coverage stands at 54% for urban and 51% for rural. At the current annual growth averaging 1%, attaining both the Vision 2030 (100%) and the MDGs(80%) targets looks beyond reach. To realise universal access by 2030, investments required in water supply are estimated to be KSh 1,287.9 billion against a budget of KSh 561.5 billion, according to the National Water Master Plan 2013. It is clear that the resource allocation to the sector is not sufficient to achieve the target. Resource allocation can be improved by increasing sector efficiency, maximising consumer contributions and tapping into private sector funding.

The current sanitation coverage of 73% urban and 70% rural is on track with regard to national targets. Challenges still abound in reporting since WSPs lack a clear mandate on on-site sanitation and therefore rely on external data sources, such as the Department of Public Health. It is important to strengthen WSPs' mandate on on-site sanitation, including providing financial incentives for rapid up scaling of access to improved sanitation, especially in urban LIAs.

The Water Services Trust Fund (WSTF) has a programme, Upscaling Basic Sanitation for the Urban Poor (UBSUP), which aims at improving access to sanitation in low income areas where the sanitation situation is poor. WSPs are advised to take full advantage of this programme.

The momentum realised by the reforms unlocked funds to finance the rehabilitation and expansion of the water services sector. This should be sustained by county governments by adhering to international good practice as far as water service management is concerned. This includes operating under uniform norms and standards on quality, service delivery, cost recovery, and consumer protection. Ring-fencing of revenues from water services is necessary for reinvestment into operations.

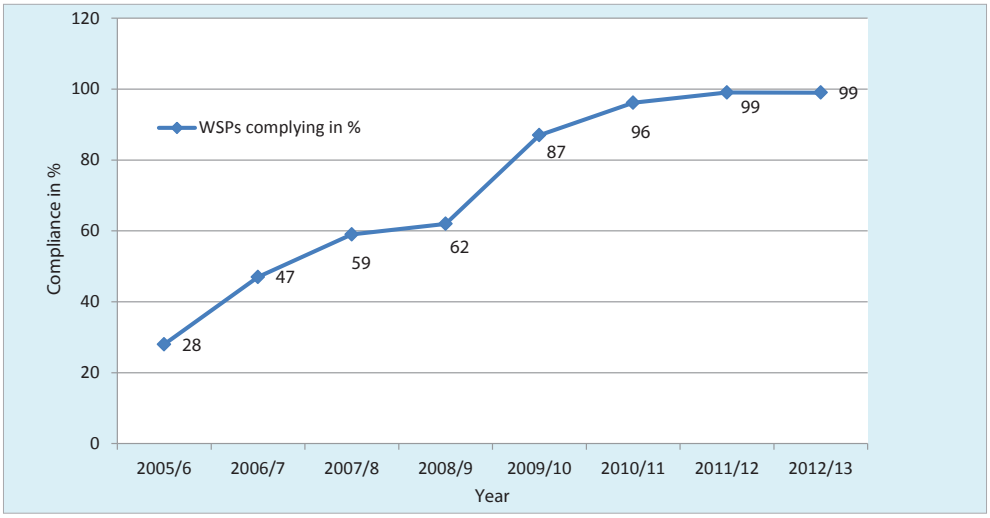
2.2 WATER SERVICE PROVIDERS PERFORMANCE SUMMARY

This section summarises WSP performance over the reporting period 2012/13, based on data submission on the nine Key Performance Indicators (KPIs). These KPIs are Water Coverage, Sanitation Coverage, Non-Revenue Water (NRW), Water Quality, Hours of Supply, Metering Ratio, Revenue Collection Efficiency, Operation and Maintenance (O+M) Cost Coverage and Staff Productivity (staff per 1000 connections). It also gives the ranking of the WSPs, with a brief analysis on viability and market share.

Data submission

Data submission from WSPs is no longer a challenge with performance having stabilised at 99% in the last two years as shown in Figure 2.1.

Figure 2.1: Compliance of WSPs with annual data submission requirements



Compliance with data submission has continued to improve, having peaked at 99% (100/101 WSPs) in the last two years. In 2012/13, the only WSP which did not report is Hola-Tana River, under the Coast Water Services Board. The submission of complete data shows that there is an increased willingness and ability to report by the WSPs. This willingness to report is crucial in empowering rights holders to demand for quality and accountability in public services.

Although data submission has tremendously improved, a number of WSPs still face challenges in providing accurate and consistent data. They lack adequate tools for data collection, storage, and processing. Data management issues also receive low prioritisation at managerial level. To address this challenge, Wasreb is in the process of developing a data accreditation protocol which will require utilities to evaluate and indicate the source and reliability of all data entered into WARIS.

Whereas reporting on urban underserved areas is essential for the fulfilment of the progressive realization of the human right to water and sanitation, lack of disaggregation masks urban inequalities. To address this challenge, Wasreb is in the process of developing

a pro-poor indicator that will measure utility performance with respect to services to the poor. The refined web-based WARIS 3.0 system incorporates various inbuilt data validation mechanisms and an enhanced reporting module for underserved urban areas. This will, hopefully, address the challenges highlighted.

Progress on key performance indicators

The performance of urban and rural providers for 2012/13 as well as the previous reporting period is given in Table 2.1.

Table 2.1: Progress on key performance indicators

Key Performance Indicators	Urban WSPs		Trend	Rural WSPs		Trend
	2011/12	2012/13		2011/12	2012/13	
Water Coverage, %	53	54	↑	50	51	↑
Sanitation Coverage, %	69	73	↑	69	70	↑
Water Quality (Residual Chlorine), %	92	93	↑	94	93	↓
Water Quality (Bacteriological), %	72	93	↑	60	69	↑
Hours of Supply, hrs/day	15	16	↑	16	17	↑
Non- Revenue Water, %	44	42	↑	57	55	↑
Metering Ratio, %	79	89	↑	68	75	↑
Staff Productivity, Staff per 1000 Connections	7	7	→	9	9	→
Revenue Collection Efficiency, %	89	85	↓	84	91	↑
O+M Cost Coverage, %	105	113	↑	109	104	↓
Sector Benchmarks	good		acceptable		not acceptable	

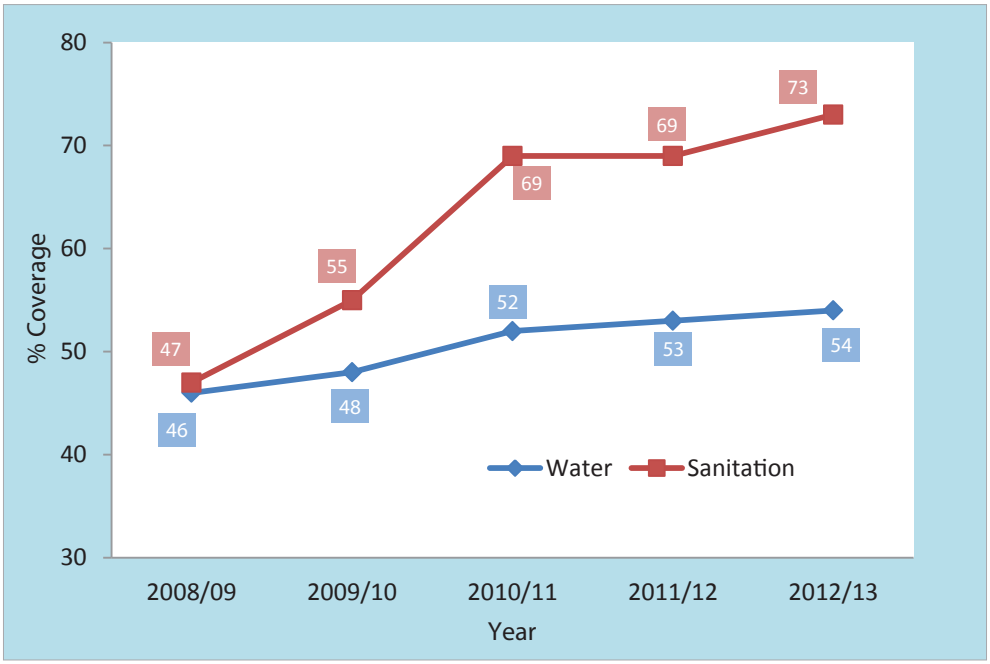
For both urban and rural WSPs, there is improvement in all the Key Performance Indicators (KPIs) except for Staff Productivity, Revenue Collection Efficiency (urban), Water Quality (Residual Chlorine) and O+M Cost Coverage (rural). However, it is worth noting that despite this improvement, none of the indicators, except Collection Efficiency (rural), has reached the desired level. Wasreb is working to ensure that at least 50% of the WSPs attain at least 50% of the sector benchmarks by 2018. Currently, only 8% of WSPs have attained this level.

Despite the positive trend, Non-Revenue Water (NRW) levels remain unacceptably high despite the increase in sector investment over the years. At a total billing of KSh 14.6 billion for urban and KSh 689 million for rural WSPs, and average NRW levels of 42% and 55% respectively, the loss in financial terms due to NRW can be estimated to a staggering KSh 11.4 billion. This is higher than the previous year's by KShs 800 million despite the overall improvement of performance in NRW.

Sector performance trend

The positive trend in urban water and sanitation coverage depicted in Figure 2.2 indicates that the water services sector is continuing to record growth.

Figure 2.2: Trend in urban water and sanitation coverage



At an access rate of 73% in 2012/13 for urban sanitation coverage, achieving the sector target of 77.5% in 2015 as per the National Water Services Strategy seems within reach (though challenges regarding reliability of on-site sanitation data remain). However, at the current access rate of 54% and an average annual increase of about 1 percentage point, reaching the sector target of 80% urban water coverage in 2015 is beyond reach, as this would require closing a gap of 26 percentage points in less than two years.

Performance ranking highlights

The performance of WSPs during the year 2012/13 was ranked on the basis of the nine KPIs mentioned earlier and in line with the methodology outlined in section 4.3 of Chapter 4.

The best performing WSP was Nyeri (for the urban category) and Muthambi 4K for the rural category (Tables 2.2 and 2.3). The lowest ranked WSPs were Olkejuado and Tuuru for urban and rural categories respectively.

Issues in corporate governance continued being constraints to improved sector performance. Refusal to comply with Wasreb's Corporate Governance Guideline renders WSPs ineligible for consideration in the performance ranking, irrespective of their technical scores. Nakuru Urban (Very Large category) and Kisumu (Large category) are singled out for continued non-compliance and have therefore neither been ranked nor recognised for the third year in a row. Appointment of Boards of Directors without following a transparent process, and failure to amend Memorandum and Objects of Association to conform to governance standards by these WSPs, show non-compliance to regulation. Stakeholder pressure is required on these WSPs to ensure they do not operate in positions that are not in tandem with consumer interests.

Table 2.2: Top and worst performing urban WSPs

URBAN TOP TEN		
WSP	**Rank**	**Score (Max 200)**
Nyeri	1	181
Thika	2	155
Meru	3	146
Ruiru Juja	4	145
Nanyuki	5	140
Embu	6	134
Muranga	7	129
Malindi	8	124
Eldoret	9	117
Limuru	10	112

URBAN BOTTOM TEN		
WSP	**Rank**	**Score (Max 200)**
Eldama Ravine	54	48
Matungulu Kangundo	55	40
Nol Turesh Loitokitok	56	39
Machakos	57	39
Rumuruti	58	38
Nakuru Rural	59	38
Amatsi	60	37
Moyale	61	16
Gulf	62	8
Olkejuado	63	8

Table 2.3: Top and worst performing rural WSPs

RURAL TOP TEN		
WSP	**Rank**	**Score (Max 200)**
Muthambi 4k	1	147
Nithi	2	124
Murugi Mugumango	3	123
Tetu Aberdare	4	120
Rukanga	5	118
Engineer	6	117
Karimenu	7	117
Ngandori Nginda	8	113
Gatundu South	9	104
Nyakanja	10	103

RURAL BOTTOM TEN		
WSP	**Rank**	**Score (Max 200)**
Embe	28	53
Gatamathi	26	57
Gitei	34	43
Kathiani	33	44
Kikanamku	31	45
Kinja	27	55
Kyeni	29	51
Mbooni	32	45
Nyandarua	30	49
Tuuru	35	36

The best performing WSPs are recognised for their efforts in spearheading the progressive realisation of the human right to water and sanitation. The continued improvement in performance by Kiamumbi (168/200), in the category of privately-owned, is commendable. On the other hand, it is of concern that Runda has for the 2nd consecutive year declined in performance.

In recognition of WSPs who have shown significant improvement, albeit not making it to the top, and to expose WSPs who have slackened in performance, Wasreb also ranks WSPs based on performance over the two last reporting periods.

Tables 2.4 and 2.5 indicate the top improvers as well as the bottom losers for the urban (including privately-owned WSPs) and rural categories respectively.

Table 2.4: Top improvers and bottom losers (urban WSPs)

URBAN TOP TEN IMPROVERS			
WSP	Score 2012/13	Score 2011/12	Scores +/-
Gusii	80	31	49
Kakamega Busia	112	72	40
Kapsabet Nandi	65	26	39
Murang'a	129	91	38
Namanga	111	75	36
Kiamumbi	168	132	36
Thika	155	119	36
Kibwezi Makindu	95	61	34
Kitui	76	44	32
Kilifi Mariakani	89	58	31

URBAN BOTTOM TEN LOSERS			
WSP	Score 2012/13	Score 2011/12	Scores +/-
Kiambu	62	84	-22
Eldoret	117	138	-21
Rumuruti	38	56	-18
Olkejuado	8	23	-15
Malindi	124	133	-9
Kericho	91	100	-9
Gulf	8	16	-8
Moyale	16	22	-6
Embu	134	138	-4
Kiambere Mwingi	100	102	-2

Table 2.5: Top improvers and bottom losers (rural WSPs)

RURAL TOP TEN IMPROVERS			
WSP	Score 2012/13	Score 2011/12	Scores +/-
Imetha	84	50	34
Nyakanja	103	69	34
Ndaragwa	89	56	33
Rukanga	118	92	26
Engineer	117	93	24
Nithi	124	101	23
Karimenu	117	96	21
Gatundu South	104	87	17
Nyandarua	49	34	15
Ngagaka	95	86	9

RURAL BOTTOM TEN LOSERS			
WSP	Score 2012/13	Score 2011/12	Scores +/-
Gatamathi	57	94	-37
Othaya Mukurweni	61	96	-35
Tuuru	36	60	-24
Kikanamku	45	58	-13
Kathita Kiirua	92	104	-12
Kinja	55	66	-11
Tachasis	79	88	-9
Kahuti	86	94	-8
Embe	53	60	-7
Mawingo	79	84	-5

Wasreb commends the 10 WSPS, in respective urban and rural categories, that have remarkably improved their performance and encourages them to keep up. On the other hand, the 10 WSPs in respective urban and rural WSPs who have declined in performance are urged to swiftly put in place strategies to reverse this negative trend as it is detrimental to their customers.

Financial sustainability and market share analysis

The financial sustainability of a WSP is crucial in ensuring that it is able to offer sustainable services. Cost-reflective tariffs enable WSPs to effectively operate, maintain and in due course, in collaboration with WSBs, develop their assets and hence ensure provision of sustainable water services. The size of a WSP is critical to its viability. Large WSPs are able to attract and retain qualified staff who then become useful in efficiency goals. They benefit from economies of scale hence the low operating costs per cubic metre (m^3) produced.

According to legislation, WSPs must operate under regulated tariffs but many small WSPs continue operating under tariffs that can hardly cover their O+M costs. In a majority of cases, these WSPs rely on unpredictable and unsustainable subsidies to finance their operations.

Figures 2.3 and 2.4 respectively show the percentage of WSPs with over 100% O+M Cost Recovery (as measure of sustainability) and the market share of WSPs per category. The analysis indicates that the viability of the very large WSPs continues to improve while that of smaller categories shows a decline. This firms the case of clustering for financial sustainability. Wasreb has disseminated a Clustering Study to County Governments with proposals for possible clusters and guidance on the process. This is in line with the MTP2 (2013-2017) goal of clustering water supplies in the county to improve sustainability.

Looking at the market share of WSPs, it can be seen that Very Large and Large WSPs are not only more likely to be viable than smaller WSPs, but also dominate the market. While they represent 36% (up from 31% last year) of all WSPs in the sector, they continue to account for the largest share of business (91% of the total WSP turnover, 89% of the total water produced and 74% of the people served).

Figure 2.3: Percentage of WSPs with over 100% O+M cost coverage

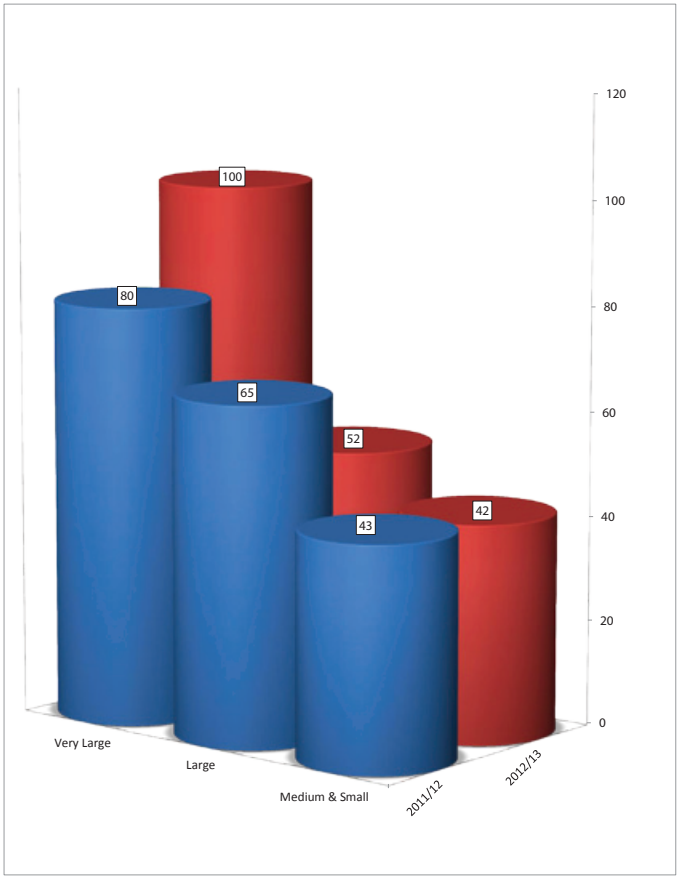
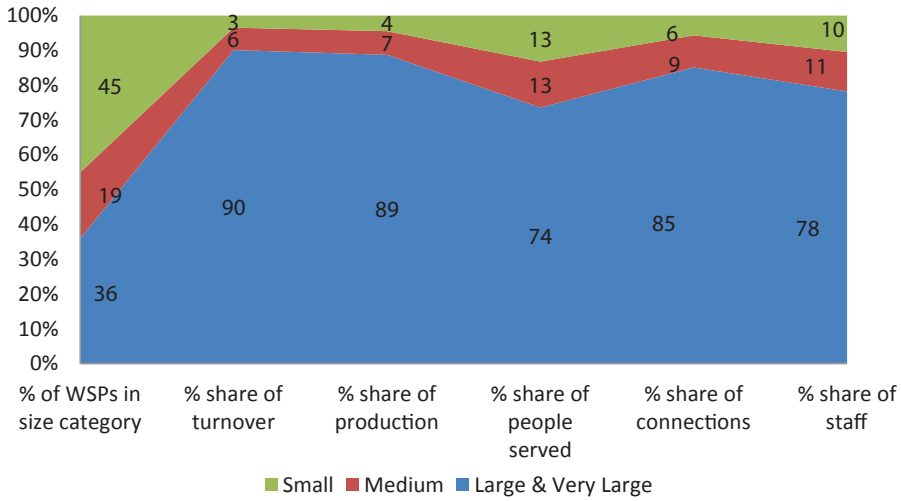


Figure 2.4: Combined share of business of urban and rural WSPs by categories



Size is a critical factor in the sustainability of any WSP. County governments stand guided by this information as they are the duty bearers in the progressive realization of the right to water and sanitation.

Water Services Boards performance summary

WSBs have been assessed and ranked on the basis of investment, financial, and qualitative indicators. These indicators measure the impact of investments, operational efficiency and viability, as well performance in respect to the mandate of WSBs as licensed asset holders and principals of the WSPs (for detailed indicators refer to Table 5.3 "WSB performance indicators and scoring criteria").

Table 2.6 shows the WSB performance ranking for 2012/13. Tana, Athi and Northern for the second year running have retained the 1st, 2nd and 3rd positions respectively. All WSBs in the current period improved their performance with the biggest improvement recorded by Lake Victoria North. None of the WSBs has, however, reached an acceptable level of performance.

Table 2.6: WSB performance ranking

WSB	Score 12/13	Ranking 12/13	Score 11/12	Ranking 11/12	Change in Scores
Tana	66	1	57	1	9
Athi	65	2	51	2	14
Northern	55	3	49	3	6
Lake Victoria North	53	4	33	5	20
Rift Valley	46	5	41	4	5
Lake Victoria South	33	6	18	8	15
Tanathi	32	7	27	6	5
Coast	28	8	22	7	6

The aggregated performance of WSBs since 2006/07 is given by Figure 2.5. The negative trend recorded in 2010/11 has been reversed in the last two years. The general improvement in performance is commendable and should be continued.

Figure 2.5: WSBs performance over time

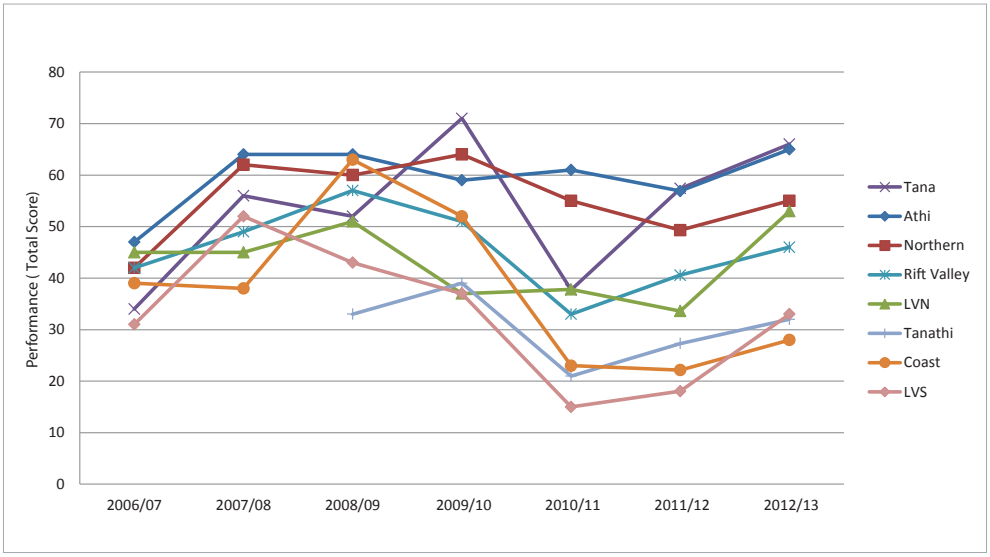


Table 2.7 presents the rating of the WSBs with respect to WARIS data submission on the basis of timeliness and accuracy. Except for Coast and Tanathi, all the WSBs have improved on their rating with Athi and Tana having attained the satisfactory level of performance.

Table 2.7: Ratings of WSBs according to data submission by the WSPs

WSB Data submission rating	2011/12	2012/13
Good (>80%)	-	Tana, Athi
Satisfactory (>65 - 79%)	Tana, Athi	RV, LVS, Northern
Fair (50 - 64%)	LVS, Northern, RV, Tanathi,	LVN, Tanathi
Poor (<49%)	Coast, LVN	Coast

2.3 STATUS OF WATER SERVICES IN COUNTIES

The status of water services in counties has been presented in terms of the proportion of the county population living within the service area of the WSPs in each county, the fulfilment of the rights of consumers living within a WSP service area (Water Coverage, Sanitation Coverage and Hours of Supply) as well as commercial sustainability (O+M Cost Coverage, unit cost of water produced, unit operating cost of water billed and average tariff). The summary data for all 47 counties is presented in Annex 1: General data on counties.

There is significant variation among counties on the proportion of people living within service areas of respective WSPs. All the counties, save for Wajir, have formal WSPs either at county or cross-county level. In 31 counties, a majority (>50%) of the population live outside areas served by the formal WSPs. Discrepancy in the population served by formal WSPs is largely due to different degrees of urbanisation. Whereas formal water services are the required mode of service delivery in urban densely-populated areas, this is not the case for rural, sparsely-populated settings where service delivery is typically from community-based water projects, point sources, and rain harvesting.

There are also significant disparities as well in regard to the right to water and sanitation. In Water Coverage for example, only Garissa has attained the acceptable benchmark of 80%. In 20 out of the 44 counties with formalised services, less than 50% of the population that is supposed to receive services from registered WSPs actually has access to the service. This is a clear indication that the current WSP setup in these counties is not adequate to fulfil demand, mainly because they are not viable.

A similar picture emerges regarding Sanitation Coverage with 13 counties being the only ones attaining the minimum acceptable benchmark of 80%. Performance on Hours of Supply looks better, with more than two thirds of counties reaching an average of at least 12 hours of supply (minimum acceptable threshold for service areas with <100,000 people). However, there are a number of counties, such as Lamu, Marsabit, Migori, and Mombasa, where hours of supply only reach half the minimum acceptable threshold or less than that, or are not reported at all.

Performance in Non-Revenue Water presents a huge challenge in most counties. None of the counties recorded average water losses at an acceptable level (not more than 25% of the water produced). In 10 counties, water losses equal or exceed water sales (i.e. for every litre sold, one litre or more is lost on the way). Considering that this directly affects the revenue streams and service levels of WSPs, county governments should seriously be concerned with the management capacity and level of professionalism in their WSPs.

Financial sustainability presents a tremendous challenge as well. More than half of the counties are faced with a situation where their WSP or the majority of their WSPs (where more than one) do not reach at least 100% O+M Cost Coverage.

There are significant variations among counties in the unit operating cost of water billed, ranging from under KSh 20/m^3 to more than KSh 100/m^3. The same is true for the average tariff. These differences can partially be attributed to differences in the operating environments of WSPs and to a large extent different efficiency levels with which WSPs in the counties are managed. The level of the average tariff within a county to a large extent depends on whether or not the WSP or most of the WSPs (where more than one in the county) operate with an approved, cost-reflective tariff. For WSPs where the results of a tariff study indicate that customers cannot afford to pay cost reflective tariffs, County Governments should make provision for subsidy as guided by Wasreb.

CHAPTER THREE:
THE REGULATORY ENVIRONMENT

3 THE REGULATORY ENVIRONMENT

3.1 INTRODUCTION

The devolution of water services to county governments provides an opportunity to deepen the water sector reforms of 2002 by enhancing the gains realised and improving on service delivery. To ensure growth in water service provision, there is need for sound legislation to guide the process of devolving water services. There is also need to improve investment realisation, and preserve proper governance structures in the sector.

3.2 THE LEGAL FRAMEWORK

Sound legislation is necessary to minimise conflict between national and county governments. The national government has an obligation to ensure the progressive realisation of the right to water and sanitation by setting a transparent national infrastructure system, budgeting for adequate resources, setting standards, monitoring and reporting on sector performance. On the other hand, county governments bear the constitutional obligation of ensuring that WSPs under their jurisdiction are commercially sustainable, operate efficiently and embrace proper governance practices in their operations.

While there are ongoing efforts to have legislation to support the devolution process in the water sector, delay in finalising the Water Bill leaves room for ambiguity and for conflict with the new governments, at county level, which are grappling to entrench themselves. A new Water Policy and a new Water Bill have been drafted, but they are yet to be passed by Parliament. This means that the sector as of now has only partly legally aligned itself to the requirements of the constitution. In the meantime, other conflicting legislation have been passed (the Urban Areas and Cities Act 2011 and County Governments Act 2012), contributing to the ambiguity.

The Water Bill 2014 as it stands now creates a dual regulatory regime that is likely to result in both confusion and conflict between county governments and national government over the interpretation of the Bill. Devolving the licensing function to county government creates a conflict of interest for county governments who are charged with setting up Water Service Providers, owning the providers, overseeing governance arrangements (appointing Management Boards), setting tariffs and regulating them. The foregoing arrangement vests both operations and oversight in the same organization. Therefore, pressure for strong performance and fair play is unlikely.

Consequently, there is a real risk of water service provision sliding back to the pre-reform era when utilities were departments in Local Authorities and water revenue was used to fund other uses. There was also no independent standard setting and monitoring. The result was that water utilities underperformed, water coverage never improved, the situation of the poor got worse (child mortality in slums was two times higher than country average), infrastructure was dilapidated and no repayment of loans was done.

Given the foregoing, there is urgent need to address the ambiguities and finalise the legal framework to support the devolution process in the water services sector.

3.3 GOVERNANCE

While the takeover of water institutions by county governments is supported by the constitution, there is need to do it in a manner that ensures that the flow of services to consumers is not interrupted or compromised. The starting point of this process is an amendment of the Memorandum and Articles of Association of WSPs to reflect the new ownership. As successors to the previous Local Authorities, county governments, through the executives in charge of water and finance or their representatives, are required by now to have taken up BoD positions previously held by their predecessors to provide executive authority and supervision. There should then be an open and competitive process of Board appointment that brings in the best professionals to provide strategic leadership.

3.4 INVESTMENT REALIZATION

Sound governance structures have to be supported by injection of investments in the sector. The possibility of insufficient resources to meet the vision 2030 goal on water and sanitation is a reality. According to the National Water Master Plan 2030, the proposed budget for water and sanitation for the period 2013 - 2030 is KSh 592.4 billion against the required investment of KSh 1,764.5 billion. However, it is possible to achieve desired targets by raising additional resources from the private sector and blending this with resources from the traditional sources. These include government funding, tariff setting, and support from development partners. Creating conditions for commercially viable WSPs, improving self-financing capacities as a goal in the National Water Services Strategy (2007 – 2015) and attracting financing of the sector is therefore an important strategy to bridge the financing gap.

Fundamental to the mobilisation of private resources is that all resources to the sector must be used efficiently and effectively within a well articulated policy framework. Therefore, there is need to have a policy framework that provides for:

- Increasing the efficiency and effectiveness of financing to the sector
- Establishing a commercially sustainable and yet socially responsible water and sanitation sector
- Increasing self-financing capacity by lowering production costs.
- Maximizing the mobilization of resources from the private sector.
- Planning from the local level to ensure suitability of projects and technology.

To address the challenges in investment planning, Wasreb has developed guidelines on investment planning and financial strategy to guide investment in the water services sector.

3.5 PEER REVIEW OF REGULATORY SYSTEM

As the implementation of devolution continued, Kenya was lucky to benefit from a benchmarking exercise mid this year conducted by regulators of water and sanitation services in Africa, under the auspices of the Eastern and Southern Africa Water and Sanitation (ESAWAS) Regulators Association. The peer review of the water services regulatory system

ESAWAS delegates follow proceedings during the peer review exercise of Wasreb.

in Kenya was done in the context of regional and regulatory cooperation to improve water supply and sanitation. It was carried out by five regulators drawn from Zambia, Lesotho, Tanzania, Rwanda and Mozambique. The regulators visited Kenya to examine the country's regulatory regime in the context of regulatory governance, actions, and impact.

The review noted that the 2010 Constitution presents both important opportunities and threats to the future effectiveness of water services regulation in Kenya. They noted that the right to water and government's responsibility to ensure progressive realisation of this right provides firm grounds for an effective national water services regulatory function, including the licensing of water services providers and the approval of water services tariffs. Their view was that the national government has a duty to set standards and monitor and report on sector performance.

They noted, however, that the Water Bill 2014 diminishes the effectiveness of water services regulation with the Water Bill retaining Water Services Boards (with a new name) with no provision to regulate them.

"The Bill creates a dual regulatory regime that is likely to result in both confusion and conflict between county governments and national government over the interpretation of the Bill/Act.

"Taking the licensing function away from national government substantially reduces the effectiveness of a national water services regulator," they said. "Consequently, there is a real risk that the regulator becomes an advisory body only."

3.6 FINANCING ARRANGEMENTS FOR THE SECTOR

A large portion of funding for investment comes from development partners. The impact of a funding drought in the 1980s and 1990s has already been experienced in Kenya. There is a significant risk that the Water Bill, as currently drafted, will lead to conflict and

contestation in the water sector between national government and county governments. This will increase the risk of an unsustainable sector, placing development financing at risk. This will lead, in turn, to a reduction in the availability of investment finance to the sector.

Therefore, creating conducive conditions for external financing of the sector is important.

3.7 REGULATORY IMPACT

In the verdict of the East and Southern African regulators visiting Kenya for a peer review exercise mid this year, Regulation has had significant contribution to improved sector outcomes. This has been realized through:

- Improved governance of the Water Services Providers
- Improved incentives for performance by WSPs
- Setting standards
- Approving water service provider agreements
- Reporting on performance and fostering competition, and
- Improved sector information.

Stakeholders are reported to have noted an improvement in the regulator's performance over time, especially in the last five years when governance stabilised. Consequently, Wasreb has developed a good reputation among stakeholders and most stakeholders want the regulator to continue playing a national role.

CHAPTER FOUR: PERFORMANCE OF WATER SERVICE PROVIDERS

4 PERFORMANCE OF WATER SERVICE PROVIDERS

4.1 INTRODUCTION

This chapter highlights key industry data and analyses the performance of 65 urban and 35 rural WSPs for the reporting period 2012/13. The chapter outlines the procedure used in data collection, classification and analysis. It further outlines sector benchmarks and the scoring regime used in the ranking of WSPs. The analysis of urban and rural WSPs is given in detail in section A and B respectively.

4.2 DATA COLLECTION, SUBMISSION, QUALITY AND REPRESENTATIVENESS

Data on the performance of WSPs and WSBs is the most important ingredient to the performance analysis conducted in *Impact.* The following sections address some of the key issues regarding the use of data in the report.

4.2.1 Data collection

The Water Regulation Information System (WARIS) is the main tool used in the collection of data for performance analysis. This data was corroborated with inspection reports, tariff information and annual licensee reports. In cases where cross checks showed data inconsistency, WSPs were contacted directly to confirm the accuracy or make corrections.

4.2.2 Compliance with data submission requirements

During the reporting period, 100 out of 101 formalised WSPs submitted fairly complete data. Only Hola-Tana River, under Coast WSB, was noncompliant with annual reporting requirements. Compliance with data submission requirements can be observed to have stabilized at 99% during the last two reporting periods (Table 4.1). The trend over time indicates that the number of reporting WSPs has dropped from 124 (2008/09) to 101 (2012/13) which is attributed to clustering and exclusion of schemes under District Water Officers (DWOs).

Table 4.1: Trend in data submission by WSPs

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

4.2.3 Data quality

Challenges in the quality of submitted data exist at various levels. WSBs generally do not perform their role of ensuring that WSPs submit complete and accurate annual data on their performance. Additionally, monitoring and reporting on urban underserved areas remains poor yet this is essential for improvement of access. The lack of clear mandate on onsite sanitation results in poor data quality.

At the WSP level, data management is not sufficiently prioritised in some cases, resulting in poor inputs and cross-checks by management. A few cases of deliberate tampering with data to suit different purposes have been detected by Wasreb and corrective action taken.

Lack of appropriate tools to precisely measure operational data mainly among small WSPs impacts on the accuracy of data submitted. This is prominent in water production (no master meters), consumption (inaccurate and inadequate metering) and quality (no access to adequate laboratory facilities).

4.2.4 Data representativeness

Considering that 100 out of 101 registered WSPs reported, the presented data is representative of the formalised Water Service Providers. However, regarding representativeness for the water services situation in the country, the situation presents itself very differently both for urban and rural areas. Urban WSPs, who reported, have a total population of 18,354,984 within their service areas. This compares well with the population in Kenya's urban and urbanising areas and can therefore be said to be representative of urban water supply and sanitation (WSS) services.

In contrast, rural WSPs, who report, have a total population of 2,724,110 within their service areas, which represent about 12% of Kenya's total rural population. A majority of the rural population is served by small scale rural water supply systems managed by communities. The basis on which these systems are generally run does not lend itself to regulation by Wasreb and monitoring of their performance has not been feasible with existing methods and technology. Therefore, the representativeness of rural performance data is limited.

4.3 CLASSIFICATION OF WSPs

To ensure a fair comparison between the performance of various WSPs, companies have been classified on the basis of size, operating environment, and ownership structure.

4.3.1 Categorisation by size

This depends on the total number of connections for both water and sewer (Table 4.2). WSPs have been categorised into Very Large, Large, Medium and Small categories. Categorisation by size is relevant because size has a direct correlation to commercial viability, financial sustainability, and human resource capacity. Ranking therefore considers performance within each category prior to overall ranking.

Table 4.2: Categorisation of WSPs by size

Total registered water and sewerage connections	< 5,000	5,000 – 9,999	10,000 – 34,999	≥ 35,000
Size category	Small	Medium	Large	Very large

4.3.2 Classification by type of service area

The operating environment of a WSP has a big impact on its performance. This classification takes into account, *inter alia,* differences in geographic spread, capacity levels, income levels of consumers (and therefore consumption patterns) and availability of capital for investments. The classification based on operating environment considers where most of the revenue of the WSP comes from.

For the current reporting period, the scoring regime for rural WSPs has been matched with that of urban WSPs in recognition of the need to progressively realise the right to water and sanitation services.

4.3.3 Classification by ownership structure

WSPs can either be publicly or privately owned. This classification, based on ownership structure, takes into account differences in the customer base (publicly-owned WSPs serve a wide range of customers, high- and low-income, within their predefined service areas, whereas privately-owned WSPs have a more homogeneous medium- to high-income customer base). Presently, this classification only applies to the urban WSP category, with two privately owned WSPs, namely Runda Water Company and Kiamumbi Water Project, ranked separately from the publicly-owned urban WSPs.

4.4 PERFORMANCE ANALYSIS AND RANKING

WSP performance is analysed with respect to the following 9 KPIs: Water Coverage, Sanitation Coverage, Non-Revenue Water (NRW), Drinking Water Quality (residual chlorine and bacteriological quality), Hours of Supply, Metering Ratio, Revenue Collection Efficiency, Operation and Maintenance (O+M), Cost Coverage, and Staff Productivity (staff per 1000 connections). WSPs are ranked on the basis of their performance in these indicators as well improvement between the previous and current reporting periods.

Additional performance indicators used for analysis but not factored in the ranking are: Sewerage Coverage (where applicable), Dormant Connections and Personnel Expenditure as Percentage of O+M Costs.

Each indicator is defined in Section 4.8: Comparative performance of urban WSPs by indicators. Indicators that are directly related to the right to water and sanitation are presented graphically. These indicators are Water Coverage, Sanitation Coverage, Water Quality, Hours of Supply and NRW. To allow for the assessment of the overall sector performance on a given indicator, the weighted sector average (all reporting urban WSPs and all reporting rural WSPs respectively) is shown as well. Further, presentation of performance data as well as the sector average for both the current and the previous reporting period allows for the assessment of performance from one year to the next.

Good corporate governance remains a strong pillar in ensuring improved sector performance. Nakuru and Kisumu remain the only WSPs that have consistently refused to comply with Wasreb's Corporate Governance Guideline and therefore have not been ranked. Poor corporate governance is at odds with the principles of professionalism, transparency and accountability and ultimately leads to a deterioration of performance. The measure principally targets WSPs which exploit their favourable operating environment to continue propagating poor management at the expense of consumers.

Table 4.3: Performance indicators, sector benchmarks and scoring regime

INDICATORS			Sector Benchmarks			Scoring Regime	
			Good	Acceptable	Not Acceptable	Performance	Score
1	**Water Coverage**		>90%	80-90%	<80%	≥90%	30
						≤50%	0
2	**Sanitation Coverage**		>90%	80-90%	<80%	≥90%	15
						≤50%	0
3	**Drinking Water Quality**	No. of tests - Residual Chlorine	>95%	90-95%	<90%	≥95%	10
						≤90%	0
		Compliance - Residual Chlorine	>95%	90-95%	<90%	≥95%	5
						≤90%	0
		No. of tests - Bacteriological Quality	>95%	90-95%	<90%	≥95%	10
						≤90%	0
		Compliance - Bacteriological Quality	>95%	90-95%	<90%	≥95%	5
						≤90%	0
4	**Hours of Supply**	Population >100,000	21-24	16-20	<16	≥20	20
						≤10	0
		Population <100,000	17-24	12-16	<12	≥16	20
						≤6	0
5	**Non-Revenue Water**		<20%	20-25%	>25%	≤20%	25
						≥40%	0
6	**O+M Cost Coverage**		≥150%	100-149%	≤99%	≥150%	25
						≤90%	0
7	**Collection Efficiency**		>95%	95-85%	<85%	≥95%	20
						≤85%	0
8	**Staff Productivity (Staff per 1000 Connections)**	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
10	**Personnel Expenditure as Percentage of O&M Costs**	Large and Very Large Companies	<20%	20-30%	>30%	N/A	N/A
		Medium Companies	<30%	30-40%	>40%		
		Small Companies	<40%	40-45%	>45%		

Table 4.3 above shows the sector benchmarks for the 9 KPIs along with Personnel Expenditure as % of O+M cost. In addition, the table illustrates the weights, thresholds and ceilings which apply to the scoring of the indicators.

4.5 SECTOR BENCHMARKS AND SCORING REGIME

Sector benchmarks for the 9 KPIs along with Personnel Expenditure as % of O+M cost are presented in Table 4.3 on the previous page. In addition, the table illustrates the weights, thresholds and ceilings which apply to the scoring of the indicators. Different benchmarks are applied for some indicators to acknowledge the different operating conditions resulting from total population in the service area (hours of supply), WSP size (staff productivity and personnel expenditure) and the number of towns (or schemes) covered (staff productivity).

Taking into account the state of development of the sector, lower scoring thresholds have been adopted for all KPIs, except for Water Quality and Staff Productivity. Upper ceilings, on the other hand, are assigned to the sector benchmarks. The aggregated score for the nine KPIs is then used to rank the WSPs, with the maximum achievable score being 200. It should be noted that Wasreb continuously monitors the development of the sector and reviews the scoring regime to align it to set sector benchmarks. In the current edition of *Impact,* the scoring regime on Collection Efficiency has been adjusted upwards and aligned to the sector benchmark.

Detailed description on the computation of Water and Sanitation Coverage as well as O+M Cost Coverage and NRW is presented in Annex 2.

SECTION A: PERFORMANCE OF URBAN WATER SERVICE PROVIDERS

This section highlights key industry data for urban WSPs, ranks their overall performance for the current reporting period and their change in performance from the previous reporting period. Thereafter, it provides a detailed performance analysis for all KPIs.

4.6 GENERAL INFORMATION ON URBAN WSPs

The number of urban WSPs has decreased from 66 in the last reporting period to 65 in the current reporting period. Together, they have more than 1.28 million connections up from 1.18 million. They employ more than 7,000 staff and have a turnover of more than KSh 14.6 billion (up from 12 billion in 2011/12). The population within the service area of urban WSPs has increased from 17.75 to 18.35 million, out of which 9.81 million people were served. This represents an additional 364,501 people served compared to the previous reporting period. At the same time, total production has slightly increased from 332.05 to 362.87 million cubic meters while NRW has decreased slightly from 44 to 42%, implying that more water was available for consumption hence the increase of daily per capita consumption from 34 to 41 litres.

Detailed information per urban WSP can be found in Table 4.4.

Table 4.4: General data on urban WSPs

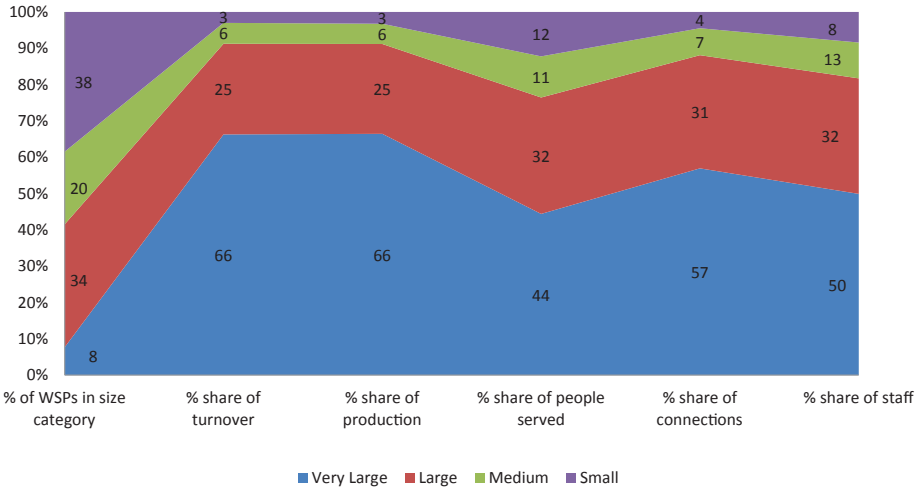
WSP	Total population in service area	Total population served	Total no. of connections	Total no. of active connections	No. of towns	Turnover (KSh million)	Production in m³ (000)	Domestic + kiosks billed volume in m³ (000)	NRW	Production per capita (l/c/d)	Consumption per capita (l/c/d)	No. of staff
Very Large WSPs (≥35,000 connections)												
Nairobi	3,875,749	2,915,662	472,205	472,205	6	7,227	190,445	79,886	38	179	75	2,595
Mombasa	1,053,169	598,212	103,281	64,836	1	984	17,236	7,012	47	79	32	404
Eldoret	374,500	268,870	64,932	61,386	1	418	10,459	5,911	32	107	60	217
Nakuru	383,169	357,696	48,157	43,918	1	604	12,434	6,244	46	95	48	237
Thika	223,941	212,684	35,040	32,275	1	457	10,589	3,982	30	136	51	201
Large WSPs (10,000-34,999 connections)												
Nzoia	368,422	230,611	31,269	26,334	4	244	5,630	1,581	40	67	19	198
Nyeri	134,392	114,014	29,036	25,655	1	348	5,211	2,998	24	125	72	107
Kisumu	514,888	343,686	27,347	26,747	1	415	8,893	2,472	47	71	20	137
Kakamega Busia	331,478	239,964	26,754	20,764	4	219	5,991	2,448	45	68	28	135
Kirinyaga	469,397	138,293	25,632	14,952	5	101	6,542	1,599	71	130	32	152
Malindi	226,968	193,208	23,794	23,731	2	340	5,942	3,789	29	84	54	113
Mathira	148,847	47,286	21,448	8,959	1	68	4,208	964	67	244	56	64
Nakuru Rural	511,586	123,978	19,028	7,682	4	156	8,518	1,033	63	188	23	146
Embu	150,600	93,586	18,801	17,512	1	168	3,972	2,332	41	116	68	97
Kilifi Mariakani	773,481	431,484	17,328	13,116	4	364	6,874	1,309	47	44	8	115
Tililbei	265,867	146,105	16,629	11,242	7	58	3,487	900	62	65	17	90
Kericho	150,158	116,387	16,494	13,694	1	135	1,412	621	37	33	15	133
Gusii	541,751	244,774	16,339	10,808	7	95	2,060	775	47	23	9	116
Nanyuki	113,616	103,678	15,278	14,108	1	221	3,673	1,238	33	97	33	79
Nyahururu	110,385	53,312	12,838	11,554	2	97	1,955	494	49	100	25	109
Kikuyu	158,852	42,290	12,000	9,853	4	63	1,487	418	45	96	27	54
Murang'a	63,879	50,400	11,864	10,529	1	83	1,596	700	39	87	38	68
Tavevo	61,306	44,305	11,173	4,172	2	102	2,682	1,237	No data	166	77	69
Sibo	327,920	76,445	11,047	5,881	9	49	1,722	488	58	62	17	96
Meru	108,569	64,010	10,967	9,720	1	121	2,115	1,559	26	91	67	75
Garissa	150,165	128,685	10,596	10,524	2	134	3,779	1,428	50	80	30	78
Kwale	687,617	116,662	10,427	6,607	5	68	1,971	1,074	38	46	25	97
Medium WSPs (5,000-9,999 connections)												
Ruiru Juja	204,374	124,439	9,275	9,050	3	98	1,383	972	30	30	21	28
Machakos	199,211	82,404	9,063	6,478	1	61	988	421	57	33	14	51
Limuru	179,556	71,796	8,307	6,672	3	76	1,311	622	34	50	24	48
Kitui	539,018	249,240	8,293	7,384	1	94	2,578	825	56	28	9	71
Mavoko	157,207	125,055	8,238	7,368	3	152	1,091	520	38	24	11	66
Oloolaiser	265,594	71,896	8,216	5,318	4	89	1,982	994	47	76	38	75
Isiolo	70,000	28,128	7,441	6,104	1	54	1,093	475	43	107	46	48
South Nyanza	996,662	119,982	6,342	5,838	5	20	1,023	491	34	23	11	62
Mikutra	181,439	36,096	6,242	4,140	3	7	156	45	38	12	3	55
Amatsi	265,932	63,784	6,101	2,828	5	27	1,558	251	46	67	11	67
NolTuresh Loitokitok	275,500	51,741	6,052	3,367	4	39	4,271	620	84	226	33	74
Kiambu	94,833	33,150	5,487	4,111	9	79	1,761	740	41	146	61	35
Lodwar	116,890	55,592	5,238	5,216	7	41	1,060	257	37	52	13	43
Small WSPs (<5,000 connections)												
Kibwezi Makindu	270,752	103,748	4,964	3,693	5	39	1,121	732	28	30	19	56
Gulf	186,018	37,889	4,562	2,902	1	6	401	0.30	No data	29	0.02	35
Karuri	151,905	90,156	4,503	4,233	1	27	864	574	32	26	17	26
Nyanas	729,217	448,471	4,059	3,375	2	7	570	264	46	3	2	24
Lamu	22,249	15,400	3,459	2,387	2	19	555	303	41	99	54	31
Kiambere Mwingi	81,281	55,570	2,774	2,774	1	38	602	289	36	30	14	40
Eldama Ravine	31,933	18,364	2,770	1,743	1	13	981	216	71	146	32	34
Narok	45,701	17,024	2,608	2,570	1	32	698	279	37	112	45	34
Mandera	89,000	22,842	2,583	2,583	1	12	1,274	450	32	153	54	13
Kapsabet Nandi	32,890	14,904	2,354	2,315	1	14	641	143	49	118	26	17
Kapenguria	58,490	16,602	2,337	1,070	1	9	326	121	28	54	20	25
Naivasha	275,000	178,402	2,164	2,042	3	45	754	229	36	12	4	23
Mwala	103,641	28,136	2,054	1,763	1	13	173	77	33	17	8	41
Maralal	38,100	No data	1,957	1,832	1	10	299	91	38	No data	No data	28
Yatta	61,555	17,834	1,851	1,513	1	13	167	61	27	26	9	21
Iten Tambach	51,639	10,062	1,754	1,447	2	11	315	168	32	86	46	15
Olkalou	77,299	28,411	1,656	1,293	1	5	115	57	27	11	6	14
Namanga	19,256	10,965	1,378	1,126	1	6	232	105	53	58	26	9
Runda	10,125	10,080	1,127	1,122	1	83	783	522	32	213	142	42
Kiamumbi	8,659	6,996	862	857	1	14	227	157	31	89	61	3
Rumuruti	10,997	4,956	793	393	1	3	84	21	59	47	12	12
Matungulu Kangundo	22,882	5,882	742	432	1	10	123	56	48	57	26	12
Wote	64,033	13,307	577	527	1	9	89	17	21	18	4	16
Moyale	45,475	29,920	557	473	1	4	112	75	No data	10	7	18
Olkejuado	40,000	12,871	2,561	637	3	No data	234	156	No data	50	33	27
TOTALS	**18,354,984**	**9,808,382**	**1,271,005**	**1,097,740**	**164**	**14,617**	**362,876**	**146,887**	**42***	**101***	**41***	**7,321**
*Weighted Average												

Table 4.5 and Figure 4.1 provide information on the market share of the four WSP categories based on size.

Table 4.5: Absolute market shares of urban WSPs by size

Urban WSPs	No. of WSPs	Turnover in KSh billion	Production in million m^3	People served in millions	No. of connections	No. of staff
Very Large	5	9.69	241	4.35	723,613	3,654
Large	22	3.65	89.7	3.14	396,089	2,328
Medium	13	0.84	20.2	1.11	94,295	723
Small	25	0.44	11.8	1.20	57,006	616
Total	**65**	**14.62**	**362.7**	**9.81**	**1,271,003**	**7321**

Figure 4.1: Relative market shares of urban WSPs by size



Compared to the previous year, the percentage of WSPs in small and medium size categories decreased from 42% and 21% to 38% and 20% respectively, implying that WSPs are gradually improving on their connections and hence graduating to higher size categories. Lodwar and Mikutra moved from small to medium, while Kwale, Kikuyu and Tavevo graduated to the large category. WSPs in the Very Large category, though few in number (5 out of 65), account for more than 50% of market share in turnover, production, number of connections, and staff. They account for almost 50% of the people served.

4.7 OVERALL RANKING

This section presents the ranking of 63 out of 65 urban WSPs according to their performance on the 9 KPIs. Ranking is based on the scoring regime shown in Section 4.2 and is presented separately for 61 publicly-owned (Table 4.6a) and 2 privately-owned WSPs (Table 4.6b). The ranking has been done overall as well as within the four size categories. As indicated in Section 4.1, Nakuru and Kisumu have consistently refused to comply with requirements of corporate governance. As a result, they are not ranked.

Table 4.6(a): Overall ranking and ranking by category for publicly-owned urban WSPs

	DWQ - Residual Chlorine (%)	DWQ - Bacteriological Quality (%)	Non-Revenue Water (%)	Water Coverage (%)	Sanitation Coverage (%)	Hours of Supply (hrs./d)	Staff Productivity (no. staff/K conns.)	Revenue Collection Efficiency (%)	O+M Cost Coverage (%)	Metering Ratio (%)	Total score	Ranking by Category	Overall Rank
Very Large WSPs													
Thika	96	95	30	95	92	24	6	97	107	100	155	1	2
Eldoret	92	96	32	72	97	16	4	87	100	100	117	2	9
Nairobi	80	94	38	75	72	18	5	77	126	96	101	3	15
Mombasa	94	96	47	57	88	6	6	82	107	58	62	4	48
Nakuru	89	96	46	93	77	18	5	91	112	87	X	X	X
Large WSPs													
Nyeri	100	96	24	85	99	24	4	102	135	99	181	1	1
Meru	100	96	26	59	91	24	8	120	116	98	146	2	3
Nanyuki	96	71	33	91	90	23	6	81	140	92	140	3	5
Embu	95	94	41	62	77	23	6	94	134	99	134	4	6
Murang'a	96	53	39	79	91	23	6	98	89	99	129	5	7
Malindi	93	61	29	85	43	24	5	92	98	100	124	6	8
Kakamega Busia	76	96	45	72	76	19	7	100	171	76	112	7	11
Garissa	95	89	50	86	81	21	7	85	107	76	101	8	14
Nyahururu	96	53	49	48	97	20	9	104	95	95	93	9	19
Nzoia	95	95	40	63	60	22	8	94	105	92	93	10	20
Kikuyu	96	38	45	27	87	12	5	100	87	93	92	11	21
Kericho	100	58	37	78	82	23	10	89	87	80	91	12	22
Kirinyaga	95	94	71	29	88	23	10	94	104	90	90	13	23
Kilifi Mariakani	85	87	47	56	n.d.	14	9	94	92	100	89	14	25
Gusii	99	54	47	45	84	17	11	98	72	79	80	15	30
Mathira	90	56	67	32	67	23	7	101	112	84	73	16	37
Tililbei	99	61	62	55	70	19	8	76	74	45	71	17	38
Sibo	71	96	58	23	62	16	16	93	68	90	65	18	45
Tavevo	89	0	n.d.	72	77	7	17	98	116	75	64	19	47
Kwale	93	77	38	17	62	21	15	97	66	82	58	20	50
Nakuru Rural	74	86	63	24	71	9	19	95	85	30	38	21	57
Kisumu	96	41	47	67	61	23	5	95	109	100	X	X	X
Medium WSPs													
Ruiru Juja	96	95	30	61	82	20	3	97	121	100	145	1	4
Limuru	68	49	34	40	95	17	7	94	107	100	112	2	10
Mavoko	90	76	38	80	68	10	9	95	132	96	108	3	13
Isiolo	96	96	43	40	76	18	8	91	106	58	87	4	26
Lodwar	96	56	37	48	36	12	8	76	146	90	83	5	27
Kitui	95	96	56	46	76	9	10	112	75	100	76	6	33
Oloolaiser	97	47	47	27	82	13	14	97	99	92	71	7	39
South Nyanza	97	93	34	12	56	11	11	105	54	77	67	8	44
Kiambu	75	56	41	35	88	8	9	76	95	96	62	9	49
Mikutra	100	53	38	20	65	5	13	97	46	83	50	10	51
NolTuresh Loitokitok	96	0	84	19	49	18	22	83	46	90	39	11	54
Machakos	87	63	57	41	70	5	8	87	94	62	39	12	55
Amatsi	96	61	46	24	39	20	24	81	74	50	37	13	58
Small WSPs													
Namanga	96	56	53	57	81	16	8	95	138	84	111	1	12
Kiambere Mwingi	94	93	36	68	85	14	14	100	58	95	100	2	16
Karuri	0	41	32	59	91	12	6	98	86	93	99	3	17
Kibwezi Makindu	96	44	28	38	82	18	15	108	77	100	95	4	18
Nyanas	99	95	46	62	91	5	7	105	30	71	90	5	24
Iten Tambach	98	90	32	19	86	14	10	108	87	78	83	6	28
Mwala	96	67	33	27	36	16	23	98	48	100	81	7	29
Yatta	96	68	27	29	63	16	14	95	78	89	79	8	31
Maralal	96	96	38	n.d.	33	14	15	99	68	99	77	9	32
Wote	96	89	n.c.d.	21	91	16	30	89	78	100	75	10	34
Lamu	96	39	41	69	80	6	13	97	80	96	74	11	35
Kapenguria	95	39	28	28	76	14	23	93	47	46	74	12	36
Olkalou	0	47	27	37	69	15	11	92	51	100	71	13	40
Naivasha	70	119	36	65	75	8	11	93	97	39	70	14	41
Narok	96	50	37	37	66	12	13	98	90	94	69	15	42
Mandera	68	0	32	26	49	18	5	59	133	0	67	16	43
Kapsabet Nandi	83	0	49	45	87	18	7	74	94	88	65	17	46
Eldama Ravine	97	66	71	58	69	8	20	105	60	51	48	18	52
Matungulu Kangundo	63	78	48	26	67	12	28	77	123	91	40	19	53
Rumuruti	80	50	59	45	75	8	31	97	50	79	38	20	56
Moyale	0	0	n.d.	66	60	5	38	58	40	0	16	21	59
Gulf	56	76	n.d.	20	58	4	12	46	60	n.d.	8	22	60
Olkejuado	0	12	n.d.	32	n.d.	n.d.	42	n.d.	n.d.	90	8	23	61

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

For the sixth year running, Nyeri has dominated the first position, with Thika moving up six positions to position two. Meru has moved to position 3 from position 6 last year.

The least performing urban WSPs for the current period are Olkejuado, Gulf and Moyale in the 61st, 60th and 59th positions respectively. The worst performers in the Very Large, Large, Medium and Small categories are Mombasa (third year in a row), Nakuru Rural, Amatsi (2nd year in a row) and Olkejuado respectively.

The Large and Very Large WSPs dominated the top ten positions, with 7 and 2 WSPs respectively. For the 2nd year running, Ruiru Juja remained the only WSP within the top ten performers from the medium category. Kiamumbi led in this category with all its KPIs attaining the sector benchmark, except for NRW.

Table 4.6(b): Overall ranking for privately owned urban WSPs

	DWQ - Residual Chlorine (%)	DWQ - Bacteriological Quality (%)	Non-Revenue Water (%)	Water Coverage (%)	Sanitation Coverage (%)	Hours of Supply (hrs./d)	Staff Productivity (no. staff/K conns.)	Revenue Collection Efficiency (%)	O+M Cost Coverage (%)	Metering Ratio (%)	Total score	Ranking by Category	Overall Rank
Kiamumbi	96	96	31	81	99	22	4	92	183	100	168	1	1
Runda	96	96	32	100	92	20	37	99	116	100	145	2	2

4.8 PERFORMANCE OVER TIME

The ranking of WSPs performance over time is meant to serve two main purposes:

- To recognise WSPs whose performance has shown progress despite not catapulting them to the top in the short or medium term, due to factors beyond their control (mainly differing starting positions with respect to condition of infrastructure).
- To warn and expose WSPs whose performance has declined even though their favourable operating environment has cushioned them from sinking to the bottom.

Tables 4.7 (a) and (b) show the performance over time of urban publicly and privately owned WSPs respectively from the last to the current reporting period.

Table 4.7(a): Performance over time of publicly-owned urban WSPs

Rank	WSP	Score 2012/13	Score 2011/12	Scores +/-
1	Nyeri	181	179	2
2	Thika	155	119	36
3	Meru	146	128	18
4	Ruiru Juja	145	123	22
5	Nanyuki	140	131	9
6	Embu	134	138	-4
7	Murang'a	129	91	38
8	Malindi	124	133	-9
X	Kisumu	119	83	36
X	Nakuru	117	119	-2
9	Eldoret	117	138	-21
10	Limuru	112	98	14
11	Kakamega Busia	112	72	40
12	Namanga	111	75	36
13	Mavoko	108	101	7
14	Garissa	101	77	24
15	Nairobi	101	97	4
16	Kiambere Mwingi	100	102	-2
17	Wote	75	63	12
18	Karuri	99	83	16
19	Kibwezi Makindu	95	61	34
20	Nyahururu	93	69	24
21	Nzoia	93	79	14
22	Kikuyu	92	71	21
23	Kericho	91	100	-9
24	Kirinyaga	90	75	15
25	Nyanas	90	62	28
26	Kilifi Mariakani	89	58	31
27	Isiolo	87	71	16
28	Lodwar	83	69	14
29	Iten Tambach	83	63	20
30	Mwala	81	66	15

Rank	WSP	Score 2012/13	Score 2011/12	Scores +/-
31	Gusii	80	31	49
32	Yatta	79	63	16
33	Maralal	77	68	9
34	Kitui	76	44	32
35	Lamu	74	54	20
36	Kapenguria	74	66	8
37	Mathira	73	59	14
38	Tililbei	71	41	30
39	Oloolaiser	71	44	27
40	Olkalou	71	69	2
41	Naivasha	70	69	1
42	Narok	69	61	8
43	Mandera	67	46	21
44	South Nyanza	67	45	22
45	Sibo	65	38	27
46	Kapsabet Nandi	65	26	39
47	Tavevo	64	50	14
48	Mombasa	62	63	-1
49	Kiambu	62	84	-22
50	Kwale	58	37	21
51	Mikutra	50	33	17
52	Eldama Ravine	48	41	7
53	Matungulu Kangundo	40	26	14
54	NolTuresh Loitokitok	39	31	8
55	Machakos	39	20	19
56	Rumuruti	38	56	-18
57	Nakuru Rural	38	36	2
58	Amatsi	37	17	20
59	Moyale	16	22	-6
60	Gulf	8	16	-8
61	Olkejuado	8	23	-15

Gusii, Kakamega-Busia and Kapsabet Nandi were the top three improvers. Kiambu, Eldoret and Rumuruti were the top three losers. The drop in performance for Eldoret is particularly worrying considering that it is a very large provider serving close to 400,000 people and has a turnover of over 400 million per annum. This trend should urgently be reversed.

Table 4.7(b): Performance over time of privately-owned urban WSPs

Rank	WSP	Score 2012/13	Score 2011/12	Scores +/-
1	Kiamumbi	168	132	36
2	Runda	145	158	-13

In this category, Kiamumbi improved its score by an impressive 36 marks while Runda declined by 13 marks. Runda should reinforce efforts to reverse the continued decline in performance.

Table 4.8 indicates that the overall performance for urban WSPs has improved compared to the previous reporting period. Whereas in 2011/12 only 35% of the WSPs improved their performance, in the current year an impressive 80% of the WSPs recorded improved performance.

Table 4.8: Number and percentage of urban WSPs recording improvement

Year	No. urban WSPs	No. of improvers	% of improvers
2012/13	65	52	80
2011/12	66	23	35

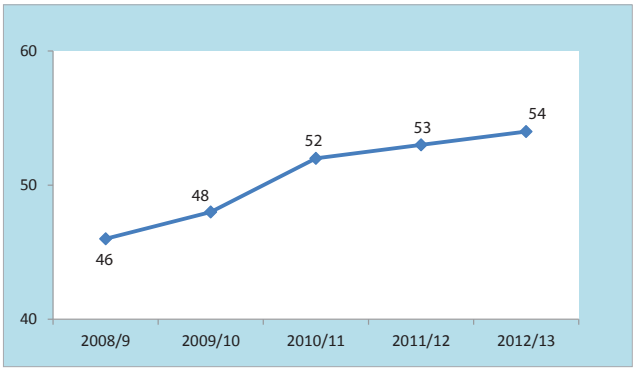
4.9 PERFORMANCE OF URBAN WSPs BY INDICATORS

The overall performance of urban WSPs in the current period is quite remarkable. All the KPIs except staff productivity and revenue collection efficiency recorded an improvement. It is also worth noting that water quality (bacteriological) and hours of supply have now reached an acceptable level.

4.9.1 Water Coverage

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

Figure 4.2 Trend in urban water coverage (%)



Overall, water coverage improved slightly from 53% during the previous reporting period to 54% in 2012/13 (Figure 4.3a and b), thus maintaining a positive performance trend (Figure 4.2). In fact, 45 out of 65 WSPs (69%) recorded an improvement on this

indicator. However, from the trend, achieving the MDGs target of 80% coverage would need coverage to increase by 26 percentage points in less than two years, which is not feasible. WSPs need to increase their efforts to extend services to currently underserved urban low-income areas (LIAs) to effectively leverage their investments in terms of impact.

Figure 4.3(a): Water Coverage in %

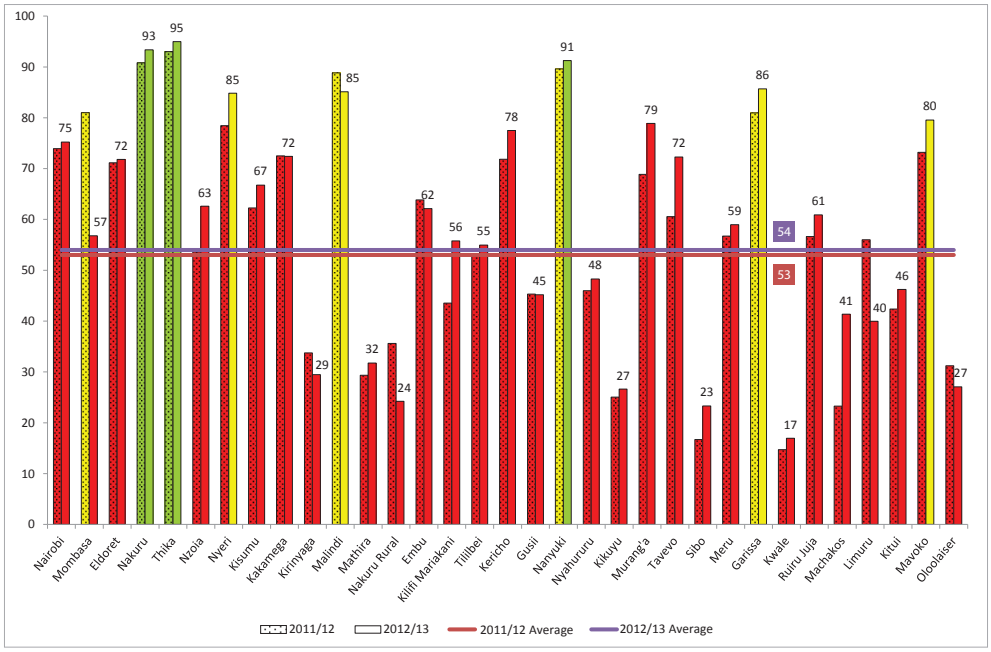
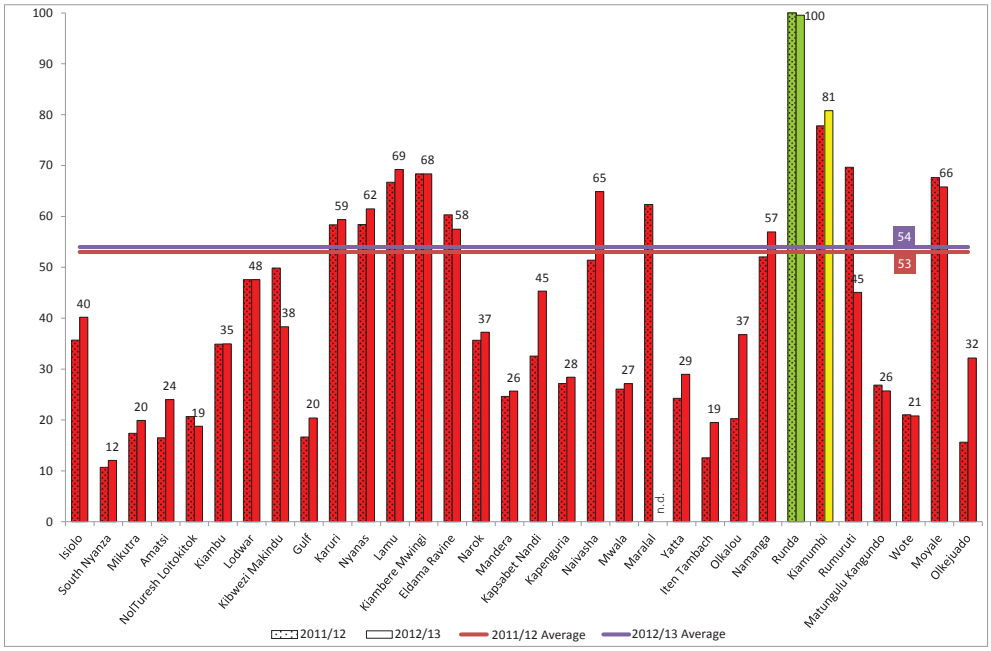


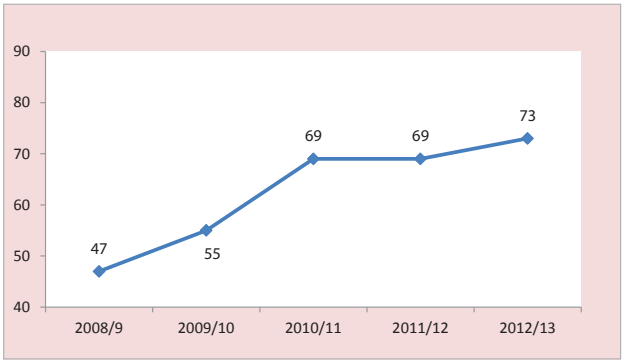
Figure 4.3(b): Water Coverage in %



4.9.2 Sanitation Coverage

Sanitation Coverage refers to the number of people with access to improved sanitation facilities expressed as a percentage of the total population within the service area of the WSP. It measures performance with regard to the provision of sewerage and on-site sanitation services. Improved facilities include flush or pour-flush to piped sewer systems, septic tanks, ventilated improved pit latrines (including Urine Diversion Dehydration Toilets) and traditional pit latrines (with a squatting slab).

Figure 4.4 Trend in urban Sanitation Coverage (%)



Overall sanitation coverage improved by 4 percentage points from 69% to 73% which makes the sector target of 77.5% by 2015 attainable given the trend depicted in Figure 4.4. The number of WSPs that reported of having attained the acceptable sector benchmark more than doubled from 13 to 28.

Wasreb has continued to apply more rigorous validation of the data and excluded reported figures which appeared incredible considering other data sources. Challenges still abound in the reporting of on-site sanitation since WSPs lack a clear mandate on on-site sanitation and therefore rely on external data sources, such as the Department of Public Health. It is important to strengthen WSPs' mandate on on-site sanitation, including providing financial incentives for rapid upscaling of access — especially in urban LIAs.

The Water Services Trust Fund (WSTF) runs a programme, Upscaling Basic Sanitation for the Urban Poor (UBSUP), where WSPs apply to obtain grants to improve access to sanitation in their service areas. The aim is to improve access to sanitation in low income areas where the sanitation situation is poor. UBSUP also helps WSPs to fulfill one of their key responsibilities namely collection, transport and treatment of sludge from human waste regardless of the origin (sewer systems or onsite sanitation installations). It is crucial that WSPs become aware of these responsibilities as indicated in the National Water Services Policy and Strategy. WSPs have to get more engaged in sludge management in order to improve environmental sanitation in densely populated low income areas.

So far, UBSUP with the participation of Oloolaiser, Nakuru urban and Embu WSPs, has promoted over 2,000 individual sanitation installations (exceeding 20,000 beneficiaries) and is in the process of supporting the establishment of decentralized sludge management units for low income areas. With the help of these WSPs, the Urban Project Component is in the process of preparing to formalise emptying services to control the disposal of sludge and ensure the safety of workers. Upscaling of sanitation through UBSUP is now gaining speed and is planned to reach around 100,000 beneficiaries by the end 2014 and 600,000 to 800,000 beneficiaries in the next three years. This will have a positive impact on the

living conditions in densely populated low income areas, as beneficiaries will have access to standardised sanitation installations, and a better sanitary environment due to control in sludge disposal and treatment.

Figure 4.5(a): Sanitation Coverage in %

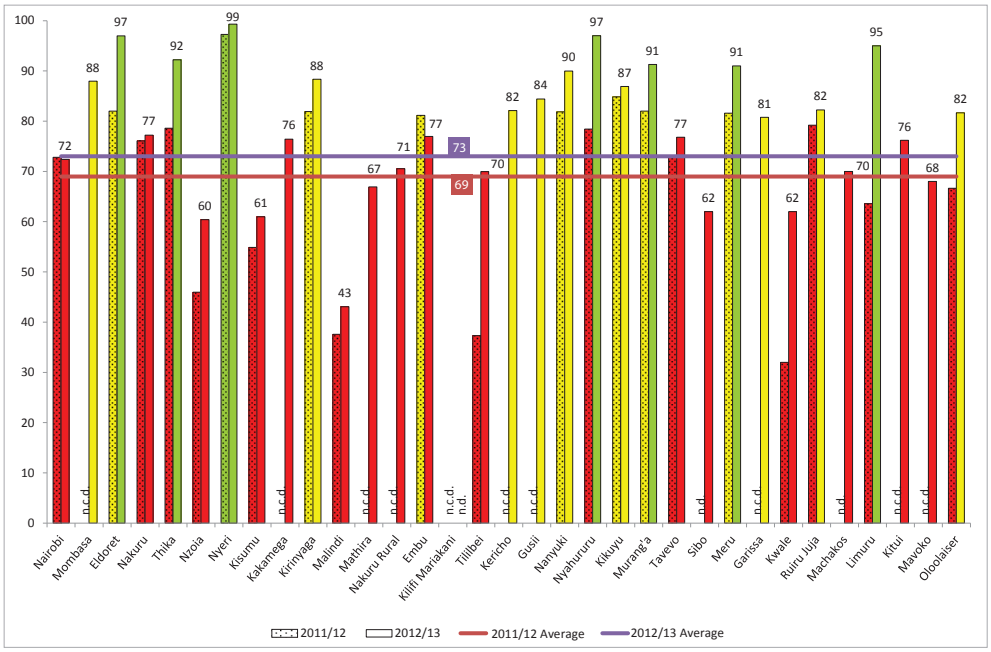
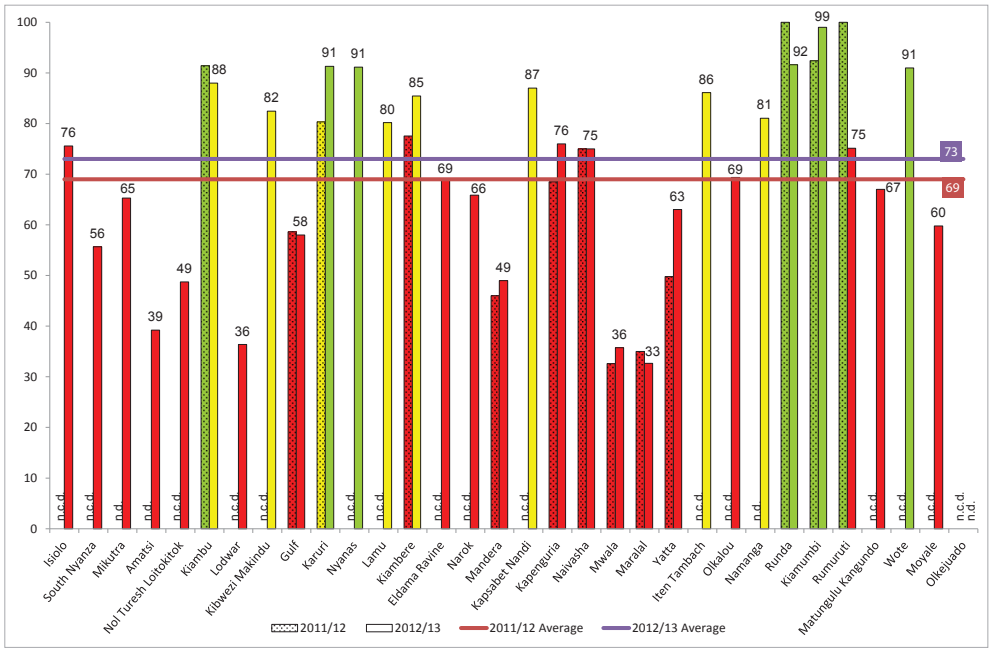


Figure 4.5(b) Sanitation Coverage in %

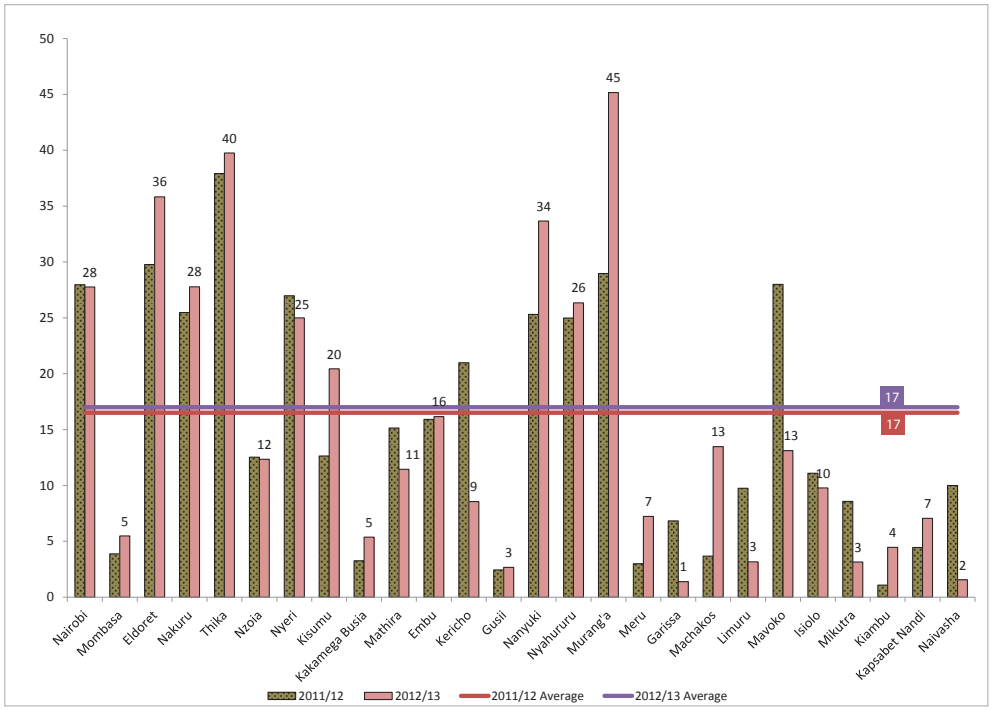


4.9.3 Sewerage Coverage

Sewerage Coverage refers to the number of people served with flush or pour-flush to piped sewer systems as a percentage of the total population within the service area of a WSP. It measures the performance of urban WSPs with sewerage systems (29 out of the 66) in delivering sewerage services to consumers. In the current reporting period, sewerage coverage stagnated at 17%. This is still below the national target for sewerage coverage of 40% by 2015.

The stagnation of sewerage coverage in the current year, coupled with a drop in the previous period, is a clear pointer to the need for a mix of off- and on-site technologies. This is necessary if the desired coverage level is to be realised, factoring in availability of resources, consumer ability, willingness to pay and population densities. Wasreb is currently exploring the possibility of implementing a sanitation levy to cover part of the collection, treatment and disposal costs of sewerage as well as setting cost recovery tariffs for sewerage.

Figure 4.6: Sewerage Coverage in %



4.9.4 Drinking Water Quality

Drinking Water Quality (DWQ) measures the potability of the water supplied by a WSP. It is a critical performance indicator since it has a direct impact on the health of consumers. The indicator is composed of two equally weighted sub-indicators, Residual Chlorine and Bacteriological Quality. The two are composed of two elements each:

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

Poor performance indicates that either too few samples were taken or that many samples did not meet the required norm, or both. Non-submission of monthly water quality reports to Wasreb is factored in by capping the score at 70% of the total achievable score for the number of tests conducted. A breakdown of WSP performance in the two components of the DWQ sub-indicators is provided in Annex 3.

Compliance to the GWQEM entails having an elaborate sampling programmes and submitting monthly and annual reports timely. However, most WSPs do not submit these reports. In this regard, it should be noted that with exception of Tana, WSBs are currently not doing enough to enforce or to support WSPs' compliance with the GWQEM. They could do this by investing in laboratory facilities and ensuring adequate provision for water quality analysis in the tariff proposals.

(i) Residual Chlorine

Overall, performance on this sub-indicator slightly improved, from 92% in 2011/12 to 93% in 2012/13. The number of residual chlorine tests conducted as a percentage of the number planned has remained constant at 90% while compliance of the tests with the norm increased from 96% to 97%. Forty four (44) urban WSPs (68%) managed to achieve the acceptable sector benchmark of 90%. Only 4 WSPs did not provide data on this indicator, implying that the figures reported are representative of the urban situation.

Figure 4.7(a): DWQ — Residual Chlorine in %

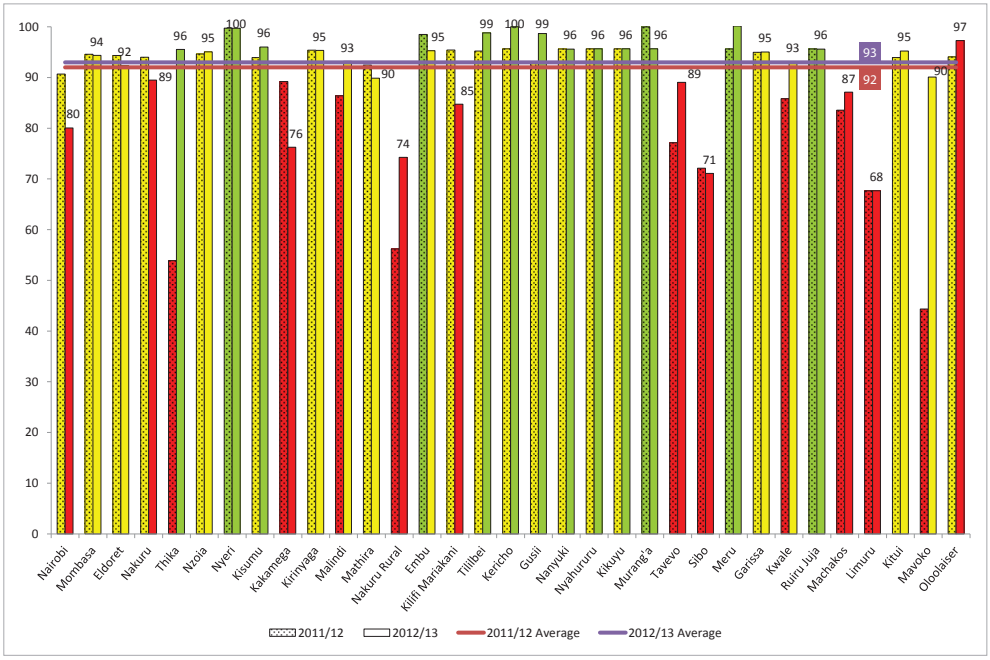
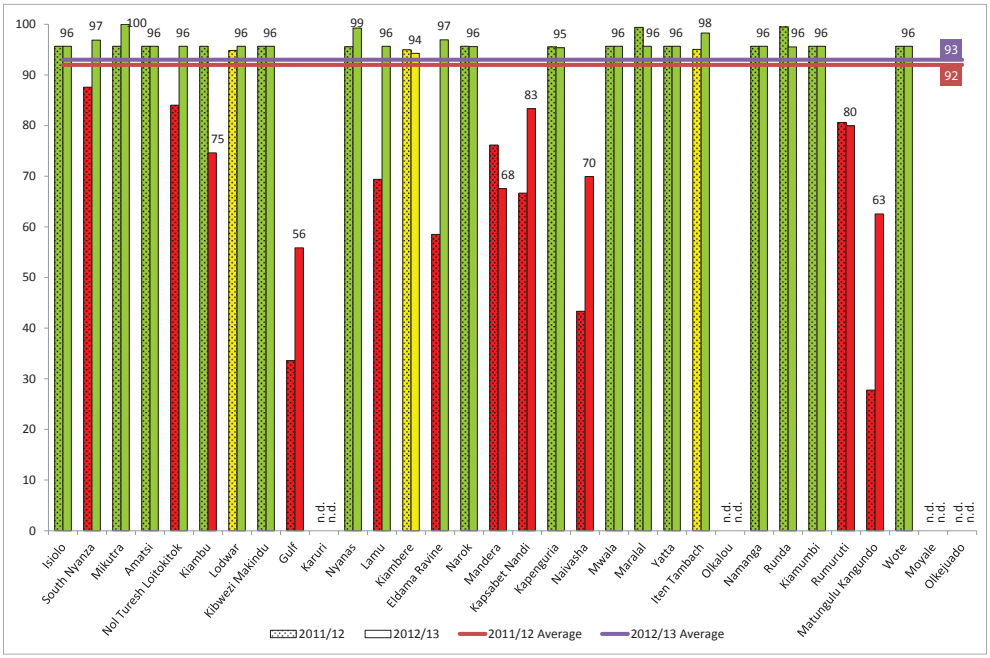


Figure 4.7(b): DWQ — Residual Chlorine in %



(ii) Bacteriological Quality

The performance on this sub-indicator improved significantly from 72% in 2011/12 to 93% in 2012/13 thereby reaching the acceptable benchmark of 90%. Both the number of bacteriological tests conducted as a percentage of the number of tests planned and compliance of the tests with the norm have improved considerably from 65 to 90% and 88 to 99% respectively.

It is particularly encouraging that all the Very Large WSPs have reached the acceptable level of performance whereas on the contrary, performance of WSPs in the large category is appalling. This is despite having adequate capacities to treat water and conduct adequate tests. The number of WSPs within the acceptable benchmark of 90% is still very low at 23. Wasreb will continue to apply the Compliance and Enforcement Strategy on the WSBs to ensure that they comply with required sampling programmes and reporting regimes. Lake Victoria South (LVS) and Coast WSBs are under penalty for default on these requirements.

Figure 4.8(a): DWQ — Bacteriological Quality in %

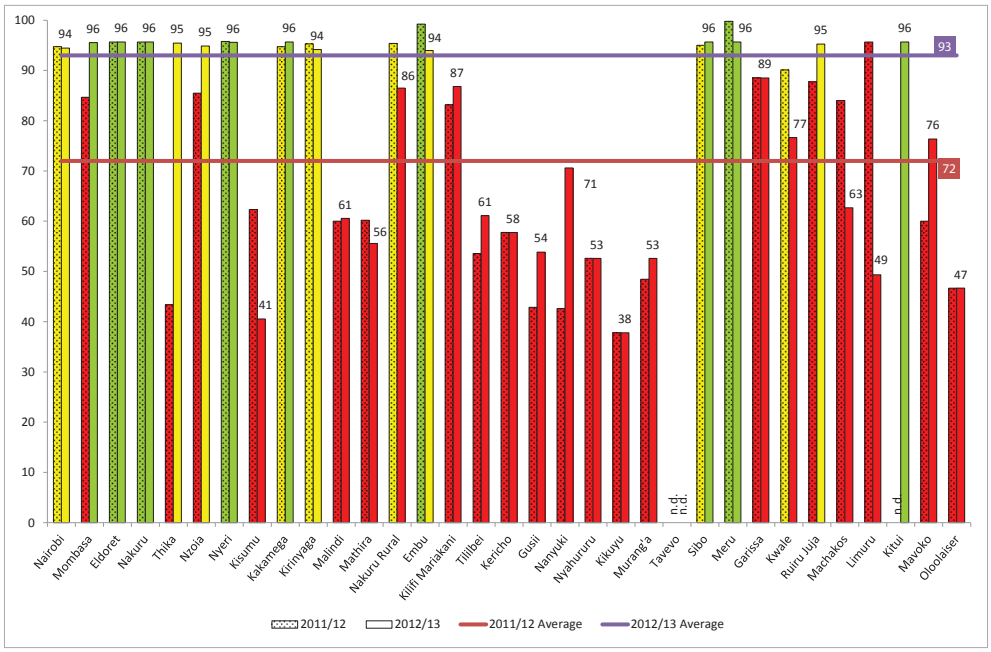
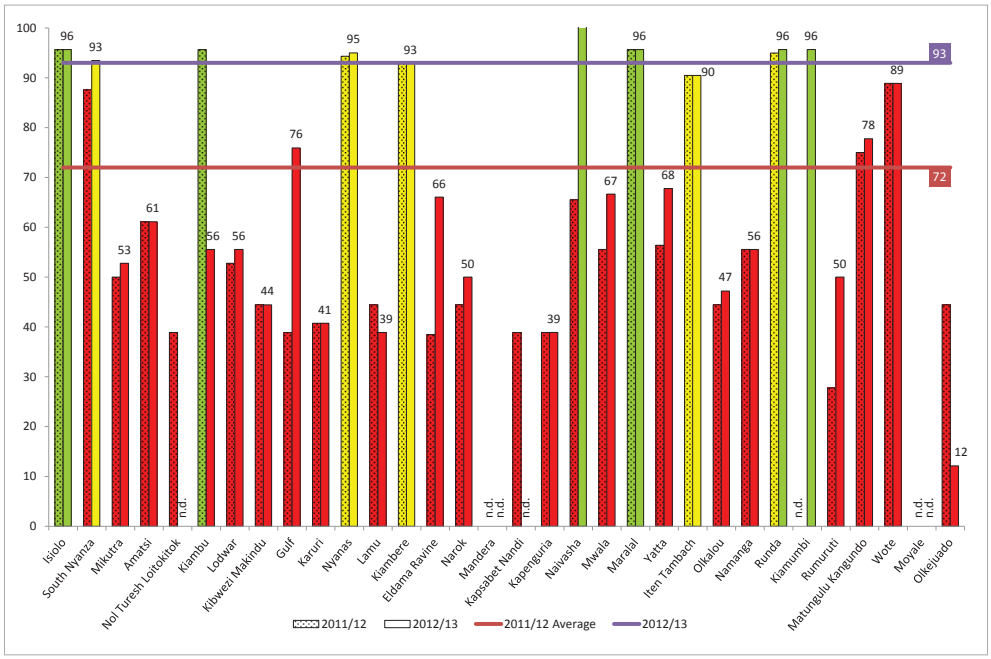


Figure 4.8(b): DWQ — Bacteriological Quality in %



4.9.5 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 WSP and thus the availability of water to the customer. It is an important indicator of service quality and shows the extent to which the WSP is making progress towards the fulfilment of the human right to water and sanitation in terms of availability of water in sufficient quantities. Beyond that, it has a direct bearing on the financial sustainability of the WSP: the higher the hours of supply, the higher the consumption and revenue.

Average daily service hours increased from 15 hours in the previous reporting period to 16 hours in the current period, which is within the acceptable benchmark. 66% of the WSPs have hours of service within the acceptable sector benchmark. Considering that half of these are within the Large and Very Large categories, their performance in this indicator signifies sector development. Given that some of the WSPs reporting low hours of supply have NRW levels higher than 40% (e.g. Machakos at 57%), this non-performance points to a direct link between poor management and poor service quality. Low hours of service impact negatively on customer satisfaction and hence the willingness to pay, which puts financial sustainability of the WSP at risk.

Figure 4.9(a): Hours of Supply

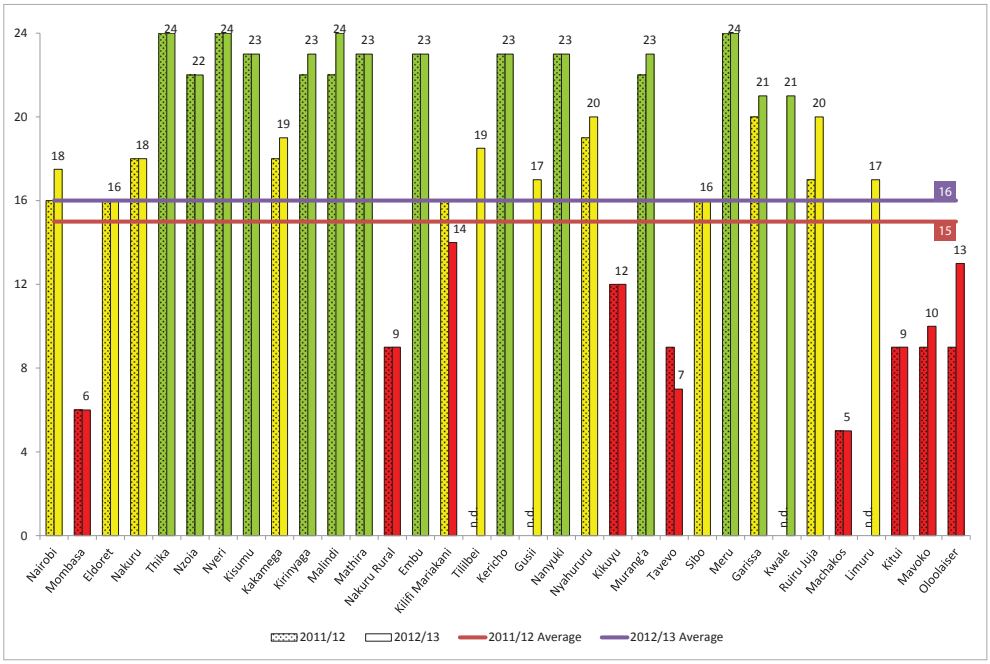
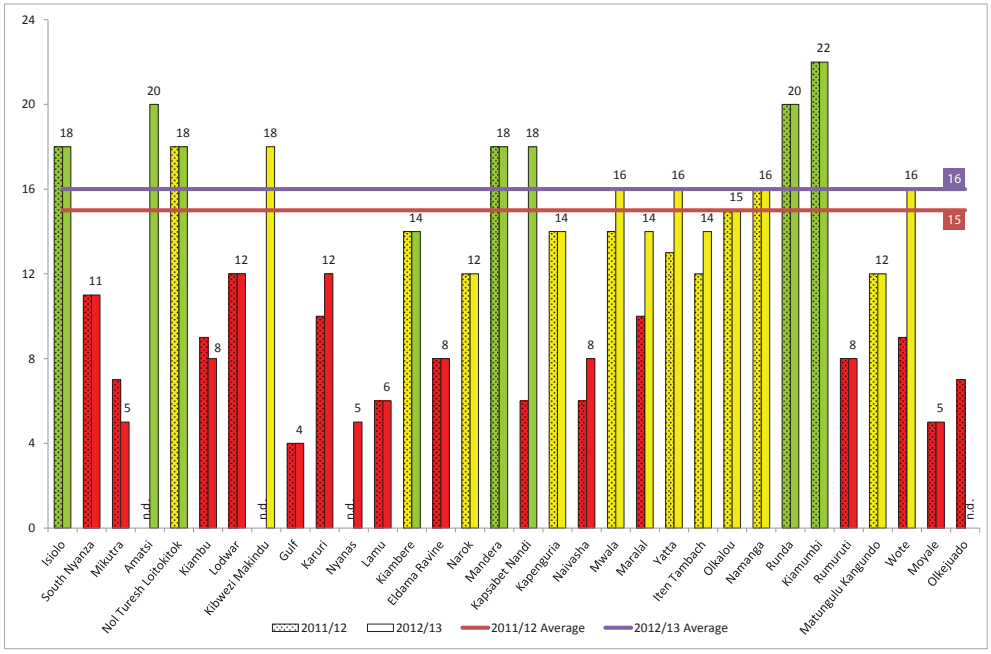


Figure 4.9(b): Hours of Supply



4.9.6 Non-Revenue Water

Non-Revenue Water (NRW) refers to the difference between the amount of water produced for distribution and the amount of water billed to customers. It measures the efficiency of the WSP in delivering the water it produces to the customer take-off point. It captures both technical losses (leakages) and commercial losses (illegal connections/water theft, metering errors and unbilled authorised consumption).

Performance on this indicator improved from 44% in 2011/12 to 42% in 2012/13 but it still remains far off the acceptable benchmark of 20-25%. To get to the National Water Services Strategy (NWSS) target of 30% by the 2015, the sector needs to close the gap of 14 percentage points in less than 2 years.

Nyeri, Malindi and Meru achieved the NWSS target, with their NRW levels at 24%, 29% and 26% respectively.

Of great concern is the high level of NRW for some large WSPs i.e. Kirinyaga 71%, Mathira 67%, Nakuru Rural 63% and Tililbei 62%. Bearing in mind that the bulk of the losses are estimated to be commercial, these figures are a clear indication of poor corporate governance in many WSPs. High levels of NRW also result from poor infrastructure maintenance and, above all, poor commercial practices (illegal connections and bill adjustments). They are detrimental to the commercial viability of WSPs as well as the safety of the water supplied (where related to leakages).

At a total billing of KSh 14.6 billion and the current NRW levels of 42%, the total value of the loss in 2012/13 can be estimated at a KSh 10.6 billion. This not only threatens the financial sustainability of the sector but also wastes funds which could have been used to increase access and improve service delivery. In short, underperformance in NRW is a direct expense to the customer and contradicts Kenya's aspiration to move towards higher living standards.

Given that NRW is to a large degree a result of commercial losses, county governments, WSBs and WSPs must put in place measures to address this. Wasreb is currently disseminating the NRW management manual which aims at providing a practical approach to the reduction of NRW through measures that do not require use of sophisticated equipment, high level of skills or major investments. The standard is based on experiences in the management of NRW from pilot studies in four WSPs, namely Meru, Embu, Narok and Kapsabet Nandi.

Figure 4.10(a): Non-Revenue Water in %

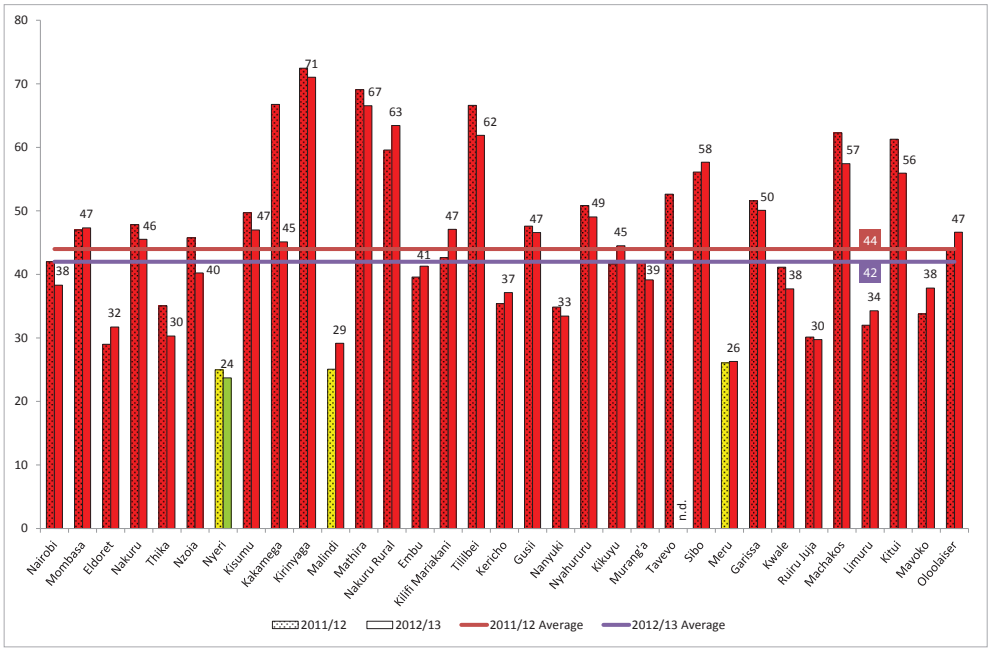
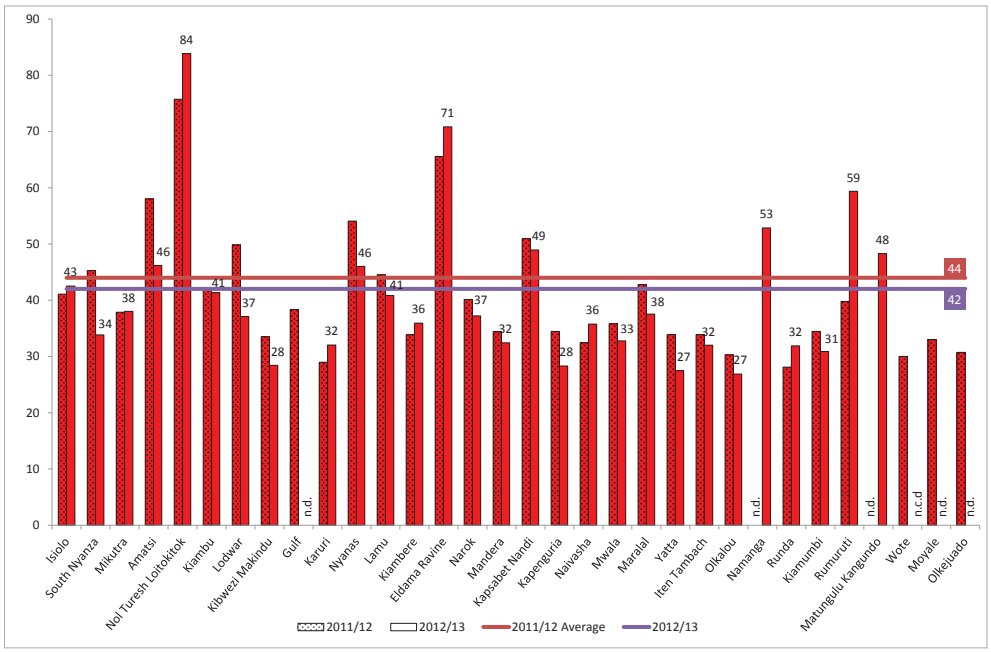


Figure 4.10(b): Non-Revenue Water in %



4.9.7 Dormant Connections

This indicator is computed as the number of access points that have remained disconnected or have not received water for more than three months expressed as a percentage of total water connections. They are an indicator of a WSP's management capacity to deliver quality services to its customers. Where the percentage of dormant connections is high, the WSP is either not able to provide services to all its registered customers or it provides services of inferior quality (which makes customers shift to alternative sources of supply). It could also imply that a large number of customers connect illegally.

The proportion of dormant connections remained constant at 17%. However, a high ratio for the Large and Very Large WSPs is a risk to commercial viability. WSPs in this category are Tavevo 63%, Nakuru Rural 60%, Sibo 47%, Kirinyaga 42%, and Mombasa 40%. This situation is likely to have a poor governance dimension where disconnected customers collude with WSP staff to get new account numbers. This results in dormant accounts in the records of the WSP yet these do not physically exist. Alternatively, some disconnected accounts, classified as dormant, continue to receive water through illegal reconnections.

This situation leads to loss of market share and gives way to informal providers, subsequently decreasing revenues. Nairobi continues to be the only WSP within the Large and Very Large category which still does not credibly report on this indicator.

4.9.8 Metering Ratio

Metering Ratio refers to the number of connections with operational meters expressed as a percentage of the total number of active water connections. It measures to what extent the WSP has implemented metering as a management tool. Metering not only provides critical information to WSPs in managing NRW but also allows them to charge customers according to their consumption and thereby manage water demand.

Metering improved considerably, from 79% to 89%, between the two reporting periods. Where metering is implemented effectively (high ratio), NRW levels can be expected to be generally moderate. A high metering ratio with a corresponding high NRW level indicates that the WSP either does not report the correct number of functional meters or does not effectively use metering as a management tool.

Only 25 urban WSPs (38%) achieve at least the acceptable sector benchmark of 95%. Under the oversight of WSBs, WSPs need to reinforce efforts to effectively use metering as a management tool. If this happens, we can expect management of their systems to improve and, consequently, levels of NRW to go down.

4.9.9 Staff Productivity (staff per 1000 connections)

Staff Productivity refers to the number of staff in employment for every 1000 connections (total registered water and, where applicable, sewer connections). It measures the efficiency of WSP in utilising its staff. Thus, a low figure is desirable. It should be noted that staff productivity is affected by factors such as the nature of human settlement (distances between connections), skills mix, outsourcing, the number of schemes served, and whether a utility provides water alone or water and sewerage services together.

Overall performance in terms of Staff Productivity has for the second year running stagnated at 7 staff per 1000 connections. The number of WSPs achieving the acceptable sector benchmark improved from 45% (30/66) to 60% (39/65). WSPs with unacceptably low staff productivity are Nakuru Rural (19), Tavevo (17), Sibo (16), Kwale (15) and Gusii (11). These WSPs must ensure that they have the right calibre of staff and the required skills mix in line with the criteria for appointment of WSPs.

4.9.10 Revenue Collection Efficiency

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

Overall performance on this indicator improved from 85% in 2011/12 to 89% in 2012/13, with 51 urban WSPs (79%) achieving the minimum threshold of 85%. All the Very Large and Large urban WSPs, with the exception of Nairobi, Mombasa, Nanyuki and Tililbei, have reached an acceptable performance level on this indicator.

The challenge of separating current collections from arrears has led to some WSPs reporting figures over 100%. A figure greater than 100% reflects collection ratio as opposed to efficiency since the figures being compared do not apply to the same period. In order to move towards more professional management, WSPs have to implement billing systems that allow them to clearly separate collections for arrears from current collections. Wasreb will prescribe and promote the minimum requirements for billing software to be used by utilities.

4.9.11 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 WSP. O+M Cost Coverage is critical to the performance of a WSP as it is a first step towards full cost coverage. It ensures long term financial sustainability. A WSP is estimated to have reached full cost coverage when it reaches at least 150% O+M Cost Coverage.

Overall performance in terms of O+M Cost Coverage improved by an impressive 8 percentage points to 113%. However, the high number (50%) of Large WSPs below cost coverage is particularly alarming considering that Large WSPs control 25% of the sector turnover.

Improved performance in this indicator is a result of revenues having increased at a higher proportion than O+M costs. The marginal increase on the costs shows that WSPs prudently managed their costs. Considering that there were no major changes in the tariffs of most WSPs during the period, the increase in revenues can be attributed to increase in production and sales. WSPs without justified tariffs need to urgently apply for tariff reviews to ensure revenues match the cost of providing the service. The high figures reported by some WSPs can mainly be attributed to operating on unjustified tariffs i.e. the tariffs are higher than required or the WSPs are not incurring all the necessary costs (e.g. they are not incurring the required expenditure on maintenance of their systems).

Figure 4.11(a): O+M Cost Coverage

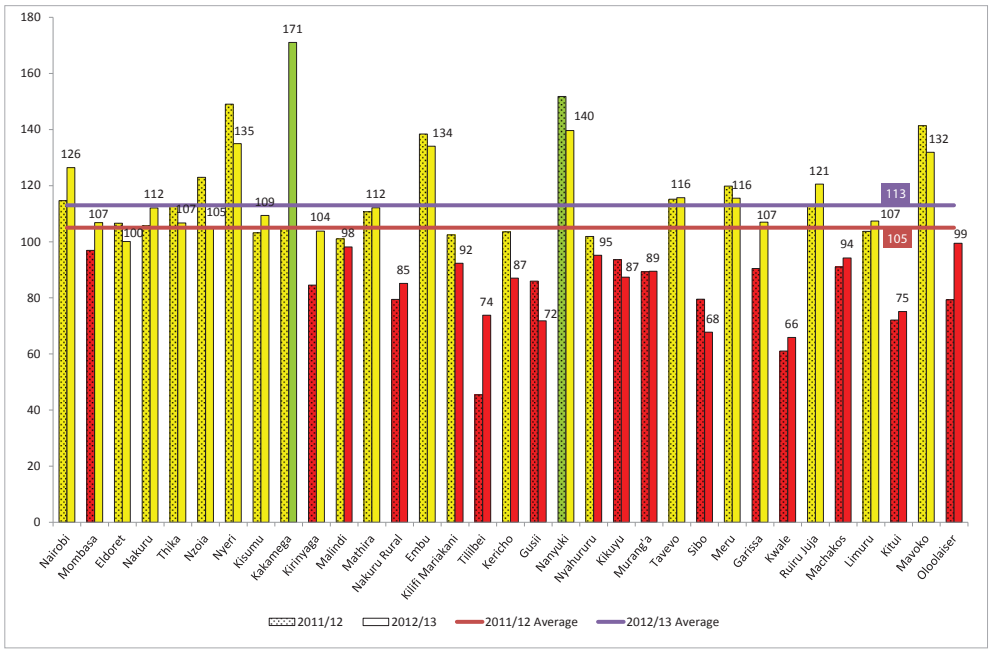
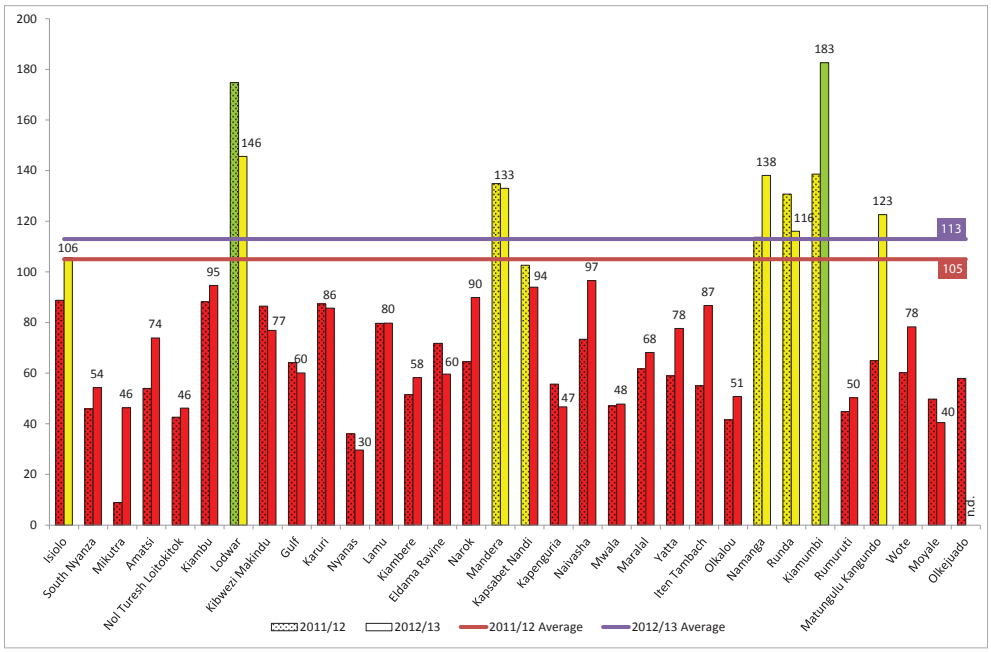


Figure 4.11(b): O+M Cost Coverage



4.9.12 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 through the respective sector benchmarks (Section 4.5).

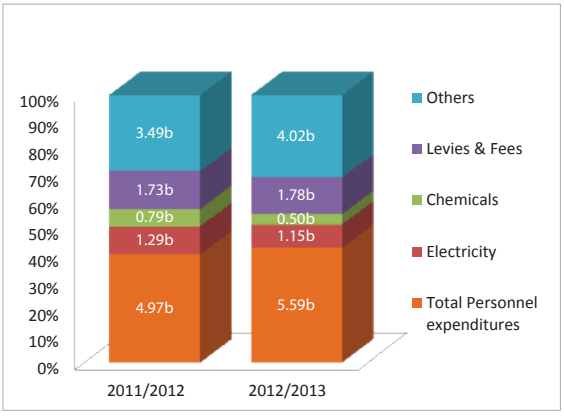
Performance on this indicator declined from 41% in 2011/12 to 43% in 2012/13 since O+M expenditures increased by 5% whereas personnel costs rose by 12%. This mismatch is more evident in the Very Large and Large urban WSPs. Contrary to the generally accepted principles, relative personnel expenditures of Very Large and Large urban WSPs are on average higher than those of medium and small urban WSPs. WSPs must strictly follow budget provisions made for personnel expenditures in the approved tariffs. Where this is not done, Wasreb will take appropriate measures in line with the compliance and enforcement strategy.

O+M COST BREAKDOWN

Cost distribution in a utility is a major factor in ensuring its financial sustainability. Wasreb has set benchmarks for some of these cost components e.g. personnel, BoD and maintenance, among others. The breakdown of O+M costs into personnel, electricity, chemicals, levies & fees and other operational expenditures provides important information on the main cost drivers in the operations of WSPs. These cost components differ depending on the degree to which they are under the control of the WSP. Controllable expenses include personnel and other operational expenditures (general administration expenditures, maintenance and BoD allowances) while those that cannot be directly controlled are levies and fees (these are pre-set), electricity and chemicals (determined by the type of scheme(s) and water source respectively).

Figure 4.12 shows the aggregated O+M cost breakdown for all urban WSPs and the change in O+M costs from the last to the current reporting period.

Figure 4.12: Aggregated O+M cost breakdown for all urban WSPs

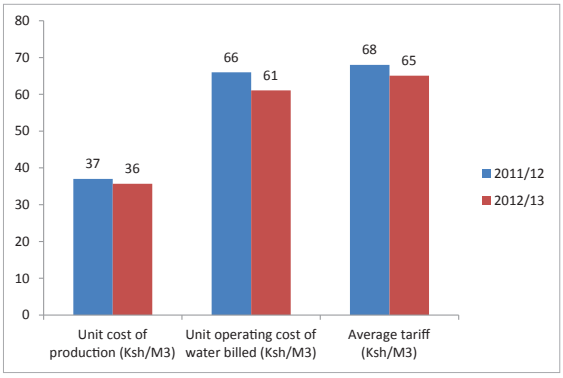


As illustrated, the main cost drivers for O+M during the current reporting period are, in descending order: personnel expenditure (43%), other expenses (31%), levies and fees (14%), electricity (9%) and chemicals (4%). The "other" costs comprise general administration expenses, maintenance, and BoD allowances. All the main cost drivers except chemicals increased in absolute terms from the last to the current reporting period. High personnel expenditure continues to eat up most of the budget for the majority of WSPs leaving little for asset operation and maintenance as well as investments. This practice needs to be curbed.

COMPARISON OF AVERAGE TARIFF, UNIT COST OF PRODUCTION AND UNIT COST OF WATER BILLED

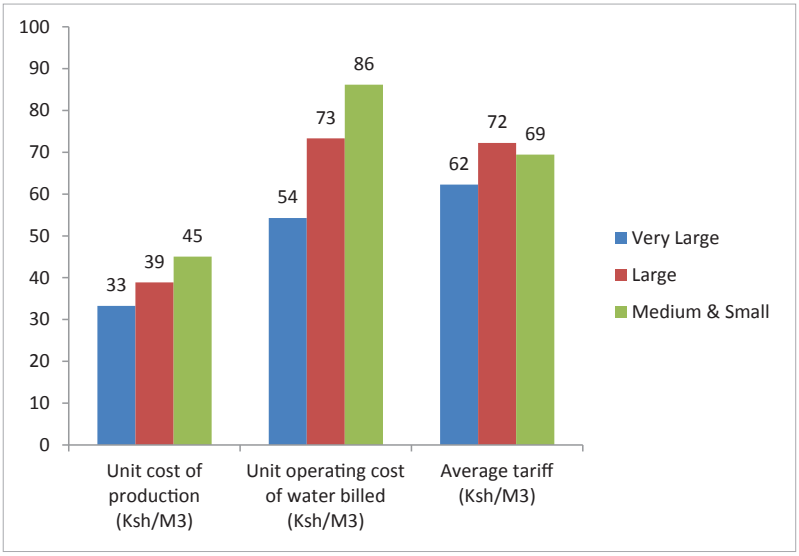
The unit cost of production, unit cost of water billed and average tariff all decreased between the two periods as shown in figure 4.13. The decrease in unit cost of production can be attributed to the fact of production increasing at a higher rate (9%) compared to operating costs (5%). The same case applies to the unit operating cost of water billed where the billed volume increased by 14% compared to the operating cost increase of 5%. The net effect of this is a drop in the unit operating cost of water billed by 7.5% between 2011/12 and 2012/13. The increase in billed volume (at 14%) was also higher than the increase in the amount billed (of 10%), which led to a drop in the average tariff by 4%. The marginal reduction in NRW of 2% and hence an increase in the billed volume is responsible for the closing of the gap between unit cost of production (KShs 36/M^3) and the unit operating cost of water billed (KShs 61/M^3).

Figure 4.13: Comparison of average tariff, unit cost of production and unit operating cost of water billed



Comparison was also done of the above indicators for the different size categories of WSPs as shown in figure 4.14. For the three indicators, size has a positive impact on the cost of providing services. The Very Large WSPs have their unit cost of production and unit cost of water billed at 40% less than the small WSPs.

Figure 4.14: Comparison of average tariff, unit cost of production and unit operating cost of water billed for the different size categories of WSP



SECTION B: PERFORMANCE OF RURAL WATER SERVICE PROVIDERS

A large proportion of the Kenyan population resides in rural areas and mostly depend on point sources or small-scale piped systems run by the communities themselves for their water needs. Unlike for urban areas, data on these point sources and small scale systems is hardly available, making it difficult to present a comprehensive picture of the status of water services in rural areas. This section presents a detailed analysis of the performance of 35 registered rural Water Service Providers for the period 2012/13. As their combined service area covers only about 12% of Kenya's rural population, the data presented is the closest we can get to capturing the situation of water services in rural areas. Generalisation of the data to represent the situation of the entire rural Kenya should be done with reservation.

4.10 GENERAL INFORMATION ON RURAL WSPs

Rural WSPs account for more than 225,000 connections, employ more than 1,200 staff and have a turnover of more than KSh 700 million. Their combined service area covers a total population of slightly less than 2.8 million, which represents roughly 12% of Kenya's rural population. In the current reporting period, NRW improved from 57% to 55 %, however, rural WSPs still have a high number of inactive connections (an average of 34%), whose revival should be given priority.

Table 4.9 presents a summary of the basic data from 35 rural WSPs analysed for the year 2012/13. The WSPs are placed in three size categories depending on the total number of registered connections.

Table 4.9: Summary of rural WSP categories

Rural WSP category	No. of WSPs	Turnover in million KSh	Production million m^3	People served in millions	No. of connections	No. of staff
Large	9	462.3	30.72	0.74	141,279	671
Medium	6	148.56	7.51	0.36	42,290	242
Small	20	90.58	6.51	0.28	27,249	275
Total	**35**	**701.44**	**44.74**	**1.38**	**210818**	**1188**

Detailed information per rural WSP can be found in Table 4.10.

Table 4.10: General data on rural WSPs

WSP	Total population in service area	Total population served	Total no. of connections	Total no. of active connections	No. of towns	Turnover (KSh 000)	Production in m^3 (000)	Domestic + kiosks billed volume in m^3 (000)	NRW	Production per capita (l/c/d)	Consumption (l/c/d)	No. of staff
Large WSPs (10,000-34,999 conns.)												
Othaya Mukurweni	176,853	125,039	24,082	12,627	2	138,506	5,982	2,052	61	131	45	108
Murang'a South	377,368	166,614	21,847	16,846	4	49,792	6,510	1,483	70	107	24	119
Gatundu South	137,959	110,278	18,714	14,977	3	56,783	2,983	1,395	53	74	35	74
Kahuti	78,621	43,476	15,873	9,409	1	52,088	3,262	971	54	206	61	76
Imetha	139,853	35,421	15,237	7,486	7	33,488	1,904	526	62	147	41	66
Tetu	91,562	78,665	14,453	11,684	3	43,601	1,921	909	39	67	32	67
Karimenu	80,715	59,894	10,815	6,610	1	28,254	2,350	1,293	43	107	59	49
Gatamathi	124,985	56,464	10,178	6,009	1	33,777	2,160	577	66	105	28	55
Ngandori Nginda	85,780	63,477	10,080	8,986	4	26,013	3,650	1,636	43	158	71	57
Medium WSPs (5,000-9,999 conns.)												
Gatanga	67,149	44,172	9,051	7,437	1	29,507	1,931	723	40	120	45	38
Ngagaka	76,133	46,494	8,250	5,252	1	24,538	1,491	426	67	88	25	37
Nithi	72,610	41,943	7,048	4,509	3	32,468	1,175	577	51	77	38	38
Githunguri	243,436	62,890	6,673	3,530	2	30,474	726	254	39	32	11	40
Kyeni	90,468	21,546	6,217	2,394	1	7,934	892	211	76	113	27	26
Tuuru	320,249	146,989	5,051	1,648	1	23,643	1,290	369	64	24	7	63
Small WSPs (<5,000 conns.)												
Nyandarua	55,278	9,568	3,770	1,226	4	7,644	319	152	46	91	44	30
Murugi Mugumango	28,270	20,820	3,594	3,556	1	8,240	2,101	1,255	35	276	165	25
Embe	50,908	14,581	3,491	1,615	3	17,889	737	212	65	139	40	31
Muthambi 4K	19,373	16,304	1,968	1,948	1	8,007	649	366	30	109	61	15
Rukanga	7,105	6,198	1,684	1,272	1	5,830	360	149	58	159	66	15
Ndaragwa	13,930	11,301	1,678	1,173	1	2,781	112	71	37	27	17	26
Kikanamku	35,017	11,870	1,575	1,081	1	3,832	113	60	24	26	14	9
Mawingo	21,113	20,216	886	865	2	418	98	62	33	13	8	5
Nyasare	81,954	29,491	972	822	1	4,957	335	117	43	31	11	11
Kathiani	22,000	3,307	962	547	1	3,504	128	41	40	106	34	22
Tachasis	23,557	10,001	935	777	3	1,796	292	126	38	80	35	6
Engineer	27,300	25,760	932	799	1	1,677	214	55	74	23	6	5
Nyakanja	20,259	19,361	849	825	1	3,271	80	40	34	11	6	7
Mbooni	35,000	5,230	835	693	1	2,279	33	85	No data	17	44	16
Kinja	11,000	6,138	727	697	1	1,057	No data	25	No data	0	11	4
Tia Wira	6,800	3,454	616	536	1	1,028	123	55	49	97	43	4
Upper Chania	20,665	13,851	572	555	1	3,159	No data	12	No data	No data	2	5
Ruiri Thau	29,000	25,134	460	460	1	3,001	389	26	89	42	3	5
Gitei	21,000	2,394	375	361	1	133	85	No data	100	97	No data	3
Kathita Kiirua	30,840	27,494	368	368	1	10,082	339	160	34	34	16	31
TOTALS	2,724,110	1,385,835	210,818	139,580	**63**	701,454	44,734	**16,471**	**55***	**90***	**33***	**1,188**

***Weighted Average**

4.11 RANKING OF RURAL WSPs

Table 4.11 provides a performance overview of all the 35 WSPs with respect to the 9 KPIs (for indicator definitions, see section 4A). WSPs are ranked overall as well as within their respective size categories on the basis of their aggregate scores. The scores and benchmarks are based on the scoring regime in Table 4.3.

Table 4.11: Overall ranking of rural WSPs and ranking by category

WSP	DWQ - Residual Chlorine (%)	DWQ - Bacteriological Quality (%)	Non-Revenue Water (%)	Water Coverage (%)	Sanitation Coverage (%)	Hours of Supply (hrs./d)	Staff Productivity (no. staff/K conns.)	Revenue Collection Efficiency (%)	O+M Cost Coverage (%)	Metering Ratio (%)	Total score	Ranking by Category	Overall Ranking
Large WSPs (≥ 10,000 connections)													
Tetu	95	63	39	86	67	21	6	98	101	85	120	1	4
Karimenu	34	41	43	74	79	22	7	90	125	100	117	2	7
Ngandori Nginda	96	54	43	74	52	24	6	102	130	43	113	3	8
Gatundu South	57	51	53	80	62	20	5	84	146	88	104	4	9
Kahuti	95	39	54	55	76	21	8	93	106	82	86	5	14
Imetha	100	100	62	25	71	22	9	97	86	61	84	6	15
Murang'a South	95	69	70	44	70	21	7	97	94	63	73	7	20
Othaya Mukurweni	100	92	61	71	76	18	9	n.c.d.	n.c.d.	68	61	8	23
Gatamathi	100	86	66	45	76	21	9	84	83	67	57	9	26
Medium WSPs (5,000 - 9,999 connections)													
Nithi	100	100	51	58	73	24	8	90	135	95	124	1	2
Ngagaka	92	94	67	61	73	23	7	85	119	90	95	2	11
Gatanga	0	28	40	66	73	8	5	100	98	81	69	3	22
Githunguri	40	80	39	26	71	13	11	93	76	91	57	4	25
Kyeni	92	0	76	24	75	12	11	114	94	66	51	5	29
Tuuru	0	96	64	46	75	6	38	73	97	96	36	6	35
Small WSPs (<5,000 connections)													
Muthambi 4K	0	38	30	84	76	22	8	95	231	98	147	1	1
Murugi Mugumango	0	25	35	74	72	24	7	96	133	98	123	2	3
Rukanga	0	0	58	87	87	22	12	100	147	97	118	3	5
Engineer	0	0	74	94	82	14	6	95	137	0	117	4	6
Nyakanja	0	36	34	96	70	8	8	89	123	100	103	5	10
Kathita Kiirua	80	0	34	89	74	14	84	88	113	100	92	6	12
Ndaragwa	0	6	n.c.d.	81	79	21	22	108	126	17	89	7	13
Tachasis	0	0	38	42	69	24	8	88	116	96	79	8	16
Mawingo	1	0	33	96	54	13	6	146	102	0	79	9	17
Ruiri Thau	0	0	89	87	71	2	11	100	110	96	76	10	18
Upper Chania	0	0	n.d.	67	47	9	9	100	168	0	74	11	19
Tia Wira	0	0	49	51	75	22	7	100	98	0	71	12	21
Nyasare	54	94	43	36	48	13	13	96	110	72	58	13	24
Kinja	0	0	n.d.	56	79	8	6	79	128	0	55	14	27
Embe	95	88	65	29	53	10	19	82	122	98	53	15	28
Nyandarua	87	58	46	17	79	20	24	53	43	91	49	16	30
Kikanamku	0	0	n.c.d.	34	79	11	8	n.c.d.	141	0	45	17	31
Mbooni	36	36	n.c.d.	15	29	6	23	110	92	99	45	18	32
Kathiani	33	0	40	15	11	8	40	115	50	100	44	19	33
Gitei	0	0	n.d	11	75	24	8	n.d.	33	0	43	20	34

In the overall ranking for the year 2012/13, Muthambi 4K emerges as the best performing WSP for the second year running, followed by Nithi and Murugi Mugumango in the second and third positions respectively. The worst performing WSPs are Tuuru, Gitei and Kathiani respectively.

4.12 PERFORMANCE OVER TIME

Table 4.12 shows the overall performance score of rural WSPs in 2012/13 and compares it with the performance in 2011/12. WSPs who have shown the greatest improvement are Imetha and Nyakanja, followed by Ndaragwa and Rukanga in the second and third positions respectively. The WSP showing the greatest decline is Gatamathi, followed by Othaya Mukurweni and Tuuru.

Table 4.12: Performance over time of rural WSPs

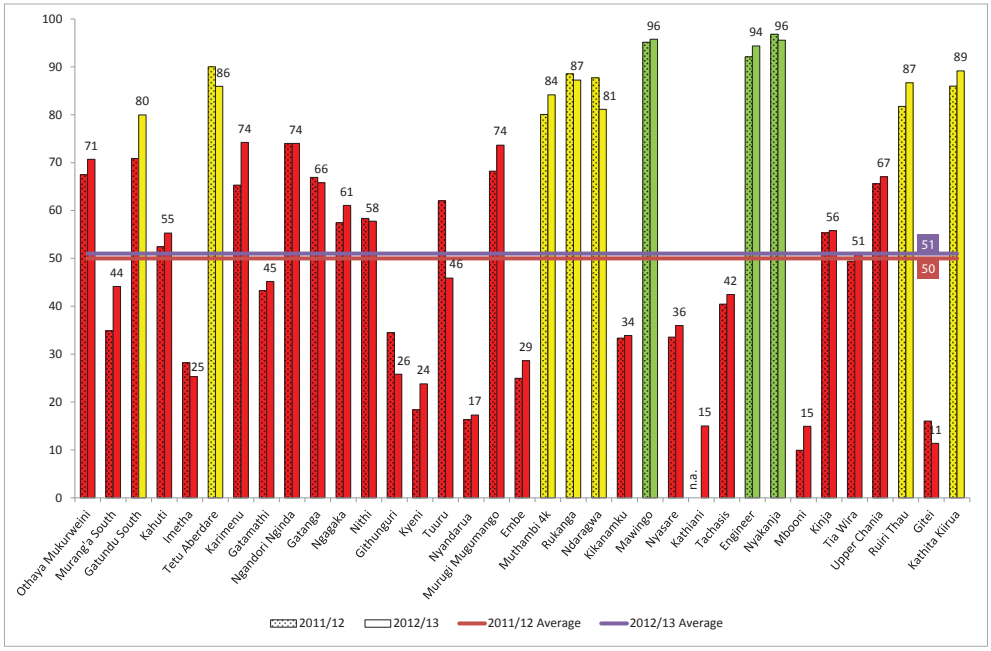
Rank	WSP	Score 2012/13	Score 2011/12	Scores +/-
1	Muthambi 4K	147	148	-1
2	Nithi	124	101	23
3	Murugi Mugumango	123	124	-1
4	Tetu Aberdare	120	121	-1
5	Rukanga	118	92	26
6	Engineer	117	93	24
7	Karimenu	117	96	21
8	Ngandori Nginda	113	110	3
9	Gatundu South	104	87	17
10	Nyakanja	103	69	34
11	Ngagaka	95	86	9
12	Kathita Kiirua	92	104	-12
13	Ndaragwa	89	56	33
14	Kahuti	86	94	-8
15	Imetha	84	50	34
16	Tachasis	79	88	-9
17	Mawingo	79	84	-5
18	Ruiri Thau	76	73	3
19	Upper Chania	74	75	-1
20	Murang'a South	73	71	2
21	Tia Wira	71	75	-4
22	Gatanga	69	66	3
23	Othaya Mukurweni	61	96	-35
24	Nyasare	58	53	5
25	Githunguri	57	59	-2
26	Gatamathi	57	94	-37
27	Kinja	55	66	-11
28	Embe	53	60	-7
29	Kyeni	51	47	4
30	Nyandarua	49	34	15
31	Kikanamku	45	58	-13
32	Mbooni	45	39	6
33	Kathiani	44	n/a	n/a
34	Gitei	43	42	1
35	Tuuru	36	60	-24

4.13 PERFORMANCE OF WSPs BY INDICATORS

4.13.1 Water Coverage

Water Coverage improved from 50% in 2011/12 to 51% in 2012/13 but remains way below the acceptable sector benchmark of 80%, with only 10 out of 35 (29%) WSPs achieving the minimum acceptable level.

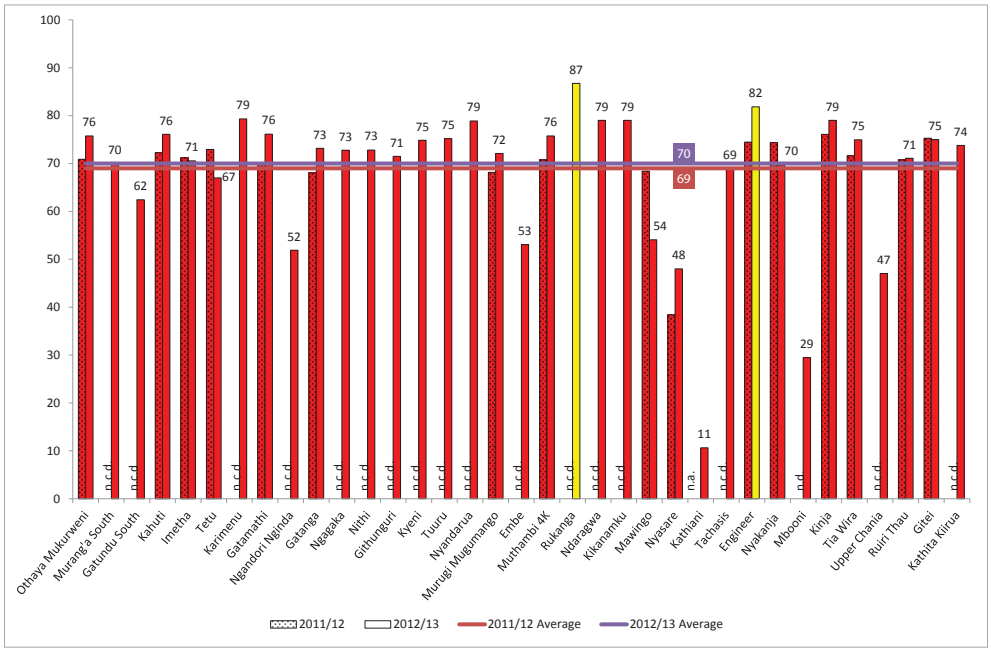
Figure 4.15: Water Coverage



4.13.2 Sanitation Coverage

Sanitation Coverage increased marginally, from 69% in 2011/12 to 70% in 2013/12. As is the case for urban WSPs, quality data on sanitation continues to present a challenge due to unavailability of credible baseline data and lack of a clear mandate on on-site sanitation. This means that WSPs have not really been responsible for managing on-site sanitation data and have been relying on external data sources, such as the Department of Public Health.

Figure 4.16: Sanitation Coverage



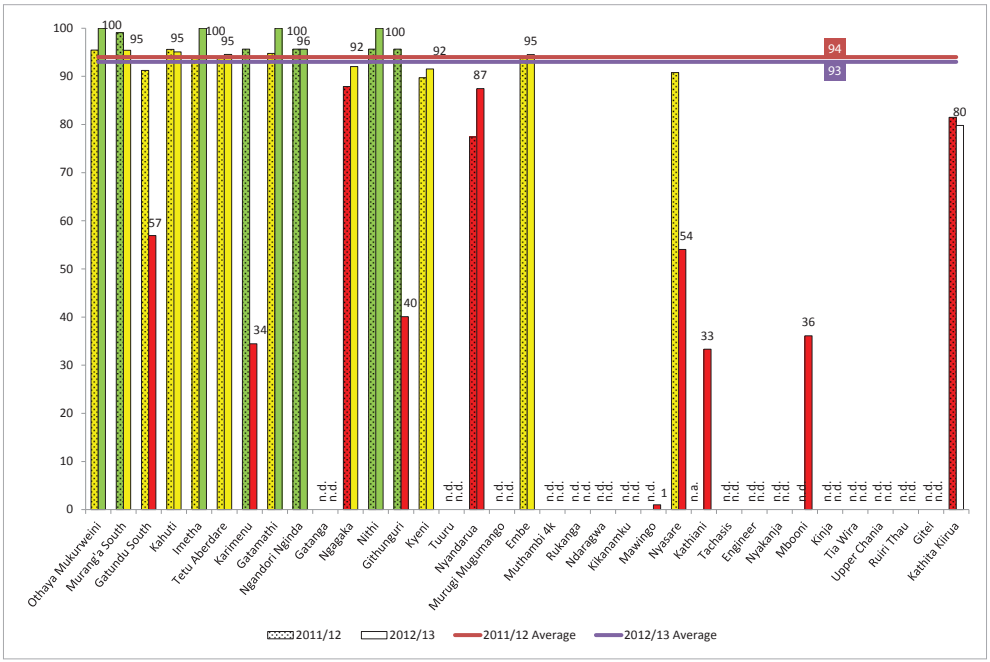
4.13.3 Drinking Water Quality

The performance of rural WSPs in regard to drinking water quality is based on two equally weighted sub-indicators: Residual Chlorine and Bacteriological Quality. The two sub-indicators are further broken down as compliance with the required number of tests, and compliance with DWQ standards respectively, as presented in Annex 3.

(i) Residual Chlorine

Overall performance on this indicator decreased from 94% in 2011/12 to 93% in 2012/13. The number of tests conducted dropped from 92% to 90% while there was stagnation in compliance at 98%. The decrease in performance in this indicator is exacerbated by the large number of WSPs 16 (46%) who did not carry out this test hence their inability to submit data on the same.

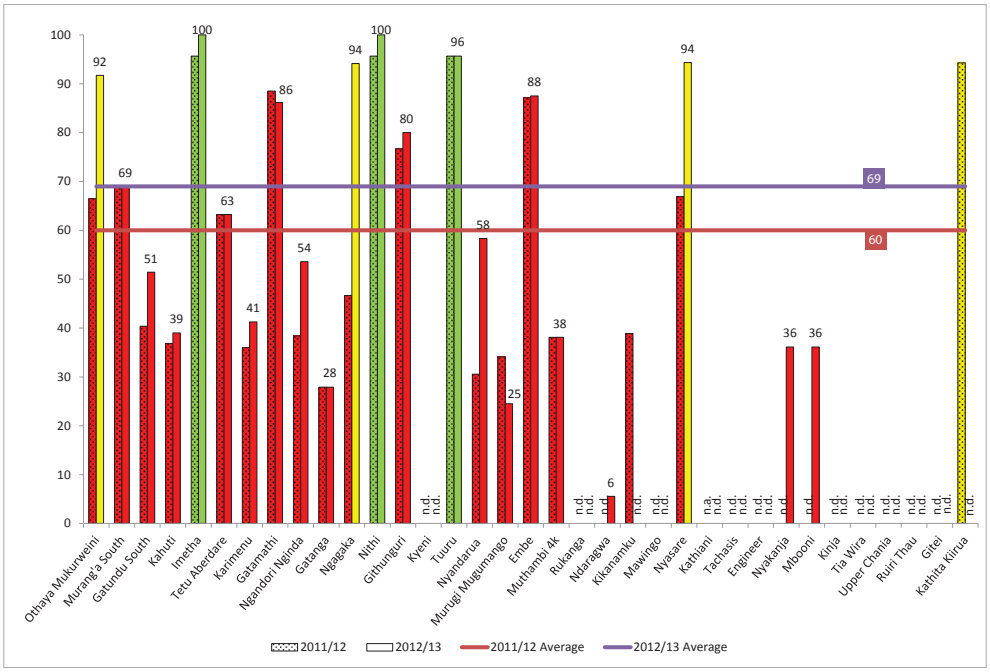
Figure 4.17: Water quality — Chlorine



(ii) Bacteriological Quality

Performance on this indicator picked up from 60% in 2011/12 to 69% in the current reporting period. The number of tests conducted went up from 41% in 2011/12 to 53% in 2012/13 while the rate of compliance remained at 99%. As with the case of residual chlorine, a large number of WSPs 16 (46%) did not conduct this test hence the n.d (no data). Showing compliance with Bacteriological Quality without having conducted a sufficient number of tests does not portray the actual water quality situation. The importance of conducting water quality tests cannot be overstated. WSPs must therefore ensure that they conduct an adequate number of tests and report on them as stipulated in the Guidelines on Drinking Water Quality and Effluent Monitoring.

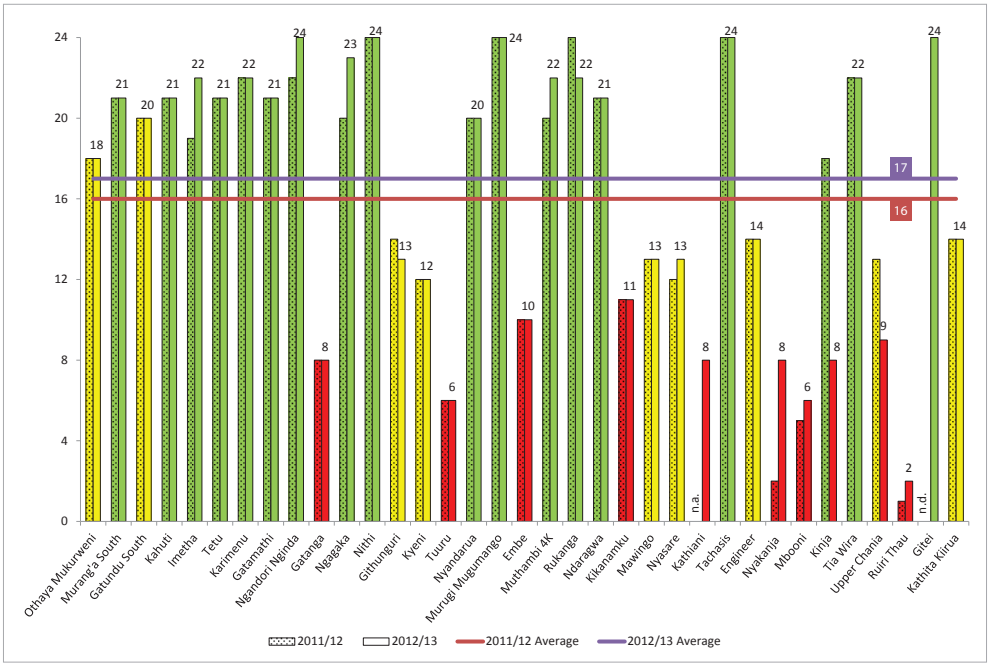
Figure 4.18: Water quality — Bacteriological



4.13.4 Hours of Supply

Hours of Supply improved from an average of 16 hours in 2011/12 to an average of 17 hours per day in 2012/13. Only 10 rural WSPs (29%) reporting on this indicator were not able to reach the acceptable sector benchmark. However, it should be noted that daily per capita consumption reduced from 47 litres in 2011/12 to 33 litres in 2012/13.

Figure 4.19: Hours of Supply

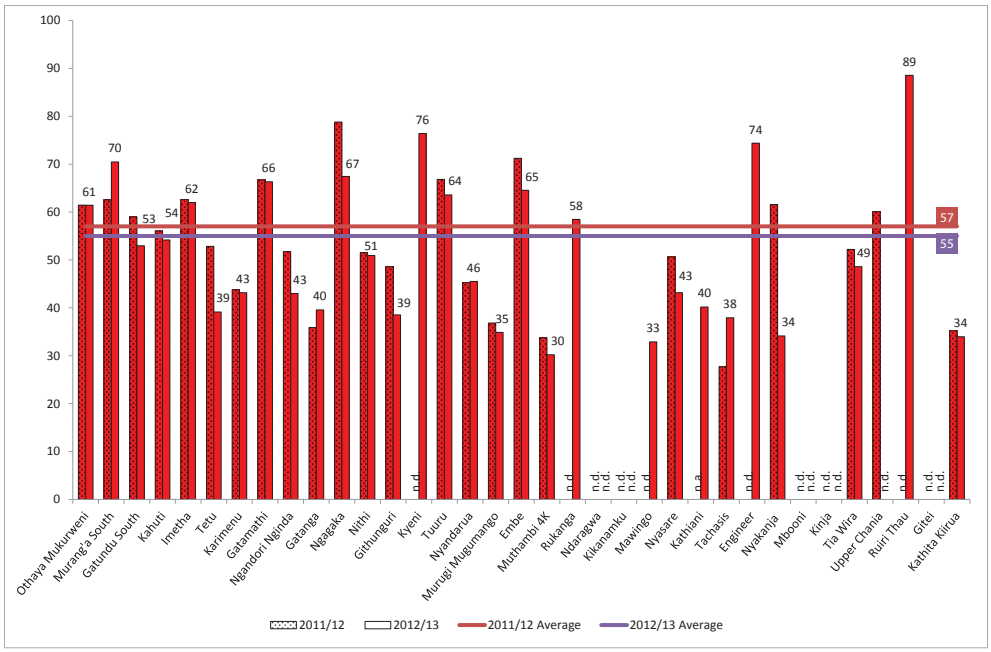


4.13.5 Non-Revenue Water

Average performance on Non-Revenue Water improved from 57% in 2011/12 to 55% in 2012/13. While this is a positive development, on average rural WSPs continue to lose more water than they sell. None of the rural WSPs was able to achieve the acceptable sector benchmark of 20-25% on this indicator.

At a billing of KSh 689m, a Non-Revenue Water of 55% translates to a loss of KSh 800m p.a. WSPs must therefore strengthen their efforts to reduce these water losses, which if saved, could be ploughed back into the system to improve services.

Figure 4.20: Non-Revenue Water



4.13.6 Dormant Connections

Performance on this indicator improved from 39% in 2011/12 to 34% in 2012/13. This is a positive trend with 18 (51%) WSPs reaching the acceptable sector benchmark of 20%.

4.13.7 Metering Ratio

The average Metering Ratio progressed from 68% in 2011/12 to 75% in the current reporting period, moving closer to the acceptable sector benchmark of 95%. 13 WSPs (37%) reached the acceptable sector benchmark on this indicator with only 3 among them being Large and Medium rural WSPs. The high ratio of unmetered connections is likely to be a big contributor to the unacceptably high levels of NRW (55%) recorded by rural WSPs. However, cases of WSPs having high levels of NRW despite high metering ratios points to the non application of metering as an NRW reduction strategy.

4.13.8 Staff Productivity (staff per thousand connections)

Performance on this indicator stagnated at 9 staff per 1000 connections in the two reporting periods. However, the proportion of WSPs with staff ratios outside the acceptable sector

benchmark declined from 50% to 51%. WSPs should enhance their staff productivity by ensuring that they have the right skills mix in accordance with the criteria for appointment of staff.

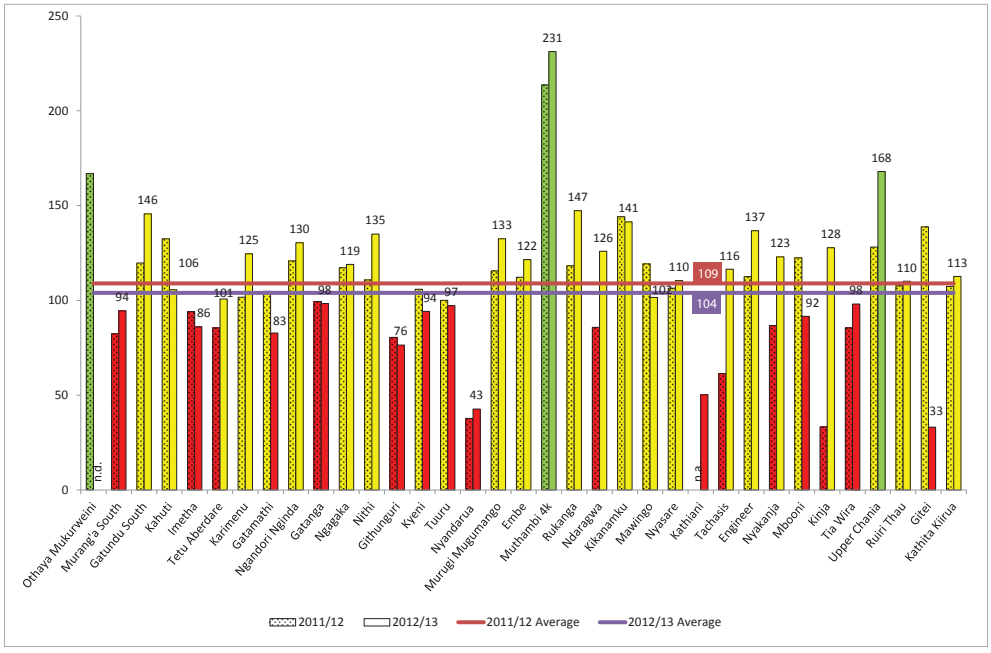
4.13.9 Revenue Collection Efficiency

The average collection efficiency improved from 84% in 2011/12 to 91% in 2012/13. While 26 (74%) of the WSPs attained the acceptable sector benchmark of 85%, there is still room for improvement.

4.13.10 O+M Cost Coverage

The overall performance on this indicator declined slightly, from 109% in 2011/12 to 104% in 2012/13. Twenty four out of the 35 WSPs (69%) that reported on this indicator attained the minimum acceptable sector benchmark of 100%, indicating commercial viability. However, the relatively high O+M Cost Coverage of rural WSPs is to some extent attributable to the non-inclusion of some costs by the WSPs (i.e. some WSPs do not declare all their costs or subsidies and typically under-provide on issues such as maintenance). Rural WSPs should make regular tariff applications to Wasreb to enable them have adequate resources to cover justified costs.

Figure 4.21: O+M Cost Coverage



4.13.11 Personnel Expenditure as a % of O+M Costs

The average performance on this indicator declined from 46% in 2011/12 to 50% in 2012/13, with only 10 out of 35 WSPs (29%) attaining the minimum acceptable sector benchmark of 40%. A disproportionate increase in personnel expenditure compromises the operation and maintenance of the systems, leading to the deterioration of services.

O+M COST BREAKDOWN

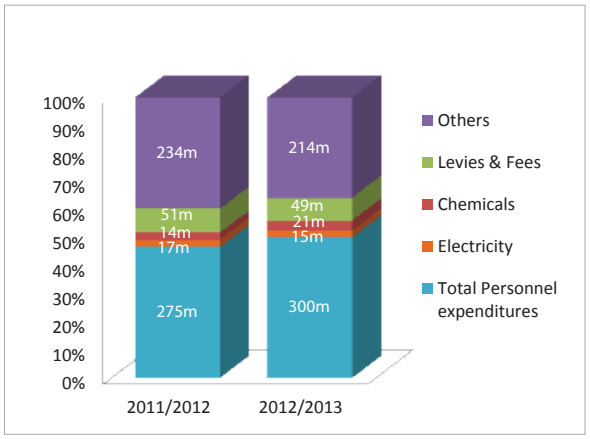


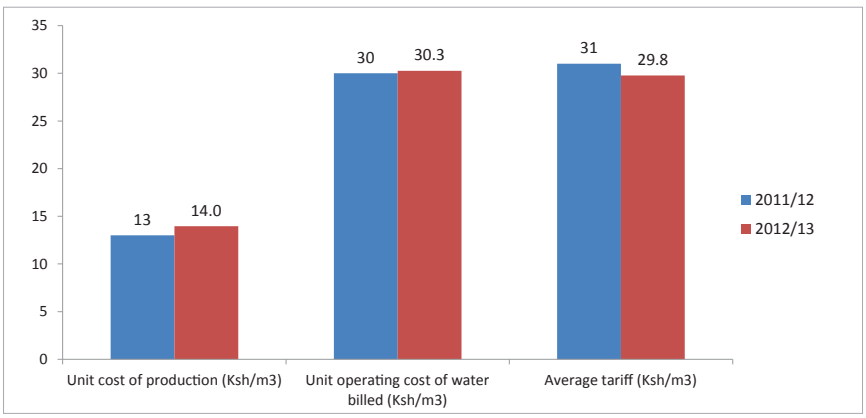
Figure 4.22: Aggregated O+M Cost Breakdown for all rural WSPs

In the year 2012/13, as presented in Figure 4.22, the main cost contributors for O+M costs were personnel expenditure (50%), other expenses (36%), levies and fees (8%), chemicals (4%) and electricity (3%). "Other" costs comprise general administration expenditure, maintenance, and BoD allowances. Personnel costs continue to consume the biggest proportion of WSPs' budgets leaving very little for investment, asset operation, and maintenance. A low proportion of personnel expenditure indicates high efficiency in the utilisation of staff and is therefore desirable. WSPs must ensure that they have the right calibre of staff and the required skills mix in order to increase staff efficiency so as to deliver efficiently on services.

COMPARISON OF AVERAGE TARIFF, UNIT COST OF PRODUCTION AND UNIT COST OF WATER BILLED

There was a slight increment recorded in the unit cost of water produced and unit operating cost of water billed between 2011/12 and 2012/13 as shown in Figure 4.23. Thus, operating costs increased at a higher rate than the volume of water produced and billed. The reduction in NRW of (2%) was not enough to impact on the unit operating cost of water billed. WSPs need to reduce NRW gradually to close the gap between the unit operating cost of water produced and the unit cost of water billed. The average tariff should be equal to or higher than the unit operating cost of water billed for financial sustainability. Unlike the previous reporting period, the average tariff is marginally lower than the unit operating cost of water billed, which is one step away from financial sustainability.

Figure 4.23: Comparison of average tariff, unit cost of production and unit cost of water billed



CHAPTER FIVE: PERFORMANCE OF WATER SERVICES BOARDS

5 PERFORMANCE OF WATER SERVICES BOARDS

5.1 INTRODUCTION

Water Services Boards are mandated to ensure the provision of efficient, affordable and sustainable water services in their areas of jurisdiction. This role is undertaken through the development of capital works to increase water and sanitation coverage and by contracting WSPs for water service provision in specific areas. This relationship is regulated through a Service Provision Agreement (SPA). WSBs sign SPAs with WSPs only after they are constituted in accordance with the Corporate Governance Guideline and the provisions of sections 55 and 57 of the Water Act 2002 which give due regard to efficiency and sustainability in the provision of water services.

This chapter presents the performance of the eight WSBs for the period 2012/13. Ranking is based on performance with respect to key investment, financial and qualitative indicators, developed in line with the mandate of WSBs under the Water Act 2002 and the Licence given to them by Wasreb.

5.2 DATA SUBMISSION

Quality data is vital for decision making in the planning and monitoring of investments. It ensures that investments are made at the right time, and are properly targeted in order to achieve the desired impact.

All the eight WSBs submitted information for the year 2012/13. There was general improvement in the rating of the WSBs on the basis of the accuracy and timeliness of the data of their agents. Athi and Tana achieved a good rating on data reporting. The other WSBs, except Coast and Tanathi, improved on their previous rating (Table 2.7). However, data on rural water systems remains scanty making it difficult to assess the impact of investments.

5.3 GENERAL INFORMATION ON WATER SERVICES BOARDS

Table 5.1 presents general information on WSBs including their area of coverage, population served, cost coverage, and turnover.

Table 5.1: General WSB information for the period 2012/13

WSB	Area in square (km²)	Population in service area	Population served	No. and size classification of WSPs		No. and % of viable WSPs (O+M ≥ 100)	Turnover in KSh million	O+M cost coverage in %	Counties covered
Athi	3,239	5,159,405	3,784,487	S	3	8 out of 13 (62%)	8,269	219	Nairobi, Kiambu and Gatanga district in Murang'a
				M	5				
				L	3				
				VL	2				
Coast	82,816	3,504,243	1,399,271	S	0	2 out of 6 (33%)	1,876	23	Kwale, Taita Taveta, Kilifi, Malindi, Mombasa, Lamu and Tana River District
				M	1				
				L	4				
				VL	1				
LVN	16,977	7,138,427	818,133	S	1	2 out of 5 (60%)	923	105	Kakamega, Vihiga, Busia, Bungoma, Trans Nzoia, Uasin Gishu,Nandi North within Nandi and Marakwet within Elgeyo Marakwet
				M	1				
				L	2				
				VL	1				
LVS	20,340	7,723,935	1,609,327	S	4	3 out of 11 (27%)	798	26	Siaya, Kisumu, Migori, Homabay, Kisii, Nyamira, Bomet, Kericho and Nandi South with Nandi
				M	2				
				L	5				
				VL	0				
Northern	232,737	3,579,358	371,521	S	4	4 out of 8 (50%)	535	38	Isiolo, Laikipia, Samburu, Marsabit, Garissa, Wajir and Mandera
				M	1				
				L	3				
				VL	0				
Rift Valley	113,771	5,463,629	930,044	S	16	9 out of 19 (47%)	942	99	Nakuru, Baringo, Narok, West Pokot, Turkana, Nyandarua and Keiyo within Elgeyo Marakwet
				M	1				
				L	1				
				VL	1				
Tana	14,272	4,570,724	1,444,248	S	6	16 out of 23 (70%)	1,407	97	Nyeri, Murang'a, Kirinyaga, Embu, Meru, and Tharaka Nithi
				M	4				
				L	13				
				VL	0				
Tanathi	66,614	3,893,192	837,186	S	10	3 out of 15 (20%)	569	26	Kitui, Machakos, Makueni and Kajiado
				M	5				
				L	0				
				VL	0				
TOTAL		**41,032,914**	**11,194,217**		**100**	**47 out of 100 (47%)**	**15,319**		

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

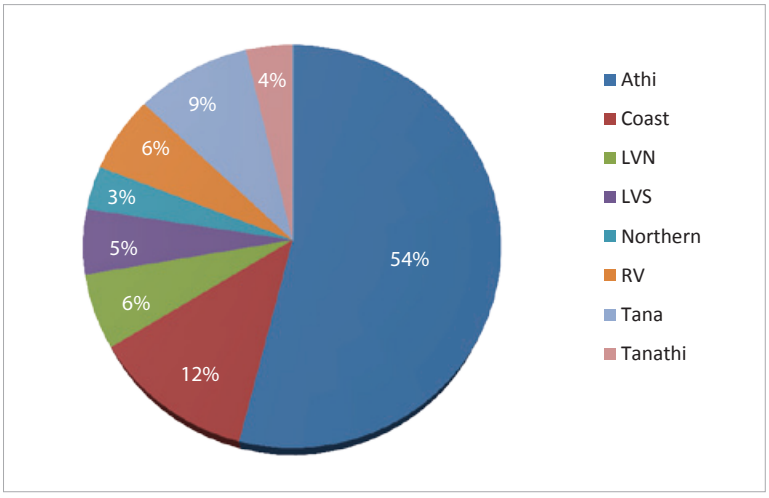
The combined turnover of the eight WSBs, i.e. the total billing of registered WSPs within their respective jurisdictions increased by 17%, from KSh 13.1 billion in 2011/12 to KSh 15.3 billion in the current reporting period. The total number of viable WSPs (≥ 100% O+M Cost Coverage) decreased from 52/102 (51%) in 2011/12 to 47/100 (47%), with LVS and Tanathi WSBs having the lowest proportion of viable WSPs for the second year running, at 27% and 20% respectively. These two WSBs had the lowest proportion of WSPs (9% and 13% respectively) operating on regulated tariffs, which is crucial for the commercial viability and financial sustainability of a utility.

As shown in Table 5.2, all WSBs realised an increase in turnover, with Athi WSB recording the highest increase at 20%. This increase in turnover can be attributed to the increase in production (9%) coupled with a decrease in NRW (2%).

Table 5.2: Sector turnover (in KSh millions)

WSB	Turnover 2011/12	Turnover 2012/13	% Change
Athi	6,882	8,269	20
Coast	1,612	1,876	16
LVN	815	923	13
LVS	731	798	9
Northern	498	535	7
RV	877	942	7
Tana	1,222	1,407	15
Tanathi	501	569	14
Total	**13,139**	**15,319**	17

Figure 5.1: Share of turnover among WSBs



In terms of relative share (Figure 5.1), there were minimal changes with Athi WSB, which accounts for the bulk of the sector turnover, increasing its proportion by two percentage points in the year.

5.4 SECTOR BENCHMARKS, PERFORMANCE INDICATORS AND SCORING CRITERIA

The scoring regime for WSBs is based on a cluster of investment, financial and qualitative indicators. The performance of the WSBs with regard to the investment indicators is an aggregation of WSPs' performance in the Board area. The corresponding scoring criteria is outlined in Table 5.3. The performance indicators adopted reflect core mandates of the WSBs: planning, development and expansion of water and sanitation infrastructure; and monitoring of WSPs.

Table 5.3: WSB performance indicators and scoring criteria

INDICATOR			Sector Benchmarks				Adopted Scoring Regime		
			Good	Acceptable	Not acceptable	Performance	Score	Peerformance	Score
A. Investment Indicators	Water Coverage		>90%	80-90%	<80%	≥90%	15	≤50%	0
	Non Revenue Water, NRW		<20%	25-20%	>25%	≤20%	15	≥40%	0
	Sanitation Coverage		>90%	80-90%	<80%	≥90%	15	≤50%	0
	Hours of Supply		21-24	16-20	<15	≥20	10	≤10	0
B. Financial Indicators	Cost Coverage of operating costs through fees from WSPs		>100%	50-100%	<50%	≥100%	5	≤50%	0
	Personnel expenditures as a % of total operating costs		<20%	70-20%	>70%	≤20%	5	≥70%	0
	BoD expenditures as a % of total operating costs		<2%	5-2%	>5%	≤2%	5	≥5%	0
	Operating costs of WSB as percentage of turn-over in WSB area	Turnover > 1.5 KSh billion	<3.5%	10-3.5%	>10%	≤3.5%	5	≥10%	0
		Turnover ≥ 0.75 < 1.5 KSh billion	<10%	20-10%	>20%	≤10%	5	≥20%	0
		Turnover < 0.75 KSh billion	<15%	25-15%	>25%	≤15%	5	≥25%	0
C. Qualitative Indicators	Adequacy of Monitoring of WSPs	Percentage of WSPs with approved tariffs	100%	50-100%	<50%	100%	10	≤50%	0
			Good	Satisfactory		Fair		Poor	
		(1) Enforcement and Compliance Strategy applied?*	3	2		1		0	
		(2) Reporting and compliance of WSPs in line with regulatory regime	3	2		1		0	
	Driving Efficient Investments in WSB Area	Facility Management System (and Register)	2	1		0.5		0	
		5 year Business and Capital Works Plan for WSB area	2	1		0.5		0	
		Implementation of 5 year Business Plan for WSB area	5	3		1		0	
		Pro-poor efforts and strategies	3	2		1		0	
		Discerned issues in procurement and management of capital projects	5	3		1		0	
	Improving Customer Service of WSPs	Use of Customer Complaints Procedure	3	2		1		0	
	Transparency and Adherence to Regulations	WARIS data submitted (timely, accurate)	9	6		3		0	
		WSB duties derived from License (Public Information Officer in place, information available on website etc.)	2	1		0.5		0	
		Provision of Performance Guarantee	3	0					
Total Maximum Score			**120**						

* Scores for the qualitative indicators are derived from the Licence achievement report and inspection findings

5.5 PERFORMANCE ANALYSIS AND RANKING OF WSBs

The performance analysis and ranking shown in Table 5.4 is based on the scoring regime outlined in Table 5.3 above and considers the aggregate performance of WSBs in 2012/13.

Table 5.4: Performance analysis and ranking of WSBs

			TANA	ATHI	NOR-THERN	LVN	RIFT VALLEY	LVS	TANATHI	COAST
Investment Indicators		**Water Coverage %**	50	70	59	60	52	40	39	50
		Non Revenue Water (NRW)	52	38	42	38	51	50	57	43
		Sanitation Coverage %	89	77	76	71	73	71	69	54
		Hours of Supply	19	18	20	19	13	14	12	12
Financial Indicators		**Cost Coverage of operating costs through fees from WSPs**	126	219	29	105	99	26	26	16
		Personnel expenditures as a % of total operating costs	41	57	29	53	48	69	38	23
		BoD expenditures as a % of total operating costs	4	7	6	9	7	10	8	3
		Operating costs of WSB as percentage of turn-over in WSB area	14	3	11	13	13	19	27	8
Qualitative Indicators	Adequacy of monitoring of WSPs	**Percentage of WSPs with regulated tariffs**	30%	38%	25%	20%	21%	9%	13%	29%
		Enforcement and compliance strategy applied?*	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Fair	Satisfac-tory	Fair
		Reporting and compliance of WSPs with the regulatory regime	Good	Fair	Satisfac-tory	Satisfac-tory	Fair	Satisfac-tory	Satisfac-tory	Fair
	Driving efficient investments in WSB area	**Facility Management System (and register)**	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	v
		Five year Business and Capital Works Plan for the WSB area	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory
		Implementation of the five year Business Plan for the WSB area	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
		Pro-poor efforts and strategies	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
		Discerned issues in procurement and management of capital	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory	Satisfac-tory
	Improving customer service of WSPs	**Use of customer complaints procedure**	Good	Satisfac-tory	Satisfac-tory	Satisfac-tory	Good	Satisfac-tory	Satisfac-tory	Fair
	Transparency and adherence to Regulation	**WARIS data submitted (timely, accurate)**	Good	Good	Satisfac-tory	Fair	Satisfac-tory	Satisfac-tory	Fair	Poor
		WSB duties derived from License	Good	Good	Fair	Good	Good	Satisfac-tory	Good	Fair
		Provision of Performance Guarantee	Good	Good	Good	Good	Good	Good	Good	Good
		SCORES	66	65	55	53	46	33	32	28
		RANKING	1	2	3	4	5	6	7	8

Note 1: Performance for the qualitative indicators has been evaluated on the basis of Licence Achievement Reports and findings from inspections.

Note 2: As per the Scoring Regime in Table 5.4, both 'satisfactory' and 'fair' performance have been classified as acceptable and are therefore marked in yellow. Since 'satisfactory' performance is considered to be closer to 'good' performance and 'fair' performance closer to 'poor' performance, the latter has been allocated fewer points than the former.

Based on the analysis outlined in Table 5.4, Tana WSB led with 66/120 points while Coast WSB recorded the lowest score of 28/120 points. Compared to 2011/12, all the WSBs recorded improvement (Table 5.5), with the LVN recording the highest improvement. Overall, the performance of all WSBs remains unsatisfactory. There is need for WSBs to come up with strategies to enable them deliver on their mandate as per the licence.

Table 5.5: Performance ranking over time

WSB	Score 2011/12	Score 2012/13	Change in Scores
Tana	57	66	9
Athi	51	65	14
Northern	49	55	6
Lake Victoria North	33	53	20
Rift Valley	41	46	5
Lake Victoria South	18	33	15
Tanathi	27	32	4
Coast	22	28	6

5.6 DETAILED PERFORMANCE ANALYSIS OF WSBs

A detailed analysis of the WSB performance broken down into the key areas of investment, financial and qualitative indicators is presented in sections 5.5.1, 5.5.2 and 5.5.3 respectively.

5.6.1 Investment Indicators

Investments made by the WSBs are expected to impact positively on the provision of water services. The effectiveness of such investments is measured by their impact on the KPIs necessary for the improvement of water services.

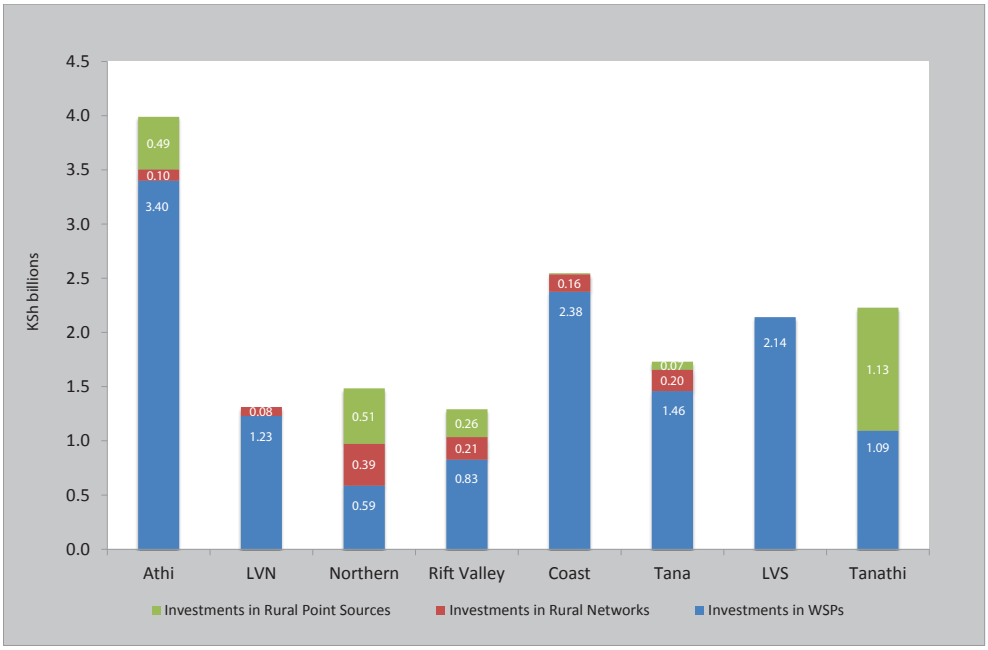
In the period under review, data submitted by WSBs indicates that a total of KSh 16.7 billion was invested, as presented in Table 5.6. This amounts to 62% of the total development budget (KSh 26.8 billion - Annual Water Sector Review, 2012-2013) for the WSS sector during the period. Although this amount is 12 percentage points higher than the amount reported in the last period, the reporting on investments is still inadequate.

Table 5.6: Investments by WSBs

Area of investment	Total Investments in 2011/12 (KSh Billion)	Total Investments in 2012/13 (KSh Billion)
Investments in WSPs	10.8	13.11
Investments in Rural Networks	1.8	1.14
Investments in Rural Point Sources	0.4	2.47
Total	13	**16.72**

A breakdown of the investments by WSBs in WSPs, rural networks and rural point sources is presented in Figure 5.2.

Figure 5.2: Investments by WSBs for water and sewerage systems and rural infrastructure



The highest investment levels were recorded in Athi WSB while the lowest investments were in Rift Valley WSB. Tanathi recorded the highest investment in rural systems. There is need to focus more resources in rural systems since a majority of the country's population lives in rural areas. The impact of WSB investments on the four investment related indicators is shown in Table 5.7.

Table 5.7: WSB investments against performance change in investment related KPIs

WSB	Investments in WSPs (mio KSh)	Change in Water Coverage, %	Change in Sanitation Coverage, %	Change in NRW, %	Change in Hours of Supply, Hrs/ day
Athi	3,401	1	3	4	2
Coast	2,375	-4	6	-1	2
LVS	2,141	3	17	0	3
Tana	1,460	1	11	2	1
LVN	1,230	4	-9	6	1
Tanathi	1,094	1	7	0	2
Rift Valley	828	-3	-8	1	0
Northern	586	-1	3	1	3

At the national level, these investments had a positive impact on all the four investment related indicators i.e. Water and Sanitation Coverage, Hours of Supply and NRW for both urban and rural WSPs. Although positive changes can be observed in most KPIs, WSBs should ensure that there is proper planning and monitoring of investments if the desired impact is to be realised.

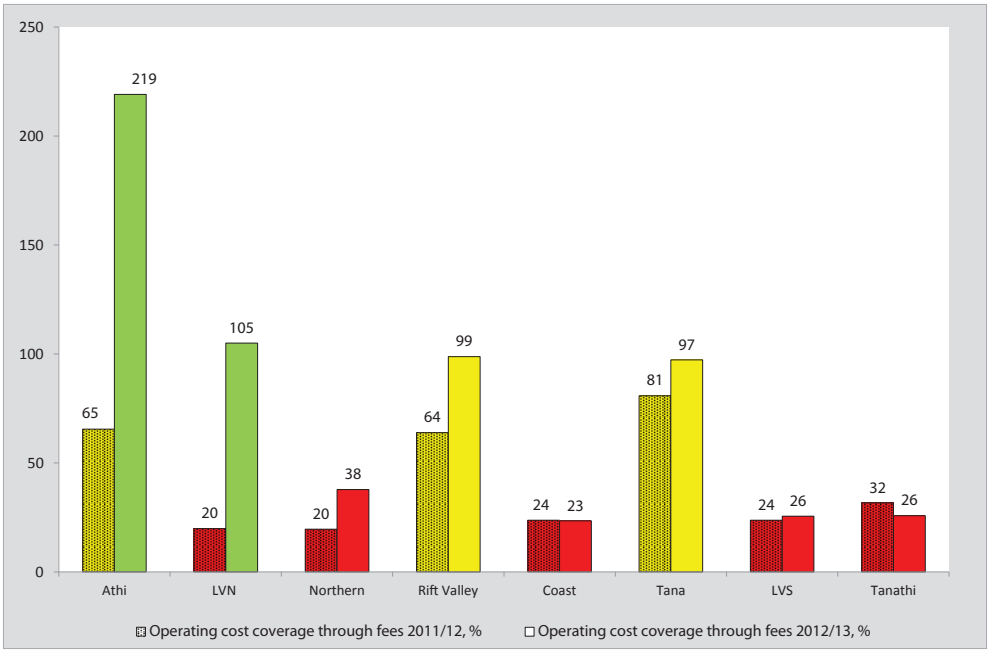
Licences issued to WSBs require them to develop, implement and report on 10-year capital works plans. Most WSB investment plans are not elaborate as they do not incorporate pre-feasibility studies and do not adequately address the issue of financing of planned investments. Further, business and capital works plans are not normally linked to the business and investment plans of respective WSPs.

5.6.2 Financial Indicators

(i) Coverage of Operating Costs

Coverage of Operating Costs measures the extent to which a WSB is able to finance its operations from the licensee administrative fees collected from its agents (WSPs). WSB operating costs mainly relate to administrative expenses arising from their role as principals of WSPs. Full cost coverage (of at least 100%) is key to the financial sustainability of WSBs. Conversely, high cost coverage (above 110%) implies either non-justification of WSB costs leading to WSPs paying higher licensee remuneration fees than required, or WSBs failing to separate asset renewal funds from the licensee remuneration. Asset renewal funds are intended for asset development in the WSB area, not for meeting operational expenditure. Figure 5.3 shows the performance of WSBs on this indicator.

Figure 5.3: Coverage of WSB operating costs in %



In the reporting period, only Athi and LVN WSBs covered their full operational costs from licensee remuneration fees. All the WSBs recorded improvement in their cost coverage, except for Coast and Tanathi. The dismal performance of Northern, Coast, LVS and Tanathi WSB raises concern over the financial sustainability of the WSBs. It has been observed that WSBs with very low cost coverage are mostly those that have failed to collect the licensee remuneration fees as approved in the tariffs. The administrative fees received from the WSPs in comparison with the WSB operating cost is presented in Table 5.8.

Table 5.8: Administrative fees from WSPs vs operating costs

WSB	Administrative Fees from the WSPs in 2011/12 in KSh Million	Operating Cost in 2011/12 in KSh Million	Operating cost coverage through fees 2011/12, %	Administrative Fees from the WSPs in 2012/13 in KSh Million	Operating Cost in 2012/13 in KSh Million	Operating cost coverage through fees 2012/13, %
Athi	129	197	65	581	265	219
LVN	23	116	20	129	123	105
Northern	18	92	20	22	59	38
Rift Valley	122	191	64	123	125	99
Coast	36	152	24	36	152	23
Tana	164	203	81	176	181	97
LVS	36	152	24	39	151	26
Tanathi	38	120	32	40	154	26

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

Operating costs as a percentage of turnover in the WSB area measures the efficiency of a WSB in executing its functions. It is expected that the operating costs of a WSB should be proportionate to its turnover. So different benchmarks apply to each WSB, depending on the turnover (Table 5.3). WSBs' expenditure as a percentage of their turnover is shown in Table 5.9.

Table 5.9: Operating costs of WSBs as percentage of turnover in WSB area

WSB	Operating Cost in 2011/12 in KSh million	Turnover 2011/12 in KSh million	Operating cost as a % of Turnover 2011/12	Operating Cost in 2012/13 in KSh million	Turnover 2012/13 in KSh million	Operating cost as a % of Turnover 2012/13
Athi	197	6,882	3	265	8,269	3
LVN	116	815	14	123	923	13
Northern	92	498	18	59	535	11
Rift Valley	191	877	22	125	942	13
Coast	152	1,612	9	152	1,876	8
Tana	203	1,223	17	181	1,407	13
LVS	152	731	21	151	798	19
Tanathi	120	501	24	154	569	27

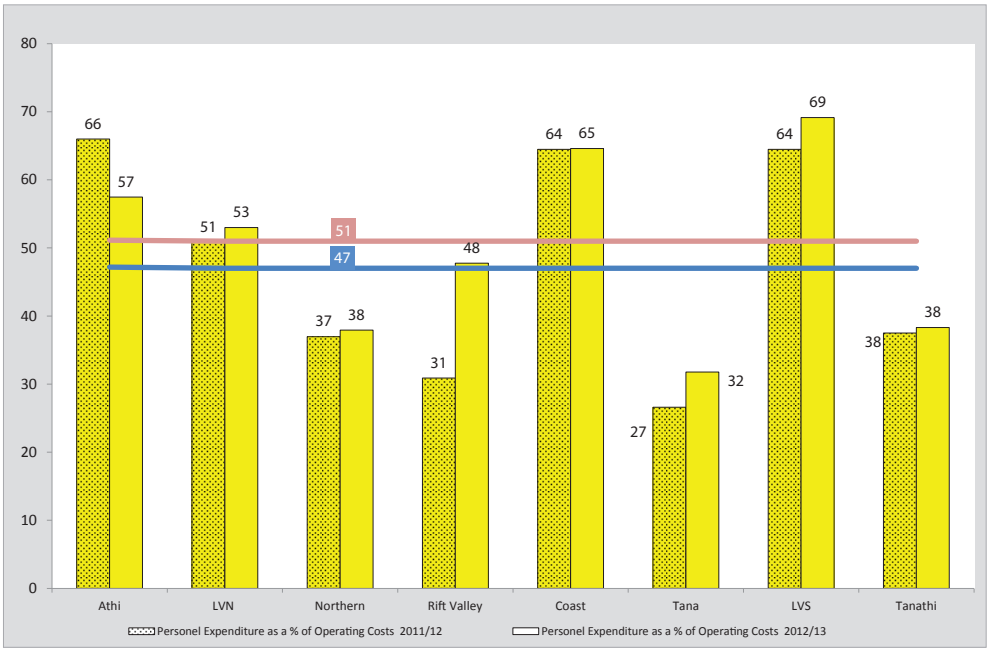
All the WSBs, except Tanathi, were within the acceptable level of the sector benchmark. Rift Valley and Northern WSBs recorded the highest efficiency improvements with drops of 9 and 7 percentage points respectively.

(iii) Personnel Cost as Percentage of Operating Costs

Personnel Cost as Percentage of Operating Cost measures whether staff costs are proportionate to overall operating costs, as defined by the sector benchmark. All WSBs were within the acceptable range for this indicator even though Athi is the only WSB that recorded improvement. This improvement, however, is not absolute since both personnel and overall operational costs increased. Thus, personnel costs are seen to be within an

acceptable range only because of a higher increase in operational costs. Athi, Coast and LVS WSBs had their personnel costs making up two-thirds of their total operating costs and consequently need to take measures to reverse this.

Figure 5.4: Personnel expenditures as a percentage of operating costs



A comparison of WSBs' personnel expenditure with their operating cost is presented in Table 5.10.

Table 5.10: Personnel expenditure of the WSPs vs operating expenditure

WSB	Personel Expenditure in 2011/12 in KSh million	Operating Cost in 2011/12 in KSh million	Personel Expenditure as a % of Operating Costs 2011/12	Personel Expenditure in 2012/13 in KSh million	Operating Cost in 2012/13 in KSh million	Personel Expenditure as a % of Operating Costs 2012/13
Athi	130	197	66	152	265	57
LVN	59	116	51	65	123	53
Northern	34	92	37	22	59	38
Rift Valley	59	191	31	60	125	48
Coast	98	152	64	98	152	65
Tana	54	203	27	58	181	32
LVS	98	152	64	104	151	69
Tanathi	45	120	38	59	154	38

(iv) Board of Directors (BoD) Expenditure as a Percentage of Operating Costs

Board of Directors (BoD) Expenditure as a Percentage of Operating Costs measures whether BoD costs are within the set benchmark. Wasreb's Corporate Governance Guideline sets these costs at 2% of a WSB's operating costs. Where the turnover and therefore operating costs are high, such as for Athi and Coast WSB, the percentage should even be lower. This is because BoD expenditure should not vary with the size of the WSB. A comparison of WSB's BoD expenditure with their operating cost is shown in Table 5.11.

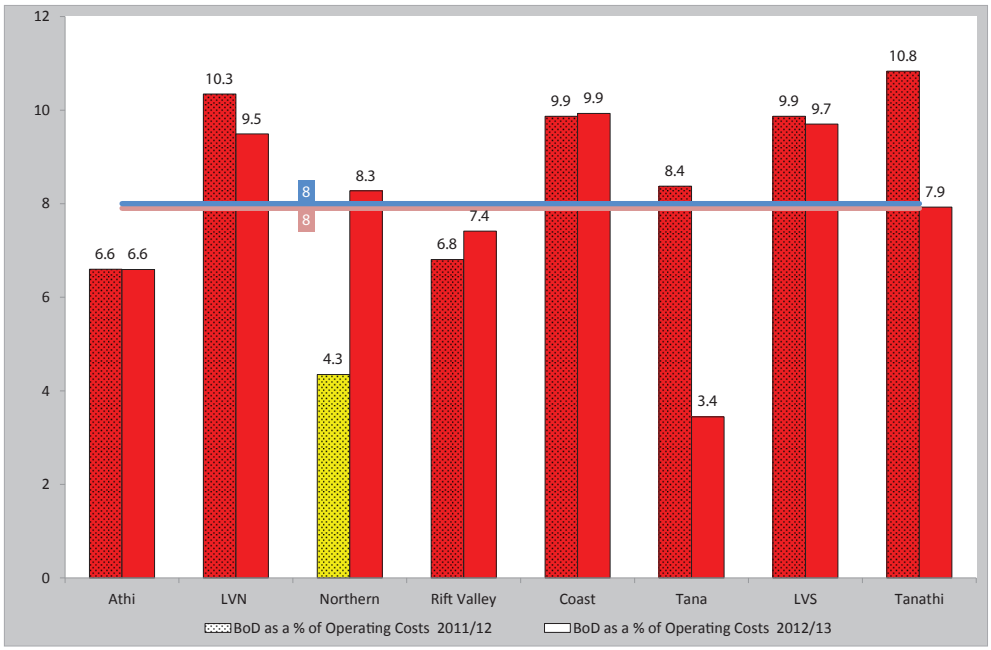
Table 5.11: BoD expenditure of the WSBs vs Operating Expenditure

WSB	BoD Expenditure in 2011/12 in KSh million	Operating Cost in 2011/12 in KSh million	BoD as a % of Operating Costs 2011/12	BoD Expenditure in 2012/13 in KSh million	Operating Cost in 2012/13 in KSh million	BoD as a % of Operating Costs 2012/13
Athi	13	197	7	17	265	7
LVN	12	116	10	12	123	9
Northern	4	92	4	5	59	8
Rift Valley	13	191	7	9	125	7
Coast	15	152	10	15	152	10
Tana	17	203	8	6	181	3
LVS	15	152	10	15	151	10
Tanathi	13	120	11	12	154	8

Tana and Tanathi recorded the greatest improvement in this indicator, with a drop of 5 and 3 percentage points respectively. Conversely, Northern deteriorated with a rise of 4 percentage points, which is unacceptable.

In absolute terms, Athi, Coast and LVN WSBs remain the highest spenders on BoD allowances and related expenses. The three WSBs spend three times more than Northern WSB (Table 5.11). Considering that BoD remuneration is uniform across all WSBs, as defined by the State Corporations Guidelines, huge variations can only be attributed to the varying of Board activities. The huge variation between the highest and lowest spending WSBs shows non-adherence to the defined levels of expenditures and is an expression of poor corporate governance. To contain costs, WSBs need to adhere to the schedules of planned board meetings and approved ceilings of board expenditure.

Figure 5.5: Board of Directors (BoD) expenditures as a percentage of operating costs



5.6.3 Qualitative Indicators

(i) Enforcement and Compliance

The Enforcement and Compliance Strategy (ECS) was developed to ensure conformity to the Water Act 2002, rules and regulations and guidelines issued by Wasreb. Wasreb applies the ECS to non-compliant WSBs for breach of various licence conditions. By extension, the WSBs are expected to apply the ECS to their WSPs. All WSBs, except Coast and LVS, have been rated satisfactory in the application of the ECS on their agents. The two exceptions were rated 'Fair' after being put under Wasreb's Special Regulatory Regime (SRR). Table 5.12 highlights the main areas of non-compliance by WSBs.

Table 5.12: Non-compliances in the WSBs

Area of non- compliance	WSB
Late submission of SPAs	Athi, LVS, Coast
Failure to implement corporate governance guideline	LVS, Rift Valley
Failure to submit reports on water quality and effluent monitoring	LVS, Coast
Failure to submit licensee achievement report	Tana, Tanathi, LVS, Coast
Failure to provide performance guarantee	LVS, LVN
Failure to submit applications for Regular Tariff Adjustments (RTAs)	LVS
Failure to provide cure plans on tariff post-implementation findings	LVS, Coast

WSBs should take advantage of existing subsidiary legislation to exercise delegated regulatory functions. This includes ensuring that WSPs comply with their obligations under the SPA.

(ii) Submission and Implementation of Tariff Proposals

Justified tariffs are crucial in promoting the financial sustainability of WSPs and are also a tool of ensuring that consumers pay fair prices for water services. WSB are charged with the responsibility of ensuring that WSPs in their service areas operate on justified tariffs. In addition, WSBs are required to monitor the implementation of approved tariffs to ensure that all conditions set therein are met.

In the period under review, all the WSBs had less than 40% of their WSPs operating with justified tariffs. Only 36% (13 out of 36) of large and very large WSPs had justified tariffs. The 36 WSPs represent 74% of people served and 90% of turnover. All WSBs performed poorly with regard to monitoring of tariff implementation. Wasreb has continued to levy penalties on non-compliant WSBs on this aspect.

(iii) Facility Management Systems

Most of the WSBs are yet to put in place comprehensive Facility Management Systems. Six out of the eight WSBs have developed a listing of their assets. In the absence of a comprehensive Facility Management System, WSBs cannot effectively fulfil their responsibility in asset management and development.

(iv) Five-Year Business and Investment Plans

Efforts to increase access to water and sanitation have to be reinforced by effectively translating investments into impact and ensuring value for money. This can only be realised on the basis of elaborate investment and financing plans which ensure that business objectives are linked to sector policy and are effectively implemented.

Under Licence Clause 9.1, WSBs are required to develop investment plans that detail how to achieve their business objectives. These investment plans are supposed to be harmonised with the business and investment plans of their agents. None of the WSBs have adequately aligned their plans to these requirements. The business plans have to clearly outline how the Minimum Service Levels (MSLs) will be achieved in a given time while investment plans have to be accompanied by detailed financing plans. They should regularly be updated. In this regard, there is urgent need for an investment planning guideline which will guide the sector towards more professional and streamlined investment planning. Wasreb is in the process of developing this guideline.

(v) Pro-Poor Efforts and Strategies

The license requires WSBs to collaborate with their agents to develop, publish and implement a pro-poor strategy for promoting low cost technology in the provision of water services in underserved areas.

The performance of all WSBs in development and implementation of pro-poor strategies during the reporting period was assessed as fair. Lack of disaggregated data for utilities masks service inequalities which in effect limit accountability of sector institutions vis-à-vis realisation of the rights of consumers.

In order to enhance the monitoring of pro-poor efforts and strategies, Wasreb has redesigned its information system (WARIS) to incorporate a pro-poor module for assessing water and sanitation coverage and hours of supply specifically within low income areas. In addition, Wasreb is currently developing a stand-alone pro-poor indicator to further strengthen public reporting on underserved/ low income areas.

(vi) Discerning Issues in Procurement and Management of Capital Projects

Adherence to proper procurement procedures in capital projects is critical to the successful implementation of those projects and is an assurance of value for money. All the WSBs have been rated as satisfactory on this indicator. Nonetheless, the continued unreliability of information on investments points to the need to ensure increased quality assurance in the management of capital projects. WSBs, and by extension WSPs, need to ensure continued adherence to the Public Procurement and Disposal Act.

(vii) Use of Model Customer Contract

The Licence requires the licensee to ensure that customer contracts developed are used by WSPs to enter into contracts with their customers. All WSBs have a Model Customer Contract for use by their agents as per Clause 7.1 of the Licence.

(viii) Use of Customer Complaints Procedure

The development of a complaints handling mechanism is mandatory under Clause 7.2 of the Licence. Tana and Rift Valley were rated good in their efforts to use the customer complaints procedure. The performance of all the other WSBs was satisfactory except Coast which was rated as fair.

Whereas Water Action Groups (WAGs) are operational in selected WSPs in each of the WSB areas, they represent a secondary complaints mechanism which is supposed to complement and build on existing customer complaints procedure.

(ix) Performance Guarantee

The licence requires the licensee to provide a Performance Guarantee as warranty for its performance obligations. All WSBs maintained a Performance Guarantee with Wasreb during the reporting period. For breach of licence conditions, Wasreb levies penalties which are deducted from the guarantees. This situation is undesirable since WSBs are in effect passing over unjustified costs to consumers. The Public Finance Management Act now requires accounting officers to be held responsible for such non-performance.

CHAPTER SIX:
CONCLUSION

6 CONCLUSION

6.1 DEEPENING REFORM

Devolution is a reality in Kenya today. All players should accept it and help it work. However, devolution should recognise the human right to water (emphasised in global instruments like the universal declaration of human rights, and back home, in the constitution). This means that water will remain a shared resource and any actions at national or county level should recognize the right for all persons to water and avoid watering down gains already made or disrupting services.

Therefore there is urgent need to finalise the legal framework that will support the devolution of water services. As indicated in the publication, the Water Bill as currently drafted could create conflict and water down the role of regulation in the sector with adverse consequences on the future of water service provision.

It is worth noting that while devolution has created physical and political boundaries in the country, decisions on water service provision cannot be made purely along these boundaries. Counties must resist the temptation of creating additional water service providers along the political boundaries and put the issue of sustainability at the forefront. As a way forward, clustering of non-viable WSPs is no longer an option. Wasreb is willing to support counties in moving towards this. The analysis made in this report advances the case for socially responsible commercialisation in water service provision.

6.2 GROWING THE SECTOR

The analysis presented in this report shows that there was a commendable improvement in seven out of the nine KPIs for both urban and rural WSPs. The positive stride needs to be sustained if the national targets and by extension the right to water and sanitation is to be realised.

For both urban and rural WSPs, there is improvement in all the Key Performance Indicators (KPIs) except for staff productivity, revenue collection efficiency (urban), water quality (residual chlorine) and O+M cost coverage (rural). However, it is worth noting that despite this improvement, none of the indicators, except collection efficiency (rural), has reached the desired level of performance. Wasreb is working to ensure that at least 50% of the WSPs attain at least 50% of the sector benchmarks by 2018. Currently only 8% of WSPs have attained this level.

Water Coverage

Water coverage stands at 54% for urban and 51% for rural. At the current annual growth averaging 1%, attaining both the Vision 2030 (100%) and the MDG (80%) targets look beyond reach. To realise universal access by 2030, investments required in water supply are estimated to be KSh 1,287.9 billion against a budget of KSh 561.5 billion. It is clear that the resource allocation to the sector is not sufficient to achieve the target. There is need

to increase the resource allocation to the sector, by increasing sector efficiency, maximising consumer contributions and tapping into private sector funding.

Sanitation Coverage

The current coverage of 73% urban and 70% rural though on track with regard to national target does not provide a firm basis for decision making due to the unreliability of data on onsite sanitation. However, despite the challenge, Wasreb has continued to apply more rigorous validation of the data and excluded reported figures which appeared as incredible considering other data sources. Challenges still abound in the reporting of on-site sanitation since WSPs lack a clear mandate on on-site sanitation and therefore rely on external data sources, such as the Department of Public Health. As we move into the future, it is important to strengthen WSPs' mandate on on-site sanitation, including providing financial incentives for rapid up scaling of access to improved sanitation, especially in urban LIAs.

The Water Services Trust Fund (WSTF) programme, Upscaling Basic Sanitation for the Urban Poor (UBSUP), aims at improving access to sanitation in low income areas where the sanitation situation is worst. WSPs are advised to take full advantage of such programmes.

Reporting on Urban Underserved Areas

Whereas reporting on urban underserved areas is essential for the fulfilment of the progressive realization of the human right to water and sanitation, lack of disaggregation of data masks urban inequalities. To address this challenge, Wasreb is in the process of developing a pro-poor indicator that will measure utility performance with respect to services to the poor. The refined web-based WARIS 3.0 system incorporates various inbuilt data validation mechanisms and an enhanced reporting module for underserved urban areas. This will, hopefully, address the challenges highlighted.

Non-Revenue Water Management

Despite the positive trend, Non-Revenue Water (NRW) levels remain unacceptably high despite the increase in sector investment over the years. The total amount of money lost in 2012/13 can be estimated at a staggering KSh 11.4 billion. From the county perspective, performance in Non-Revenue Water presents a huge challenge. None of the counties recorded average water losses at an acceptable level (not more than 25% of the water produced). In 10 counties, water losses equal or exceed water sales (i.e. for every litre sold, one litre or more is lost on the way).

Therefore County Governments and Water Service Providers need to quantify their Non-Revenue Water levels and then develop strategies to address it.

On the other hand, the state department of water under the Ministry of Environment, Water and Natural Resources, Wasreb and Japanese international Cooperation Agency (JICA) has developed standards for Non Revenue Water management specific to the Kenya situation. The standards consisting of a manual, guidelines, and a handbook are meant to provide a practical approach to reduction of NRW in Kenya. The effective utilization of the standards will lead to water use efficiency, preserve financial resources, enhance the willingness to invest, promote stronger customer satisfaction and willingness to pay.

6.3 GOVERNANCE ISSUES

Corporate governance continued being a constraint to improved sector performance. Refusal to comply with Wasreb's Corporate Governance Guideline renders WSPs ineligible for consideration in the performance ranking, irrespective of their technical scores. Nakuru Urban (Very Large category) and Kisumu (Large category) are singled out for continued non-compliance and have therefore neither been ranked nor recognised for the third year in a row.

Further, appointment of Boards of Directors without following a transparent process and failure to amend Memorandum and Objects of Association to conform to governance standards by these WSPs show non-compliance to regulation. There is need for all stakeholders to ensure that good governance practices are deepened in the sector to guarantee all stakeholders of inclusion, representation and participation in decisions that impact on provision of water services.

6.4 SUSTAINABILITY

The viability of the very large WSPs continues to improve while that of smaller categories shows a decline. This firms the case of clustering for financial sustainability. Wasreb has disseminated a Clustering Study to County Governments with proposals for possible clusters and guidance on the process. This is in line with the MTP2 (2013-2017) goal of clustering water supplies in the county to improve sustainability.

County Governments who are now in charge of water services in their respective counties are advised to concentrate WSS services under commercially viable county or cross-county WSPs in order to achieve economies of scale and be in a position to provide efficient, affordable and sustainable water services.

ANNEXES

Annex 1 General data on counties

No.	County	Population in the County	Percentage of County population within service areas of WSPs (%)	INDICATORS								
				Water Coverage (%)	Sanitation Coverage (%)	Hrs of supply	NRW (%)	O+M cost coverage (%)	Unit cost of water produced (KShs/m³)	Unit operating cost of water billed (KShs/m³)	Average tariff (KShs/m³)	WSPs in the county
1	**Baringo**	615,632	5	58	69	8	71	Eldama Ravine: 60	23	77	45	Eldama Ravine
2	**Bomet**	812,234	33	55	70	19		Tililbei: 74	22	59	42	Tililbei
3	**Bungoma**	1,627,271	17	63	60	22	40	Nzoia: 105	41	69	66	Nzoia
4	**Busia**	834,071	15	72	76	19	45	Kakamega Busia: 171	21	39	59	Kakamega Busia
5	**Elgeyo-Marakwet**	413,211	12	19	86	14	32	Iten Tambach: 87	42	61	48	Iten Tambach
6	**Embu**	552,220	82	53	25	18	50	Embe: 122 Embu: 134 Ngandori Nginda: 130 Kyeni: 94 Ngagaka: 119	35	35	43	Embe, Embu, Ngandori Nginda, Kyeni, Ngagaka
7	**Garissa**	720,518	21	86	81	21	50	Garissa: 107	33	66	65	Garissa
8	**Homa Bay**	1,072,176	93	12	56	11	34	South Nyanza:54	36	55	27	South Nyanza
9	**Isiolo**	151,788	46	40	76	18	43	Isiolo:106	47	82	85	Isiolo
10	**Kajiado**	819,946	73	25	65		70	Oloolaiser: 99 Olkejuado: n.d Nolturesh-Loitoktok: 46 Namanga: 138	27	89	65	Oloolaiser, Olkejuado, Nolturesh-Loitoktok, Namanga
11	**Kakamega**	1,806,016	11	72	76	19	45	Kakamega-Busia:171	21	39	59	Kakamega-Busia
12	**Kericho**	827,268	50	63	74	21	55	Kericho: 87 Tililbei: 74	48	105	86	Kericho, Tililbei
13	**Kiambu**	1,795,999	82	55	83	16	37	Gatundu South: 146 Kikuyu: 87 Ruiru-Juja: 121 Thika: 107 Kiambu: 95 Githunguri: 76 Karimenu: 125 Karuri: 86 Limuru: 107	37	59	58	Gatundu South, Kikuyu, Ruiru-Juja, Thika, Kiambu, Githunguri, Karimenu, Karuri, Limuru
14	**Kilifi**	1,251,444	80	62	43	19	39	Kilifi-Mariakani: 92 Malindi: 98	58	94	86	Kilifi-Mariakani Malindi
15	**Kirinyaga**	560,457	81	29	88	23	71	Kirinyaga: 104	15	51	50	Gichugu Kirinyaga
16	**Kisii**	1,284,358	22	45	84	17	47	Gusii: 72	65	121	84	Gusii
17	**Kisumu**	1,076,607	100*	58	76	11	49	Gulf: 60 Nyanas: 30 Kisumu: 109	42	82	78	Gulf Nyanas Kisumu
18	**Kitui**	1,104,812	56	49	77	12	52	Kiambere- Mwingi: 58 Kitui: 75	60	125	82	Kiambere Mwingi Kitui
19	**Kwale**	720,206	95	17	62	21	38	Kwale:66	53	84	55	Kwale
20	**Laikipia**	465,245	51	69	93	17	39	Nanyuki: 140 Nyahururu: 95 Rumuruti: 50	47	77	88	Nanyuki, Nyahururu, Rumuruti
21	**Lamu**	111,949	20	69	80	6	41	Lamu: 80	42	71	54	Lamu
22	**Machakos**	1,175,214	48	46	60	11	45	Machakos: 94 Mavoko: 132 Matungulu Kangundo: 123 Mwala: 48 Yatta: 78 Kathiani: 50	90	163	144	Machakos, Mavoko, Matungulu Kangundo, Mwala, Yatta,Kathiani
23	**Makueni**	987,833	34	35	84	17	28	Wote: 78 Kibwezi Makindu: 77	52	72	54	Wote, Kibwezi Makindu
24	**Mandera**	1,198,144	7	26	49	18	`	Mandera:133	7	11	14	Mandera
25	**Marsabit**	325,172	14	66	60	5	n.d.	Moyale:40	89	117	46	Moyale
26	**Meru**	1,507,059	38	43	77	17	48	Imetha: 86 Meru: 116 Tuuru: 97	32	61	59	Imetha, Meru, Tuuru
27	**Migori**	1,034,289	18	20	65	5	38	Mikutra: 46	94	152	68	Mikutra
28	**Mombasa**	1,023,488	100*	57	88	6	47	Mombasa: 107	53	101	108	Mombasa
29	**Murang'a**	1,042,871	68	51	74	19	59	Gatanga: 98 Gatamathi: 83 Kahuti: 106 Muranga South: 94 Muranga: 89	17	42	39	Gatanga, Gatamathi, Kahuti, Muranga South, Muranga
30	**Nairobi**	3,726,682	100*	75	72	18	38	Nairobi:126	30	49	58	Nairobi
31	**Nakuru**	1,832,752	64	56	74	12	52	Naivasha: 97 Nakuru: 112 Nakuru Rural: 85	35	74	77	Naivasha, Nakuru, Nakuru Rural
32	**Nandi**	844,182	23	61	91	12	48	Nyanas: 30 Kapsabet Nandi: 94	30	58	30	Nyanas, Kapsabet Nandi
33	**Narok**	968,925	5	37	66	12	37	Narok: 90	51	82	74	Narok
34	**Nyamira**	657,785	82	45	84	17	47	Gusii: 72	65	121	84	Gusii
35	**Nyandarua**	678,958	24	40	75	16	52	Engineer: 137 Nyandarua: 43 Olkalou: 51	45	93	42	Engineer, Nyandarua, Olkalou
36	**Nyeri**	716,020	77	66	78	22	49	Nyeri: 135 Mathira: 112 Othaya Mukurweini: n.c.d Tetu Aberdare: 101	24	47	64	Nyeri, Mathira, Othaya Mukurweini, Tetu Aberdare
37	**Samburu**	243,359	16	n.d.	33	14	38	Maralal: 68	49	78	51	Maralal
38	**Siaya**	935,929	35	23	62	16	58	Sibo: 68	42	98	59	Sibo
39	**Taita-Taveta**	304,992	20	72	77	7	n.d.	Tavevo: 116	33	52	58	Tavevo
40	**Tana River**	274,428	17	n.d.	n.d.	n.d.	n.d.	Hola Tana River: n.d.	n.d.	n.d.	n.d.	Hola Tana River
41	**Tharaka-Nithi**	411,182	25	62	73	24	41	Nithi: 135 Murugi Mugumango: 133	9	16	19	Nithi, Murugi Mugumango
42	**Trans Nzoia**	965,219	38	63	60	22	40	Nzoia: 105	41	69	66	Nzoia
43	**Turkana**	950,480	12	48	36	12	37	Lodwar: 146	27	42	59	Lodwar
44	**Uasin Gishu**	1,020,156	37	72	97	16	32	Eldoret: 100	40	59	57	Eldoret
45	**Vihiga**	631,536	42	24	39	20	46	Amatsi: 74	24	44	31	Amatsi
46	**Wajir**	765,481	n.d	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
47	**West Pokot**	579,281	10	28	76	14	28	Kapenguria: 47	57	80	37	Kapenguria

Since the sum of the reported figures for 'total population in service area' exceeds the total projected population in the county (Kisumu at 110%;Mombasa at 103% ; Nairobi at 104%), the percentage has been capped at 100. In actual fact the percentage should be lower than 100, as the service areas of the respective WSPs do not cover the whole county.
n.d. = no data, n.c.d. = not credible data

Annex 2 Methodology for selected KPIs

Indicator	Indicator elements	Computation	Remarks
Water Coverage	Population served through individual connections - **A**	Total No. of active connections * Average household size	1. The average household size is derived from the census data and is unique for each area 2. 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 is 100 - 400 people
	Number of people served with water services	A+B+C+D+E+F	
	Population in Service area	Sum population of all sublocations within the WSP service area	Sublocation population is derived from Census data and growth rates applied appropriately
	Water Coverage	Number of people served with water services/ Population in Service area	
Sanitation Coverage	Population served through individual sewer connections - **A**	Total No. of active sewer connections * Average household size	The average household size is derived from the census data
	Population served through plot level sewer connections - **B**	Total No. of active plot-level sewer connections * Average No. of households served by a plot-level sewer connection * Average household size	Allowed range of average number of households per plot level connection is 4 - 6
	Population served through small MDU sewer connections - **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 MDU sewer connections - **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
	Number of people served with sanitation services	A+B+C+D+E	
	Population in Service area	Sum population of all sublocations within the WSP service area	Sublocation population is derived from Census data and growth rates applied appropriately
	Sanitation Coverage	Number of people served with sanitation services/Population in Service area	
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	
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 up to the point of cutomer use	
	Non-Revenue Water	(A+B/ Volume of water produced)*100	

Annex 3 Components of Drinking Water Quality (urban and rural)

URBAN WSPS				
WSP	Drinking Water Quality (resid chlor.) in %	Compliance with res. Chlor. Standards in %	Drinking Water Quality (bacteriological) in %	Compliance with bacteriological Standards in %
Nairobi	75	91	93	96
Mombasa	93	96	93	100
Eldoret	93	90	93	100
Nakuru	85	98	93	100
Thika	93	100	93	99
Nzoia	93	98	93	98
Nyeri	100	99	93	100
Kisumu	95	98	11	100
Kakamega Busia	69	90	93	100
Kirinyaga	93	99	93	95
Malindi	90	99	41	100
Mathira	88	94	33	100
Nakuru Rural	61	100	80	99
Embu	93	99	93	95
Kilifi Mariakani	93	67	93	73
Tililbei	99	98	42	100
Kericho	100	100	37	100
Gusii	100	96	31	99
Nanyuki	93	100	57	97
Nyahururu	93	100	29	100
Kikuyu	93	100	7	100
Murang'a	93	100	29	100
Tavevo	84	100	0	0
Sibo	58	97	93	100
Meru	100	100	93	100
Garissa	93	98	83	100
Kwale	93	92	76	79
Ruiru Juja	93	100	93	99
Machakos	81	100	44	100
Limuru	51	100	24	100
Kitui	93	99	93	100
Mavoko	93	83	74	81
Oloolaiser	91	110	20	100
Isiolo	93	100	93	100
South Nyanza	99	92	99	82
Mikutra	100	100	33	92
Amatsi	93	100	42	100
NolTuresh Loitokitok	93	100	0	0
Kiambu	62	100	33	100
Lodwar	93	100	33	100
Kibwezi Makindu	93	100	17	100
Gulf	34	100	75	78
Karuri	0	0	11	100
Nyanas	99	99	93	98
Lamu	93	100	8	100
Kiambere Mwingi	93	96	93	92
Eldama Ravine	100	91	54	90
Narok	93	100	25	100
Mandera	59	85	0	0
Kapsabet Nandi	75	100	0	0
Kapenguria	93	99	8	100
Naivasha	61	89	131	95
Mwala	93	100	50	100
Maralal	93	100	93	100
Yatta	93	100	67	70
Iten Tambach	99	98	86	100
Olkalou	0	0	33	75
Namanga	93	100	33	100
Runda	93	100	93	100
Kiamumbi	93	100	93	100
Rumuruti	79	81	25	100
Matungulu Kangundo	50	88	75	83
Wote	93	100	83	100
Moyale	0	0	0	0
Olkejuado	0	0	17	3

RURAL WSPS				
WSP	Drinking Water Quality (resid chlor.) in %	Compliance with res. Chlor. Standards in %	Drinking Water Quality (bacteriological) in %	Compliance with bacteriological Standards in %
Othaya Mukurweni	100	99	88	100
Murang'a South	93	99	53	100
Gatundu South	39	93	30	95
Kahuti	93	100	12	93
Imetha	93	98	65	100
Tetu Aberdare	93	97	45	100
Karimenu	2	100	12	100
Gatamathi	100	100	83	93
Ngandori Nginda	93	100	30	100
Gatanga	0	0	4	75
Ngagaka	92	91	93	95
Nithi	100	100	134	100
Githunguri	10	100	70	100
Kyeni	93	88	0	0
Tuuru	0	0	93	100
Nyandarua	84	95	38	100
Murugi Mugumango	0	0	3	67
Embe	93	97	81	100
Muthambi 4K	0	0	7	100
Rukanga	0	0	0	0
Ndaragwa	0	0	8	0
Kikanamku	0	0	0	0
Mawingo	2	0	0	0
Nyasare	35	93	93	96
Kathiani	0	100	0	0
Tachasis	0	0	0	0
Engineer	0	0	0	0
Nyakanja	0	0	4	100
Mbooni	4	100	4	100
Kinja	0	0	0	0
Tia Wira	0	0	0	0
Upper Chania	0	0	0	0
Ruiri Thau	0	0	0	0
Gitei	0	0	0	0
Kathita Kiirua	86	68	0	0

Annex 4 Case Study: Leveraging on technology to run Rural Water Systems

The 35 rural WSPs included in this edition of *Impact* cover only rural piped systems. In the last Impact report, it was noted that the combined service areas of these rural schemes covered only 12% of Kenya's rural population. To date, Small Scale Rural Water Supply Systems (SSRWSS) based around community hand pumps have not been included within Wasreb's regulatory regime. This is because the basis on which these systems are run does not lend itself to regulation. Monitoring of their performance has therefore not been feasible with existing methods and technology. However, new thinking and technology is creating the possibility of rural service providers being supported to effectively run rural water systems.

In 2013, the Oxford University conducted a trial in Kitui County where hand pumps were monitored using the mobile phone network, using the "Smart Hand pump" technology. Data from this monitoring system was used to trigger a rapid hand pump maintenance response. Having information about all the pumps in one place enabled the creation of an effective Maintenance Service Provider (MSP) with responsibility for the maintenance of hand pumps over a wide geographical area, in this case a district. This is similar to a WSP, although the MSP is not responsible for the water itself, but the means of delivery of the water. With this system, the average downtime for hand pumps in the study area fell from 27 days pre-trial to under three days, representing a great improvement in performance.

While improving the sustainability of SSRWSSs, this enhanced monitoring approach can provide wider benefits in terms of asset management and regulatory oversight. The same data that triggered the maintenance response also provides new information on how water usage varies over time (throughout the day and seasonally) and space (between different communities and hand pumps). Understanding hand pump usage level would contribute to the planning of further infrastructure investments, be they further hand pump installations or the introduction of piped water systems. Moreover, data on water usage and hand pump outages can be automatically reported, enabling Wasreb to ensure that satisfactory performance levels are achieved and maintained, and enhancing transparency and accountability within the rural sector.

A water supply system based around hand pumps is different from that of a piped system. Therefore, different performance indicators would be needed to monitor, benchmark, and regulate MSPs.

Some of the current performance indicators such as NRW and Dormant Connections are clearly incompatible with point source systems. One piped connection might have one or two households using it. However, using the hand pump as the equivalent unit has difficulty as many households might use the same pump, and there is large variation in this number.

Likewise, some performance indicators may need to be adjusted to take into account the operational characteristics of a hand pump-based SSRWSS. For example, for piped systems the metric for supply reliability is hours of supply per day. For WSPs serving populations below 100,000, over 17 hours of supply per day is classed as Good. This equates to 71%. A typical hand pump might break down three times per year. If the pump remained broken for

a month each time this would still equate to a 75% up-time, which is clearly unacceptable. This was approximately the baseline functionality level in Kyuso prior to the trial. The Kyuso trial did achieve an average 98% uptime for pumps in the system (2.3 repairs per year times 2.6 days downtime per repair). This is a very encouraging figure, but the adverse impact of those days without a pump is much greater than the impact of having a piped supply that works for all but ten minutes per day. Alternative metrics are needed to address the needs of the communities and the impact of poor service levels on them. While the direct equivalent metric of "days functioning per hand pump per year" would be useful, it could be complimented by an additional metric of "percentage of outages greater than two days", which would reflect the fact that short outages have lower impact as they can be buffered by household storage.

As well as providing better water services to the communities in Kyuso, this trial has demonstrated that innovative approaches and new technology can make it possible to deliver higher levels service to rural water users across Kenya. While our ultimate aim is for all Kenyans to have piped water, hand pumps will remain part of the rural water supply landscape for many years to come. However, the availability of objective data on their use will enable us to create appropriate regulatory metrics and benchmarks, so delivery of SSRWSSs can be normalized and brought into the regulatory fold alongside larger rural and urban systems. This would contribute to our aim of extending services to under-served low-income area, and rural communities would realize their human right to water and sanitation as recognized in our constitution.

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