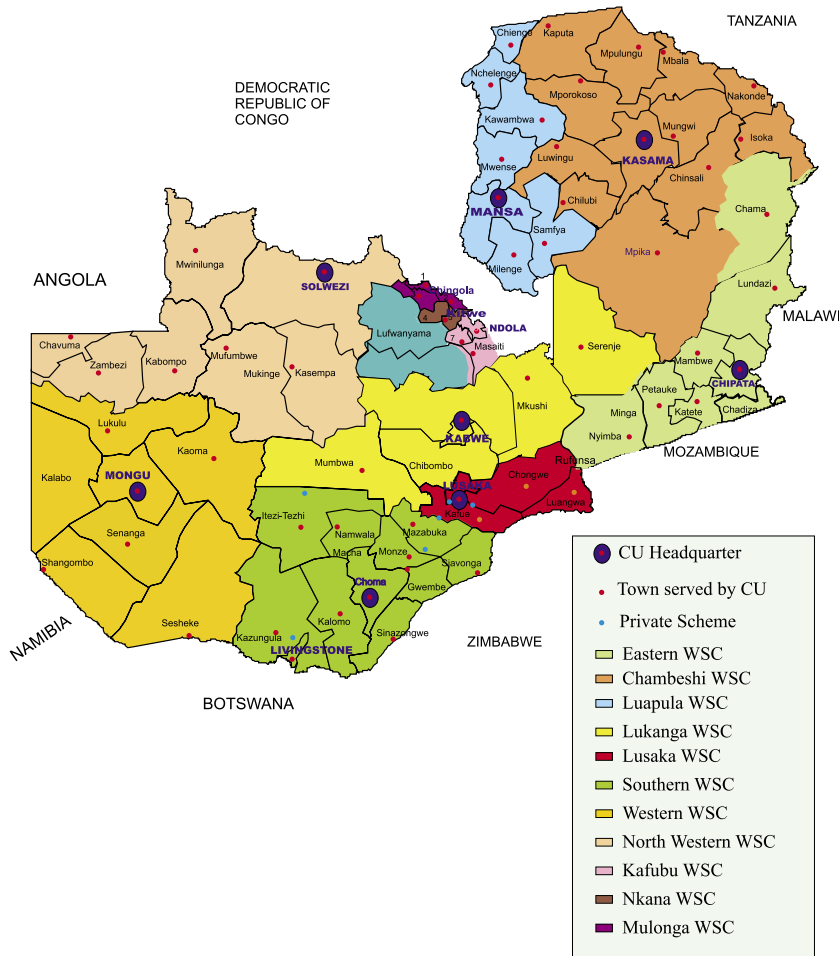




Urban and Peri-Urban Water Supply and Sanitation Sector Report 2010/2011



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Abbreviations and Acronyms

AGM	Annual General Meeting	KCM	Konkola Copper Mines
AusAID	Australian Aid	KWSC	Kafubu Water and Sewerage Company
CCO	Commercial and Customer Orientation	LA	Local Authority
CEO	Chief Executive Officer	LGWSC	Lukanga Water and Sewerage Company
CHWSC	Chambeshi Water and Sewerage Company	LPWSC	Luapula Water and Sewerage Company
CN	Country Node	LWSC	Lusaka Water and Sewerage Company
CPA	Community Participatory Assessment	MEWD	Ministry of Energy and Water Development
CU	Commercial Utility	MDGs	Millennium Development Goals
DANIDA	Royal Danish Embassy	MLGH	Ministry of Local Government and Housing
DBSA	Development Bank of Southern Africa	MOU	Memorandum of Understanding
DTF	Devolution Trust Fund	MWSC	Mulonga Water and Sewerage Company
ESAWAS	Eastern and Southern Africa Water and Sanitation	NRW	Non Revenue Water
ESAWUR	Eastern and Southern African Water Utility Regulators	NUWSSP	National Urban Water Supply and Sanitation Programme
EWSC	Eastern Water and Sewerage Company	NWASCO	National Water Supply and Sanitation Council
GF	General Fund	NWSC	Nkana Water and Sewerage Company
GIZ	German International Cooperation		

NWWSC	North-Western Water and Sewerage Company	WSC	Water and Sewerage Company
O&M	Operation and Maintenance	WSP	Water Safety Plan
PEF	Performance Enhancement Fund	WSS	Water Supply and Sanitation
PS	Private Schemes	WWG	Water Watch Group
PTI	Part time Inspectors	WWSC	Western Water and Sewerage Company
RBI	Regulation by Incentives	ZESCO	Zambia Electricity Company
RBIRS	Regulation by Incentives Reporting System	ZNBC	Zambia National Broadcasting Cooperation
RegNet	Regulators Network	ZPPA	Zambia Public Procurement Authority
RWSSU	Rural Water Supply and Sanitation Unit		
SI	Service Level		
SLA	Service Level Agreement		
SLG	Service Level Guarantee		
SWSC	Southern Water and Sewerage Company		
UfW	Unaccounted for water		
WASAZA	Water and Sanitation Association of Zambia		
WDM	Water Demand Management		

Foreword

The responsibility of providing water supply and sanitation services is indeed a noble and distinguished one, as it entails support of life for the general population of the country. This onerous task with its challenges is at times perceived by the general public as taken lightly by those responsible for discharging it on behalf of the Zambian people. The expectations from the general public with regard to the quality of water supply and sanitation cannot be over emphasised. It is clear that the quality of service provision in the WSS sector is still below the expected standard, evidenced by the number of complaints from the public.

As people charged with this noble responsibility, we usually have genuine and convincing reasons for not performing to the expectations of the general public. However, these reasons will never justify non-provision of services to a customer in need. The public expect us to deliver in spite of the challenges we face.

Admittedly, we continue to see positive trends on average in almost all the indicators in the sector and the gallant men and women behind this progress need to be lauded.

Nonetheless, the information contained in this report should enable the various stakeholders draw action

plans on specific identified areas of weakness and to strengthen the areas of potency. Thus, the contents of the report are meant to motivate service providers to improve on their performance and also highlight areas requiring Government interventions in order to improve the sector.

Suffice to say, this great task rests with all stakeholders in the Water Supply and Sanitation sector. While we may take the supply of water and sanitation services for granted, the lack of it has serious repercussions on public health and national development.

The Government of the Republic of Zambia has set Vision 2030 as the focus for universal access for water and sanitation services. This underscores the high expectations from the general public. It is therefore incumbent upon all of us charged with the rare and noble responsibility of supporting life to reflect on our roles and ask ourselves what we must do to help our country attain the Vision 2030 and also meet the expectations of the general public. Therefore we just have to act or risk being irrelevant.

If we all did that, the whole paradigm of what we do will shift and greater will be the results and more fulfilling will be the task.

Yes! Let us celebrate the achievements in the year that has gone by, but there is more work at hand. The average coverage for water and sanitation of the urban population are still low at 77.5% and 54.1% respectively, hours of supply on average has not changed from the previous year and stands at 16 and water losses remain high at 46%.

We therefore call upon all stakeholders, i.e. Government, Local Authorities, Cooperating Partners, Commercial Utilities, Civil Society Organisations, consumers of services, Contractors, Suppliers, the Regulator and everyone to commit to actions that will result into the speedy achievement of the Vision 2030.

Looking forward to a greater leap in the next reporting period.




Kelvin Chitumbo
Director-NWASCO

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1

SUMMARY OF CU PERFORMANCE FOR THE YEAR 2010 / 2011

Over
10
Years
of Regulating WSS
service provision

This chapter presents an overview of the performance of the Commercial Utilities (CUs) detailed in Chapter 7 for the 2010/11 reporting period (1st April 2010 to 31st March 2011).

The indicators highlighted in this sector report are based on the minimum service levels (articulated in Chapter 6), which each service provider should strive to attain. Additional indicators have been included to provide the reader with a broader view of the performance of CUs.

1.1 NATIONAL URBAN WATER SUPPLY AND SANITATION COVERAGE

Commercial Utilities and Private Schemes are the two main types of providers supplying water and sanitation services in urban areas. Currently there are about 5.56 million people living in the CUs' serviced areas of which 1% are serviced by seven private schemes

Table 1 depicts the national urban water supply and sanitation coverage. In the reporting period, 304,339 more people accessed water supply services bringing the National Urban Water Coverage to 77.5%. CUs continued to make efforts to capture decentralised sewer systems such as septic tanks hence the dramatic increase in sanitation coverage.



Table 1: National Urban Water Supply and Sanitation Coverage

	2009/10	2010/11
Total Urban Population	5,423,722	5,559,343
Total Urban Population Served	4,006,810	4,311,149
National Urban Water Coverage	73.9%	77.5%
National Urban Sanitation Coverage	36.6%	54.1%



1.2 OPERATING CONDITIONS OF CUS

It is important to note that the CUs operate under varied conditions in terms of geographic coverage, level of economic activity in the area of operation, state of infrastructure and availability and level of external support (see Table 2). These aspects explain the operating environment of the CUs which may impact on their performance.

Table 2: Overview of CUs

Commercial Utility	Abbreviation	Start of operations	No. of connections	No. of towns serviced	No. of Staff	Level of economic activity ¹	State of Infrastructure ²	External Support *
Lusaka WSC	LWSC	1989	76,749	4	819	High	B	World Bank
Nkana WSC	NWSC	2000	45,983	3	476	High	B	AfDB
Kafubu WSC	KWSC	2000	48,807	3	773	High	B	-
Mulonga WSC	MWSC	2000	43,330	3	309	Medium	B	-
Lukanga WSC	LGWSC	2006	15,403	6	190	Medium	A	AfDB/DBSA
Southern WSC	SWSC	2000	31,535	17	268	Medium	A	-
Chambeshi WSC	CHWSC	2003	14,288	12	182	Low	C	-
North Western WSC	NWWSC	2000	7,661	7	88	Medium	A	-
Eastern WSC**	EWSC	2009	10,316	8	120	Medium	B	Germany
Western WSC	WWSC	2000	9,257	6	100	Low	C	Denmark
Luapula WSC	LPWSC	2009	2,929	7	50	Low	C	Denmark

¹ Economic Activity Key:

Using average household income
Below K400, 000- low
between K400, 000 and K600,000 -Medium
above K600,000-High

² State of Infrastructure Key:

A- Good, rehabilitated, needs minimal intervention
B- Fair, dilapidated infrastructure, needs major rehabilitation
C- Poor infrastructure, needs a complete overhaul

* Support considered for the reporting period only. DTF funded projects are elaborated in Chapter 3.

** Was operating previously as Chipata WSC from formation in 1992 servicing Chipata town only

Source: *Living Conditions Economic Survey 2004, CSO.*

1.3 OVERVIEW OF SECTOR PERFORMANCE

The performance of CUs in nine key indicators is summarised in Table 3.

Table 3: Overview of Key Performance Indicators

	UFW [%]	Trend	Water Quality Compliance#	Trend	Metering Ratio [%]	Trend	Water Service Coverage [%]	Trend	Sanitation Coverage [%]	Trend	Hours of supply	Trend	Staff per 1,000 water connections	Trend	Collection efficiency [%]	Trend	O+M Cost Coverage by Collection [%]	Trend			
LWSC	43	↑	89	↑	62	↑	75	↑	65	↑	18	↑	11	→	75	↓	102	↓			
NWSC	51	↓	97	↓	41	↓	90	↑	57	↑	16	→	8	→	83	↑	95	↑			
KWSC	49	↓	92	↓	52	↑	87	↑	61	↑	15	↓	7	→	67	↓	105	↑			
MWSC	40	↑	95	↑	60	↑	90	↑	81	↑	17	→	7	→	94	↑	129	↓			
LGWSC	58	↓	95	↑	78	↑	66	→	21	↓	21	↑	12	↑	74	↓	77	↑			
SWSC	35	↑	97	↑	74	↓	92	↑	61	↑	20	↑	8	↑	100	↑	106	→			
CHWSC	44	↑	87	↓	41	↑	66	↑	22	↓	16	→	13	↑	91	↑	77	↑			
NWWSC	34	→	99	↓	100	→	73	↑	22	→	23	→	11	↑	101	↓	93	↑			
WWSC	45	↑	89	↑	14	↑	51	↓	22	↑	10	→	11	↓	75	↓	73	↓			
EWSC	48	↑	86	↑	80	↑	65	↑	31	↑	17	↓	12	↓	99	↑	73	↑			
LPWSC	67	↓	79	-	0	→	15	↓	8	↑	6	↑	17	↓	90	↑	48	↑			
Av.	46 (w)	↓	91 (s)	↓	58(w)	↑	76 (w)	↑	53(w)	↑	16 (s)	→	**		84 (w)	↓	105 (w)	↓			



Worse than the relevant average and benchmark not achieved (1 point)

Better than the relevant average but benchmark not achieved (3 points)

At least “acceptable” benchmark achieved (5 points)

(w) weighted average

(s) simple average

** Not applicable

The water quality compliance indicator calculation incorporates the compliance to standards and the required number of samples

1.3.2 Sector Achievements and Challenges

Notable achievements in the period were:

- Increase in water supply and sanitation coverage;
- Increase in metering ratio; and
- Increase in O&M cost coverage by total revenue.

Challenges/Concerns:

- Low revenue collections;
- High water losses (UfW);
- Dilapidated and inadequate infrastructure;
- Frequent electrical power outages;
- Water pollution particularly from mining activities; and
- Low investments in the sector.






Water losses continue to be a challenge

1.4 CU PERFORMANCE RANKING

Commercial Utilities (CUs) are ranked according to indicators and respective weightings shown in Table 4. A higher weighting reflects how critical the indicator is to the quality of service and financial viability of the CU. The different characteristics and operating environments of the CUs should be taken into consideration in interpreting this performance.

The ranking is arrived at as follows:

-  Below relevant average and benchmark not achieved -1 mark
-  Better than relevant average but benchmark not achieved -3 marks
-  Acceptable benchmark achieved – 5 marks

These are multiplied by indicator weightings shown in Table 4 and the CU's performance score for each indicator (shown in Table 3). The resulting scores for each indicator are then aggregated.

However, the computation for UfW and Staff efficiency are treated differently. For UfW, because a negative trend is desired, the performance score was subtracted from 100 and the result multiplied by the mark and the weight. Staff per 1,000 connections has both an upper and lower limit, therefore only the mark for each CU was multiplied by the weight.

Table 4: Performance Indicators- Weighting Factors

	Indicator	Weighting
1	Water Quality	20 points
2	Collection efficiency	20 points
3	Metering ratio	15 points
4	Hours of supply	15 points
5	O+M cost coverage by collection	15 points
6	UFW	10 points
7	Staff per 1000 connections	10 points
8	Regulators perception	05 points
9	Sanitation coverage	05 points
10	Water coverage	05 points

Note: Where no benchmark is defined, the relevant sector average is used

CUs' were ranked as shown in Table 5 below. In order to provide readers with the performance trends, the ranking for the previous three years has also been reflected.

Table 5: Ranking of CUs

Commercial Utility	Ranking 2010/11	Ranking 2009/10	Ranking 2008/9	Ranking 2007/8
SWSC	1	1	2	2
MWSC	2	3	3	5
NWWS	3	2	1	1
LGWSC	4	6	7	8
EWSC	5	5	4	7
NWSC	6	4	5	3
KWSC	7	4	9	4
LWSC	8	8	6	6
ChWSC	9	10	10	9
LPWSC	10	9		N/A
WWSC	11	7	8	8

Congratulations Southern WSC for maintaining the top position and Mulonga WSC for moving to second position.

Western WSC dropped to last position from seventh, while Nkana WSC and Kafubu WSC dropped from tying at fourth position to sixth and seventh positions respectively.



1.5 COMMENTS AND RECOMMENDATIONS FOR EACH CU

Lusaka WSC

- Increased sanitation coverage by capturing more septic tanks.
- Installed new boreholes to improve water supply in a number of areas such as Chelston and Avondale and also replaced less efficient pumps at some pump stations.
- Improved hours of supply.
- Installed a substantial number of meters
- High turnover of management staff is a concern.
- Service extension to new development areas is slow.
- Needs to improve water quality compliance.
- Needs to improve customer complaint resolution rate.



Nkana WSC

- Improved collection efficiency.
- Good kiosk management .
- Reduction in metering ratio due to defective meters.
- Increased water losses (UfW).
- Service extension to new development areas is slow.
- Need to re-activate idle customers to boost billing.



Kafubu WSC

- Improved metering ratio.
- Increased water losses (UfW)..
- Concerted effort required to increase collection efficiency.
- Need to improve hours of supply in the upper part of Ndeke, New Mushili and Chifubu townships of Ndola City.

Mulonga WSC

- Good Staff efficiency.
- Managed to contain costs.
- Achieved the benchmark for water quality compliance.
- Directed efforts at addressing sewer challenges in Mufulira district.
- Need to reduce UfW which has remained unchanged in three years.
- Need to improve water supply and collection efficiency in low-cost areas.



Continuous pigging of sewer lines helping to reduce complaints of blockages



NWASCO staff verifying water quality compliance in the field

Lukanga WSC

- Increased hours of supply.
- Improved O&M cost coverage by collection.
- Collection efficiency dropped.
- Need to address the numerous sewer challenges in Kabwe town.
- Need to drastically reduce UfW.
- Increase in water supply coverage requires further enhancement.

Southern WSC

- Maintained good collection efficiency.
- Improved water quality compliance.
- Co-ordinated with Local Authorities to extend service delivery to new development areas.
- Reduced UfW.
- Still need to improve water supply in Pemba district.



Extending water supply service through individual connections

Chambeshi WSC

- Increased the number of connections by over 2,000.
- Increased the metering ratio.
- Met the acceptable benchmark for collection efficiency and staff efficiency for the first time.
- Need to improve hours of supply in Mpulungu district.
- Need to improve customer relations.
- Need to improve water quality in Nakonde.



Bulk metering to improve management of water losses

North Western WSC

- Maintained metering ratio at 100%.
- Improved O&M cost coverage by collection by containing costs.
- Staff per 1,000 connections met the 'good' benchmark.
- Increased number of connections but needs to further grow the customer base.



New infrastructure installed through Government to Government funding

Western WSC

- Increased total revenue.
- Introduced electronic billing.
- Hours of supply still low.
- Collection efficiency dropped below the benchmark.
- Need to grow the customer base and re-activate old customers.
- Need to address sewer challenges in Mulambwa township of Mongu district.

Eastern WSC

- Improved metering ratio.
- Improved hours of supply in Katete, Chadiza, Chama and Nyimba districts.
- Improved collection efficiency.
- Hours of supply in Chipata district deteriorated.
- Need to utilise potential to extend sanitation service in Chipata district.
- Need to grow the customer base.

Luapula WSC

- Generally increased hours of supply.
- Management and staff in place.
- Good systems and procedures in place.
- Seriously dilapidated and inadequate infrastructure.
- Cost coverage a major challenge.
- Need to improve service delivery especially in Kawambwa district.



2

SECTOR DEVELOPMENTS
Reaching the
Millenium Development Goals
(MDGs)

Over
10
Years
of Regulating WSS
service provision

Safe drinking water and basic sanitation are fundamental to human life. Access to these basic necessities becomes essential and critical for survival, health, growth and development.

It has been over 10 years since the world leaders, including the Zambian, came together in September 2000 to adopt the United Nations Millennium Declaration to reduce extreme poverty, hunger and illness. Eight time-bound targets known as the "Millennium Development Goals" were set with a deadline for achievement of 2015.

For the water sector, the required interventions are articulated under Goal 7, which is to "Ensure Environmental Sustainability". Under this Goal, Target 10 demands halving, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

According to the United Nations (WHO and UNICEF Joint Programme for WSS, Water for Life: Making It Happen, 2005), one billion people lack access to safe drinking water and 2.4 billion to adequate sanitation in the World. To achieve the Millennium target, an additional 1.5 billion people will require access to improved water supply by 2015, implying an additional 100 million people each year or 274,000 per day.

2.1 HOW ZAMBIA HAS FARED

Zambia has an enabling environment with institutional reforms, policies, strategies and commitments in place to drive the MDGs. The National Water Policy of 1994 revised in 2010 provides sufficient guidance to the water sector. The WSS Act No. 28 of 1997 provides for institutional and legal framework with the establishment of an autonomous regulator and CUs for urban and

peri-urban service provision. For rural WSS, a Rural Water Unit under the MLGH is operational. The Water Resources Management Bill which will establish a regulator for water resources has been assented to by the President.

That notwithstanding, investments in the sector by the Government have been low, with allocations in the National Budget of less than 3% of the total. However, efforts are being made to increase investments through the development and implementation of both National Rural and Urban WSS Programmes under MLGH. The Programmes are intended to speed up the achievement of MDGs and meet the Government's vision of universal coverage. Co-operating partners and NGOs are supplementing Government programmes.

Investments in the sector have largely been skewed towards water supply as opposed to sanitation. This has been compounded by the absence of a clear policy and mandate on issues of sanitation.



2.2 PROGRESS MADE TOWARDS MEETING MDGS

The national target for water is 74% while that of sanitation is 42% by 2015. Zambia's population as of the 2010 census stands at just over 13 million from about 10 million in 2000. Of this population, 61% reside in rural areas while the rest (39%) reside in urban areas. The annual population growth rate is estimated at 2.8%.

2.2.1 Water Supply

Urban: Currently, the water coverage for urban stands at 77.5%. At the present rate of increase in water supply coverage, the national urban water supply population coverage is projected to be over 86% by 2015. Service provision is through individual household connections, communal taps, public stand posts and kiosks. The kiosk system has boosted coverage in densely populated areas, with one kiosk estimated to cover a maximum of 1,800 persons.

Rural: According to the MLGH, the Water supply coverage stands at 57%. This is still low and hence the need for concerted efforts by all stakeholders to accelerate access to safe drinking water. Service provision is mostly through hand pumps, protected wells and developed springs. There are still challenges in ensuring sustainable operation and maintenance of the water points managed by communities.

2.2.2 Sanitation

Sanitation has traditionally been considered a household issue and as a consequence has not been handled decisively.



Urban: The figure for coverage stands at 54.1%. The facilities considered acceptable are sewer network and septic tanks. Nonetheless, some people resort to using septic tanks and soakaways which are mostly poorly constructed with no consideration for the sub-soil structure leading to contamination of underground water. This is further compounded by lack of enforcement of building regulations by the Local Authorities. The access gap in urban areas is yet to be established as CUs are still compiling information related to the use of properly constructed septic tanks.

Rural: The figure for coverage, as reported by the MLGH, stands at 38%. Acceptable facilities are well constructed pit latrines. However, some facilities are poorly constructed.

It is worth noting that there are disparities in the coverage figures reported by the WSS sub-sector from those compiled by the CSO due to differences in the definitions of coverage for water and sanitation and the boundaries for urban and rural areas, which in some instances may not necessarily be the municipal boundaries.

The distinction between the Urban/peri-urban and rural areas has been necessitated by the difference in the interventions needed as far as water supply and sanitation is concerned. Whereas a dug well or hand pump may be an acceptable level of service in rural areas, a piped system is preferred in urban areas to cater for the high population densities at an economic level.



2.3 INVESTMENT REQUIREMENTS

In 2010, the Government released a total of K82 billion for various activities that included support to institutions, water sector programme, National Urban Water Supply and Sanitation Programme, sector performance improvement and counterpart funding. Co-operating partners have also provided another K380 billion for various interventions in urban areas. Further, DTF released K24.4 billion for water and sanitation projects to various commercial utilities, out of which K5.5 billion has been dedicated to sanitation intervention in peri-urban areas. CUs have also channeled internal resources for WSS service extension.

According to the estimates in the Sixth National Development Plan, K179.9 billion and K270.1 billion is required to reach the MDG target on water and sanitation for both rural and urban areas, respectively.

2.4 CONCLUSION

Significant progress has been made in meeting the MDGs for access to safe water. It is therefore highly likely that the target will be met. However, the challenge still remains with accelerating access to sanitation. The focus for Zambia is beyond 2015 to the Vision 2030 which targets universal access to safe drinking water and sanitation. A lot more effort is therefore needed in order to attain the aspirations of Vision 2030.



3

SERVICE PROVISION TO THE POOR

Over
10
Years
of Regulating WSS
service provision

3.1 THE DEVOLUTION TRUST FUND (DTF): SUPPORT TO CUs

The primary aim of the DTF is to improve water supply and sanitation service delivery in peri-urban areas by working with the CUs to subsidise the cost of service provision to the poor. This ambition is being achieved by funding projects comprising water kiosks, individual connections, water supply networks, drilling of boreholes and provision of storage facilities and metering.

In its eight years of operation, the DTF has supported projects in all licensed commercial utilities apart from the newly established Luapula Water and Sewerage Company, (LPWSC). The DTF operates two funding portfolios:

- General Fund: Water and Sanitation – for extension of service to the urban poor.
- Performance Enhancement Fund (PEF) - to improve efficiency of the CUs by increasing revenue, reducing the NRW and operating costs such as energy.

After the pilot phase of 2003/2004, the DTF has successfully implemented six Calls for Proposals (CfP) under the General Fund – Water portfolio, three CfPs under the PEF and one Call under the General Fund – Sanitation portfolio. Luapula Water and Sewerage Company responded to the sixth call under the General Fund–Water and Sanitation issued in September 2010 whose implementation would commence in 2011.

To-date, 55 water supply and four sanitation projects have been funded under the General Fund–Water and Sanitation portfolio, respectively. Further, eight performance enhancement projects have been funded as shown in

Table 6. The sanitation projects under SWSC, MWSC, NWWSC and KWSC which were expected to be completed by December 2010 were delayed due to procurement challenges.

Table 6: Projects Implemented since September 2006

Portfolio	No. of Projects	Participating CUs	Budget Values (Mil' ZMK)	Disbursed (Mil' ZMK)
General Fund-Water	55	10 except LPWSC	39,519	36,128
General Fund-Sanitation	4	SWSC, MWSC, KWSC, and NWWSC	15,600	5,529
Performance Enhancement Fund	8	SWSC, NWSC, KWSC, and CHWSC	9,835	9,321
Total			64,954	50,978



Meters installed under PEF

During the period 1st April 2010 to 31st March 2011, 14 GF-Water projects were completed and eight PEF projects funded (four of which have since been completed) as shown in Table 7.

Table 7: Completed Projects in the Period 1st April 2010 to 31st March 2011

Implementing CU	Project Area	Project Description	Project Budget (Mil' ZMK)	Potential Beneficiaries
SWSC	Kabobola	Laying of 11.2km water supply network, installation of 1,106 water meters, drilling and equipping of borehole, construction of tank stand, and installation of 96m ³ water tank.	1,526	7,238
	Gabon	Construction of 9 water Kiosks, laying of 3.1 km water supply network, construction of tank stand, and installation of 50m ³ water tank.	1,089	13,132
	Ngwenya	Construction of 1.35km water supply network, installation of 500 water meters, construction of 2 water kiosks.	726	6,383

Implementing CU	Project Area	Project Description	Project Budget (Mil' ZMK)	Potential Beneficiaries
CHWSC	Chitamba*	Construction of 18 Water Kiosks, laying of 8.5 km water supply network, and construction of 30 valve chambers.	1,711	28,798
NWWSC	Katumba	Construction of 3 water kiosks, and laying of 1.1 km water supply network.	252	6,700
	Kabanda	Construction of 3 water kiosks, and laying of 600m water supply network.	207	7,000
MWSC	Kawama West*	Construction of 12 water Kiosks, and laying of 11km water supply network.	774	10,300
	Chiwempala-Phase 2	Construction of 10.2 km water supply network, and installation of 550 water meters.	766	12,960

Implementing CU	Project Area	Project Description	Project Budget (Mil' ZMK)	Potential Beneficiaries
NWSC	Ipusukilo*	Construction of 12 water kiosks and minor repairs to damaged sections of the water supply network.	628	14,400
	Mulenga*	Construction of 9 water kiosks and laying of 2.8 km water supply network.	581	10,800
LWSC	Garden*	Drilling and equipping of 2 boreholes, laying of 3km water supply network and installation of 1,100 water meters.	1,222	59,200
	John Laing-Phase 1	Installation of floating pontoon on Ngwenya (Blue water) dam with 2 submersible pumps, rehabilitation of the water lagoon, installation of 2 high lift pump, and construction of 5 water kiosks.	1,605	60,000

Implementing CU	Project Area	Project Description	Project Budget (Mil' ZMK)	Potential Beneficiaries
EWSC	Referendum, Mchenga, Damview, Mchini and Soweto*	Construction of 8. Kiosks, laying of 9.5km network water supply network, and installation of 228 water meters.	924	26,730
WWSC	Katimamulilo	Installation of 3 sand filters, construction and placement of floating pontoon on the Zambezi river and installation of booster pumps; construction of 4.2km water supply network; and construction of 4 water Kiosks.	1,783	10,000
TOTAL			12,189	273,641

NB: * denotes project physically completed and commissioned.



Borehole drilling in progress

3.2 PROGRAMME DEVELOPMENT

The DTF developed its first three-year Strategic Plan (2010-2012) around which the future outlook is weaved. The Plan has five strategic goals which also take into consideration the ongoing development of the NUWSSP. The strategic goals are to:

- 1 Become the leading institution in sustainable financing of water supply and sanitation infrastructure to licensed commercial utilities in Zambia
- 2 Facilitate and support the development of innovative low-cost WSS technologies
- 3 Foster project impact monitoring and enhance transparency, accountability and reporting through compliance to DTF procedures
- 4 Contribute to efficiency and accountability of WSS service providers and community participation through capacity building
- 5 Improve visibility and external relations of DTF

It is envisaged that the Strategic Plan shall facilitate efficient utilisation of the gains made so far and structure the future development of the DTF.

In the reporting period, the DTF programmes attracted another Co-operating Partner to the Basket, Australian Aid (AusAID) that provided a grant financing agreement to the DTF of three million Australian dollars through GIZ. The first disbursement under this agreement is expected in 2011.

3.3 IMPACT OF COMPLETED PROJECTS

365 kiosks, 186kms of water supply network, cumulative 488m³ storage capacity water reservoirs (Tanks) and 20,000 water meters have been constructed and installed respectively in various locations across the Country since 2006. All these have resulted in improved access to water supply for a total of 793,508 people, increased revenue and contributed to reduction in water losses.



3.4 PROGRESS IN MEETING WATER SUPPLY TARGETS

The progress made towards meeting the water supply targets since inception is outlined in Table 8:

Table 8: Progress in Meeting Water Supply Targets

	Mobilised as at 31 st March 2011 (Billion ZMK)	Expenditure as at 31 st March 2011 (Billion ZMK)		
Funding	89,9	69,8		
	Population covered as at 31 st March 2011	Cumulative Target (Jan' 2012)	Cumulative Target (Dec' 2015)	
Population	793,508	993,508	2,85 million	

3.5 CHALLENGES

The major challenge has been low funding levels compared to the CUs' financing requirements. This has limited the number and scope of projects that can be funded in each particular funding window, thus affecting the provision of large scale access to water supply and sanitation services for many of the urban poor.

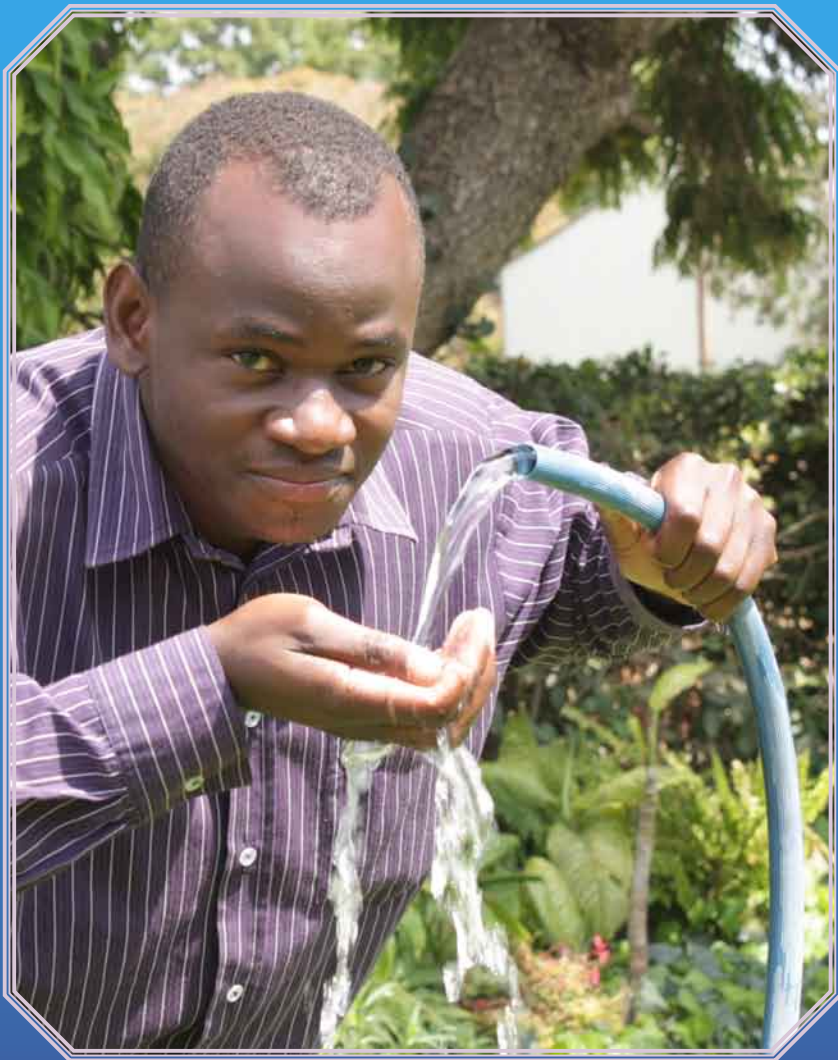
During the reporting period, there were procurement challenges with ZPPA resulting in delayed project completion. The DTF was also faced with the challenge of delayed project completion due to high staff turnover and re-assignment of trained project staff to other roles within the CUs. This necessitates continuous capacity building and monitoring, resulting in

increased costs of training and induction of new staff attached to the project.

Whilst the CUs have gained ground in reaching peri-urban residents with water supply, there has been a manifestation of weaknesses in managing completed schemes. Some CUs tend to shun peri-urban areas because of the perception that there is no income. Notable among the weaknesses was poor debt management of kiosks whereby huge sums of revenue were not remitted to CUs despite running a pre-paid system. Consequently, erring CUs were cautioned and are being closely monitored to ensure compliance with the regulation.

3.6 FUTURE OUTLOOK

The gathering of information on the progress of project implementation and on the present water supply and sanitation situation in peri-urban and low-cost areas will remain at the core of the DTF's day-to-day monitoring activities. This is in addition to regular standardisation of information dissemination on the use of funds and on the progress towards the DTF's strategic goals. Further, internal database available at the DTF will be advanced to capture data and automatically produce standard reports.



4

**THE NATIONAL
WATER SUPPLY AND SANITATION
COUNCIL (NWASCO)**

Over
10
Years
of Regulating WSS
service provision

The major focus of NWASCO during the the year under review was the commemoration of the 10 years of regulation in addition to monitoring service providers, tariff adjustments and provision of support to CUs among others.

4.1 PERSONNEL

Several staff changes were effected in NWASCO. A new Director was appointed from within the institution. The Secretary to the Council resigned after 10 years of service following her appointment as High Court Judge and was therefore replaced. The Technical Inspector was promoted to the position of Chief Inspector while the Technical Officer in turn was promoted to the position of Technical Inspector. The position of Technical Officer, which consequently fell vacant, was filled by an external candidate.



Farewell gathering for the Secretary to Council (in orange and blue) by some members of staff and Council. Board Chairman on extreme left and new Director on extreme right.

4.2 STRATEGIC PLAN FOR 2010-2012

NWASCO commenced the implementation of the 2010-12 Strategic Plan which outlines four goals:

- | | |
|---|---|
| 1 | Strengthen sector performance through advice and participation |
| 2 | Strengthen and innovate instruments for regulating service providers |
| 3 | Promote engagement and education of the key stakeholders on water and sanitation issues |
| 4 | Promote excellence, innovation and financial sustainability within NWASCO |

Over 85% of the planned activities in year 1 were successfully undertaken. Among them, affordability studies for five CUs (KWSC, EWSC, MWSC, LPWSC and WWSC), revision of five regulatory guidelines and commencement of the establishment of the Resource Centre which will house information for the water and sanitation sector as a whole.

4.3 TARIFF ADJUSTMENTS

It is NWASCO’s mandate to approve water and sanitation tariff adjustments. Comprehensive tariffs for the CUs are approved for a minimum period of one year and a maximum of three years to match their business planning cycle. In cases where a multi-year tariff approval is given, the CU has to seek a ‘no objection’ to implement approved tariffs for subsequent years. NWASCO approved upward tariff adjustments and also granted “no objection” for all the CUs that applied as shown in Table 9:

Table 9: Approved Tariff Adjustments for the period 2011/12

CU	% Applied	% Approved	Major Tariff Conditions up to end of 2011	Comments
Comprehensive				
Eastern WSC	30	5.5	<ul style="list-style-type: none"> To increase customer base by 1,000 connections To improve hours of supply from an average of 10 hrs to 16 hrs 	Approved tariff sufficient to cover 95% of O&M costs based on the information submitted.
Luapula WSC	150	50	<ul style="list-style-type: none"> To increase the number of connections by 1,000 To maintain O&M cost coverage of at least 72% throughout the tariff period 	The CU was applying for the first time moving from very low tariffs. Caution exercised in approving tariff to reduce negative impact on both the CU and the Customer.
Mulonga WSC	13	13	<ul style="list-style-type: none"> Improve hours of supply for Lulamba and Twatasha site & service in Chingola to the guaranteed levels To reduce NRW to 40% 	Sanitation surcharge introduced at 2.5% of the water billing dedicated for sanitation projects.
Western WSC	20	20	<ul style="list-style-type: none"> To increase the number of connections by 1,000 Install 20 bulk meters 	CU had not applied for a tariff adjustment since 2006.
Kafubu WSC	30	7	<ul style="list-style-type: none"> CU required to inform customers at least a month before implementation of tariff 	Comprehensive tariff application rejected as it was incomplete. Tariff awarded to cushion the impact of the increment in the electricity tariffs by ZESCO
No Objection				
Lusaka WSC	23	20	<ul style="list-style-type: none"> To reduce NRW to 40% To maintain water quality compliance at least 95% 	CU must meter all customers by end of 2011
Lukanga WSC	10	10	<ul style="list-style-type: none"> To increase metering ratio to 85% Manage costs to ensure 100% cost coverage 	Approved 52% downward adjustment for water bowser charges as proposed by CU
Nkana WSC	15	15	<ul style="list-style-type: none"> Reduce NRW to 45% Increase metering ratio to 85% 	Have to maintain O&M cost coverage at least 100%
Chambeshi WSC	17	17	<ul style="list-style-type: none"> Increase bulk metering ratio to 90% Manage costs to ensure 100% O&M cost coverage 	Was not allowed to implement 2011 tariffs for all low cost areas in Mbala until service level is met
North Western WSC	18	10	<ul style="list-style-type: none"> Grow customer base by at least 5% Reduce response time for new connections to 12 days 	The CU has the highest tariff in the sector because of the small customer base in N/Western Province. CU was challenged to focus on increasing the customer base.

Tariff approvals come with conditions which could either be specific or general. Among the general ones were to:

- Ring-fence the meter charges for the purpose of meter replacement;
- Maintain the O&M costs for the approved tariff within 10% adverse variance subject to reasonable justification;
- Maintain an average collection efficiency of at least 85% throughout the tariff period; and
- Ensure current external auditing of financial statements.

Tariff restrictions for non-compliance to guaranteed hours of supply were imposed on Lulamba and Twatasha Townships in Chingola under Mulonga WSC, all low cost areas in Mbala under Chambeshi WSC and continued for unmetered customers in parts of Chelston, Avondale and the entire Woodlands extension under Lusaka WSC.



Data verification is a critical aspect of monitoring

4.4 MONITORING SERVICE PROVIDERS

Detailed scheduled inspections and spot checks were conducted on all commercial utilities and private schemes during the year to monitor the quality of service and adherence to regulations. The inspections revealed that some service providers were not fully complying with the Service Level Guarantees or adhering to Service Level Agreements (see Chapter 6 for details).

The major problem areas identified included:

- Low hours of supply in;
 - Chelston, Upper Ibex Hill, Chudleigh and Avondale areas in Lusaka City under LWSC;
 - Chifubu, Upper Ndeke and New Mushili areas of Ndola City under KWSC;
 - Ellaine Brittel area of Livingstone City under SWSC;
 - Mbala district under CHWSC;
 - Lulamba and Twatasha areas of Chingola district under MWSC; and
 - The entire Chipata district.
- Low hours of supply and poor water quality in Mpulungu and Nakonde under CHWSC and Mongu under WWSC.
- Old and dilapidated sewer network in Kabwe City under LGWSC, Masala in Ndola City under KWSC, and Mufulira district under MWSC.
- Generally poor service delivery in Luapula Province.

Arising from the inspections, directives were issued to all providers to redress areas of non-compliance. Some of the directives given and measures taken were:

- Improvement of water quality monitoring-WWSC and EWSC procured water quality dosing and testing equipment.
- Adherence to guaranteed hours of supply or suffer a tariff restriction;
 - LWSC drilled 3 boreholes for Chelston and Avondale areas in an attempt to boost supply;
 - MWSC laid a new line to Lulamba though not yet commissioned; and
 - CHWSC has an ongoing project to improve supply in Maround and Location Townships of Mbala district.
- Improvement of Customer Service - NWSC held a number of customer care workshops.
- Strengthening of kiosk system management - EWSC and MWSC effected systems to account for revenues.

The major challenges on the ground included ZESCO power outages; pollution of water bodies from mining activities; unpaid bills by Government departments and domestic customers; slow extension of services particularly sanitation and inadequate investments.

PERFORMANCE INDICATOR		TARGET	APRIL	MAY	JUNE	JULY	AUG	SEPT
1	ENSURE 95% OF REGISTARATED KIBLA ARE CONSISTENTLY COLLECT EVERY MONTH	95%	95	95	95	95	95	95
2	REDUCE NON-REVENUE WATER IN ZIMBA FROM 60% TO 35%	25%	60	60	60	60	60	60
3	ENSURE 100% OF BOTH COMMERICAL AND OPERATING RELATED COMPLAINTS ARE RESOLVED WITHIN A WEEK OF REGISTERING	100%	100	100	100	100	100	100
4	IMPROVE COLLECTION EFFICIENCY FROM 95% TO 100%	25%	130	110	110	110	110	110
5	CONNECT 20 NEW CHANGARAKA TO THE WATER NETWORK BY 30 SEPTEMBER 2010	20	1	1	1	1	1	2
6	RECOVER AND INSTALL 17 BILL METER BY 31ST JULY 2010	17						

Keeping a focus on targets; under RBI

4.5 SUPPORT TO COMMERCIAL UTILITIES

NWASCO undertook various activities to enhance performance of the CUs. Among them were:

4.5.1 Regulation by Incentives (RBI)

Regulation by Incentives (RBI) initiative is the use of incentives to induce high performance and innovation in commercial utilities by rewarding good performance thereby bringing about efficiency gains. The third 6-month cycle with Chambeshi, North Western, Kafubu and Southern water and sewerage companies was completed with a total of K773 million spent on incentives. A total of K3.58 billion funded by GIZ was spent on incentives for all the three cycles since the inception of the programme. The programme continued despite the phasing out of GIZ funding at the end of the third cycle in 2010.

An evaluation of the impact of the programme was done which revealed improvements in service delivery as shown in Table 10.

Table 10: Impact of RBI on Service Delivery

CU	UfW		Average Hours		Collection Efficiency		Water Quality		Metering	
	Base	Achieved	Base	Achieved	Base	Achieved	Base	Achieved	Base	Achieved
SWSC	43%	36%	17	21	100%	101%	93%	99%	76%	80%
NWWSC	33%	30%	18	20	71%	100%	-	-	-	-
CHWSC	-	-	10	15	71%	86%	-	-	11%	41%
KWSC	45%	42%	11	18	67%	91%	91%	98%	45%	48%

4.5.2 Chief Executive Fora

The Chief Executive forum is a meeting convened by NWASCO for Managing Directors of all Commercial Utilities to discuss diverse sectoral issues. Stakeholders are invited to make their contributions to various topical issues. Thus, a Chief Executive Forum was held in April 2010 and among the issues discussed were benchmarking, human resource management, compliance with statutory obligations, HIV/AIDS mainstreaming and procurement procedures. Three joint Chief Executive Fora were hosted by the MLGH in collaboration with NWASCO during the reporting year. The issues discussed included among others, the NUWSSP, amendment of the WSS Act No.28 of 1997, coordination of planning in new development areas, corporate governance issues and non-payment of bills by Government departments.

4.5.3 Training of Boards of Directors

NWASCO coordinated a second training for EWSC and WWSC Boards of Directors on corporate governance and aspects of utility management

as well as an induction workshop for the newly appointed LPWSC Board of Directors on corporate governance.

4.5.4 Financial Forum

A financial forum was held with all the CUs that looked at among others, issues raised by the Auditor General’s report on performance of the CUs, the Public Finance Act and Government debt for WSS services and also provided a platform for sharing innovations. The forum was facilitated by the Auditor and Accountant Generals’ offices.



4.6 EXTERNAL RELATIONS

NWASCO interacted with a number of external organisations and individuals to share information and knowledge on aspects pertaining to regulation and issues in the water sector.

4.6.1 Regional Co-operation

The 4th AGM for the ESAWUR Association for which NWASCO is the Secretariat was held in Mombasa, Kenya at which the Constitution to formalise the Association was signed. The core objective of this Association is for regional regulatory co-operation to improve the effectiveness of WSS regulation in the member countries. A CEO's meeting of the Member Countries hosted by NWASCO finalised the first Strategic Plan for the period 2011-2013 and proposed a change of name to East and Southern Africa Water and Sanitation (ESAWAS) Regulators Association subject to approval by the AGM.

4.6.2 Hosting of International Delegates

NWASCO hosted a number of international delegates that sought to learn from its experiences and exchange best practices in the regulation of water supply and sanitation. These included among others:

- Two staff from the Public Utilities Regulatory Commission of Ghana whose interest was to learn about the concept of Water Watch Groups (WWGs) which they intend to replicate in their country.
- A student from UNESCO-IHE and University of Dundee who was conducting research on water supply and sanitation sector reforms of Sub-Saharan Africa-A Case study of Zambia and Uganda.

4.6.3 Other Meetings Attended by NWASCO Staff

- Drinking Water Regulators (RegNET) Conference in Canada to share best practices and challenges in regulating drinking water quality;
- International Water Congress in Canada to share innovations, best practices and challenges in the water sectors across the world;
- Expert seminar on intergrated watershed management for the Zambezi basin in Livingstone to identify issues and draft action points to enhance watershed management in the basin;
- Strategic planning workshop for WAVE-plus, (a capacity building initiative by GIZ in the WSS Sector for Zambia, Kenya, Tazania and Uganda) in Siavonga to develop an annual workplan for capacity building of CU staff; and
- Development Bank of Southern Africa (DBSA) workshop in South Africa to discuss water demand management issues.

4.7 INVOLVEMENT OF CONSUMERS IN REGULATION

One of NWASCO's main objectives is to protect consumer interests. Consumers are therefore at the core of the regulation of water supply and sanitation. Their voice is of paramount importance as they are one of the avenues through which the quality of service delivery is gauged.

NWASCO has set up volunteer groups called WWGs to assist in monitoring the quality of service provision thereby ensuring that the CUs adhere to the Service Level Guarantees (SLGs). Their role is to increase public awareness on water and sanitation issues and to attend to unresolved consumer complaints.

NWASCO continuously assesses the performance of the WWGs for effectiveness. Of the initial 12 WWGs, three were dissolved due to non-performance and five reconstituted to strengthen membership thus bringing the total number to 11. The 11 WWGs are in Kabwe, Kapiri Mposhi, Kalulushi, Kitwe, Kasama, Livingstone, Lusaka, Mongu, Mpika, Ndola, and Solwezi districts.

Further, the WWGs

- Carried out primary and secondary school sensitisations on consumer rights and obligations, SLG and roles and functions of NWASCO;
- Aired Radio Programmes on Service Level Guarantees and functions of WWGs;
- Attended public hearings on tariff adjustment proposals for CUs that applied; and
- Participated in the commemoration of the World Water Day which falls on 22nd March.

Among the issues emanating from these activities were that customers shunned tariff consultative meetings hence they did not have input in the tariff setting process.

4.8 PUBLICITY

To increase consumer awareness of the sector activities, several public awareness programmes were undertaken throughout the year using print and electronic media most of which focussed on commemorating NWASCO's 10 years of regulation. The activities included:

- The introduction of a Toll Free Line (0800 1 700 700) to enhance consumer relations. The line was established with the support of DANIDA.
- An Open Day held at Arcades Shopping Centre in Lusaka aimed at interacting with the public to raise awareness of NWASCO's mandate and issues on water supply and sanitation.
- Introduction of monthly media updates to enhance Journalists' knowledge and information on WSS issues.
- Airing of Video Jingle, documentary and 6-week TV Series on NWASCO's 10 years of operation.
- Spot advertisements on Q FM, Muvi TV, ZNBC TV and Radios 4 and 2 on NWASCO's roles and functions.
- Weekly newspaper articles in the Post Newspaper on various issues relating to water supply and sanitation.
- Distribution of brochures and other publicity materials.
- Introduction of a Quarterly Bulletin dubbed 'The Water Voice'.
- Publication of a booklet on the 10 years of Regulation.





5

**OVERCOMING THE CHALLENGE OF
EXTENDING WATER SUPPLY AND
SANITATION (WSS) SERVICES TO
NEW DEVELOPMENT AREAS**

Over
10
Years
of Regulating WSS
service provision

5.1 INTRODUCTION

Demand for housing in urban areas has been on the increase in Zambia. This has necessitated the opening up of more land by the Local Authorities for housing development. By law, WSS services should be in place before construction of housing units can begin. However, this is not currently the case. The housing empowerment exercise embarked on in the mid-90's by the Government of the Republic of Zambia through selling of houses to sitting tenants, coupled with increased population and economic activities, increased the demand for allocation of new land for housing in almost all the districts of Zambia.



Previously, when Local Authorities were directly providing water supply and sanitation services, cost of utility services (water, electricity and roads) were embedded in the cost of land, which funds were used to provide these services. The Water Supply and Sanitation Act No. 28 of 1997 (Part V, Section 24, paragraph 3) provides: 'A utility or service provider and a local authority in its service area shall establish procedures for adequate consultation to be carried out for developmental planning or for implementing physical works'.

However, with the delegating of authority of WSS service provision to commercial water utility companies (CUs) while the Local Authorities retained allocation responsibility, inadequate co-ordination in developmental planning has resulted in the allocation of plots without first providing the necessary services such as roads, water and sewerage reticulation systems. This is contrary to the provisions of the Town and Country Planning Act Cap 283. WSS service provision has thus lagged behind in new development areas.



5.2 CURRENT SITUATION

The functions of the various institutions have been streamlined. The Local Authorities are responsible for developmental planning and allocation of land as delegated to them by the Ministry of Lands. The Ministry of Justice provides guidance on the provisions of the law. CUs are in charge of providing WSS services. The Ministry of Local Government and Housing (MLGH) has the oversight role of country planning and provision of WSS services. NWASCO regulates the provision of WSS services to ensure efficiency and sustainability.

Despite having a clear institutional set-up, there is inadequate consultation and co-ordination among stakeholders resulting in consumers not receiving satisfactory services in new development areas. There is also lack of standardised information, outdated development plans and failure to identify focal point institutions in land development.

Allocating land without first providing services has resulted in planning in retrospect. The CUs still do not have readily available investment funds to meet the current demand for services. To bridge the investment gap, the CUs resort to implementing projects using a shared funding strategy. A proportion of the funding is from the CUs' own resources while the balance is met by the customers in the form of capital contributions.

Developers are required to pay service contributions for the CUs to extend WSS service to a new area. Where there are no developers, customers must make high capital contribution towards the extension of WSS services which they in most cases find difficult to pay. In some cases, it has been a challenge to get the buy-in of a sufficient number of plot owners to raise adequate capital to begin the project. The CUs end up collecting money in trickles thus slowing the rate of service provision in such areas. Because of delays in getting connected to WSS systems, most consumers resort to sinking their own boreholes and poorly constructed septic tanks/pit latrines thereby contributing to contamination of underground water. Additionally, customers make unauthorised water and sanitation connections to the system resulting in revenue loss to the CUs.



Excavations for laying new water network



Manhole converted into pit latrine

5.3 INTERVENTIONS

The problem of inadequate co-ordination in the provision of services in new development areas has been discussed with various stakeholders in different fora such as the CEOs' meetings.

Culminating from one of the CEOs' forum that included selected Town Clerks, the Minister of Local Government and Housing issued a directive to all Local Authorities to ensure costs for the services are included in the costs of the plots before they are sold. The money thus collected was to be remitted to the respective CUs for WSS service provision.

As a result of such interventions, some CUs and Local Authorities have established procedures for consultation in developmental planning. A CU and Local Authority sign an MoU for the purpose of servicing new development areas. When the Local Authority has identified an area for development, the CU costs the plans for water and sewerage installations and apportions the costs equally over the total number of plots. In the MoU, the Local Authority is to collect the service charges on behalf of the company and later remit the money to the CU.

Examples of Local Authorities and CUs that have collaborated and successfully extended WSS services in new development areas include Mazabuka – East Villa (under Southern WSC), and Kitwe-Riverside Extension (under Nkana WSC).



5.4 CONCLUSION

Co-ordination among stakeholders is key in the acceleration of provision of better services thus contributing to improved health, environmental protection and economic development. This in turn will help the Country meet its national targets on water supply and sanitation service provision.

All stakeholders should take a keen interest in ensuring that co-ordination in developmental planning is enhanced. Each CU will need to use the provisions of the WSS Act to establish procedures for adequate consultation with Local Authorities and other land developers on new development areas to ensure WSS services are extended in tandem with land development.



6

PROGRESS TOWARDS MEETING SERVICE LEVEL AGREEMENTS AND GUARANTEES

Over
10
Years
of Regulating WSS
service provision

In order to ensure that service providers adhere to minimum service standards and strive to attain desired sector benchmarks, NWASCO has formulated MSL guidelines which define the acceptable minimum level of service which providers must achieve over a specified timeframe.

As part of the license conditions issued under the WSS Act No. 28 of 1997, all WSS providers sign an SLA with the regulator which shows the stepwise progress towards the required MSL. The MSL is adjusted every three years. The WSS providers also undertake to guarantee the service level they assure their clients by signing a document called a SLG. The progress achieved is reported annually to NWASCO.

There are eleven indicators as shown in Table 11, which have to be attained from the commencement of operations of a particular provider and must therefore not be assessed in perpetuity. Considering that WSS providers begun operations at different time scales, operate in diverse economic situations and have varied levels of service provision, attainment of these indicators vary among them.



CU_s must make progress in improving service delivery

Table 11: Service Level Indicators (SI)

	SERVICE INDICATOR	MEASUREMENT
SI 1	Coverage of the Service Area	% of population served with drinking water.
SI 2	Drinking Water Quality	No. of tests carried out and test results within the national standards for drinking water.
SI 3	Service Hours	Water supply hours per day and hours to attend to customers per week.
SI 4	Billing for Services	Billing, meter reading sequences, conditions for payment of bills by the customer.
SI 5	Client Contacts	Complaints from clients, the response time on any other contacts with customers.
SI 6	Interruption of Water Supply and Bockage of Sewer	Unannounced interruption of supply or sewer evacuation due to maintenance and repair work
SI 7	Pressure in the Network and Minimum Flow Rate at the Customer Point for Water Supply	Minimum flow rate of 7 litres/min required at customer connection
SI 8	Unjustified Disconnections	No. of unjustified disconnections and the compensation to be paid by the provider to the customer
SI 9	Sewer Flooding	The number of times sewer floods a connection per year
SI 10	Quality of Discharged Sewer	In terms of BOD ₅ , COD, Nitrates, Phosphorous, etc
SI 11	Support to Public Institutions to Curb Wastage and Settle Bills Promptly	Activities put in place by the water providers

6.1 ADHERENCE TO SLG AND SLA

SLGs and SLAs are signed for specific residential areas under each CU. Every town has its own target for the three-year period that enables the CU progress towards the acceptable benchmark. It is important to note that the Guarantee is normally lower than the Agreement, implying that failure to adhere to the SLG automatically results in failure to meet the SLA. The analysis below therefore considers achievement of individual targets for both SLG and SLA such that failure in one town may translate into overall non-achievement of the SL.

LPWSC signed its first SLG and SLA during the reporting period, thus its performance is not included in the analysis that follows.



Service Level Guarantees must be displayed to customers

Key: ✓ Achieved ✗ Not achieved

SI 1 Service Coverage – Proportion of population serviced with water

	NWSC	MWSC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	✗	✓	✓	✗	✗	✓	✗	✗	✗	✗
SLA	✗	✓	✓	✗	✗	✓	✗	✗	✗	✗

Apart from WWSC whose water coverage dropped owing to a database cleanup, all other CUs recorded a slight rise in coverage on average. However, only MWSC, KWSC and SWSC managed to adhere to both SLG and SLA. EWSC adhered to the SLG but did not significantly increase coverage to the target stated in the SLA mainly due to the increase in population not being matched by increase in connections.

SI 2 Drinking water quality – Assessment through number of tests conducted and compliance to standard

	NWSC	MWSC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	✓	✓	✓	✗	✓	✓	✗	✓	✗	✗
SLA	✗	✓	✗	✗	✓	✓	✗	✗	✗	✗

The water quality indicator is a very important one as it hinges on the health of consumers. The acceptable target for this indicator for all CUs is 95% overall compliance. Three CUs namely MWSC, LGWSC and SWSC adhered to both the SLG and SLA. NWSC, KWSC and NWWSC managed to fulfill the SLG but did not meet the targets set out in the SLA for the period under review. Poor dosing techniques largely accounted for the failure in results of parameters tested in a number of CUs. More details on compliance in specific parameters are presented in Chapter 7.

SI 3 Service Hours- Water supply hours per day

	NWSC	MWSC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	x	x	x	x	√	√	x	√	x	x
SLA	x	x	x	x	√	√	x	√	x	x

A number of CUs failed to meet the guaranteed hours of supply in some of their service areas, particularly the low income areas. This resulted in automatic failure to adhere to the SLA. Only LGWSC, SWSC and NWWSC met the target for SLG and SLA. Below are some of the areas where poor hours of supply were observed:

- NWSC - Mindolo-Miseshi, Ndeke and Luangwa of Kitwe City as well as parts of Kalulushi district.
- MWSC – Lulamba site and service areas of Chingola and Kansuswa township of Mufulira district.
- KWSC - Pamodzi, New Mushili and Chibufu Townships of Ndola City and Masaiti district. The vast majority of residents of Chifubu were subjected to very erratic water supply.
- LWSC- hours of supply in sections of Chelston and Avondale areas of Lusaka City continued to be below the SLG and as such the tariff restriction on these areas remained in effect. Nonetheless, efforts of the CU to improve water supply by sinking more boreholes were noted. Other areas under LWSC that had challenges with water supply included sections of Woodlands area and generally new development areas.
- CHWSC - in a number of low and medium cost areas in Mbala and Mpulungu districts.

- WWSC- Tungi and St Johns areas of Mongu district. Also the residents of Mongu’s Shoprite area either had unacceptably low to no water supply for several days while an extensive part of the Southern Zone of Kaoma district experienced erratic supply attributed to the sub-mergence of a pump.
- EWSC- Nyimba, Petauke and Chipata districts. Rehabilitation works under KfW and low voltage were major contributing factors in Petauke and Chipata districts, respectively.



SI 4 Billing for Services – Billing, meter reading sequences, conditions for payment of bills by the customer

	NWSC	MWSC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	√	√	√	√	√	√	√	√	√	√
SLA	√	√	√	√	√	√	√	√	√	√

Although metering is not yet at 100% to ensure customers are billed according to actual consumption, all the CUs met the other billing related components of this indicator both in the SLG and SLA.

SI 5 Client Contacts - Complaints from clients, the response time on any other contacts with customers

	NWSC	MWSC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	x	√	x	x	x	x	x	√	x	√
SLA	x	√	x	x	x	x	x	√	x	√

Most CUs did not satisfy this indicator. The indicator requires that customer complaints are resolved within the stipulated time. CUs are supposed to ensure that complaint registers are in place and timely updated as complaints are received. SWSC did not meet the Guarantee for response time to written complaints, hence automatic failure to adhere to the SLA. Similarly, KWSC, CHWSC and WWSC did not keep the necessary registers in acceptable formats.

SI 6 Interruption of Water Supply & Blockage of Sewer - Unannounced interruption of supply or sewer evacuation due to maintenance and repair work

	NWSC	MWSC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	√	x	x	√	x	x	x	√	x	x
SLA	√	x	x	√	x	x	x	√	x	x

Load shedding and unstable power supplies continued to hamper consistent water service delivery and often resulted in unplanned interruptions across the country. Nonetheless, residents of Mpika and Kasama districts (CHWSC); Livingstone, Chirundu and Monze districts (SWSC); Chifubu, Mushili and Lubuto-Chintu townships (KWSC); parts of Mongu district (WWSC); Lundazi and Petauke districts (EWSC); Kabwe City (LGWSC); and Chingola district (MWSC) were subjected to unannounced interruptions lasting more than 20 hours mostly because of equipment failure, ruptures in the distribution lines,

flooding of the sewage treatment plants and pollution of water source, hence failure to adhere to SLG and SLA.

SI 7 Pressure & Flow in the Network for Water – Minimum flow rate of 7 litres/min required at customer connection

	NWSC	MWSC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	√	√	√	√	√	√	√	√	√	√
SLA	√	√	√	√	√	√	√	√	√	√

The requirement that not more than 5% of the service area should be affected by a flow rate of less than 7 litres/minute was satisfactorily met by all CUs.

SI 8 Unjustified Disconnections – No. of unjustified disconnections and the compensation paid by the provider to the customer

	NWSC	MWSC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	√	√	√	√	√	√	√	√	√	√
SLA	√	√	√	√	√	√	√	√	√	√

It is an unacceptable inconvenience to unjustifiably disconnect a customer. In cases where this happens, it should not affect more than 0.2% of the customers. Affected customers are entitled to an apology and compensation of free water equivalent to a month's billing. It is pleasing to note that all utilities met their Guarantees and targets in the SLA on this indicator. In isolated cases where customers were unjustifiably disconnected, compensation was given as per Guarantee.

SI 9 Sewage Flooding – Number of times sewage floods a connection per year

	NWSC	MWSCC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	√	x	√	x	x	√	√	√	x	√
SLA	√	x	√	x	x	√	√	√	x	√

The CUs are supposed to ensure that their sewerage infrastructure is regularly maintained to avoid public health nuisance through sewage flooding. If sewer flooding occurs, it should not affect more than 0.5% of the total connections per town. In some CUs, a number of factors ranging from technical competence, social, economic to political affected adherence to the SLG. The Mulambwa township sewage flooding in Mongu continued to persist with WWSC making little breakthrough to ensure a lasting solution due to challenges in land acquisition for conveyance and treatment infrastructure. In addition, cases of sewage flooding as a result of vandalism and dilapidated infrastructure were pronounced in Mufulira under MWSC and Kaunda Square under LWSC. Further, old and dilapidated infrastructure in Kabwe City under LGWSC perpetuated sewage flooding.



SI 10 Quality of Discharged Sewage – In terms of BOD₅, COD, Nitrates, phosphorus, and others.

	NWSC	MWSCC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	√	x	x	x	√	x	√	√	x	√
SLA	√	x	x	x	√	x	√	√	x	√

MWSC, KWSC, LWSC, SWSC and WWSC did not satisfy this indicator. Most sewage treatment works in the country are in need of urgent rehabilitation/ upgrade as effluent standards are regularly not met. Uptake capacities of sewage treatment plants like the Manchinchi in Lusaka and the Kanini in Ndola have been out-grown by the population. Others such as the Kaunda Square in Lusaka and Livingstone City stabilisation sewage ponds are in a deplorable state, thus posing a serious environmental hazard. Ground water quality, aquatic ecosystems and flora in the vicinity of the ponds are all under threat.

SI 11 Support to Public Institutions to Curb Wastage & Settle Bills Promptly – Activities put in place by the water providers

	NWSC	MWSCC	KWSC	LWSC	LGWSC	SWSC	CHWSC	NWWSC	WWSC	EWSC
SLG	√	√	√	√	√	√	√	√	x	√
SLA	√	√	√	√	√	√	√	√	x	√

Almost all CUs demonstrated effort in ensuring that public institutions employed conservation measures through metering and technical support aimed at curbing leakages. In addition, the CUs lobbied Government for the timely payments and dismantling of outstanding debts. However, WWSC removed meters and placed some institutions on flat rate billing, an action that is detrimental to the cause of the indicator.



7

COMPARATIVE PERFORMANCE OF COMMERCIAL UTILITIES (CUS)

Over
10
Years
of Regulating WSS
service provision

7.1 OVERVIEW

Comparative performance of CUs from 1st April 2010 to 31st March 2011 is presented.

Performance is measured against the sector benchmarks and averages. CUs operate as monopolies in their respective areas thus the use of comparative performance is necessary to induce competition; determine the progress made in the sector; and allow the various stakeholders to plan appropriate interventions. Consumers can use the comparative data to understand the performance and challenges of their respective provider.

Different operating environments of the CUs need to be appreciated in analysing their performance in order to design future interventions. Performance is measured in the following five broad categories of indicators:

- Operational;
- Financial;
- Staff Efficiency;
- Service Level; and
- Corporate Governance and Management.

Each CU is thus motivated to improve its previous performance as well as outperform others.

7.1.1 Total Population in Service Areas of the CUs

The CSO census of 2010 reports a total urban population of 5,068,234. This is slightly lower than that reported by the CUs due to the difference in the delineation of rural and urban areas. Some of the CU licensed operating areas in urban and peri-urban overlap with what is defined as rural by CSO.

Out of a total urban population of about 5.56 million, about 1% resides in areas serviced by private schemes which are business entities that provide WSS services as a fringe benefit to their employees.



7.1.2 Clustering of Commercial Utilities

CUs have varying characteristics and operate under different conditions (see Table 2 in Chapter 1). Hence, CUs are placed in three clusters based on water production volumes, number of connections, and population in licensed areas. This enables comparison of performance both within and across Clusters as shown in Table 12.

Table 12: Clustering of CUs

Cluster	CU	Total Population in Service Area	No. of Connections	Water Production (Million m ³)	No. of towns/centres
1	LWSC	1,937,630	76,749	98.6	4
	NWSC	701,870	45,983	55.9	3
	KWSC	653,299	48,807	55.5	3
	MWSC	446,719	43,330	60.0	3
2	LGWSC	376,574	15,403	24.8	6
	SWSC	339,735	31,535	20.8	17
	CHWSC	286,493	14,288	15.2	12
3	NWWSC	236,157	7,661	3.9	7
	EWSC	224,379	10,316	4.8	8
	WWSC	179,124	9,257	7.6	6
	LPWSC	177,363	2,929	3.6	7
TOTAL	11 CUs	5,559,343	306,258	351	76

7.2 PERFORMANCE ANALYSIS

7.2.1 OPERATIONAL INDICATORS

The effectiveness of the CU in conducting its core business of providing water and sanitation services is assessed using operational indicators. These include water and sanitation coverage, UfW and metering ratio, which are calculated using the number of connections, population size and water production figures.



7.2.1.1 Total Connections

The total number of connections, mainly household, increased by 12,462. WWSC and LPWSC carried out database verification exercises to establish the actual active customers. The drop for WWSC was due to the removal of duplicate accounts while LPWSC removed all non-functional connections.

Table 13: Total Connections

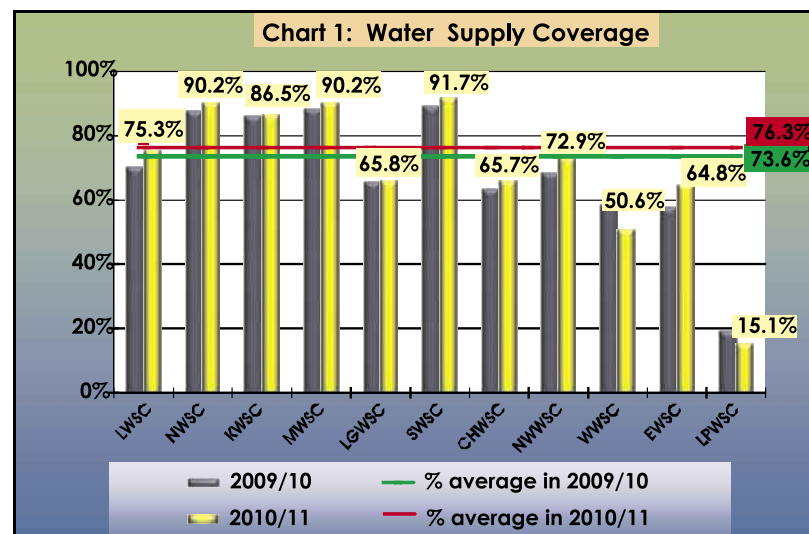
	Total Domestic	Total Non-Domestic	Total connections 2010/11	Total connections 2009/10
LWSC	71,039	5,710	76,749	73,240
NWSC	43,544	2,439	45,983	43,805
KWSC	46,748	2,059	48,807	48,365
MWSC	41,885	1,445	43,330	41,600
LGWSC	14,199	1,204	15,403	14,360
SWSC	29,474	2,061	31,535	29,529
CHWSC	13,123	1,165	14,288	12,344
NWWSC	7,412	249	7,661	6,882
WWSC	8,481	776	9,257	9,775
EWSC	9,239	1,077	10,316	9,903
LPWSC	2,670	259	2,929	3,993
Total	287,814	18,444	306,258	293,796

7.2.1.2 Water Supply Coverage

The ratio of urban population with access to safe and reliable water

Benchmark for service coverage (water supply and sanitation)	Very Good	100%
	Good	> 90%
	Acceptable	80 – 90 %
	Unacceptable	< 80%

There was a general increase in coverage except for WWSC and LPWSC as shown in Chart 1. The apparent drop in coverage for WWSC is due to removal of duplicate accounts through a database clean-up. In the case of LPWSC, a customer verification exercise established a much lower number of customers receiving water than that captured in the database.



Although the average coverage marginally increased from 73.6% to 76.3%, the total population serviced increased by 337,572 as shown in Table 14. Only four CUs met the acceptable benchmark of 80%. For LWSC, 65,000 people out of the total serviced population within the CU area are serviced by Water Trusts in nine peri-urban areas.

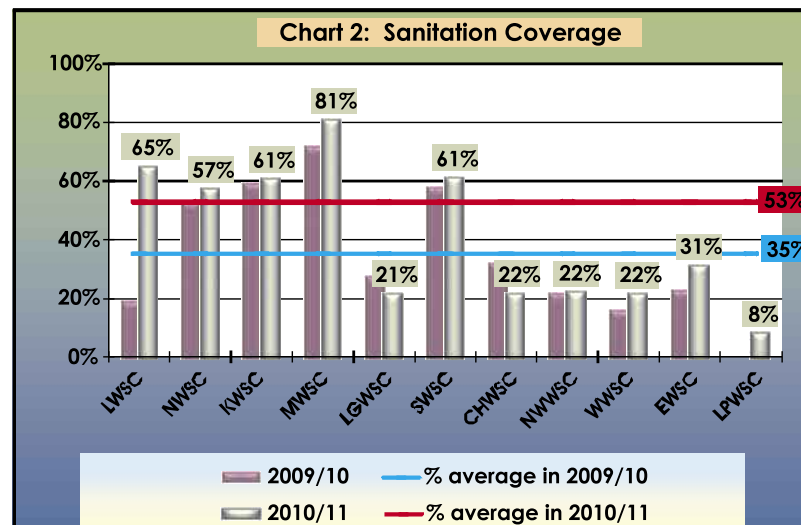
Table 14: Population Serviced with Water

	Total Population 2009/10	Population Serviced 2009/10	Total Population 2010/11	Population Serviced 2010/2011
LWSC	1,831,408	1,285,270	1,937,630	1,459,918
NWSC	685,420	600,199	701,870	633,218
KWSC	633,656	545,196	653,299	564,869
MWSC	436,249	385,914	446,719	403,063
LGWSC	365,869	239,848	376,574	247,649
SWSC	328,882	292,638	339,735	311,440
CHWSC	275,474	174,517	286,493	188,254
NWWSC	223,817	153,398	236,157	172,192
WWSC	176,477	103,140	179,124	90,705
EWSC	217,632	125,733	224,379	145,417
LPWSC	173,206	26,700	177,363	26,700
Total	5,348,090	3,932,553	5,559,343	4,243,425

The ratio of urban population with access to adequate sanitation

7.2.1.3 Sanitation Coverage

There was a marked improvement in the sanitation coverage as shown in Chart 2, with most CUs capturing information on septic tanks, particularly LWSC and LPWSC. The drop in CHWSC and LGWSC was due to the deterioration of infrastructure. MWSC, the only CU that met the acceptable benchmark, has been undertaking continuous unclogging and replacement of sewer lines.



The total population serviced with sanitation is shown in Table 15.

Table 15: Population Serviced with Sanitation

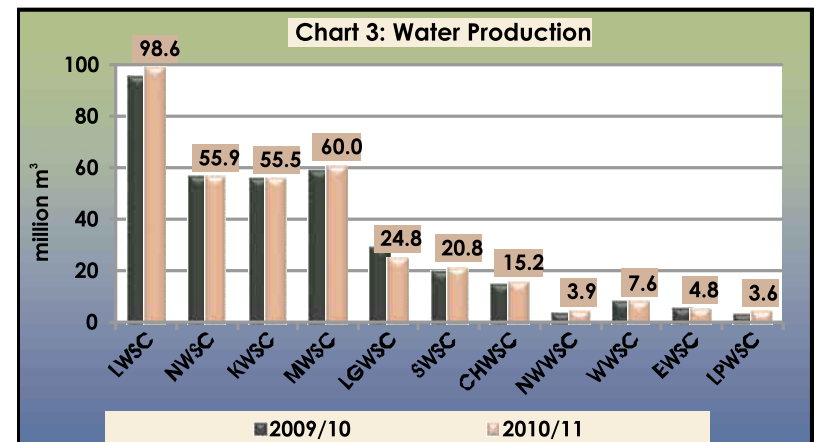
	Total Population 2009/10	Population Serviced 2009/10	Total Population 2010/11	Population Serviced 2010/11
LWSC	1,831,408	340,681	1,937,630	1,257,636
NWSC	685,420	358,194	701,870	400,742
KWSC	633,656	375,625	653,299	396,802
MWSC	436,249	311,460	446,719	360,573
LGWSC	365,869	99,493	376,574	80,891
SWSC	328,882	189,396	339,735	207,044
CHWSC	275,474	87,359	286,493	61,654
NWWSC	223,817	48,821	236,157	52,198
WWSC	176,477	27,560	179,124	38,646
EWSC	217,632	48,584	224,379	70,168
LPWSC	173,206	-	177,363	14,240
Total	5,348,090	1,887,173	5,559,343	2,940,594



7.2.1.4 Water Production

Water production is the volume of treated water distributed into the network. Thus, the water production figures in Chart 3 is looked at in relation to water losses in Chart 4. With good operational efficiency, an increase in water production should only be necessitated by an increase in customer base or to improve hours of supply.

LPWSC and CHWSC increased production due to stable power supply in these provinces. The reduction of production in EWSC was due to erratic power supply for the majority of the reporting period, and interruption in water supply due to ongoing infrastructural works in the phase 1 project towns i.e. Lundazi, Chama, Mambwe and Petauke. In the case of LGWSC, production reduced due to frequent pipe bursts which led to plant shutdowns for long periods coupled with malfunctional boreholes in Serenje and Kabwe towns.



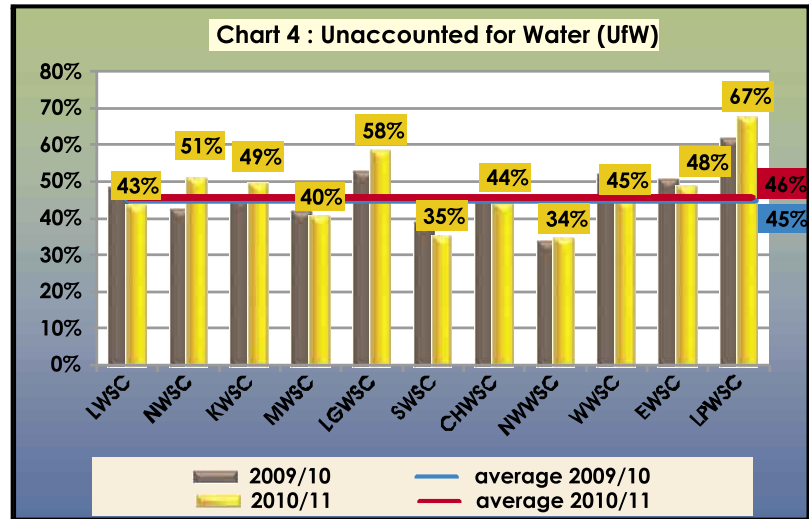
7.2.1.5 Unaccounted for Water (UfW)

UfW is a measure of water lost in the distribution system. It is the difference between the quantity of treated water distributed in the network and the quantity of water billed. UfW consists of the technical losses (leakages and overflows) and commercial losses (illegal connections, unbilled customers and wastage on un-metered customers' premises).

As shown in Chart 4, the increase in water losses for NWSC was due to a decrease in billed volumes despite there being no changes in production. The billed volumes decreased as a result of disconnection of more than 17,000 customers in the low cost areas (most of whom were not metered) in an effort to recover debts and the reduction in demand for water by commercial entities. This indicates that a significant amount of water went to waste.

The reduction in UfW for WWSC was a direct consequence of high billed volumes due to an increase in the fixed tariffs while production remained unchanged.

LGWSC had high commercial losses due to billing inconsistencies.



Benchmark for UfW	Good	< 20%
	Acceptable	20-25 %
	Unacceptable	> 25%



To appreciate the magnitude of the problem, the water losses were translated into monetary terms as shown in Table 16. This should serve as an incentive for each CU to come up with a strategy of realising some of this revenue.

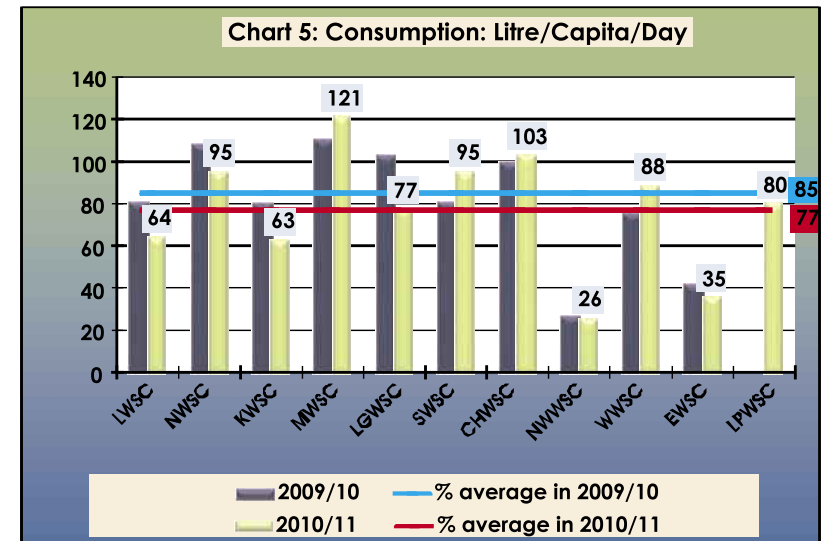
Table 16: Estimated Loss of Revenue due to UfW in 2010/2011

	Metering Ratio	Total Billing (in mil K)	UfW (in %)	UfW (in mil K)
LWSCC	62%	155,062	43%	117,724
NWSCC	41%	61,630	51%	63,861
KWSCC	52%	60,557	49%	58,732
MWSCC	60%	63,084	40%	42,187
LGWSCC	78%	12,883	58%	18,025
SWSCC	74%	22,604	35%	12,182
CHWSCC	41%	6,590	44%	5,177
NWWSCC	100%	9,684	34%	5,048
WWSCC	14%	6,541	45%	5,302
EWSCC	80%	6,935	48%	6,519
LPWSCC	0%	1,701	67%	3,521
Total				338,278

Any loss of revenue in business is unacceptable; however, a benchmark of 25% has been set as acceptable loss. The revenue loss from the current level of UfW increased by about K52 billion from K285,563 billion in 2009/10. If UfW is not reduced to the acceptable benchmark, the magnitude of the loss becomes even greater as the business expands.

7.2.1.6 Consumption in Litre per Capita per Day

Chart 5 shows the average amount of water one person consumes per day. According to WHO standards, 50m³ per person per day is an acceptable minimum. For CUs with high metering and low sewerage coverage (EWSC and NWWSC), consumption tends to be lower, when metered, customers generally become more cautious with water usage. Where sewerage coverage is low, people use onsite facilities which use little or no water.

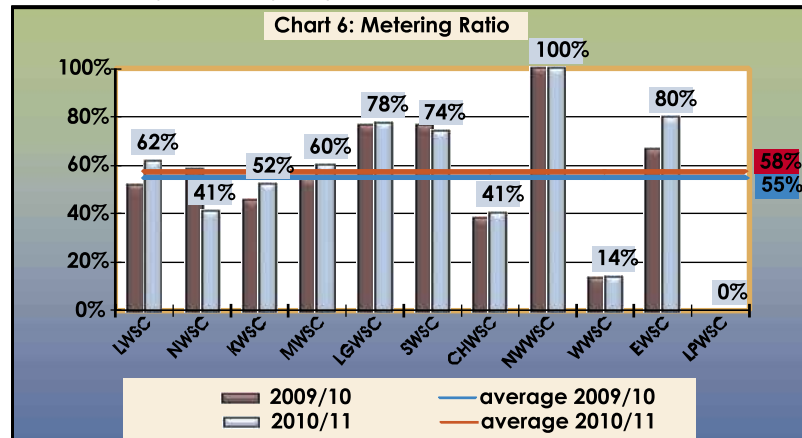


Metered connections compared to the total connections

7.2.1.7 Metering Ratio

Chart 6 shows the metering ratio which is the proportion of the metered connections compared to the total connections. Metering is required in order to measure the amount of water consumed so that consumers are charged according to their consumption. It is an important tool for controlling UfW.

In 2010/11, there was a slight improvement in the overall metering ratio. EWSC undertook extensive metering in the phase 1 German supported project towns (Lundazi, Chama, Mambwe and Petauke) and procured meters for the remaining towns using their own resources. LWSC installed over 10,000 meters under the World Bank funded project. NWSC lost over 6,000 meters which were given as a grant by Government but became defective in less than two years after installation. This is a serious drawback to the sector and CUs must take caution to procure technology appropriate to the local conditions as per sector policy.



7.2.2 SERVICE LEVEL INDICATORS

These reflect the quality of service a company is rendering to its customers. Major among these are water quality, hours of supply and resolution of customer complaints.

7.2.2.1 Water quality

Water quality is very important due to the health impact it has on consumers. The compliance level takes into account the number of samples conducted and the percentage of results meeting water quality standards. It is therefore important to note that a low compliance might imply deficiency in the required number of tests and/or adherence to quality standards.

The two types of parameters considered are bacteriological (total and faecal coliforms) and physiochemical (Chlorine residue, PH, turbidity and colour). Chlorine residue test is given prominence under physiochemical because of its relation to the bacteriological aspect of water.

Only LGWSC, MWSC, SWSC, NWSC and NWWSC met the acceptable benchmark. Inspections conducted revealed that some CUs were inconsistent in maintaining records of dosage and tests conducted. In some cases, manual dosing of chemicals was employed giving rise to highly fluctuating results. The compliance levels of the CUs are shown in Table 17.

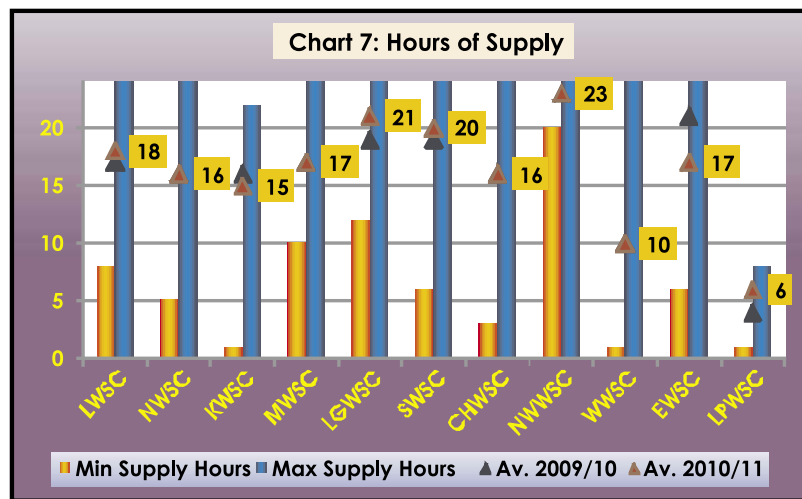
Table 17: Water Quality Analysis

Name of CU	Quality Compliance			Overall Water Quality Compliance 2009/10	Overall Water Quality Compliance 2010/11	Reason for Non Compliance
	Chlorine Residual	Bacteriological	Physio-chemical			
CHWSC	95%	78%	91%	91%	87%	Failure to meet standards on Bacteriological and physiol-chemical tests, Physio-chemical tests conducted less than required.
EWSC	85%	89%	82%	80%	86%	Failure to meet standards and required number of tests for Bacteriological.
KWSC	93%	89%	93%	98%	92%	Failure to meet standards for Bacteriological in parts of Ndola.
LGWSC	99%	99%	85%	93%	95%	-
LWSC	86%	90%	92%	85%	89%	Failure to meet standards for Bacteriological due to failure of chlorine tests.
MWSC	98%	96%	91%	92%	95%	High Turbidity failure affected Physio-chemical compliance
NWSC	99%	99%	92%	98%	97%	-
NWWSC	100%	98%	100%	100%	99%	-
SWSC	96%	98%	96%	95%	97%	-
WWSC	72%	98%	100%	80%	89%	Failure of chlorine residue tests was due to poor dosing techniques
LPWSC	96%	67%	75%	-	79%	Did not conduct bacteriological and Physio-chemical tests for most of the period

7.2.2.2 Hours of Supply

Chart 7 shows the average hours of water supplied to customers by the CUs per day. It should be noted that in areas not connected to the national grid, the availability of electricity can be an external constraint for the supply hours.

Benchmark for hours of supply (Cluster 1 & 2)	Good	20-24 hours
	Acceptable	18-20 hours
	Unacceptable	< 18 hours
Benchmark for hours of supply (Cluster 3)	Good	> 18 hours
	Acceptable	16-18 hours
	Unacceptable	< 16 hours



Only LWSC, SWSC, LGWSC, NWWSC, and EWSC met the acceptable benchmark.

LPWSC carried out some minor water network repair works which resulted in a slight improvement in water supply hours. Hours of supply for LWSC also increased slightly due to increased production particularly for Chelston and Avondale as well as increased metering which led to more water building up in the system as customers' conserved water.

The reduction in the average for EWSC was due to power supply outages coupled with low pumping capacity particularly in Chipata district which constitutes 67% of the customer base. Hours of water supply reduced from an average of 20 hours to between 10-18 hours for the majority of the period.

WWSC suffered failure of one water abstraction pump in Senanga for five months while boreholes in Kaoma and Mongu districts collapsed during the entire review period.

Interruption of service

During the reporting period, there were major water supply interruptions due to power outages and/or low voltage particularly in Northern, Luapula, Western and Eastern Provinces throughout the year.

KWSC experienced an interruption in Lubuto-Chintu and surrounding areas of Ndola City which was as a result of the blowing up of the ZESCO transformer at the Kafubu Water Works.

CHWSC experienced numerous pump breakdowns particularly in Mpika and Kasama districts, thus leading to water supply interruption. In LPWSC, persistent

bursts on the falling main from the raw water source in Kawambwa district led to frequent water supply stoppage to facilitate repairs.

In Chipata district under EWSC, road contractors damaged distribution lines on several occasions in a number of areas, with customers going without water or receiving rationed supply for more than a week.

Under MWSC, Chikola B and Lulamba areas in Chingola district were rationed for over two months due to problems with the supply line. Kabwe under LGWSC suffered several bursts that affected supply in most townships.

MWSC and NWSC were forced to interrupt water supply on two occasions following pollution of the Kafue River by Konkola Copper Mines (KCM).

7.2.2.3 Customer Complaints

Customers have the right to complain when they are not receiving the service guaranteed by the provider, a critical indicator for measuring customer satisfaction. Providers are required to keep a record of customer complaints and resolve them within a stipulated timeframe. Customer awareness plays a very important role in ensuring that complaints are reported.

A reduction in the number of complaints could indicate improvement in service and/or that customers are losing confidence in providers not attending to their complaints. Table 18 shows the number of complaints recorded and the resolution rate.

The number of complaints recorded and resolved in the reporting period decreased by 3,173 to 98,367 in 2010/11. However, the overall complaint resolution rate was lower at 81% against an acceptable benchmark of 90%. Only NWWSC, MWSC, SWSC and EWSC met the benchmark.

The majority of complaints for all CUs were related to issues of interruption, low pressure and billing errors. KWSC recorded a major reduction in complaints relating to metering and sanitation services. NWSC had the highest number of complaints in the sector with about 20,000 complaints in total mainly relating to operations, metering and sanitation. For LWSC, the increase in complaints was majorly related to metering and new connections.

Table 18: Customer Complaints

Provider	Total Customer complaints 2009/10	Total Customer complaints 2010/11	Total Complaints Resolved 2010/11	Total Complaints % resolution 2010/11	Complaints per 100 connections 2009/10	Complaints per 100 connections 2010/11
LWSC	17,641	21,589	17,674	82%	24	28
NWSC	29,714	27,666	21,394	77%	68	60
KWSC	17,174	12,695	8,264	65%	36	26
MWSC	9,546	11,315	10,940	97%	23	26
LGWSC	11,558	8,132	6,173	76%	80	53
SWSC	4,376	5,874	5,698	97%	15	19
CHWSC	6,096	4,074	3,490	86%	49	29
NWWSC	812	787	787	100%	12	10
WWSC	2,011	2,652	2,043	77%	21	29
EWSC	2,371	2,501	2,450	98%	24	24
LPWSC	241	1,082	409	38%	6	37
TOTAL COMPLAINTS	101,540	98,367	79,322	81%		

7.2.3 FINANCIAL INDICATORS

These ascertain viability and sustainability of CUs by analysing revenue and costs.

7.2.3.1 Cost of Operation

Cost containment is very critical in service provision. The major operation costs (personnel, chemical, energy, maintenance and administrative) have an impact on the efficiency of a CU. These are analysed during tariff adjustments in order to prevent unjustified costs being passed on to consumers. Table 19 and Chart 8 are used to analyse the cost of operation.



Table 19: Cost of Operation

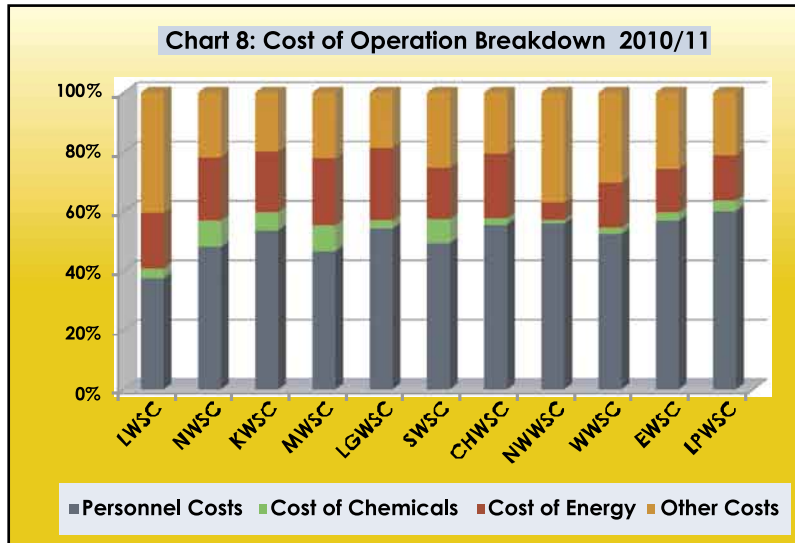
	Personnel Cost (in mil K)			Chemicals Cost (in mil K)			Energy Cost (in mil K)			Other Cost (in mil K)			Total Cost (in mil K)		
	2009/10	2010/11	% change	2009/10	2010/11	% change	2009/10	2010/11	% change	2009/10	2010/11	% change	2009/10	2010/11	% change
LWSC	47,149	42,829	-9.2%	2,085	3,670	76%	18,848	21,547	14%	28,302	46,397	64%	96,384	114,443	19%
NWSC	22,890	25,768	12.6%	3,951	4,754	20%	9,598	11,476	20%	10,034	11,726	17%	46,473	53,724	16%
KWSC	20,552	20,785	1.1%	1,532	2,366	54%	9,187	7,959	-13%	5,107	7,715	51%	36,378	38,825	7%
MWSC	17,217	21,392	24.3%	3,076	4,030	31%	7,480	10,329	38%	11,898	10,209	-14%	39,671	45,960	16%
LGWSC	6,033	6,645	10.1%	521	353	-32%	2,305	2,978	29%	2,207	2,305	4%	11,066	12,281	11%
SWSC	9,371	10,562	12.7%	1,105	1,735	57%	2,859	3,728	30%	4,127	5,418	31%	17,463	21,443	23%
CHWSC	2,751	4,290	56.0%	134	168	26%	945	1,691	79%	1,938	1,595	-18%	5,768	7,744	34%
NWWSC	5,778	5,882	1.8%	120	121	1%	379	622	64%	3,424	3,903	14%	9,700	10,528	9%
WWSC	2,696	3,540	31.3%	82	143	74%	440	1,027	133%	1,519	2,055	35%	4,737	6,766	43%
EWSC	4,553	5,341	17.3%	335	267	-20%	866	1,373	59%	1,925	2,423	26%	7,678	9,404	22%
LPWSC	2,210	1,920	-13.1%	102	114	12%	306	487	59%	1,096	680	-38%	3,714	3,200	-14%

Red- negative trend, Green- positive trend (major shifts only)

Cost Structure

CUs operate under varying socio-economic conditions hence the differences in their cost structures. That notwithstanding, the proportion of the various cost elements to the overall costs and the trend are critical. For certain cost categories such as chemicals, a reduction may not necessarily be desirable as this may mean a compromise in the quality of water rather than cost containment. Personnel costs include direct labour, which is a significant component. Energy costs include electricity and fuel.

The costs for LPWSC indicate sharp movements as it is new and therefore yet to reach a stable operational cost level.



Personnel Costs

WWSC paid compensation from court cases involving staff. Further, the CU paid terminal benefits for two Directors.

CHWSC incurred high costs due to high staff turnover which necessitated the paying of terminal benefits/gratuities and recruitment of new staff.

LWSC had high staff turnover at management level, most of whom were not replaced.

Generally, personnel costs continued to be the highest component of O&M costs.

Chemical Costs

The cost of chemicals generally went up in the year.

SWSC used more chemicals due to poor raw water quality in Livingstone City and Choma district in the period while WWSC increased consumption of chemicals in an effort to improve water quality.

MWSC experienced high turbidity in the rainy season as well as pollution from the mines that necessitated the usage of more chemicals.

Energy Costs

The cost of electricity and fuel went up in the year resulting in high increases in energy cost for most CUs.

CHWSC increased pumping hours hence the apparent increase in the cost.

EWSC incurred high costs when plants that had previously been billed on a wrong fixed electricity tariff were corrected by ZESCO. Additionally, pumping hours were increased in a number of towns to boost hours of water supply.

In the case of WWSC, the electricity bill was revised upwards after ZESCO assessed the plants.

Other Costs

SWSC incurred high costs for administrative and audit fees.

The jump in other costs for LWSC was due to an increase in direct operational consumables for water supply and non-allowable penalties from statutory bodies.

For KWSC, the expenses for repairs and maintenance of operating assets as well as the maintenance of the vehicle fleet increased. MWSC reduced administrative expenses while CHWSC reduced vehicle running expenses.

7.2.3.2 Average Tariff and Unit Operation Cost

Water and sewerage tariffs are raised periodically in order to move the CUs towards full cost recovery through user charges in line with the National Water Policy. NWASCO approves all tariff adjustments and has the responsibility of ensuring that only justified costs are passed on to customers. Thus, the justified operational costs of providing water and sanitation services have a direct bearing on the price of water.

For financial viability, the average tariff should be equal to or higher than the unit operation cost. The unit operation cost depicted in the Chart 9 is higher than the actual unit operation cost for water only due to the difficulty in isolating sewerage related costs. The average tariff for those that are not 100% metered is calculated using the rising block tariff for assessed amount of water consumption.

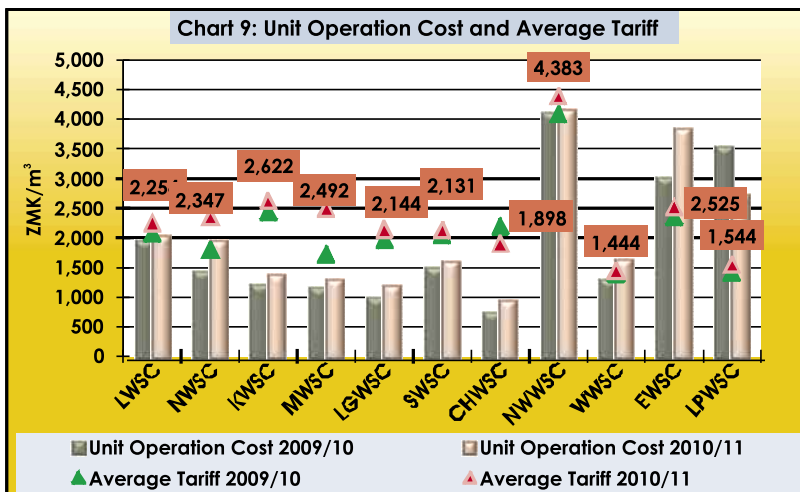


Table 20 shows the computation of a water bill for a metered domestic customer using the rising block tariff at different consumption volumes excluding fixed or sewer charges.

Table 20: Computation of Rising Block Tariffs for Domestic Customer Water Bill

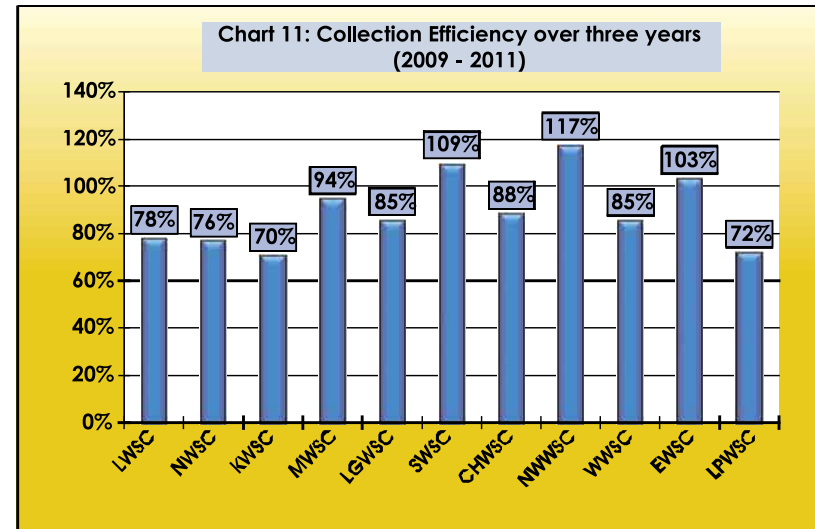
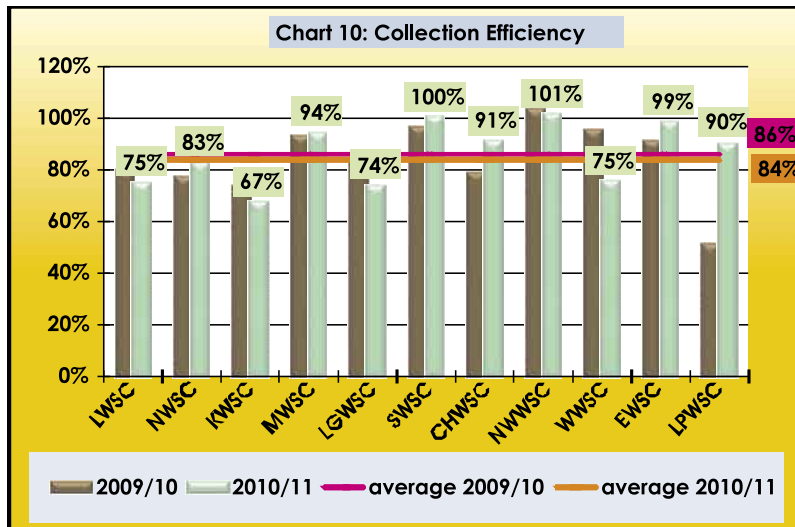
CU	Water Bill of 6 M ³ (Low consumption) (in K)	Water Bill of 30 M ³ (Medium consumption) (in K)	Water Bill of 60 M ³ (High consumption) (in K)
LWSC	12,600	70,200	151,200
NWSC	8,700	56,100	125,100
KWSC	10,525	66,030	142,590
MWSC	9,600	52,800	118,800
LGWSC	7,500	52,500	129,000
SWSC	10,158	65,646	148,326
CHWSC	9,600	62,400	167,400
NWWSC	12,000	107,400	263,400
WWSC	8,400	51,300	114,300
EWSC	9,000	75,600	174,600
LPWSC	6,600	43,200	106,700
Average	10,468	70,318	164,142

The tariffs differ among the CUs due to varying cost structures attributed to the difference in the operating environments of the CUs. However, it must be noted that the tariff per cubic meter within the 0-6m³ band is kept lower than the unit cost of service delivery as lifeline consumption. This is however, compensated in the higher bands of consumption.

7.2.3.3 Collection Efficiency

The collection efficiency is the proportion of billed amounts collected. As shown in Chart 10, the average increased to below the benchmark of 85%. However, because this figure gets distorted when outstanding amounts and/or advance payments made are treated as part of the current collections; Chart 11 gives a more accurate picture of the collection efficiency by calculating it over a three-year period to eliminate distortions.

Benchmark for collection efficiency	Very Good	>95%
	Good	90-95%
	Acceptable	85 – 90 %
	Unacceptable	<85%



CHWSC and EWSC received payments from Government and LPWSC intensified debt collection strategies hence the increase in collection efficiency.

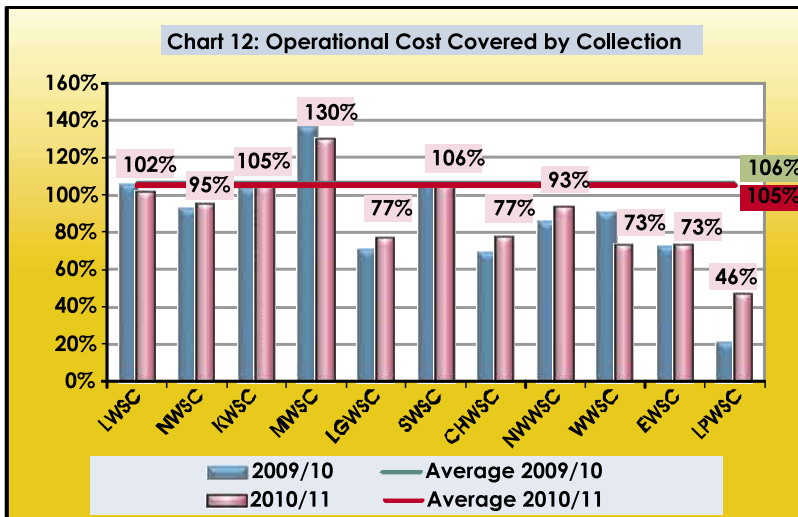
LWSC did not receive payment from Government departments, hence the drop. WWSC collections dropped significantly for about three months due to political/tribal instability in the Province.

EWSC, NWWSC and SWSC met the 'very good' benchmark while MWSC, CHWSC and LPWSC met the 'good' benchmark for collection efficiency. All the CUs apart from LWSC, KWSC, LPWSC and NWSC met the acceptable benchmark over the three year period.

7.2.3.4 Operational Cost Coverage by Collection

This indicates the extent to which the level of collection is able to cover all the operational costs.

The analysis does not include income from other fees such as penalties, meter charges, surcharges and grants from Government and Cooperating Partners.

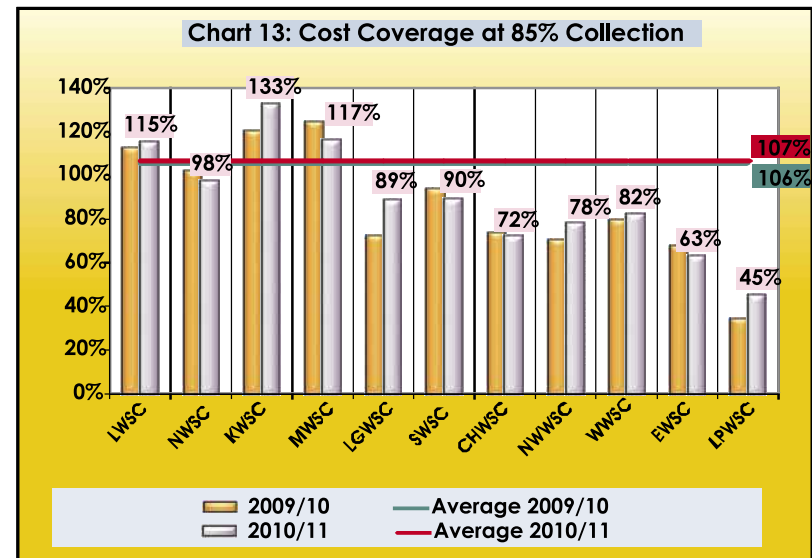


As shown in Chart 12, the average operation cost covered by collection dropped to 105% due to a general increase in costs and a drop in collections. LWSC, KWSC, MWSC and SWSC covered their operation and maintenance costs.

Benchmark for coverage of O&M Cost	Good	> 150%
	Acceptable	100 – 150 %
	Unacceptable	< 100%

7.2.3.5 Operation Cost Coverage at 85% Collection

Chart 13 shows the cost coverage assuming an acceptable benchmark collection efficiency of 85% of the billed amount. The sector average marginally increased to 107%. Only LWSC, KWSC and MWSC would have been able to cover costs at the benchmark collection efficiency.

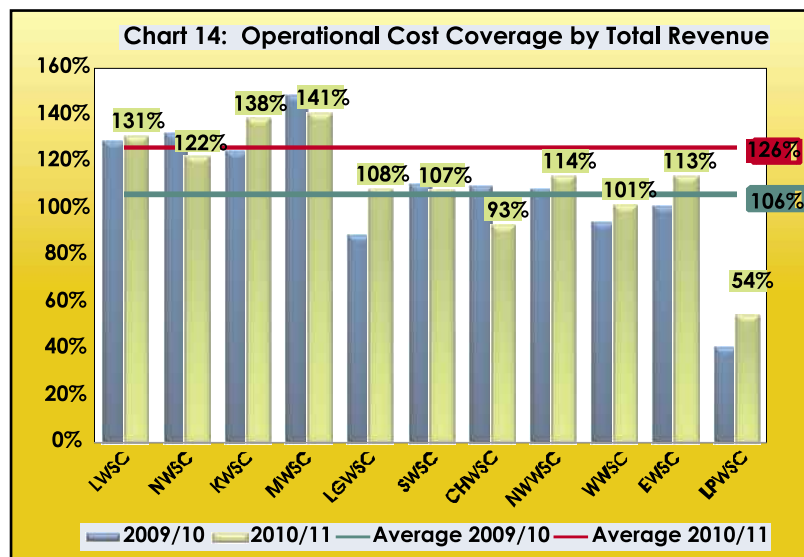


7.2.3.6 Operation Cost Coverage by Total Revenue

Chart 14 depicts the financial performance of the CUs. Total revenue included other income such as interest, other fees, subsidies and recurrent grants.

All CUs utilised recurrent grants except MWSC and LPWSC. NWSC made gains on foreign currency holdings and received other miscellaneous income.

EWSC and WWSC received income grants from Germany and Danish governments, respectively to support their operations. EWSC received a grant through the Ministry of Local Government and Housing for the payment of retrenchment of former Council workers.

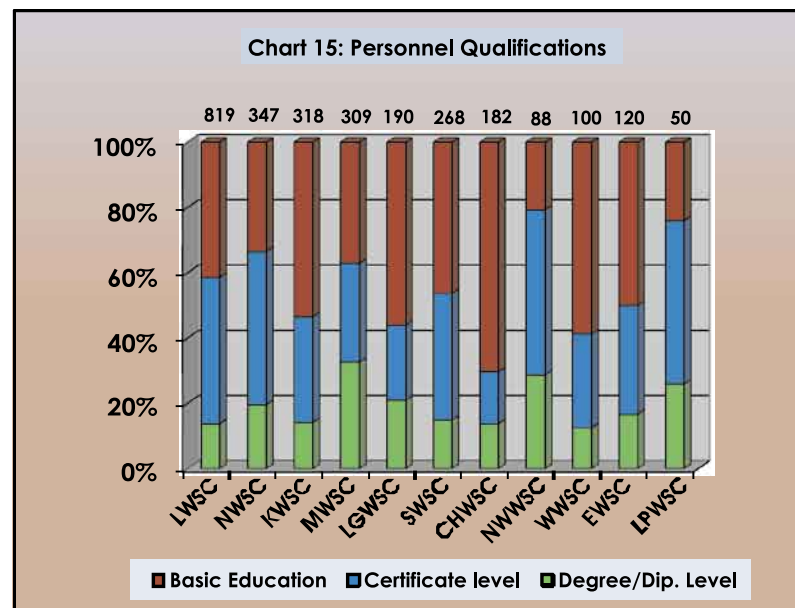


7.2.4 STAFF EFFICIENCY INDICATORS

These measure the output of personnel in relation to various aspects of operations such as billing, connections and personnel costs.

7.2.4.1 Human Resource Development

Chart 15 shows the personnel qualifications in the sector. Generally there were major changes in the structure with the bulk of staff still possessing basic qualifications.

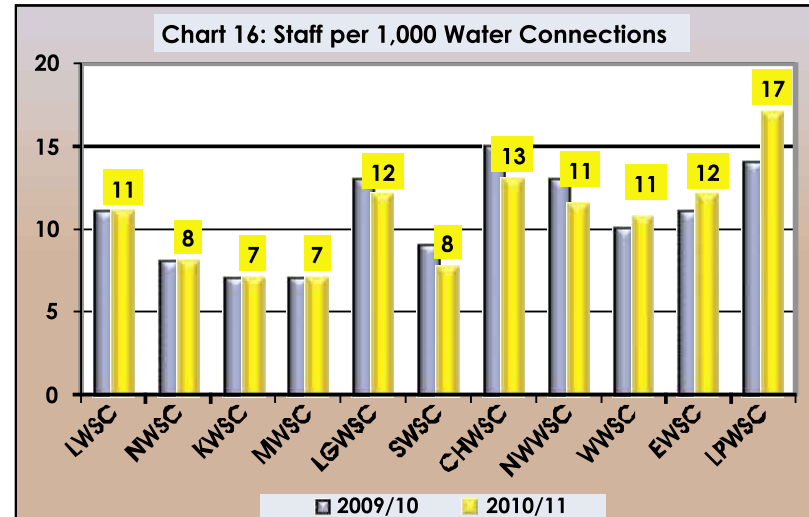


7.2.4.2 Staff per 1,000 Water Connections

This indicates the number of employees responsible for 1,000 water connections as shown in Chart 16. The computation excludes staff responsible for sewer connections. All staff on one year contracts have been included as part of the staff complement.

Staff efficiency can be measured by “staff per 1,000 water connections” (Chart 16). The lower the number of staff per 1,000 water connections within the benchmark, the more efficient the company is.

All CUs except LWSC and LPWSC met the benchmark in their respective Clusters. The negative trend for LPWSC was due to the reduction in the number of connections. CHWSC increased the number of water connections and reduced on the number of staff, hence met the benchmark.



Benchmark for staff per 1,000 water connections (Cluster 1)	Good	5
	Acceptable	6-8
	Unacceptable	>8
Benchmark for staff per 1,000 water connections (Cluster 2 and 3)	Good	9
	Acceptable	10-14
	Unacceptable	>14



7.2.4.3 Billing and Average Personnel Cost per Staff per Month

Billing per staff per month is the total billing attributed to one member of staff per month. A higher figure indicates better staff efficiency. On the other hand, average personnel cost per staff per month reflects the cost attributed to each staff. Charts 17 and 18 are therefore analysed together.

Ideally, the billing per staff per month must be higher than the average personnel cost per staff per month. LPWSC was the only CU with an undesirable situation.

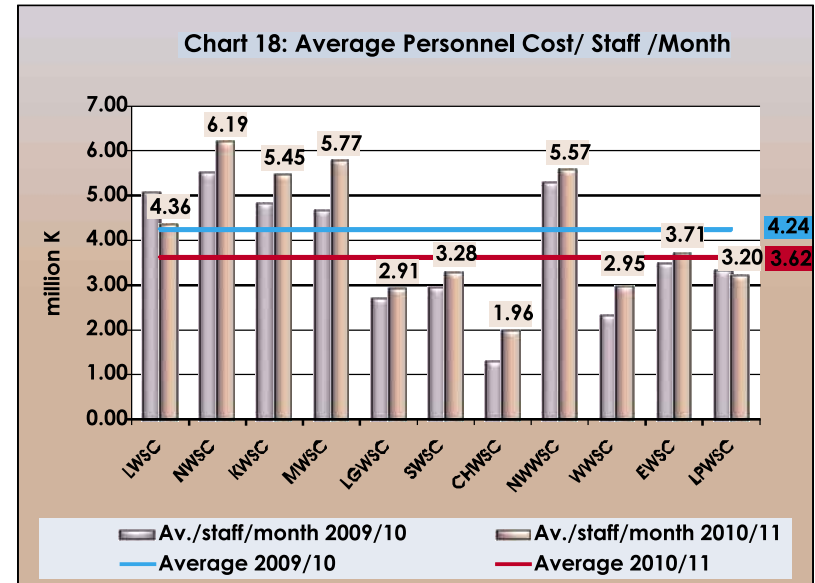
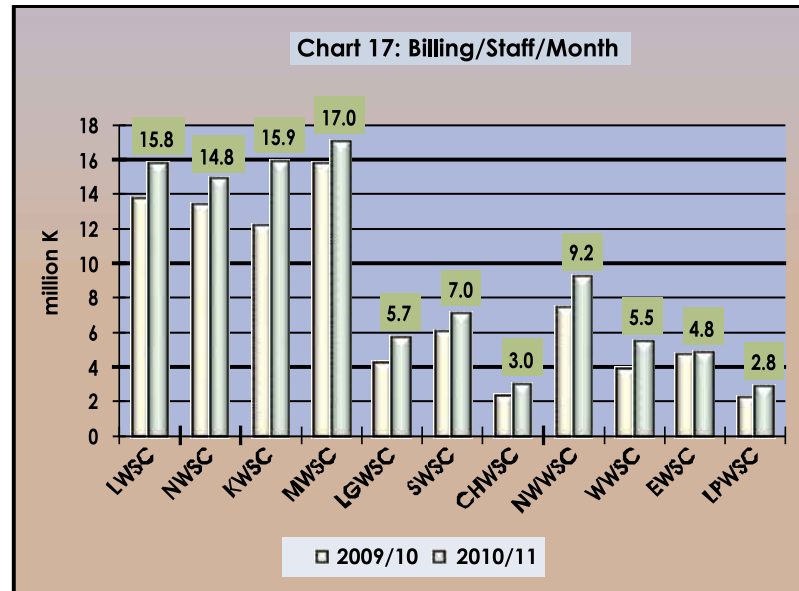
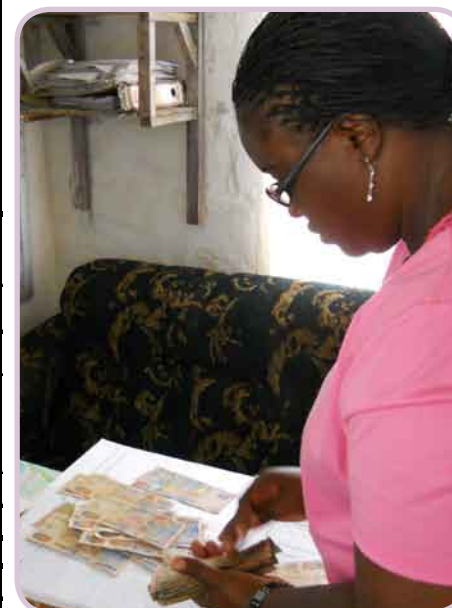


Table 21 shows an overview of the staff efficiency indicators.

Table 21: Observations on Staff Efficiency

Commercial Utility	No. of Staff	Staff/1000 water connections	Av. personnel cost/Staff/Month	Billing/Staff /Month	Collection/Staff /Month	Comments on Staff Efficiency
			(in mil K)	(in mil K)	(in mil K)	
LWSC	819	11	4.4	15.8	11.8	Need to improve collection/staff/month and staff per 1,000 water connections.
NWSC	347	8	6.2	14.8	12.3	Need to work on overall staff efficiency
KWSC	318	7	5.4	15.9	10.7	Need to work on overall staff efficiency
MWSC	309	7	5.8	17.0	15.6	Good staff efficiency
LGWSC	190	12	2.9	5.7	4.2	General improvement
SWSC	268	8	3.3	7.0	7.0	General improvement
ChWSC	182	13	2.0	3.0	2.7	Tremendous improvement
NWWSC	88	11	5.6	9.2	9.3	General improvement
WWSC	100	11	3.0	5.5	4.1	Need to do more to improve
EWSC	120	12	3.7	4.8	4.7	Need to do more to improve
LPWSC	50	17	3.2	2.8	2.6	Need to increase connections



Efficiency can be attributed to billing and cost per staff

7.2.5 CORPORATE GOVERNANCE INDICATORS

Adherence to good corporate governance enhances performance of the CU. It is the role of the Boards of Directors to steer the strategic direction of the company and thus the achievement of its objectives.

In order to assess the performance of the Board, it is important to focus on corporate decisions and expenditure on the Boards of Directors. Thus, Table 22 highlights the corporate governance indicators.

7.2.5.1 Performance of the Boards

The performance of the Boards was measured based on the existence of approved corporate documents, number of Board meetings held, key decisions made and adherence to the annual budget.

7.2.5.1.1 Approved Corporate Documents

All CUs had approved corporate documents except for WWSC and LPWSC that did not have audited accounts as shown in Table 22.

7.2.5.1.2 Budgetary Control

Budgetary control is one of the key functions of the Board. A budget variance of $\pm 10\%$ is acceptable. All CUs had a positive variance against the approved budget. However, only LPWSC was within the allowed limit. Directors therefore need to ensure CUs are within the acceptable limits.

7.2.5.1.3 Board Meetings

Board meetings should be held once per quarter and the costs maintained within 1% of the total costs for bigger CUs (Cluster 1) and 1.5% for the smaller CUs (Cluster 2 & 3). Only EWSC held the required number of meetings. CHWSC, NWWSC, WWSC, and LPWSC held less than the required number of Board meetings while the rest held more. LWSC, NWSC, KWSC and MWSC (Cluster 1 CUs) should limit the number of meetings held. All the CUs managed to keep the Board expenses within the acceptable limits except EWSC and WWSC.



Table 22: Corporate Governance Indicators

	Approved Corporate Documents				Board meetings				Major decisions of the Board	
	Strategic plan	Approved Budget	Annual report with audited accounts	Investment plan	Attendance	Meetings held	Meetings planned	Total Board expenditure as a % of O&M costs	Budget variance against approved	
LWSC	✓	✓	✓	✓	90%	7	4	0.2%	23.2%	Implementation of strategic plan and considered audited accounts
NWSC	✓	✓	✓	✓	91%	7	4	0.4%	29.7%	Implementation of strategic plan and considered audited accounts
KWSC	✓	✓	✓	✓	100%	9	8	0.6%	43.0%	Implementation of strategic plan and considered audited accounts
MWSC	✓	✓	✓	✓	85%	7	6	0.6%	15.0%	Implementation of strategic plan and considered audited accounts
LGWSC	✓	✓	✓	✓	95%	6	4	1.1%	22.2%	Approved corporate and major policy documents and considered audited
SWSC	✓	✓	✓	✓	100%	6	4	1.4%	18.9%	Implementation of strategic plan and considered audited accounts
ChWSC	✓	✓	✓	✓	86%	3	5	1.5%	26.9%	Considered audited accounts
NWWSC	✓	✓	✓	✓	80%	3	4	1.4%	31.5%	Implementation of strategic plan and considered audited accounts
WWSC	✓	✓	✗	✓	100%	3	4	2.0%	18.7%	Approved corporate and major policy documents
EWSC	✓	✓	✓	✓	100%	4	4	1.8%	23.9%	Approved corporate and major policy documents
LPWSC	✓	✓	✗	✓	93%	1	1	0.2%	0.2%	Approved corporate and major policy documents

7.3 QUALITY OF SUBMITTED INFORMATION

As part of the license condition, all service providers are required to submit an annual report timely and with accurate data. This data is submitted electronically via an information system developed by NWASCO. The CUs were given a deadline to submit data a month after the end of the reporting period. Apart from EWSC and NWWSC, all the CUs met the deadline. WWSC and LGWSC were cautioned for submitting poor quality data.

Table 23: Quality of Submitted Information

Utility	Quality of Submitted information in the NWASCO Information System	
	The Annual Report	Remark
Lusaka WSC	Good	Timely. Clarifications required
Nkana WSC	Good	Timely.
Kafubu WSC	Good	Timely. Clarifications required
Mulonga WSC	Good	Timely.
Lukanga WSC	Fair	Timely. Clarifications required
Southern WSC	Good	Timely. Clarifications required
Chambeshi WSC	Fair	Timely. Clarifications required
North Western WSC	Good	Late.
Western WSC	Poor	Timely. Major clarifications required.
Eastern WSC	Good	Late.
Luapula WSC	Good	Timely.



EWSC: Best Submitted Data- 2009/10

Note: All submitted data is checked for accuracy and completeness. Where the data is found to be such, verifications are done with the CU, as well as with data collected during inspections. The data presented in this report are therefore complete and accurate.



8

PERFORMANCE OF PRIVATE SCHEMES

Over
10
Years
of Regulating WSS
service provision

The private schemes are companies which provide WSS service primarily to their employees. The WSS services are run as an auxiliary function but not on a commercial basis. There are currently seven licensed private schemes:

- Lafarge Cement
- Kaleya Small Holding
- KCM-Nampundwe
- Maamba Collieries
- ZESCO
- Zambia Sugar
- Kafue Sugar

The regulatory performance requirements are minimal, and pertain mainly to service level issues of coverage, hours of supply and water quality. The performance of the private schemes is depicted in Table 24 below:

8.1 COVERAGE

Coverage remained at 100% for all private schemes except for Maamba Collieries which is at 75%. The remaining population uses other sources such as shallow wells and the lake. A number of persons left KCM-Nampundwe after the mine was placed under care and maintenance, thus the total population reduced.

Table 24: Performance of Private Schemes

	Population in Service Area	Coverage %	Hours of Supply 2009/10	Hours of Supply 2010/11	Water Quality Compliance 2009/10	Water Quality Compliance 2010/11
Lafarge Cement	2,938	100	24	24	87%	91%
Kaleya Small Holders	3,483	100	24	24	97%	92%
KCM - Nampundwe	5,500	100	24	24	79%	97%
ZESCO	19,932	100	19	20	86%	97%
Maamba Collieries Limited	25,613	75	15	16	81%	95%
Zambia Sugar Plc	16,261	100	24	24	86%	92%
Kafue Sugar	400	100	-	24	-	-
	74,128					

8.2 HOURS OF SUPPLY

The average hours of supply for private schemes remained at 24 hours. All Private Schemes had 24 hours except for ZESCO and Maamba Collieries were at 20 and 16 hours respectively.

8.3 WATER QUALITY COMPLIANCE

There was a general improvement in water quality compliance with ZESCO, KCM-Nampundwe and Maamba Collieries meeting the acceptable benchmark of 95%. Zambia Sugar and Lafarge had high failure on Chlorine residue results. Kaleya Small Holders failed with respect to physio-chemical tests due to occasional high turbidity caused by iron precipitation in the area.



9

CONCLUSION

Over
10
Years
of Regulating WSS
service provision

This report has provided insight into the performance of each service provider and the sector in general. As mandated by the Water Supply and Sanitation Act 28 of 1997, one of NWASCO's functions is to disseminate information on the performance of the sector to the public.

It has been noted that apart from a few, most of the service providers have shown more positive trends in their indicators in 2010/11 compared with declining trends noted in the 2009/10 report. However, efforts must be put in place to ensure all indicators show positive trends as this is the only way the sector will make major strides in meeting the needs of the people.

Some of the areas that need focus in the sector include low sanitation coverage, poor collections, high unaccounted for water, low metering ratio and poor operational efficiencies. Any investments in these areas will go a long way in accelerating service provision.

Major investment in infrastructure continues to elude the sector. With the present status of dilapidated infrastructure in most of the CUs, huge investments are required in the sector in order to change the scenario for the better given the new development areas coming up in all major towns with no corresponding level of service provision, the present infrastructure capacities that have been exceeded and poor service level in some areas. The achievement of universal coverage as articulated in the Vision 2030 can only be realised with the release of investment funds adequate to address the highlighted needs.

With the operationalisation of the SNDP and both the NUWSSP and NRWSSP, major strides in the sector are anticipated subject to the commitment by all stakeholders to the implementation of projects as articulated in the documents and availability of financial resources. Suffice to say, the investment required in the sector is far above what has been provided for in both the SNDP and NUWSSP.

Human resource development is another factor that needs attention in order to post major improvements in the sector. This was long realised during the water reforms and hence one of the seven sector principles in the National Water Policy focusing on human resource development. While the sector has shown improvement in this area, there are still gaps especially in the commercial orientation, technical, management and corporate governance capacity in the sector.

NWASCO will continue to provide information and advice to government for decision making and work with all stakeholders to enhance performance in the sector.

Urban and Peri-Urban Water Supply and Sanitation Sector Report 2010/2011

Over
10
Years
of Regulating WSS
service provision



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