



REPORT OF THE AUDITOR GENERAL ON THE
ACCOUNTS OF WATER SUPPLY AND SANITATION
COMPANIES FOR THE FINANCIAL YEAR ENDED 31ST
DECEMBER, 2020

Submitted by
The Zambia Institute for Policy Analysis and Research
To
The Committee on Cabinet Affairs

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1 Background

Access to safe water supply and sanitation remains critical in the realization of sustaining livelihoods, and socio-economic development and thus, should be at the helm of the development process and the achievement of Vision 2030 in a country. The United Nations through its Sustainable Development Goals (SDGs) accentuate that one way of alleviating poverty globally is to improve the access to clean water and sanitation. As such, the development and policy formulation of Zambia's transformative agenda, envisioned in the Eighth National Development Plan (8NDP) seeks to increase promotion of investments in the water sector by establishing sustainable financial, operational, and capacity building mechanisms for the sector that will facilitate mobilization of local water supply and sanitation programs and inclusivity to access that will ensure that no one is left behind.

Zambia continues to witness rapid urbanization, indicating that access to water and sanitation remains critical to development of the country. Currently, the available sources of water considered include lake/stream, unprotected well, pumped water, protected well, borehole, public tap, and own tap. Among these water sources, protected wells, boreholes, pumped water, and taps are regarded as safe water supplies, whereas unprotected wells, rivers and lakes/streams were considered unsafe sources of water supply.

Currently, access to water and sanitation services is limited in Zambia. On average only seven out of ten Zambians have access to safe drinking water, while only five out of every ten Zambians has access to improved sanitation facilities.

In the 8NDP, the Government envisions increased access to quality water and sanitation especially to districts, constituencies and wards where deficiencies have been experienced.

At regional level, Government targets to increase access in urban areas from 92% in 2018 to 98% by 2026. In rural areas, the target is to increase access to safe water from 58% to 67% over the same period. Further, Government hopes to expand sanitation services in rural areas from 37% in 2018 to 55% by 2026, for urban areas, the target is to increase access from 78% in 2018 to 90% by 2026 (MOF, 2022).

Table 1: Projected Water and Sanitation Coverage

	Water coverage		Sanitation Coverage	
	2018	2026	2018	2026
Urban	92%	98%	78%	90%
Rural	58%	67%	37%	55%
Total	72%	-	54%	-

Source: NWASCO 2021 Annual Report and Auditor General 2020 Report

1.1 Commercial Utilities in Zambia

Currently, there are eleven (11) Commercial Utilities (CU) responsible for providing Water and Sanitation Services (WSS) in the urban areas of the 10 provinces of Zambia. Additionally, there are 6 private entities licensed to provide water supply and sanitation services as a fringe benefit. The commercial utilities are regulated by National Water Supply and Sanitation Council (NWASCO). NWASCO was established by the Water Supply and Sanitation Act No. 28 of 1997 of the Laws of Zambia and continues to champion the improvement of the water sector by outlining and improving strategic objectives and performance indicators of utility companies.

Table 2: Licensed Commercial Utilities and Private Schemes

	Commercial Utilities	Abbreviation
1	Lukanga Water & Sanitation Co.	LgWSC
2	Southern Water & Sanitation Co.	SWSC
3	Lusaka Water & Sanitation Co.	LWSC
4	Kafubu Water & Sanitation Co.	KWSC
5	Nkana Water and Sanitation Co.	NWSC
6	Mulonga Water & Sanitation Co.	MWSC
7	North Western Water & Sanitation Co.	NWWSC
8	Eastern Water & Sanitation Co.	EWSC
9	Chambeshi Water & Sanitation Co.	CHWSC
10	Western Water & Sanitation Co.	WWSC
11	Luapula Water & Sanitation Co.	LPWSC
	Private Schemes	
12	Kafue Sugar	
13	ZESCO	
14	Kaleya Small Holding Co.	
15	Zambia Sugar Plc	

Source: NWASCO 2021 Annual Report

1.2 Policy Framework

In 2011, the Government has developed a comprehensive National Urban Water Supply and Sanitation Program (NUWWSP) covering the period 2011 to 2030 for improved livelihood and health of the urban population of Zambia. The program consists of a coherent set of institutional and sector support activities aimed at developing and sustaining water supply and sanitation, solid waste management and drain infrastructure and services in the urban areas of Zambia.

However, the WSS service provision has been skewed towards Urban and Peri-urban areas under the regulation of NWASCO. To remedy this, NWASCO developed a framework for the provision and regulation for Rural WSS in 2018. This led to CUs' operating licenses being amended to include rural areas in line with the 2019-2030 National Rural Water Supply and Sanitation Program (NRWSSP).

2 Sector Performance

To ensure improvement of resource allocation for service delivery, transparency, and credibility in achieving efficient performance of regulatory functions, NWASCO set comparative performance benchmarks to measure the performance of Water and Sanitation companies.

Thus, the effectiveness and efficiency of CUs in providing water and sanitation services is assessed using some key operational indicators as listed in Table 3. The key performance indicators include water coverage, sanitation coverage, non- water revenue (NRW) and metering ratios.

The latest report of the Auditor General's reveals that the sector only met one of the four key performance indicators set by NWASCO. As shown in Table 3, CUs only met the Water Coverage benchmark, this benchmark was achieved in all three years covered by the report. Worryingly, CUs failed to meet the benchmarks for Sanitation Coverage, NRW and Metering Ratios.

Table 3: Sector Performance

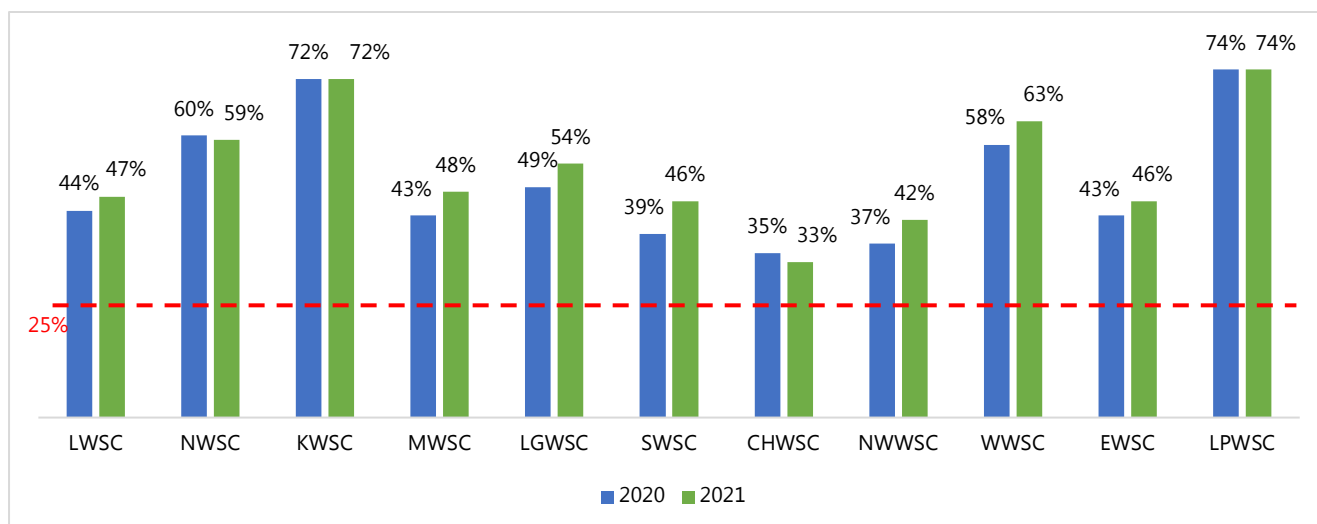
No.	Performance Indicator	Minimum Acceptable Sector Benchmark	2019	2020	2021
1	Water Coverage	80%	86%	87%	89%
2	Sanitation Coverage	80%	66%	66%	71%
3	Non- Revenue Water (NRW)	25%	52%	53%	56%
4	Metering Ratio	100%	81%	82%	82%

Source: NWASCO 2021 Annual Report and Auditor General 2020 Report

2.1 Non-Revenue Water

According to NWASCO, Non-Revenue Water (NRW) is defined as the difference between the quantity of treated water produced and distributed in the network and the quantity of water billed. NRW consists of various issues including, physical (leakages) and commercial losses (illegal connections, unbilled customers, wastage on unmetered customers' premises (WWS,2019). The accepted benchmark level for NRW is 25 % according to NWASCO standards. The benchmark ensures that losses due to NRW remain manageable.

Figure 1: Non-Revenue Water by Commercial Utility 2020-2021



Source: NWASCO 2021 Annual Report and Auditor General 2020 Report

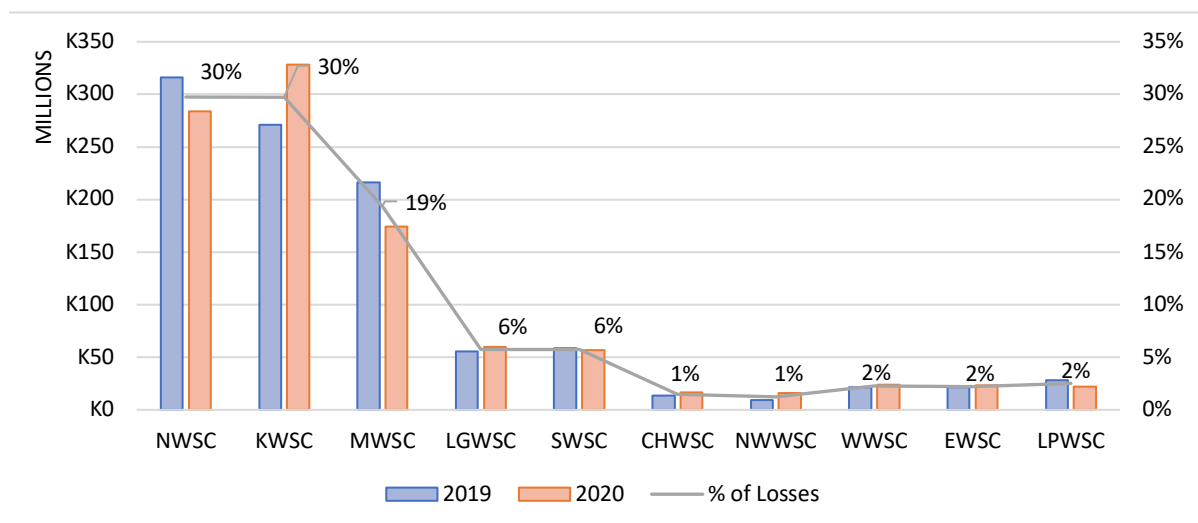
The findings shows that that none of the 11 Commercial Utilities met the NRW performance 25%, benchmark. NRW across all Commercial Utilities averaged of 52.8% in 2020 and 55.8% in 2021. Although none of the CUs met the acceptable benchmark Chambeshi Water and Sanitation Company (CHWSC) recorded a slightly lower NRW of 35% in 2020 and 33% in 2021 respectively.

The high NRW deprived companies of revenues to help improve operations such as electricity costs for pumping. High NRW further negatively affects service provision to customers who need the basic resource.

As shown in Table 4, over K 1 billion was lost in 2018 and another K 1 billion lost in 2019 which, culminated to a total revenue loss of K 2 billion in two years. NRW was also a major issue in the Auditor General’s Report as over 90% of the funds under queries were attributed to the NRW.

Nkana Water and Sanitation Company (NWSC) and Kafubu Water and Sanitation Company (KWSC) accounted for the highest NRW losses over the two-year period. Each company accounted for 30% of total losses amounting to K 600 million each. However, the Auditor General’s Report did not include figures for Lusaka Water and Sanitation Company (LWSC) whose losses totaled K 466 million over the same time period. Chambishi and North Western Companies recorded the lowest losses.

Figure 2: Revenue loss on NRW



Source: NWASCO 2021 Annual Report and Auditor General 2020 Report

To remedy the issue of NRW, the Ministry of Water and Sanitation appointed the Non-Revenue Water National Technical Task Force Team to coordinate and develop a policy framework to reduce the risk of high NRW.

However, the challenges of NRW are mainly as a result of limited investment infrastructure in the sector. Physical losses, which occur due to loss of water through leakages during transmission from the main sources to distribution centers are mainly as result of outdated infrastructure which dates as far back as 1970.¹ One of the major causes of commercial losses is the low metering ratios and faulty meters. As shown later in this report, on average 20% of serviced domestic properties were not metered.

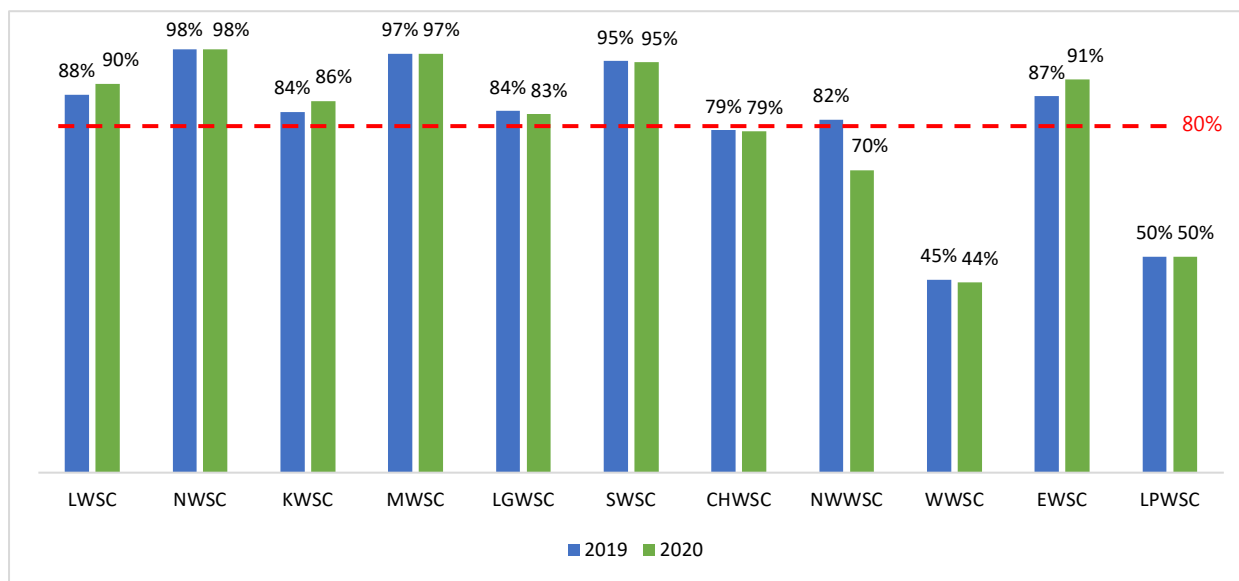
2.2 Water Coverage

Water coverage represents the proportion of population covered or serviced by domestic connections through individual household connections, kiosks, public stand posts and shared taps. The acceptable benchmark for the period 2021-2025 has been revised from 80% to 95% and is expected to be adjusted to 100% for the period beyond 2025 to align with the key national priorities of universal water supply coverage (WSS,2021).

The average water coverage by the CUs increased from 86.8% in 2019 to 88.5% in 2020. This translated into an additional 339,236 people accessing safe water supply (WSS,2021). At national level this benchmark was met, however, individually, three CU's namely; Western Water and Sanitation (WWSC), Luapula Water and Sanitation (LpWSC) and North Western Water and Sanitation (NWWSC) Companies did not meet the benchmark as shown in Figure 3.

¹ KII interview with CU staff.

Figure 3: Water Coverage by Commercial Utility – 2019 and 2020

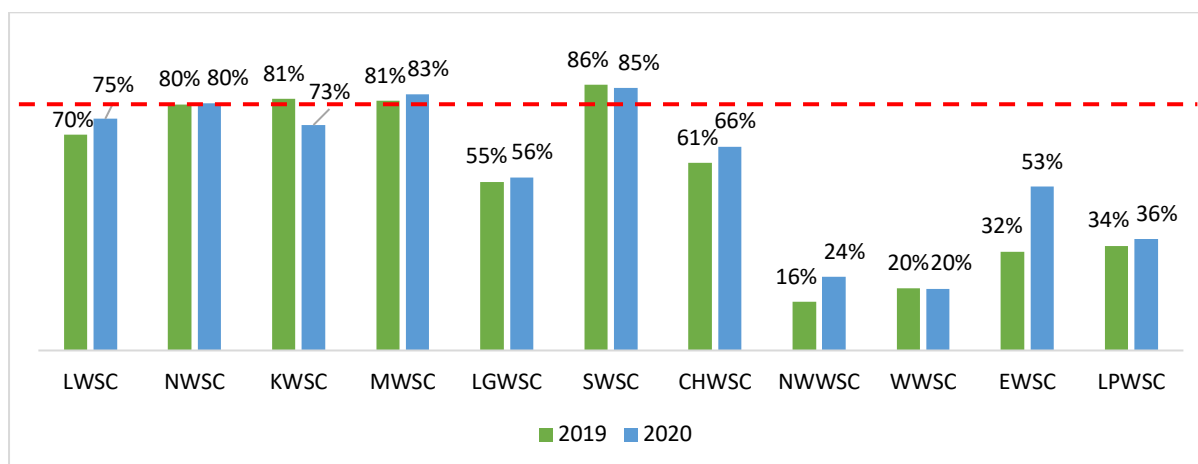


Source: NWASCO 2021 Annual Report and Auditor General 2020 Report

2.3 Sanitation Coverage

Sanitation coverage is the proportion of the urban population with access to sanitation services. Similar to water coverage, the NWASCO benchmark for sanitation coverage for the period 2021-2025 has been revised from 80% to 85% and will be increased to 90% for the period beyond 2025 to align to the national aspirations of 90% coverage for sanitation by 2030. However, at the time of review the benchmark was 80%. As shown in Figure 4, a review of the operational indicator revealed that the CU's sanitation coverage has been below the benchmark.

Figure 4: Sanitation Coverage by Commercial Utility - 2019, 2020



Source: NWASCO 2021 Annual Report and Auditor General 2020 Report

The average sanitation coverage for CUs serviced areas increased from 68.9% to 70.9%, translating into 319,635 more people accessing safe and adequate sanitation. Only three CUs met the acceptable benchmark namely NWWSC, MWSC and SWSC. The results indicate that, across the 10 utility companies, several households did not have access to adequate sanitation which is a risk to public health and a setback in achieving SDG target 2 for universal quality health. NWWSC, WWSC and LpWSC remained significantly below the acceptable benchmark with coverages of 22.8%, 25.2% and 36% respectively. The three utilities which are largely situated in rural provinces also recorded the lowest for water coverage.

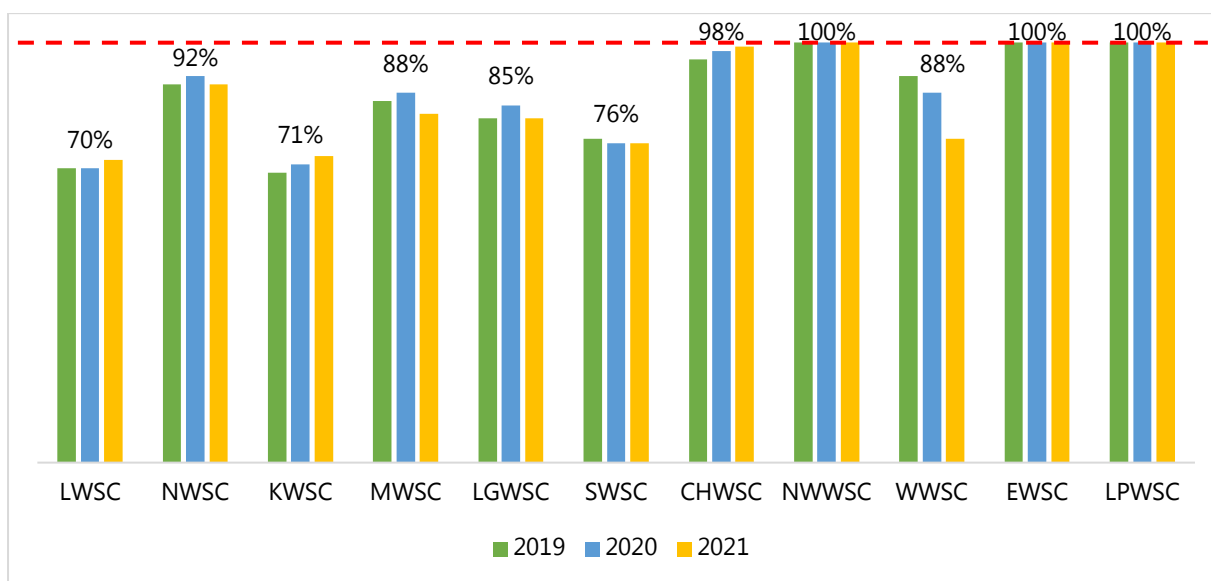
2.4 Metering Ratio

Considered as a critical component of controlling Non- Revenue Water, the metering ratio is the proportion of metered connections compared to the total connections. Regulation requires that meter readings of customers are taken and billed for services every month to ensure efficient measure of amount of water consumed, as well as charge consumers according to their consumption (AG, 2020). As such, it remains an important component in managing NRW.

The minimum acceptable benchmark for metering ratio is 100%, however, the AG report reveals that metering ratio declined from 82% in 2020 to 81.5% in 2021. As shown in Figure 5, only three of the 11 CUs met this benchmark, these were North Western Water and Sanitation Company (NWWSC), Eastern Water and Sanitation Company and Luapula Water and Sanitation Company (LpWSC). Lusaka Water and Sanitation Company (LWSC) which is one the largest CUs had the lowest metering ratio as only 70% of commercial properties were metered.

While this benchmark was not met a score of above 80% seems reasonable. However, it was discovered through KIIs that a significant proportion of meters in place faulty or not functional thus contributing to the high levels of NRW.

Figure 5: Metering Ratios by Commercial Utility - 2019, 2020, 2021



Source: NAWSCO 2021 Annual Report and Auditor General 2020 Report

3 Performance of Southern Water and Sanitation Company

The Southern Water and Sanitation Company was established under the water sector reform programme and Act of Parliament, the National Water Supply and Sanitation Act No. 28 of 1997 as amended by the Water Supply and Sanitation amendment Act No. 10 of 2005² (NAWSCO, 2021). SWASCO is a private company incorporated under the companies Act Cap 388 of the Laws of Zambia in 1999 and commenced operations in 2000. The company’s mandate is to provide water and Sanitation services in urban and peri-urban areas of Southern province on behalf of 13 shareholder Local Authorities. SWASCO, like all water utilities in the country, is regulated by NAWSCO (NAWSCO, 2021). Southern Water and Sanitation Company has a catchment of twenty-one (21) centres/towns in fourteen local authorities’ jurisdictions (see annex 1).

3.1 Operational Performance of SWASCO

These include Water and Sanitation Coverage, Non-Revenue Water (NRW), Metering Ratio, Energy Efficiency and Maintenance Efficiency. Operational indicators help evaluate the effectiveness and efficiency of Commercial utilities in the water sector.

² Report of the Auditor General on the Accounts of Water Supply and Sanitation Companies for the Financial Year ended 31 December 2020

3.1.1 Water Supply Service Coverage Urban: SWASCO

The Water supply service coverage is the proportion of the population serviced by domestic connections through individual household connections, kiosks, public stand posts and shared taps (NWASCO, 2021). During the period under review SWASCO serviced at total population of 530,751 this translated to 95.5% of the population under their jurisdiction. of 530,751, 89.4% (474,491) were serviced through individual household connections, while 10% (56,260) are supplied through public stand points and kiosks.

SWASCO scored highly on this benchmark as it was one of the three (3) CUs with household connections above 80% (NWASCO, 2021).

3.1.2 Sanitation Service Coverage

Sanitation coverage comprises the population that is serviced by offsite (centralised system) and septic tanks only. SWASCO was only one of three CUs that met the sanitation coverage benchmark of 80% in the period under review. Sanitation coverage for SWASCO stood at 86% in 2019 and 85% in 2020. It is important to note that, only SWASCO would have met the revised sanitation benchmark of 85%.

3.1.3 Metering Ratio

Although SWASCO was the 3rd highest installer of new meters (2,561) among CUs in the period 2020 – 2021, its metering ratio remained unchanged (76%). This may mean that the new meters were merely replacements or did not match up with expansion. Overall, we can assert that the SWASCO's investment in meters is not at par with rate at which meters need to be replaced and or with the growth in population in the its service area– such that the number of meters doesn't much up the metering requirement. This can be attested from the fact that between 2020-2021, SWASCO made 3,038 new connections but only installed 2,561 meters³.

SWASCO installed the most meters (2,561) between 2020 and 2021, besides Lusaka Water and Sanitation company (7,994) and Chambeshi Water and Sanitation company (3,608)⁴.

³ NWASCO Urban and Peri-Urban Water Supply and Sanitation Report 2021

⁴ NWASCO Urban and Peri-Urban Water Supply and Sanitation Report 2021

Table 4: SWASCO Metering Ratio Trend

Year	Benchmark	Metering Ratio	Variance
2019	100%	77%	23%
2020	100%	76%	24%
2021	100%	76%	24%

Source: NWASCO Annual Reports (2020 and 2021)

3.1.4 Non-Revenue Water

NWASCO has benchmarked NRW at 20-25% as acceptable tolerance level for this indicator. However, for the period 2019 – 2021, none of the CUs has attained the benchmark score. Instead, the NRW has worsened from 53% to 56% for the same period⁵.

Table 5: SWASCO Non-Revenue Water performance 2019-2021

SN.	Item	2019	2020	2021
1	Total Water Production(m ³)	22,500,000	22,000,000	20,700,000
2	Total Water Bill	13,200,000	13,400,000	11,178,000
3	NRW (m ³)	9,200,000	8,600,000	9,522,000
4	NRW (%)	41%	39%	46%
5	Benchmark (%)	25%	25%	25%
6	Est. Loss	56,760,000	58,880,000	61,893,000*

Source: NWASCO 2021 Annual Report and Auditor General 2020 Report *Computed using estimated av. unit price for 2019 and 2020

As shown in Table 4, the NRW for SWASCO shows a worsened position for 2021 and remained above the acceptable benchmark of 25% over the past three (3) years. This position threatens the company's financial viability. This also means that the company is not only losing revenue but also incurring extra charges in electricity and other operational costs for producing over 8 million cubic metres of this unbilled or not invoiced water.

⁵ NWASCO Urban and Peri-Urban Water Supply and Sanitation Report 2021

The Non- Revenue Water challenge continues to elude SWASCO despite partnering with a Dutch water company (Vitens Evides International) to learn best practices on how to reduce NRW in 2018.

Further, the company engaged Korea Engineering Consultants Corporation funded by African Development Bank to conduct a study for the rehabilitation of water and sanitation infrastructure in five (5) towns (Kalomo, Choma, Monze, Mazabuka and Siavonga) (MOF, 2018).

3.1.5 Staff efficiency

Staff efficiency is a measure of personnel output in relation to aspects of operations such as billing, connections and personnel cost. For purposes of this analysis, we look at the staff cost in relation to billing and collection which NWASCO has benchmarked forty percent (40%).

On the **staff efficiency score**, we note that SWASCO has not met the benchmark in the past three years. We also note that none of the CUs have met the industry benchmark of 40% with the exception of Lusaka Water and Sanitation company.

Table 6: Staff Efficiency

Year	Benchmark	Staff Efficiency
2019	40%	57%
2020	40%	58%
2021	40%	54%

Source: NWASCO 2021 Annual Report and Auditor General 2020 Report

SWASCO registered some improvement from 58% in 2020 to 54% in 2021. However, this still remains above the industry average of 50% - an improvement from 56% in 2020. This positive trend at overall sector level can be attributed to the increase in both billing and collection efficiency⁶.

Staff per 1,000 Connections: - Staff efficiency can also be measured in terms of staff per 1000 water and sewer connections. CUs are encouraged to stay within recommended limits of 6-8 per 1000 water connections and 10-14 per 1000 sewer connections. On both accounts, SWASCO scores well on both. This entails that the company's inefficiency is mainly stemming from poor collections.

⁶ NWASCO Urban and Peri-Urban Water Supply and Sanitation Report 2021

3.2 Financial Performance of SWASCO

3.2.1 Liquidity Ratios

The current ratio is the proportion of current assets to current liabilities. It shows the ability of the company to meet its current liabilities with current assets. The acceptable ratio for the water sector is 1:3. This range entails that the company is able to pay its obligations in part or in full once they fall due (NWASCO, 2021).

In the financial year ending 31st December 2021, SWASCO was among the worst performers with a current ratio of 0.6 with net negative profit margins for current year and the previous one. The implication of this is that the company was not able to meet its obligations as they fell due. This is evidenced by the findings of the Auditor General's report for the financial year ending December 2020, which indicates that the company failed to pay its suppliers as well as statutory remittances⁷.

4 Challenges

Several of the challenges highlighted in the report were as a result of limited financing in the sector. These challenges have led

1. **Heavy reliance on external financing:** Financing in the sector has mainly been driven by external funding sources. In the 2022 National Budget, 73% of the Water and Sanitation Budget was funded externally. The main source of the funding was a combination of loans and grants from institutions which included The African Development Bank Group (AfDB) and Kreditanstalt für Wiederaufbau (KfW). This entails that in the absence of external funding, very little goes toward infrastructure development in the sector. Investing in infrastructure is critical in addressing challenges that related to NRW, water and sanitation coverage and improving metering ratios.
2. **Limited financial returns on Water as it is a social good:** Water is an essential part of life and thus, a foundation of every community to thrive physically, economically and socially. Both at national and international level the Government has committed to ensuring universal access to a sustainable clean water supply and adequate water sanitation through SDG 6 and the 8NDP. This has been reflected in the extension of the mandate of CUs to service rural areas.

⁷ Report of the Auditor General on the Accounts of Water Supply and Sanitation Companies for the Financial Year ended 31 December 2020

As a result, this entails that water will continue to be provided at price that is below cost recovery. Hence, a sustainable financing mechanism must be developed to support the continued development of the sector.

5 Recommendations

1. ***Develop a robust financing mechanism to support infrastructure development in the water sector.*** The report shows CUs recorded significant losses due NRW and other challenges. These losses resulted in the poor performance as finances were inadequate to improve water and sanitation service provision. We also note that at the current operating levels the CUs are not able to raise the funds required to adequately invest in water and sanitation service provision. Thus, we recommend that Government develop a robust financing mechanism to support the development of the water and sanitation sector. This initiative must ensure that it blends private and public financing to support the development of the sector.

6 References

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7 Annex 1

Table 7: SWASCO operation centres

	Local Authority	Shareholding %	Towns / Centres
1	Livingstone City Council	38.95	1. Livingstone
2	Kazungula Town Council	23.02	2. Kazungula
3	Kalomo Town Council	9.31	3. Kalomo
4	Choma Municipal Council	8.21	4. Choma
5	Monze Municipal Council	2.40	5. Monze
6	Mazabuka Municipal Council	2.28	6. Chisekesi
7	Sinazongwe Town Council	7.83	7. Batoka
8	Munyumbwe Town Council	2.32	8. Mazabuka
9	Namwala Town Council	0.81	9. Magoye
10	Siavonga Town Council	2.01	10. Gwembe
11	Zimba Town Council	0.60	11. Munyumbwe
12	Chikankata Town Council	1.64	12. Maamba
13	Pemba Town Council	0.32	13. Sinazongwe
14	Itezhi tehzi Town Council	0.33	14. Sinazeze
			15. Namwala
			16. Mbabala
			17. Pemba
			18. Zimba
			19. Nega-Nega
			20. Siavonga
			21. Chikankata

Source: OAG Water Report 2020 and NWASCO Annual Report 2021

WWS