

Sierra Leone Water Supply Sanitation and Hygiene (WASH) Poverty Diagnostic

2024



A Paradox of Scarcity in Abundance



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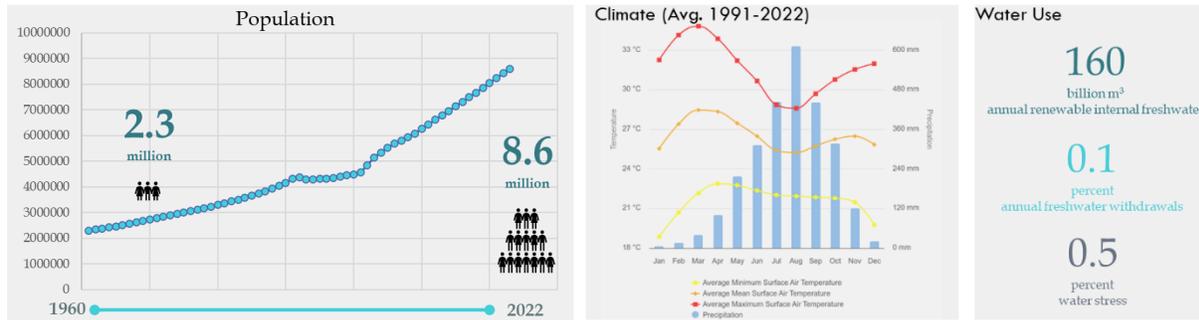
Abbreviations

AfDB	African Development Bank
AMCOW	African Ministers' Council on Water
CPF	County Partnership Framework
CWMCs	Community-based water management committees
DALYs	Disability-adjusted life years
DEHOs	District Environmental Health Officers
DHMT	District Health and Management Team
DHMT	District Health Management Team
EHSD	Environmental Health and Sanitation Directorate
EPA	Environmental Protection Agency
FCC	Freetown City Council
FCDO	Foreign, Commonwealth and Development Office
GDP	Gross Domestic Product
GNI	Gross National Income
GoSL	Government of Sierra Leone
GVWC	GUMA Valley Water Company
HCFs	Healthcare Facilities
HDI	Human Development Index
JMP	Joint Monitoring Program
LAs	Local Administrations
LIC	Low-Income Country
MDAs	Ministry Devolved Agencies
MLD	Million Liters per day
MoE	Ministry of Environment
MoHS	Ministry of Health and Sanitation
MoPED	Ministry of Planning and Economic Development
MoPED	Ministry of Planning and Economic Development
MoWRs	Ministry of Water Resources
NDP	National Development Plan

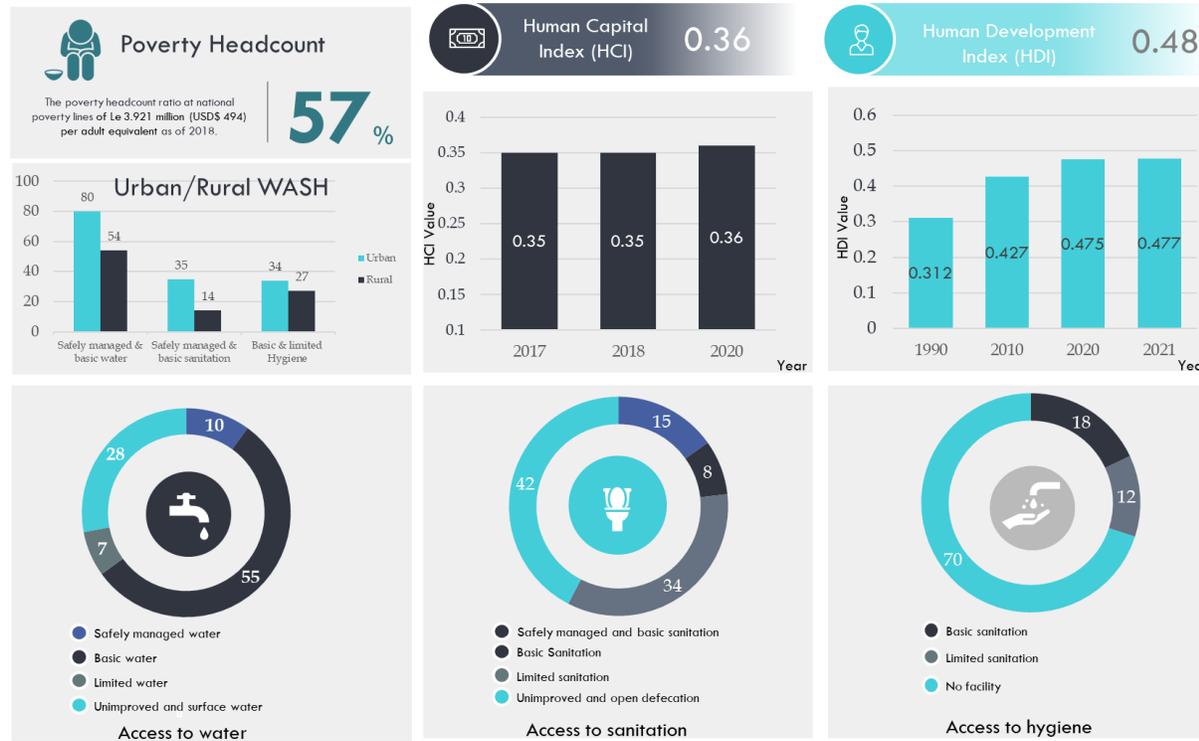
NRWSSP	National Rural Water Supply and Sanitation Program
NWRMA	National Water Resources Management Agency
SALWACO	Sierra Leone Water Company
SDG	Sustainable Development Goals
SDGs	Sustainable Development Goals
SLA	Service Level Agreement
SLEWRC	Sierra Leone Energy and Water Regulatory Commission
SLWPD	Sierra Leone WASH Poverty Diagnostic
SWA	Sanitation and Water for All
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
WASH	Water, Sanitation and Hygiene
WASH NORM	WASH National Outcome Routine Mapping (NORM)
WBG	World Bank Group
WMCs	Water Management Committees
WSS	Water Supply and Sanitation

Sierra Leone WASH Poverty Diagnostic Sector at a Glance

Context



WASH-Poverty outlook



WASH Challenges



Executive Summary

1. Sierra Leone's economic progress is overshadowed by development challenges, as reflected in its low Human Development Index (HDI). Despite abundant water resources, the country faces an "economic water scarcity" due to limited infrastructure. The country receives an average of 2,526 millimeters of rain annually, translating to a potential 80-100 cubic kilometers of water per year. This is the highest in the West Africa sub-region. Sierra Leone has approximately 160 billion cubic meters of annual renewable water. Despite this abundance, the actual utilization highlights scarcity at a withdrawal rate of a mere 0.1 percent. This paradox highlights the need for improved water management to unlock the country's development potential.

2. Access to WASH is a fundamental driver of human capital and development. Water quality, sanitation and hygiene improvements are demonstrated to reduce diarrheal disease and prevent other illnesses, impacting short-term health outcomes and long-term growth and cognitive development potential. Unfortunately, Sierra Leone faces critical gaps in WASH service delivery, which contributes to hindering human development and exacerbates poverty. Nationally, the proportion of people with access to safely managed water has only increased to 10 percent (2022) from 5 percent (2000). Sierra Leone's open defecation rate only marginally reduced from 25 percent in 2000 to 16 percent in 2022. Close to 1 in 2 Sierra Leoneans do not have access to at least basic sanitation and about 70 percent of the population do not have access to hygiene facilities.

3. This report provides evidence of the current state of WASH in Sierra Leone. It identifies key gaps in access to inform potential WASH operations and proposes strategies to improve WASH services. While the interlinkages between WASH and other sectors like agriculture, energy, environment, and forestry are crucial, and a deeper analysis of integrated water resources management (WRM) is warranted, this report prioritizes the immediate need for improved WASH access.

4. Six key binding constraints and recommendations are highlighted. These challenges in the Sierra Leone WASH sector are not a result of a lack of policy issues but rather the enforcement, implementation and financing of these policies.

- a. **The WASH sector is underfunded:** For Sierra Leone to meet the SDG targets on WASH, an estimated investment of about 557 USD per capita is needed. About USD 84 million per annum is required to achieve universal basic access, and USD 361 million annually is required for safely managed access to WASH. The sector financing needs to achieve the SDGs for WASH cannot be met by GoSL. *Leveraging financing from all partners including the private sector is essential. Policy, regulation, and institutional arrangements conducive for private sector participation are key in this regard. Other alternatives lie in the establishment of a water trust fund as in Kenya or through a pro-poor tax approach in the case of PURC in Ghana.**

- b. The sanitation sector is the least developed in Sierra Leone.** In 2020, the Ministry of Health and Sanitation commissioned the development of a National Strategy on Sanitation and Hygiene 2020-2030 (NSSH). While the policy recognized the dire need to address sanitation issues in Sierra Leone, implementation must catch up through a committed investment in the sanitation sector. *Though there is a clear policy direction to address the sanitation challenge in Sierra Leone, there is a need to commit to concrete government actions to remedy the situation.*
- c. The sanitation situation in rural areas requires significant improvement.** Only 10 percent of the rural population has access to safely managed sanitation and 4 percent to basic sanitation services. Inadequate funding underlines the limited development of WASH in rural areas. *However, with 70 percent of the sector funding coming from donor agencies, innovative financing modules (performance-based financing) can be adopted for the effective use of these resources. Lessons can be drawn from the Benin Rural Water Supply Universal Access Program for Results (PforR) which supports the establishment of regional performance-based affermage contracts, which delegate service delivery to private operators to improve the quality and sustainability of newly expanded water supply systems.*
- d. The sector's dependence on short-term programs must also be addressed.** While current sector support interventions tend to result in a fragmented solution to the WASH challenges in Sierra Leone, they can be streamlined strategically in a sector-wide vision. It is expected that the development of the National Water and Sanitation Policy (Draft as of 2021) will be critical in driving integrated programming with partnerships to strengthen linkages between WASH, education, food and nutrition and health. *Beyond the policy, it is prudent to address sector dependence on short-term programs by developing a consolidated sector development plan/roadmap.*
- e. Further, there is the need to establish a strong development partners coordination platform to know who is doing what, where and when.** *This could be achieved by exploring the implementation of One WASH programming by learning from other countries where it is implemented, such as Ethiopia. In addition to knowing the investments going on, it is useful for aligning efforts to avoid duplicity and also helps everyone to work towards progress to a more strategic objective for the country.*
- f. Sierra Leone's WASH sector's ineffectiveness extends beyond technical and economic shortcomings to encompass critical governance issues.** 60 percent of Non-Revenue Water (NRW) presents a significant technical and economic challenge. *Addressing the underlying inefficiencies lies in tackling the responsible institutions' structural and capacity constraints. Human resource capacity is needed to deliver effective and sustainable WASH services. Therefore, building the capacity of institutions such as the Ministry of Water Resource and Sanitation (MWRS), the recently established National Water Resource Management*

Authority (NWRMA) and utilities (GUMA and SALWACO) is crucial to improving overall sector efficiency.

5. Despite significant challenges, Sierra Leone has made significant strides in water sector planning and should build on these. A path towards achieving SDG 6, clean water, sanitation, and hygiene for all, lies in building on milestones evident in, among others, the National Water Resources Management Agency (NWRMA) Act No. 5 of 2017 and the NWRMA- Strategic Development Plan. Through a well-structured government program and committed government financing coupled with strong partnerships with development partners and the private sector, Sierra Leone can incrementally break free from persisting constraints and build a brighter WASH future where clean water, sanitation, and hygiene are a reality for all.

Chapter 1

Introduction and Overview

1.1 Investing in WASH for Better Human Development and Poverty Reduction

1. Sierra Leone is a lower-income country (LIC) located in West Africa. Since the end of the civil war in 2002, the country has been progressively growing economically and rebuilding its governmental institutions. Although the country's economy contracted by 2 percent in 2020 due to COVID-19, it was reported to rebound by 4 percent in 2021. This has resulted in substantial improvements in living standards, exemplified by the poverty rate declining from 62.4 percent in 2011 to 56.8 percent in 2018 (World Bank n.d).¹ However, the Human Development Index (HDI) score of 0.452 is well below the average for West Africa (0.505) and ranks 182nd of 189 countries (UNDP, 2022). This implies a lower future productivity relative to full health and complete education benchmarks. A child born in Sierra Leone today will only be 45 percent as productive when they grow up as they could be if they enjoyed complete education and full health (see Figure 1.1).

2. Water Supply Sanitation and Hygiene (WASH) is a fundamental driver of human capital and development. Access to WASH service improves the overall disease environment. Water quality, sanitation and hygiene improvements are demonstrated to reduce diarrheal diseases and prevent other illnesses, impacting short-term health outcomes and long-term growth and cognitive development potential.

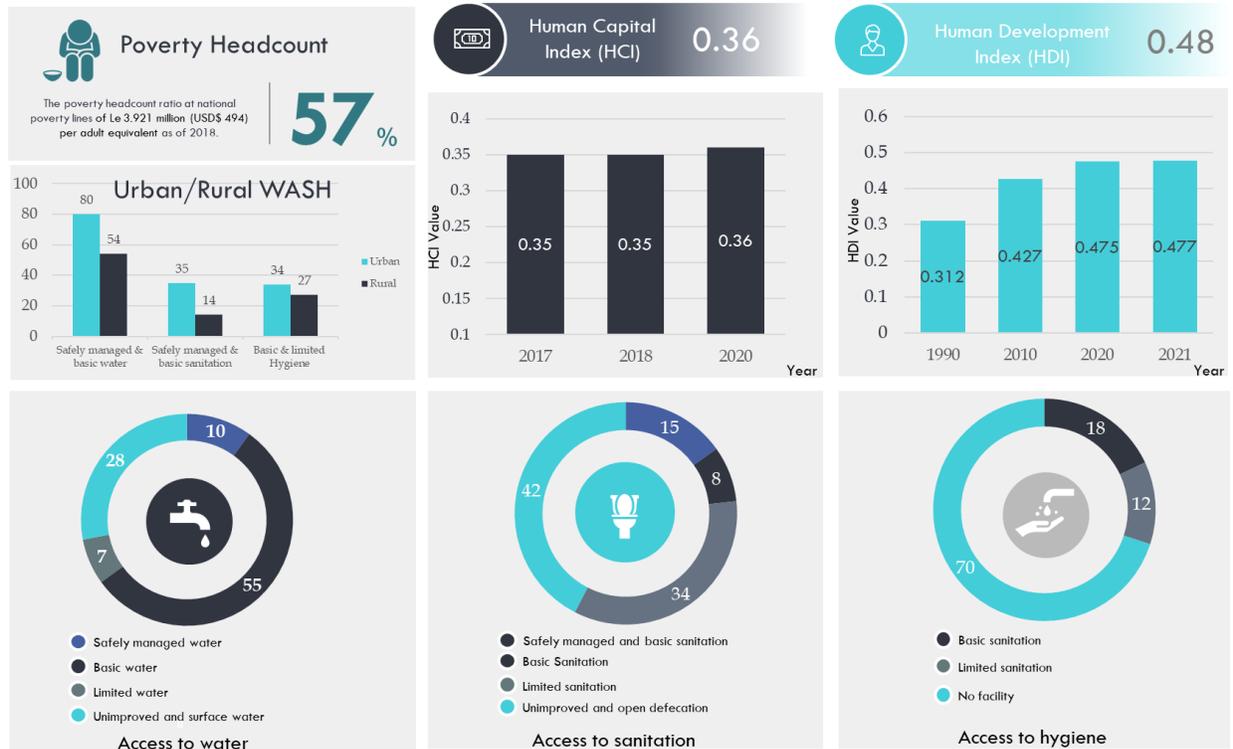
3. However, amidst the abundance of water resources, Sierra Leone faces critical gaps in WASH service delivery, which contributes to hindering human development and exacerbates poverty. The country receives the highest average rainfall annually (2,526 millimeters) in the West Africa sub-region and is the least water stress country (0.5 percent) in the region (World Bank 2020). Yet, the proportion of people accessing safely managed water sources is only 10 percent (JMP 2023).

4. There are improvements in access to sanitation; however, nationwide access could be more optimal. Sierra Leone's open defecation rate only marginally reduced from 25 percent in 2000 to 16 percent in 2022. The portion of the population using unimproved sanitation is still high (26 percent), while only 15 percent and 8 percent of the population have access to safely managed and basic sanitation, respectively. About 34 percent of the population access limited sanitation services. Of those with access to improved sanitation, the majority (49 percent) use latrines, while

¹ Poverty headcount ratio at national poverty lines

a limited number of the population use septic tanks (7 percent) and only 1 percent, mainly in the cities, have access to the sewer system (JMP 2023).

Figure 1.1 Overview of Poverty and WASH in Sierra Leone



5. The current state of WASH access in Sierra Leone not only negatively affects living standards but also hinders future economic progress. Decisive and timely action is needed to address the welfare and development costs of poor WASH. To achieve the Sustainable Development Goal (SDG) 6, which challenges countries to reach universal access to safely managed water and sanitation by 2030, Sierra Leone must move its WASH sector forward by expanding basic access to WASH and investing in higher-quality WASH services that have complementary benefits for improving human development and eradicating poverty. Supporting WASH interventions in Sierra Leone is critical in improving health, welfare and development.

1.2 Objectives of the Sierra Leone WASH Poverty Diagnostic

6. Sierra Leone's national medium-term development plan (2019-2024) and the World Bank's Country Partnership Framework (CPF) for FY21-FY26 both prioritize WASH (GoSL, 2019; World Bank, 2020). While the national development plan prioritizes improvement in water infrastructure systems, the World Bank's CPF emphasizes improving water infrastructure and waste management. This alignment highlights the shared focus on improving water infrastructure and sanitation which are crucial aspects of human capital development for inclusive growth.

7. This report, themed the Sierra Leone WASH Poverty Diagnostic (SLWPD), benchmarks key WASH indicators and builds sector knowledge relevant to improving WASH service delivery. The objectives of the diagnostic are to (1) highlight the priority gaps in WASH access; (2) identify those populations that are most deprived of higher-quality WASH services; (3) demonstrate how investment in WASH can aid poverty reduction and human development strategies; and (4) identify the major institutional constraints that hold back effective WASH service delivery.

8. The report focuses on informing potential WASH operations in Sierra Leone, particularly regarding increasing access to WASH services and achieving the Sustainable Development Goal (SDG) targets. While the interlinkages between WASH and other sectors like agriculture, energy, environment, and forestry are crucial, a deeper analysis of integrated water resources management (WRM) is warranted but beyond the scope of this report. This report prioritizes the immediate need for improved WASH access.

9. The report is structured in six (6) chapters. Following the introduction, Chapter (2) presents the country and poverty context of Sierra Leone. Chapter three (3) outlines the most recent representative data on access to WASH services. Chapter four (4) discusses the governance of the WASH sector, the public expenditure for WASH, and the different actors that coordinate investment in it. It further highlights the policies, institutions, and regulations for WASH service delivery. Chapter five (5) summarizes key findings, binding constraints and recommendations to improve WASH service delivery in Sierra Leone. Chapter six (6) concludes with a way forward to reviving the WASH sector.

Chapter 2

Country and Poverty Context

10. This section provides an overview of the WASH and poverty linkages in Sierra Leone. It highlights the geographic configuration of Sierra Leone and its demographic characteristics to facilitate a better contextualization of WASH outcomes. The section further looks at the overall governance structure and proceeds with an overview of poverty, human capital, and human development in Sierra Leone.

Key Takeaways

Sierra Leone has a history of civil war (1991-2003) that severely disrupted its human capital and human development, but there has been significant improvement with 52.9 percent HDI change (1990 to 2021).

Considering human development in terms of gender, Sierra Leone is in the top 10 most gender unequal countries.

Sierra Leone has mainly a rural population (56 percent), although with a projected annual urbanization of 3 percent for 2020-2025.

In 2018, 57 percent of Sierra Leone's population was poor. Thus, they lived below the updated national poverty line of Le 3.921 million.

2.1 Geography and Demographics

2.1.1 Geography

11. **Sierra Leone is located on the southwest coast of West Africa.** The country borders Guinea to the north and east, Liberia to the southeast, and the Atlantic Ocean to the west and southwest². Sierra Leone has a total area of 71,740 km² (27,699 sq mi), divided into a land area of 71,620 km² (27,653 sq mi) and water of 120 km² (46 sq mi).³ The climate is tropical, with two seasons determining the agricultural cycle: the rainy season from May to November and the dry season from December to May. The average temperature is 26 °C (78.8 °F) and varies from around 26 to 36 °C (78.8 to 96.8 °F) during the year.⁴

² https://en.wikipedia.org/wiki/Sierra_Leone#Geography

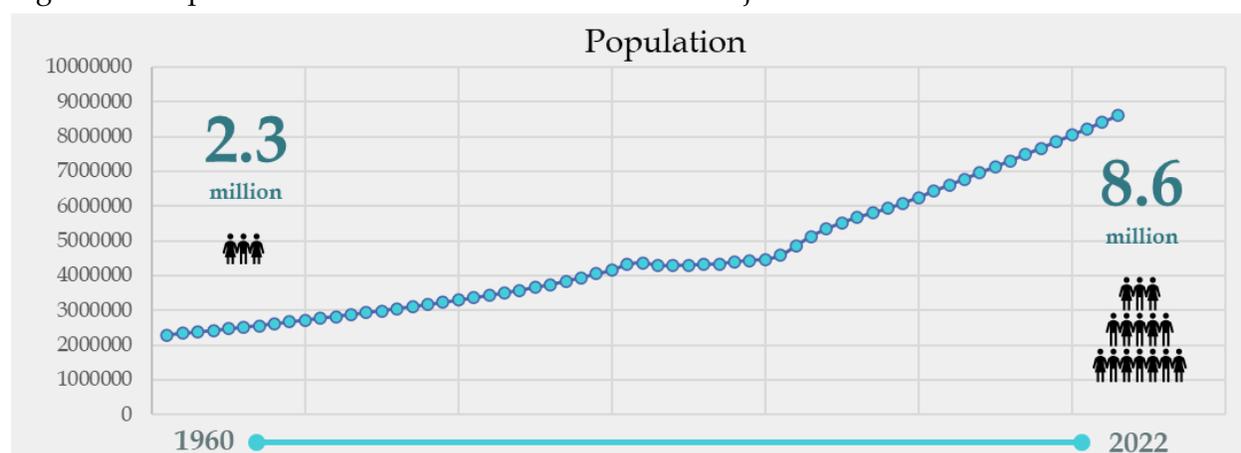
³ <https://www.cia.gov/the-world-factbook/countries/sierra-leone/#geography>

⁴ Blinker, Linda (September 2006). Country Environment Profile (CEP) Sierra Leone

2.1.2 Demographics

12. The country is experiencing a population surge driven by high birth rates and increasing life expectancy. The country's population is approximately 8.6 million (2022), with an even split of the proportions of males and females.⁵ While a brief decline in population was experienced from 1990 (4.4 million), there has been a surge in population growth from the year 2000 (4.5 million). The surge has been at an intercensal growth rate of 2.2 percent and an absolute population increase of 48 percent (see Figure 2.1). The high population growth is attributed to a relatively high fertility rate and an increasing life expectancy. The average woman in Sierra Leone has 4 children in 2021.⁶ Coupled with an increasing life expectancy (45 in 2000 to 60 in 2020) explains the surge in population.⁷

Figure 2.1: Population in Sierra Leone Estimated and Projected.



Source: World Bank (n.d)

13. The population structure of Sierra Leone is characterized as youthful and predominantly rural. The median age of the population of Sierra Leone is 19 years. It is estimated that 44 percent of the population lives in urban areas, with an annual urban population growth rate of 3.2 percent in 2022. Among the urban population, it is estimated that 51 percent live in slums.

2.2 Governance structure

14. The country is divided into three spheres of government: national government, local councils, and chiefdom councils. The national government is responsible for making laws and overseeing the country's overall administration, while the Local councils are responsible for providing services. Chiefdom councils are traditional councils responsible for settling disputes

⁵ <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=SL>

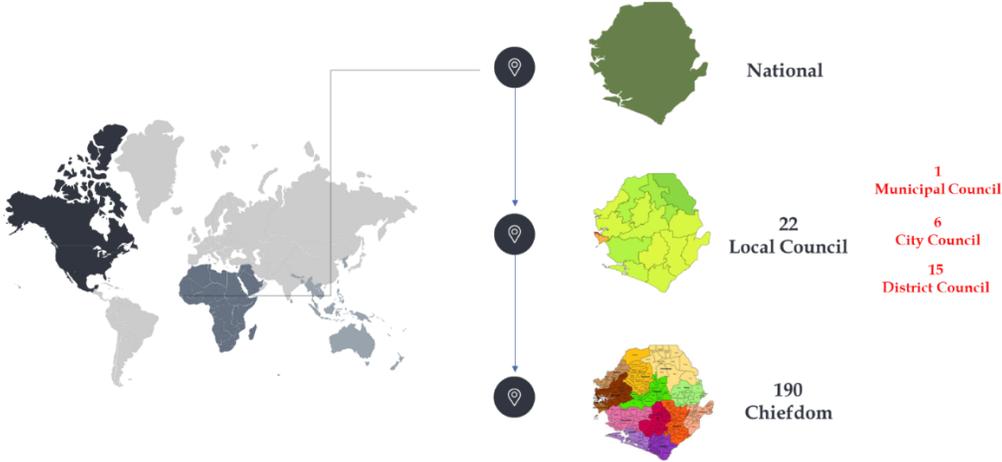
⁶ <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=SL&type=shaded>

⁷ <https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=SL&type=shaded>

and promoting development in rural areas. There are 190 chiefdom councils in Sierra Leone, each headed by a Paramount Chief.

15. Service responsibility at the local council takes the shape of a single-tier local self-government. Since 2018, there have been 22 local councils, comprising six city councils, one municipal council, and 15 district councils, predominantly in rural areas (Figure 2.2). In terms of administrative organization, the country is divided into four provinces (the Northern, North-West, Southern, and Eastern Provinces) and a region known as the Western Area. Local councils’ boundaries are delimited within provinces. A rural council governs the Western Area, and a city council governs Freetown, the country’s capital.⁸

Figure 2.2: The political-administrative structure of Sierra Leone



Source: Based on SNG 2023.

2.3 Poverty, Inequality, and Human Capital Development in Sierra Leone

16. Since the end of the civil war in 2002, the country has been progressively growing economically. This section discusses the macroeconomic environment of Sierra Leone, the state of poverty, inequality, and its geographic distribution. The section concludes with an elaboration of Sierra Leone’s human capital and human development.

2.3.1 Macroeconomic Background

17. Sierra Leone's economic growth is characterized as inconsistent, with periods of rapid expansion followed by sharp contractions. In 2017, Sierra Leone's Gross Domestic Product (GDP) growth rate was a modest 3.7 percent, down from 6.1 percent in 2016. This slowdown was partly due to a decline in mining output. The country’s economy is characterized by a large traditional agriculture sector and a small but important mining sector, leading to frequent boom-

⁸[https://www.sng-wofi.org/country-profiles/sierra_leone.html#:~:text=Sierra%20Leone%20is%20a%20unitary,members%20of%20parliament%20\(MPs\).](https://www.sng-wofi.org/country-profiles/sierra_leone.html#:~:text=Sierra%20Leone%20is%20a%20unitary,members%20of%20parliament%20(MPs).)

and-bust cycles.⁹ In the post-war era, agriculture initially fueled Sierra Leone's economic recovery. However, from 2010 onwards, the mining industry took over as the driving force of growth. Overdependence on mining has made the economy vulnerable to fluctuations in global mineral demand. Notwithstanding, agriculture remained the largest sector of the economy, contributing 55.1 percent of GDP. Services and manufacturing accounted for 36.6 percent and 9.3 percent of GDP, respectively.

18. Amidst macroeconomic economic challenges, Sierra Leone's economy is projected to grow. While the country's GDP reached \$3 billion in 2019, the country's Gross National Income (GNI) per capita remained a low \$580. With a GDP per capita of US\$ 509 in 2020, the country ranks sixth from the bottom among 27 low-income countries globally. Meanwhile, Sierra Leone's economy has also been adversely affected by nationwide health crises such as Ebola (2014-2016) and, recently, COVID-19.¹⁰ Amidst the economic challenges, there are prospects. The economy is projected to grow at 3.8 percent on average during 2023–25, below its long-term average, while the fiscal deficit is projected to decline below 3 percent of GDP by 2025.

2.3.2 Poverty and inequality status quo

19. More than half of Sierra Leone's population – and three-quarters of the population in rural areas – still lives in poverty (World Bank 2022). In 2018, 57 percent of Sierra Leone's population was poor, thus, they lived below the updated national poverty line of Le 3.921 million (USD 494) per adult equivalent (World Bank 2022). The government's measure for extreme poverty, defined as the share of the population unable to meet even minimum food needs, estimated to cost Le 2.125 million (USD\$ 268), shows that in 2018, about 13 percent of the population lived in extreme poverty. Poverty rates in rural areas (74 percent) are more than twice those in urban areas (35 percent).¹¹ Extreme poverty rates are even more disparate, at 20 percent in rural areas and 4 percent in urban areas (World Bank 2022).

20. Underscoring the poverty situation is a rising inequality. Sierra Leone's Gini index rose from 34 to 36 between 2011 and 2018.¹² Poverty in Sierra Leone has a strong spatial component. While 60 percent of the rural population lives in poverty, 20 percent of the urban population is poor. Poverty is highest in the North region and lowest in the West. Greater Freetown has a significantly lower poverty rate than elsewhere, including other urban areas.¹³

21. Extreme poverty is predominant in the East, with 18.1 percent of the people unable to meet their food needs. This is followed by the North (12.1 percent) and the South (8.4 percent). The West (1.7 percent) has the lowest proportion of people who cannot meet their food needs. On

⁹ <https://www.thesierraleonetelegraph.com/wp-content/uploads/2022/12/Sierra-Leone-Poverty-Assessment-FINAL.pdf>

¹⁰ <https://www.thesierraleonetelegraph.com/wp-content/uploads/2022/12/Sierra-Leone-Poverty-Assessment-FINAL.pdf>

¹¹ Given the significantly lower rates of poverty in the capital city and its environs, the value disaggregates Greater Freetown from other urban centers, as the poverty rate is 23 percent in Greater Freetown and 49 percent in other urban areas.

¹² <https://data.worldbank.org/indicator/SI.POV.GINI?locations=SL&type=shaded>

¹³ https://databankfiles.worldbank.org/public/ddpext/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/SM2020/Global_POVEQ_SLE.pdf

average, the poor in Sierra Leone can only meet 69.8 percent of their basic needs and 89.2 percent of their food needs (Table 2.1). Those in the Western Area, especially Freetown, can meet 77.5 percent of their basic needs, while those in the rural areas can meet 67.3 percent of their basic needs (South 72 percent; North 68.2 percent; East 65.7 percent).

Table 2.1: Absolute Poverty and Extreme Poverty, Sierra Leone (January – June 2018)

	Absolute poverty			Extreme poverty		
	Incidence	Gap	Severity	Incidence	Gap	Severity
East	60.9	35.3	16.2	18.1	21.4	6.7
Freetown	18.5	22.5	8.2	1.7	24.9	9.3
North	67.3	31.8	13.2	12.1	18.5	5.4
Other Urban	41.2	25.8	9.1	4.1	14.5	3.6
Rural	72.4	32.7	13.9	15.3	19.2	5.7
Sierra Leone	57.0	31.2	12.9	10.8	19.0	5.6
South	66.8	28.0	10.2	8.4	13.9	3.3
West	18.0	22.5	8.2	1.7	24.9	9.3

Source: GoSL 2019b using calculations based on SLIHS 2018 (Jan-June)

22. It is estimated that 66 percent of the children living in Sierra Leone experience at least one deprivation and are, therefore, multidimensionally poor (GoSL 2019). According to the GoSL (2019), over 8 children out of 10 are poor in Koinadugu, Pujehun, Moyamba, Bonthe and Tonkolili. However, the Western area/rural (45 percent) and the Western area/urban (32 percent) are the districts where child poverty is the lowest. This poverty belt goes from Koinadugu in the North to Bonthe and Pujehun in the South through Moyamba and Tonkolili.

23. The Ebola and COVID-19 pandemic have had a disruptive impact on Sierra Leone's trajectory of poverty reduction and reinforces the dire need to address gaps in WASH. According to the high-frequency COVID-19 Impact Monitoring Survey data, about six in ten households report a decline in income, with income from self-employment being the hardest hit.¹⁴

2.3.3 Human Capital and Development in Sierra Leone

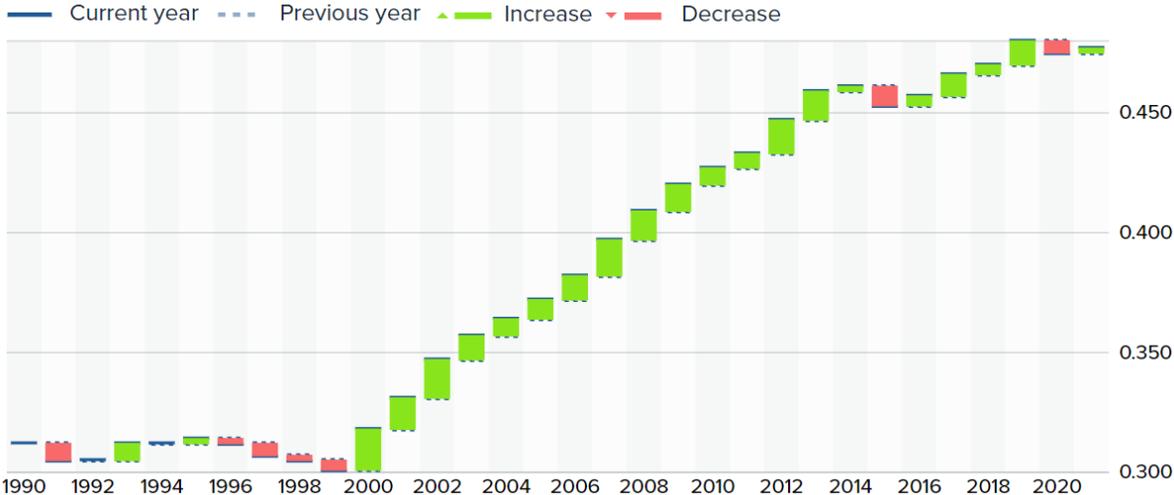
24. Sierra Leone is a fragile state with a history of civil war (1991-2003) that severely disrupted its human capital and human development, but there has been significant improvement with 52.9 percent HDI change (1990 to 2021). In 1997, 50 percent of the population was displaced, rebels controlled more than half of the territory, and Sierra Leone placed last in the UNDP Human Development Index. In recent developments, Sierra Leone's HDI value for 2021 is 0.477 (Figure 2.3). Between 1990 and 2021, Sierra Leone's HDI value changed from 0.312 to 0.477, a change of 52.9 percent (UNDP 2022). This put the country in the low human development category, positioning it at 181 out of 191 countries and territories. Between 1990 and

¹⁴https://databankfiles.worldbank.org/public/ddpext/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/SM2020/Global_POVEQ_SLE.pdf

2021, Sierra Leone's life expectancy at birth increased by 16 years. Mean years of schooling changed by 2.7 years and expected years of schooling changed by 5.1 years. Sierra Leone's GNI per capita also increased by about 8.1 percent between 1990 and 2021.

25. Considering human development in terms of gender, Sierra Leone is in the top 10 most gender-unequal countries. The 2021 female HDI value for Sierra Leone is 0.452, in contrast with 0.506 for males, resulting in a Gender Development Index (GDI) value of 0.893 (UNDP 2022).¹⁵ The GDI is based on the differences in human development index by gender. Sierra Leone is in the lowest quintile of countries (most unequal development). In the 2021 Gender Inequality Index (based on reproductive health, empowerment, and labor market), Sierra Leone ranks 162 out of 170 countries and is thus in the top 10 most gender-unequal countries.

Figure 2.3 Trends in Sierra Leone’s HDI 1990 - 2021



Source: UNDP 2022

26. Regarding human capital development, Sierra Leone performs below average on most indicators that make up the World Bank’s Human Capital Index (HCI) compared with countries of the same region and income level. Overall, Sierra Leone scores 0.36 on the human capital index. A child born in Sierra Leone today will be 36 percent as productive when she grows up as she could be if she enjoyed complete education and full health. This is below the average for the Sub-Saharan Africa region (0.40) and low-income countries overall (World Bank, 2020). Table 2.2 shows the components of the HCI and how Sierra Leone performs across these indicators overall and for girls and boys separately.

¹⁵ <https://hdr.undp.org/data-center/specific-country-data#/countries/SLE>

Table 2.2 HCI by Gender and Socio-economic Group

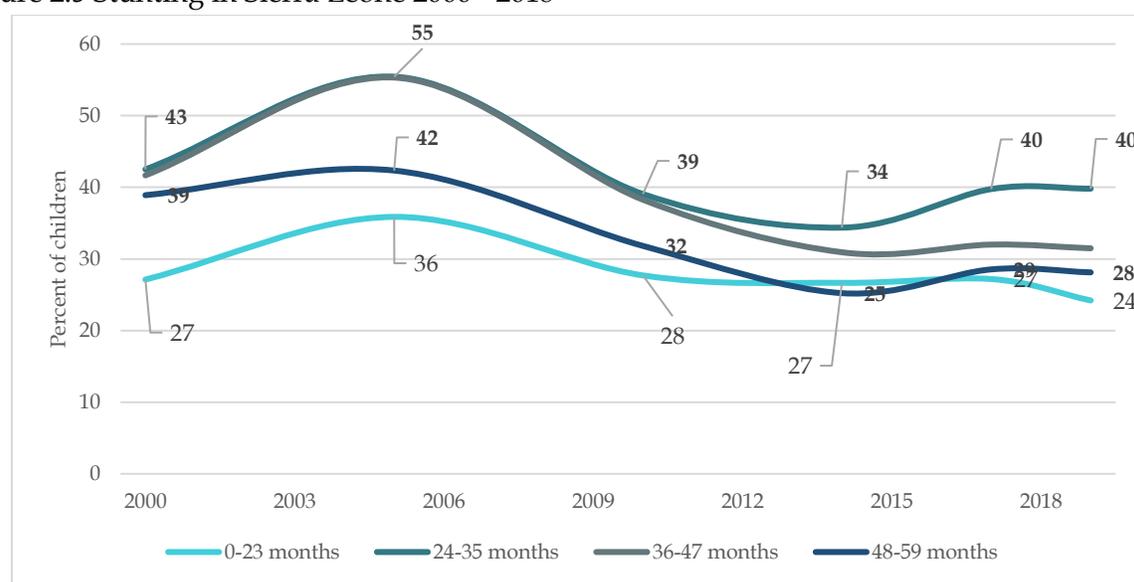
Component	Boys	Girls	Overall
HCI	0.36	0.37	0.36
Survival to Age 5	0.89	0.90	0.89
Expected Years of School	9.5	9.7	9.6
Harmonized Test Scores	318	314	316
Learning-adjusted Years of School	4.8	4.9	4.9
Adult Survival Rate	0.61	0.65	0.63
Not Stunted Rate	0.68	0.73	0.71

Notes: The HCI measures the amount of human capital that a child born today can expect to attain by age 18. It conveys the productivity of the next generation of workers compared to a benchmark of complete education and full health. Worldwide, a child born in 2020 can expect, on average, to be 56 percent as productive as she could be when she grows up. The 2020 HCI is based on data representing the status of countries pre-COVID-19.

2.3.4 Children and Stunting in Sierra Leone

27. Malnutrition is a severe problem in Sierra Leone, and progress in reducing stunting in children under five, has stagnated since Ebola in 2014 (Figure 2.5). Nearly half a million children under five are stunted, meaning their growth has been impaired due to chronic malnutrition. Additionally, around 30,000 children suffer from acute malnutrition, putting them at immediate risk of death (UNICEF 2019). Around 29 percent of children under 5 years are stunted, and gains in better nutrition have stalled in the past decade. In 2019, 30 percent of children under 5 in Sierra Leone were stunted, and an estimated 7 percent of children under five experienced diarrhea (DHS 2019).

Figure 2.5 Stunting in Sierra Leone 2000 - 2018



Source: IFPRI (2022) Sierra Leone Nutrition Profiles

2.4 Poverty and WASH Linkages in Sierra Leone

28. In Sierra Leone, poor WASH undermines investments in development, poverty reduction and growth. Two decades after the end of the civil war, Sierra Leone struggles to realize its human and economic potential. The cost of the civil war from 1991 to 2002 was a 24 percent reduction in per capita GDP (Costalli, Moretti, & Pischedda, 2014), and it left the country with most of its infrastructure destroyed and the economy in a poor state.

29. While some welfare gains have been made since 2002, the 2014-2016 Ebola outbreak and COVID-19 were destructive. The Ebola outbreak cost about \$53.19 billion globally, with the majority borne by Sierra Leone, Gabon and Liberia (Huber, Finelli, & Stevens, 2018). Compounded by the recent COVID-19 crisis, Sierra Leone's progress has been stalled, with GDP per capita reduced by 4 percent in 2020 (World Bank, n.d.). In 2021, the GDP per capita of Sierra Leone was US\$ 480, the fifth lowest in the world (World Bank, n.d). Both current poverty (57 percent) and food insecurity are high, with a healthy diet out of reach for 89 percent of the population (FAO, IFAD, UNICEF, WFP and WHO, 2022; Statistics Sierra Leone, 2019).

30. Both low human capital development as well as poor access to WASH, make progress in welfare gains challenging. Based on the World Bank's human capital index, children today in Sierra Leone are expected to only realize 36 percent of their full productivity as adults, which is lower than the average for Sub-Saharan Africa and slightly lower than the average for Low-income countries (World Bank, 2022). Of the 7 components considered in the index, Sierra Leone scores among the lowest 10 countries in the probability of surviving to age 5, in the adult survival rate (percentage of 15-year-olds surviving until age 60) and in harmonized test scores. The first two components are closely tied to water, sanitation and hygiene infrastructure and practices.

31. The impacts of poor WASH are multifaceted but ultimately affect the wellbeing and productivity of the population. The main impacts of inadequate WASH are on health, educational outcomes, and the environment, while also affecting the economy's overall production, the dignity of inhabitants and the prevalence of violence. The current state of WASH infrastructure in Sierra Leone not only negatively affects current living standards but also hinders any future economic progress. Decisive and timely action is needed to halt the further deterioration of the environment, especially of bodies of water, and to address the costs to Sierra Leonean welfare and economic development from poor WASH. The impacts of climate change only add urgency to the task. To this end, well-targeted and well-designed policies focused on the most vulnerable are key for investment in the sector to reduce poverty and induce growth with minimal impacts on climate. Any policy discussion should consider hard and soft adaptation measures, empower undervalued populations, and ensure all urbanization occurs as planned (Dickin, Bayoumi, Giné, Andersson, & Jiménez, 2020; World Bank, 2022).

Chapter 3

Water Resources and WASH in Sierra Leone

32. This section provides a comprehensive overview of water resources and WASH status in Sierra Leone. In addition to surface water and groundwater information, it highlights data on access to drinking water, sanitation, and hygiene. The section analyses the trend of WASH with consideration for urban-rural variation and highlights the key gaps in the sector.

Key Takeaways

Despite its seemingly abundant water resources, Sierra Leone faces a growing water scarcity crisis.

The NWRMA is relatively young, requiring intensive capacity development support. The lack of adequate capacity in WRM contributed to the inefficient management of the water resource, which in turn is causing scarcity in abundance.

While the proportions of access to safely managed and basic drinking water have increased marginally, there is a significant number of people (3.9 million people) resorting to limited, unimproved and surface water sources.

The sanitation sector is the most lagging, undermining human capital and posing important public health risks with compounding water quality concerns. Close to 1 in 2 Sierra Leoneans do not have access to at least basic sanitation.

For both water supply and sanitation services, rural areas are worse off.

Despite well-known risks brought to light by the 2014-16 Ebola crisis, 70 percent of the population does not have access to handwashing facilities.

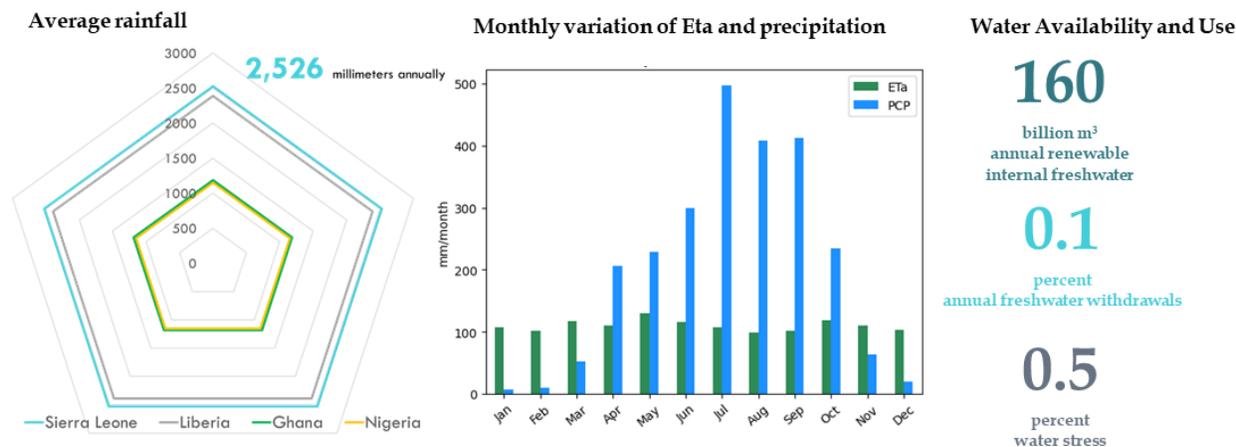
3.1 State of Water Resources in Sierra Leone

33. Sierra Leone is considered to have abundant water resources (NWRMA 2019). The country receives an average of 2,526 millimeters of rain annually, translating to a potential 80-100 cubic kilometers of water per year (World Bank 2020). This is the highest in the West Africa sub-region. Sierra Leone can be divided into 12 river basins, of which five are shared with Guinea and two with Liberia (Water Action Hub 2020). Estimates place internal renewable water resources at around 160 cubic kilometers per year, with surface water contributing the vast majority (150 cubic kilometers per year). Seasonal fluctuations are significant, with only 11-17 percent of annual river discharge occurring during the dry season (December-April), reaching its minimum in April. This results in scarcity during the dry season. Internally generated groundwater resources are

estimated at 50 cubic kilometers per year, with a significant portion (40 cubic kilometers per year) potentially representing an overlap between surface water and groundwater. (Water Action Hub 2020).

34. Despite its abundant water resources, Sierra Leone faces a growing economic water scarcity crisis. The country receives an average of 2,526 millimeters of rain annually, translating to a potential 80-100 cubic kilometers of water per year. This is the highest in the West Africa sub-region. However, there is a high rainfall variability, resulting in scarcity during the dry season (Figure 3.1). This implies that the country will need to increase its storage capacity. In addition, Sierra Leone has approximately 160 billion cubic meters of annual renewable water (Figure 3.1). Despite this abundance and being the least water stress country in the sub-region (0.5 percent), actual utilization of the water resources reflects economic scarcity at a withdrawal rate of a mere 0.1 percent (World Bank 2020).

Figure 3.1 Water resource and use in Sierra Leone



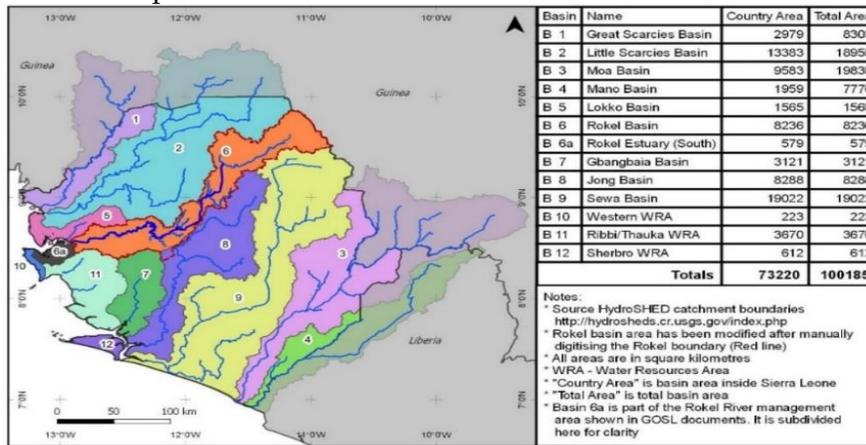
Notes: The “average rainfall” is based on data from the World Bank (2020) and compares the annual precipitation in Sierra Leone to Liberia, Ghana and Nigeria. The “monthly variation of Eta (refers to the water that is lost to the atmosphere through the vaporization process) and precipitation” shows a contrast in water availability in peak and off-seasons.¹⁶ The “water availability and use” based on the World Bank (2020) shows the extent of annual renewable water, the rate of withdrawal and the country’s water stress index.

35. The surface water network in Sierra Leone is dominated by four major rivers – Little Scarcies, Rokel, Jong, and Sewa – flowing northeast to southwest and draining most of the landmass (Figure 3.2). The Rokel, originating in the Guinean highlands, claims the longest river (424 km), while the Sewa boasts the largest basin (19,022 km²). A network of additional rivers, including Moa, Waanje, and Mano, contributes to the country's surface water resources. Importantly, four of these basins – Great Scarcies, Little Scarcies, Moa, and Mano – are shared

¹⁶ <https://wateraccounting.app/media/18f3083b-8489-4fea-a69e-c2de8dbae007/index.html>

with neighboring Guinea and Liberia, highlighting the transboundary nature of Sierra Leone's water resources.

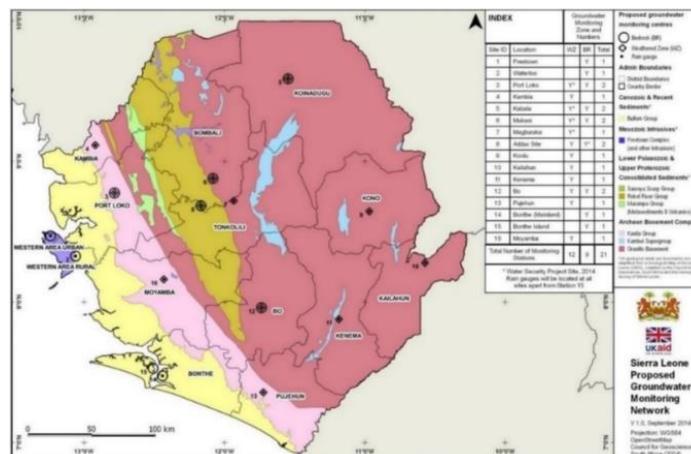
Figure 3.2 River basin map of Sierra Leone



Source: GoSL 2019 citing MWR Water Security Project. P.10

36. Groundwater is a significant source of safe drinking water in Sierra Leone, although very little information on the aquifers' potential is known. Between 2016 and 2017, Hydro Nova (USA) conducted an extensive survey of all existing hydrogeological data in Sierra Leone. The project indicated that the majority of the 28,900 wells from the WASH baseline national survey are located in unconfined aquifers of limited extent and of three different types: perched, along with large riverbanks, porous, widely distributed across the country and along the coast and fractured in the crystalline basement. The latter are generally deep and underlying the surface formation in the lateritic soils. The water table flows from NE to SW following the main watercourses and generally correlates to the topography. The crystalline basement is the common layer at the bottom of the aquifer at a depth of 15 - 80 m. Well yield usually is in the range of 0.3 - 1.5 l/s and exceptionally 3 - 6 l/s. Transmissivity is also low (2 - 3 m²/d).

Figure 3.3 Geology and proposed groundwater monitoring network

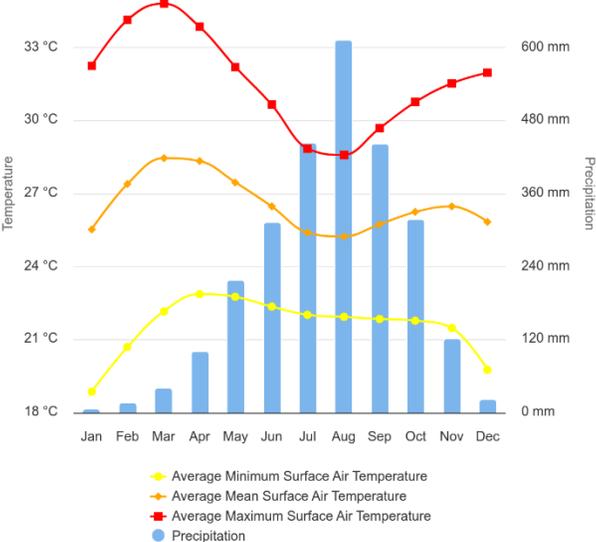


Source: GoSL 2019 citing MWR Water Security Project p.11

37. **Sierra Leone is prone to natural disasters, mainly recurrent floods, drought, and landslides, which are likely to be exacerbated by climate change.** The Notre Dame Global Adaption Index ranks Sierra Leone 158 out of 182 countries and territories in terms of vulnerability to climate change.¹⁷ Climate risks coupled with population growth, and urbanization that outweigh available infrastructure for water management exacerbate water scarcity in Sierra Leone.

38. **In the last 20 years, four major floods have affected over 220,000 people and caused severe economic damage (World Bank 2017).** Exposure to natural disasters is likely to worsen in the coming years, given the low level of Sierra Leone’s development and capacity to cope with extreme events (World Bank 2017). Sierra Leone is particularly exposed to the impact of rainfall variability and the frequency and intensity of extreme weather events, including heat waves (Figure 3.4) and heavy precipitation events. On one hand, heavy rainfall following dry spells often results in extensive flooding throughout the country. On the other hand, it is estimated that 78.1 percent of the country’s land area is under drought (UNCCD 2022).¹⁸

Figure 3.4 Observed Annual Average Mean Surface Air Temperature, 1901-2022



Source: World Bank 2024

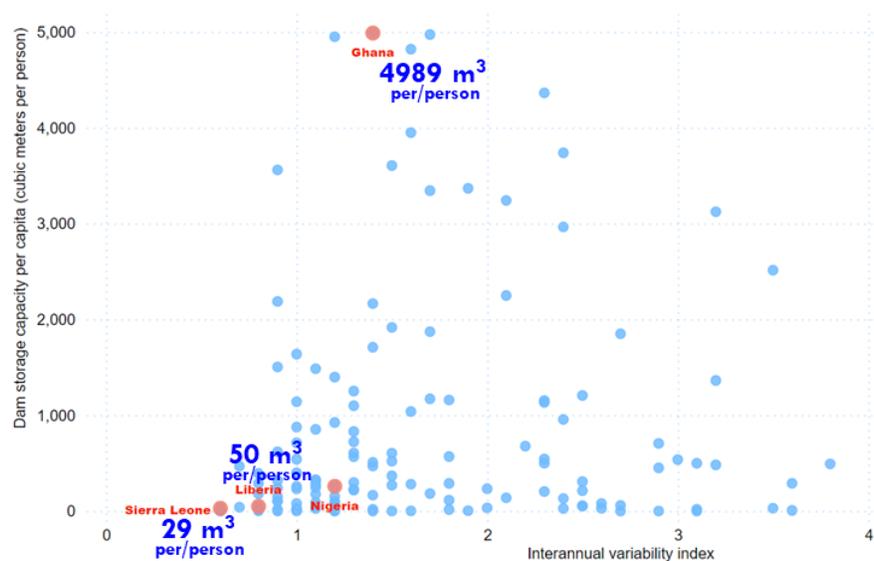
39. **To ensure water security, Sierra Leone must adopt a holistic approach.** This should encompass water storage (low dam capacity per capita (Figure 3.5)), demand management, watershed restoration, technological innovation, robust governance, and collaborative partnerships. The country is prone to drying rivers, declining groundwater, and parched agricultural lands. This highlights the critical need for robust water resource management

¹⁷ Notre Dame Global Adaptation Index (<http://index.gain.org/ranking/vulnerability>).

¹⁸ The total land area under drought is calculated as the sum of the reported area under all drought intensity classes (mild, moderate, severe and extreme), and it is also expressed as a proportion of the total land area of the country.

institutions and strategies to address uneven distribution and seasonal variations in accessibility, ensuring equitable and sustainable water access for all.

Figure 3.5 Dam capacity per capita versus interannual variability



Source: World Bank CLEAR water dashboard

40. However, the NWRMA is relatively young, requiring intensive capacity development support. The lack of adequate capacity in WRM contributed to inefficient water resource management, causing the scarcity in abundance. The agency had developed a strategic sector development plan but could implement only 30 percent at the end of the planning period. Gaps in policies and regulations to provide direction on water use fees and improve efficiency; water resources data collection and monitoring capacity limitation both in terms of staffing and equipment to monitor water resources quantity and quality, and information management systems to collect and provide real-time data for planning and to monitoring the compatibility and tradeoffs between the various water user sectors for appropriate allocation requires attention.

3.2 Measuring the state of WASH.

41. The SDGs expand the operationalization of access to WASH to include an aspiration for ‘safely managed’ levels of service that include provisions for quality and availability. Specifically, Target 6.1 of the SDGs reads: “by 2030, achieve universal and equitable access to safe and affordable drinking water for all”, and Target 6.2 reads: “by 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.”¹⁹ This section details the status of WASH access in Sierra Leone using the JMP SDG service ladder (see Appendix 1).

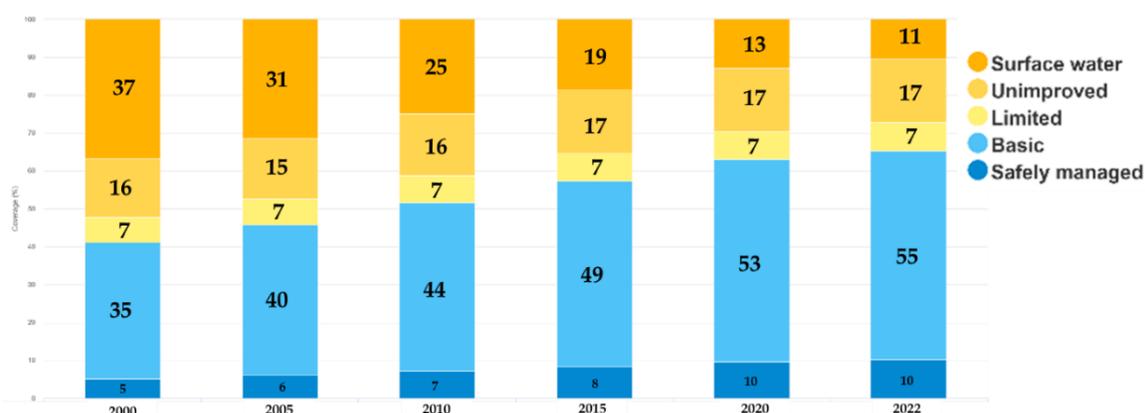
¹⁹ SDG 6 has eight global targets and eleven indicators, covering the full spectrum of access to water services, including drinking WASH, proper wastewater management, efficiency of the water sector, integrated water resources management and protection of aquatic ecosystems. Targets 6.1 and 6.2 focus on access to household infrastructure for WASH.

3.3 Water service delivery

42. In the West African region, Sierra Leone is ranked second after Liberia in volume of actual renewable water availability, with groundwater as the main water source in Sierra Leone. Internally, renewable water resources are over 29,000 km³ per capita per year, which is six times the average for Africa. Water as a natural resource in Sierra Leone is estimated to be 160 km³ of total mean annual runoff from the nine river basins (AfDB 2022). Rainwater also accounts for a significant proportion of water resources and is often available in the rainy season between late May and late October, with peak periods from June to August. Annual rainfall range is from 5000 mm to 1800 mm. Surface water resources include rivers, lakes, and wetlands. The river system is divided into 12 sub-basins with a total basin area of 100,185 km² (AfDB 2022).

43. Amidst the abundance, most Sierra Leoneans cannot access safely managed WASH. Safely managed drinking water is out of reach for 89 percent of the population, and 37 percent do not have access to even basic drinking water (JMP 2023). While the proportions of access to safely managed and basic drinking water have increased from 41 percent in 2000 to 65 percent in 2022, there is a significant number of people (3.9 million people) resorting to limited, unimproved, and surface water sources (See Figure 3.7). Besides the limited access to safely managed water (10 percent), from 2000 to 2022, there has not been any significant change in the proportions of the population using limited (7 percent) and unimproved water sources (17 percent).

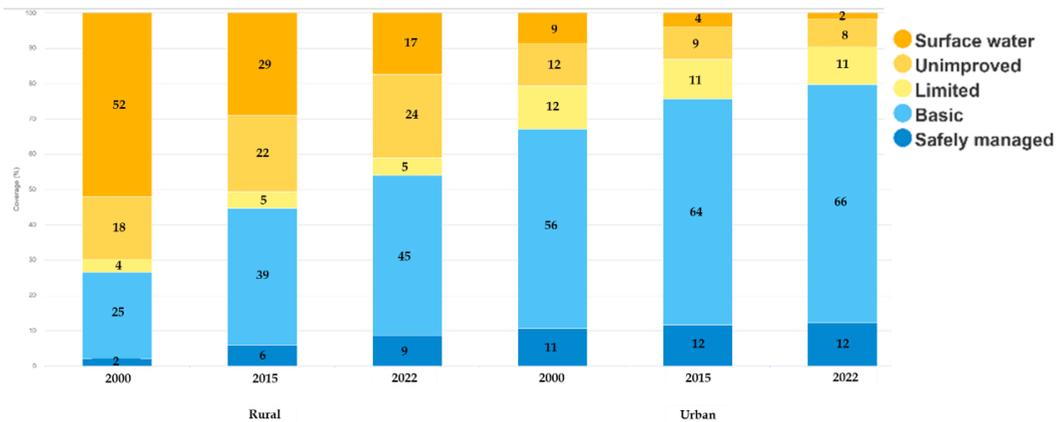
Figure 3.7 Nationwide Access to Drinking Water 2000 - 2022



Source: JMP 2023

44. There are also great disparities in access between rural and urban areas. While urban access to safely managed and basic water is at 80 percent, that of rural is at 54 percent (Figure 3.2). There is an evident improvement in rural access to water, with the proportion of the population resorting to surface water reducing from 52 percent in 2000 to 17 percent in 2022. That of the urban has also reduced from 9 percent in 2000 to 2 percent in 2022 (Figure 3.8). However, significant improvements are needed to achieve the SDG goal of universal access.

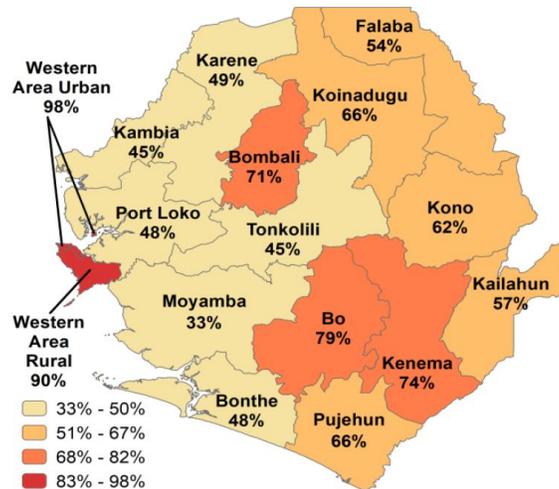
Figure 3.8 Urban versus Rural Access to Drinking Water 2000 - 2022



Source: JMP 2023

45. Access to drinking water from an improved source (provided either water is on the premises or round-trip collection time is 30 minutes or less) is more pronounced in the Western parts of Sierra Leone compared to the East. (Figure 3.9). The Bo district has the highest access at 79 percent, while Moyamba has the lowest at 33 percent.

Figure 3.9 Improved water source by district, percentage of households with improved source of drinking water 2019

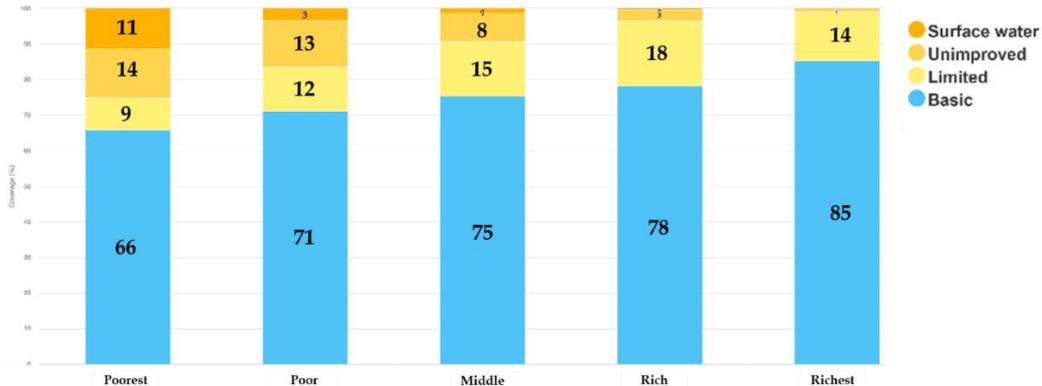


Source DHS 2019 p.10

46. Additionally, there is considerable inequality considering water supply in planned and unplanned settlements and the poor quantile in urban areas. The poorest Sierra Leoneans in urban areas have 66 percent access to basic water, while this is 85 percent for the richest (Figure 3.10). The access to drinking water in unplanned settlements of Freetown is very negligible. However, out of the existing improved water sources, an estimated 28 to 30 percent are not functional at a given time or not available when needed due to minor and /or major breakdowns.

Water contamination is a serious concern. It is estimated that 85 percent of drinking water from improved sources (at source and point of use) is contaminated. A 2022 study in Freetown found all water points (15 standpipes and 5 wells) contaminated with *E. coli*. It is reported that 95 percent of improved water sources are being contaminated due to limited knowledge of the population on WASH (Sesay et al. 2022).

Figure 3.10 Inequality in Access to Drinking Water in Urban Areas 2017

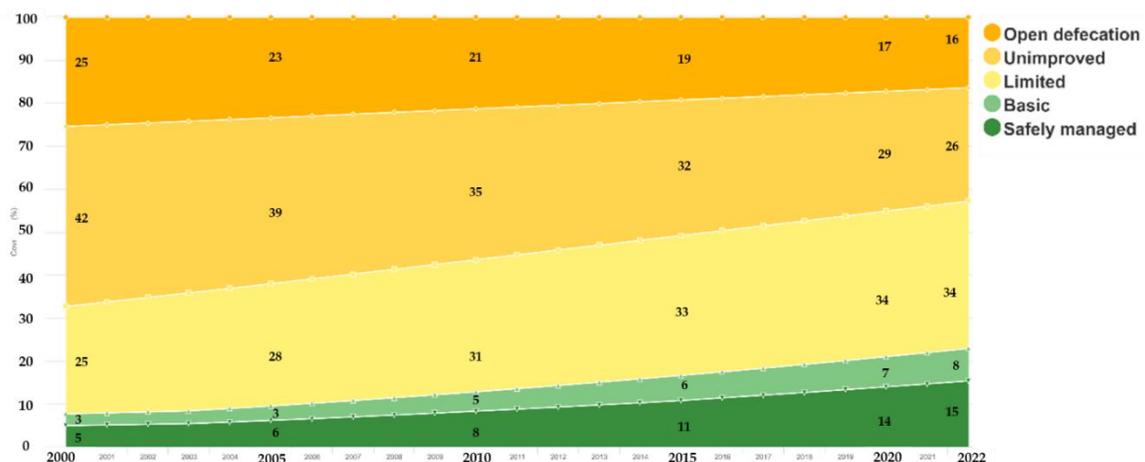


Source: JMP 2023

3.4 Sanitation service delivery

47. **Access to safely manage and basic sanitation could be much higher in Sierra Leone.** While open defecation rates reduced from 25 percent in 2000 to 16 percent in 2022, the population using unimproved sanitation is still high (26 percent). Only 23 percent of the population can access safely managed and basic sanitation, and 34 percent have limited sanitation (See Figure 3.11). For those with access to improved sanitation, the majority (49 percent) use latrines, while a limited number of the population use septic tanks (7 percent) and only one percent in the cities have access to a sewer system (Figure 3.12).

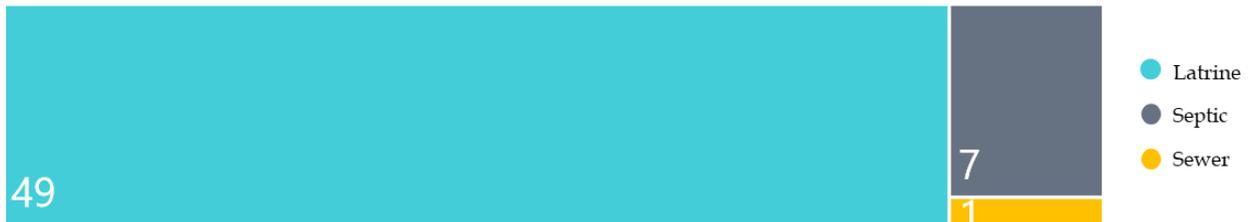
Figure 3.11 Nationwide Access to Sanitation 2000 - 2022



Source: JMP 2023

48. There is limited sewerage treatment, with the majority disposing by onsite manual emptying in waterways and oceans without further treatment. In Freetown, an estimated 336,440 m³ of fecal sludge is generated annually by households in planned and unplanned dwellings, public toilets and businesses and institutions, of which 21 percent is treated at Kingtom fecal sludge treatment plant, the only one in Sierra Leone. The remaining 78 percent is disposed of by being buried onsite following manual emptying without transport to a designated treatment facility or discharged in waterways or the ocean without further treatment. There is an urgent need to increase the capacity of the treatment plant in Freetown.

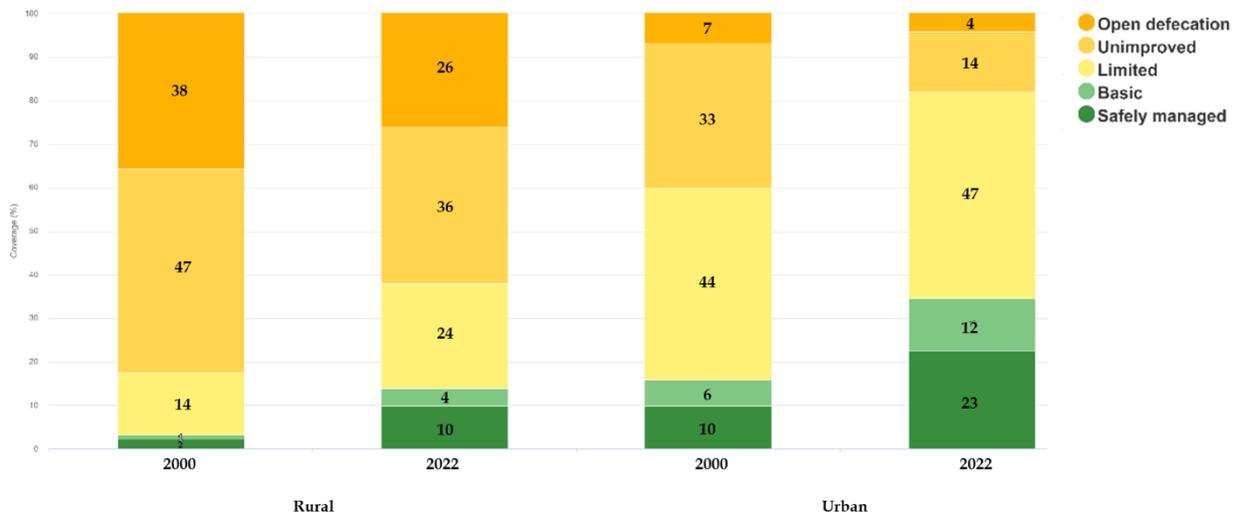
Figure 3.12 Sanitation by Facility Type 2022 (% out of those with access to improved sanitation)



Source: JMP 2023

49. The sanitation situation is equally bad in urban and rural areas but worse in the rural areas. In 2022, only 14 percent of the rural population had access to basic and safely managed sanitation services, as against 35 percent in urban areas (Figure 3.13). Changes in access to adequate sanitation services have not been positively significant, as rural and urban access stood at 3 percent and 16 percent, respectively, in 2000.

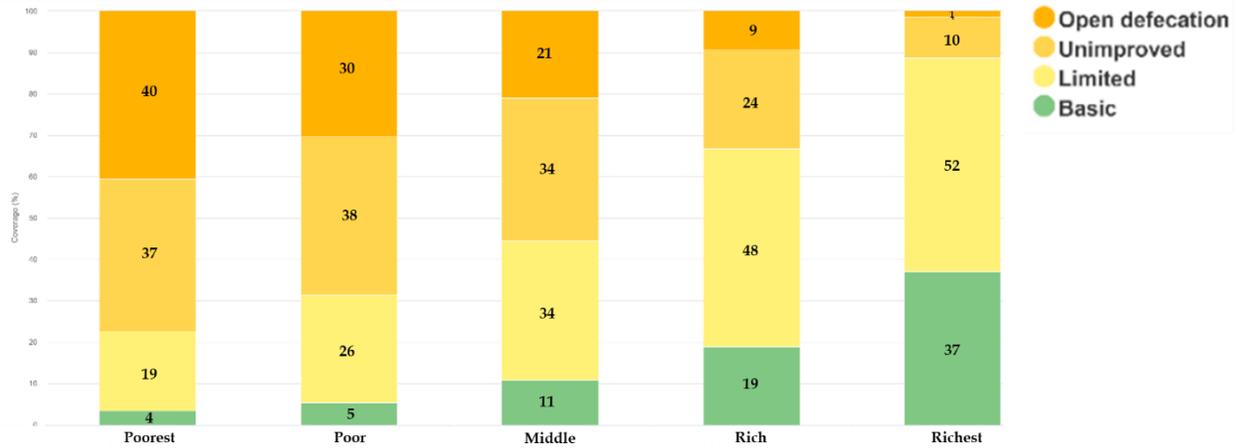
Figure 3.13 Urban versus Rural Access to Sanitation 2000 - 2022



Source: JMP 2023

50. There is also a sharp contrast in poverty levels and access to sanitation. The poorest had the highest use of open defecation at 40 percent, and this tapers down to 10 percent and 2 percent, respectively, for the rich and richest quantile (See figure 3.14)

Figure 3.14 Inequality in Access to Sanitation 2017

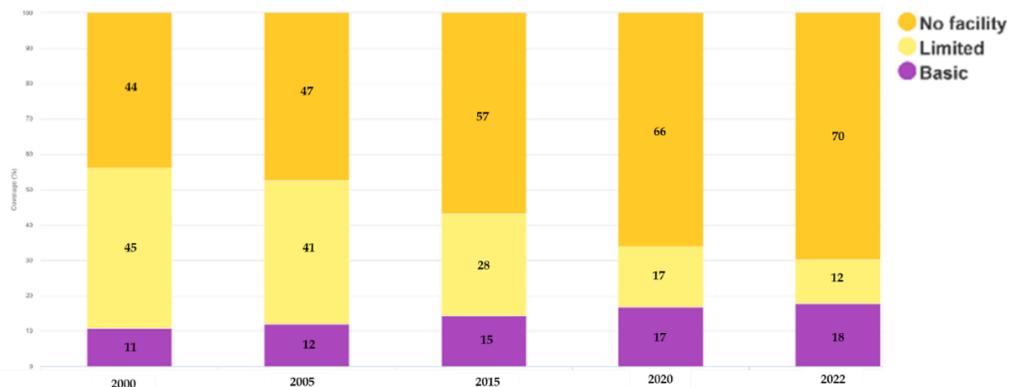


Source: JMP 2023

3.5 Hygiene facilities and services

51. The overall poor state of water and sanitation indicators, compounded with limited infrastructure, reflects inadequate hygiene practices. Approximately 5 million people in Sierra Leone (68 percent) practice unsafe hygiene (Sesay B.P, 2022). From Figure 3.15, basic hand washing facilities are out of reach for 79 percent of the population, with no significant improvement since 2005 (11 percent). Unlike access to water and sanitation which shows wide disparities in the urban and rural, the lack of adequate hygiene facilities is homogenous in both the urban and the rural at 15 and 21 percent, respectively, in 2022 (JMP 2023).

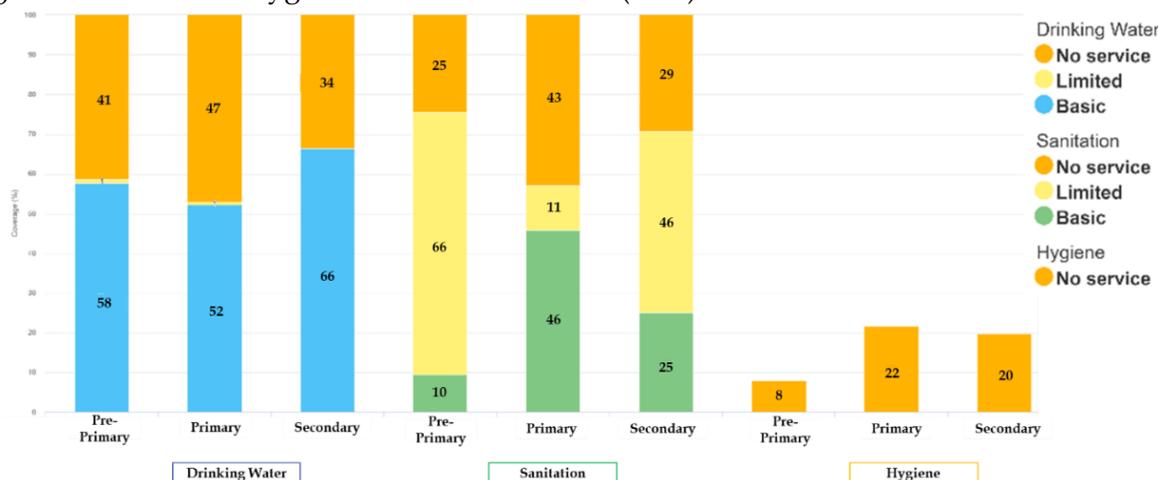
Figure 3.15 Access to Hygiene Facilities 2005-2022



Source: JMP 2023

52. Availability of basic sanitation facilities in schools is low, and this is worse in pre-primary schools. It is estimated that only 10 percent of pre-primary schools have access to basic sanitation facilities. Almost half of the primary schools have access to basic sanitation, but as much as 43 percent have no services. A similar picture is painted for secondary schools, where 25 percent have access to basic sanitation and 29 percent have no service at all (see Figure 3.16).

Figure 3.16 Access to Hygiene Facilities in Schools (2021)



Source: JMP 2023

3.6 Key issues in WRM and access to WASH in Sierra Leone

53. The NWRMA requires capacity development support. While NWRMA has a strategic plan, it faces challenges that hinder its effectiveness in managing water resources. These challenges include limited staffing capacity, limited capacity in implementing strategic plans, inadequate equipment for water resource data collection, monitoring, and management.

54. Sierra Leone will require significant improvement in WASH access to achieve SDG goal 6. While the proportions of access to safely managed and basic drinking water have increased from 41 percent in 2000 to 65 percent in 2022, there is a significant number of people (3.9 million people) resorting to limited, unimproved and surface water sources.

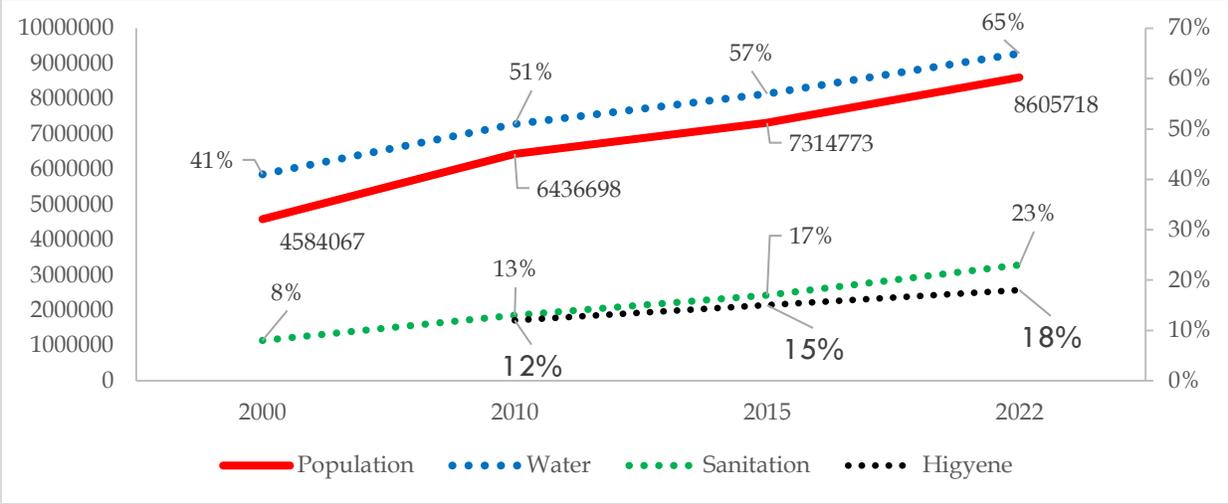
55. Sierra Leone faces a growing economic water scarcity due to limited water infrastructure in general, the poor management of water resources, and climate change. With limited infrastructure and preparedness, the country is particularly exposed to climate risks, including the impact of rainfall variability and the frequency and intensity of extreme weather events.

56. **Close to 1 in 2 Sierra Leoneans do not have access to at least basic sanitation.** Despite well-known risks brought to light by the 2014-16 Ebola crisis, the sanitation sector is the most lagging, undermining human capital and posing important public health risks with compounding water quality concerns.

57. **For both water supply and sanitation services, rural areas are worse off.** Only 10 percent of the rural population have access to safely managed sanitation, and 4 percent have access to basic sanitation services. Further, only 9 percent and 45 percent of rural dwellers have access to safely managed and basic water, respectively, while over 70 percent do not have access to hygiene facilities.

58. **A key challenge to WASH in Sierra Leone is that service level has not kept pace with population growth.** While the country’s population has approximately doubled between 2000 to 2020, improvement in WASH service levels (safely managed and basic services) have only increased marginally (see Figure 3.17) but not at the same rate as population growth and demand.

Figure 3.17 Population and trends in WASH access



Source: World Bank (n.d) and JMP 2023

Chapter 4

WASH Policies, Institutions, and Regulations in Sierra Leone

59. Addressing the challenge of WASH access and service delivery will require not only technical interventions but, more importantly, fixing the governance and institutional structures that can spearhead progress. The following sections assess the development and state of policies, institutions, and regulations in the WASH sector to unpack the governance constraints to service delivery to inform future sector interventions.

Key Takeaways

Sierra Leone has made important gains on the policy, institutional arrangement, and regulation fronts, but enforcement remains a challenge.

Due to institutional and regulatory setback, there is a high sector inefficiency, with GVWC reporting NRW of 60 percent and a collection efficiency rate of 73 percent in 2023.

There is persistent sector dependence on short-term projects/programs. Coupled with a lack of enforcement of a sector-wide visioning has led to the development of short-term projects/programs as quick reliefs to the sector challenges.

The WASH sector faces significant funding constraints. Despite projections for increased WASH budget allocation, external funding remains the primary source, with foreign funding accounting for over 70 percent of the WASH expenditure.

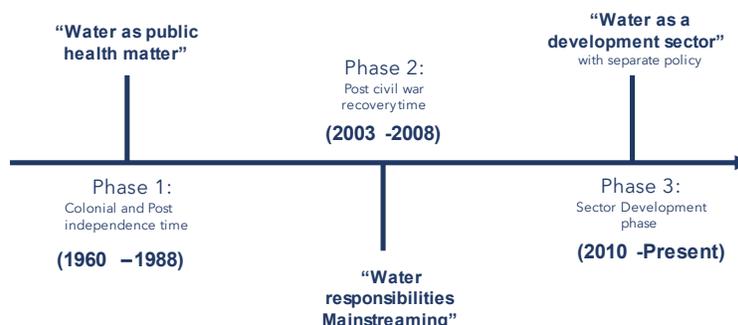
There is a lack of a dedicated budget disbursement line for WASH. While local governments have a mandate to provide WASH services, including urban sanitation, the absence of a specific budget line makes it difficult to track and understand total WASH spending, hindering accountability and transparency.

4.1 Policy and legal framework

60. Sierra Leone has undertaken commendable efforts to develop a robust WASH policy framework. The 2010 WASH policy was a foundational document to guide comprehensive sector development in the post-civil war era. However, significant advancements have been made since its promulgation, and new challenges, such as climate change and rapid urbanization, necessitate a re-evaluation of the policy's adequacy and effectiveness. The WASH legal and Policy Framework trajectory can be grouped into three distinct Phases as summaries in Figure 4.1. The

first phase reflects the colonial and post-independence time until the post-civil war recovery period in phase two and the sector development period in phase 3 (see Appendix 1).

Figure 4.1. Sierra Leone's historic development of water sector policies



4.1.1 Phase 1: “Water Supply as a public health matter”

61. During this period water was first considered a natural resource and embedded in land and forestry policy provisions. In 1960, the Crown Lands Ordinance (Act) was made to make Further and Better Provisions for the Management and Disposal of Crown Lands. The restriction to confer any right to any type of water was a strong foundation for the water sector. In paragraph (a), the Minister ordinance provided the power to the Minister to make grants of land but restricted any right to confer the water of any spring, river, lake, or stream other than such water as may be required for domestic purposes upon the land which is the subject of the grant; and in paragraph (b), restrictions on any right to transfer the foreshore or to the banks of any navigable water-way; or any mineral or to any mineral oil. An exception express provision to the contrary was required to decide on the water. This was a good step to safeguard water resources and prevent uncontrolled personal use.

62. In the same year (1960), a step further was made under the Public Health Ordinance (now Act). With this, water supply was recognized as a “public health matter” among many others, including drainage, water pollution, sanitation, hygiene and wholesomeness of food, the control of animals, and nuisances. This was a foundation to guide water supply practices and draw some responsibilities to deliver that public health matter. In 1988 Forestry Act was developed to deal with forest management with a provision on the protected areas for soil, water, flora, and fauna.

4.1.2 Phase 2: “Water responsibilities mainstreaming.”

63. While the attention to water was growing, its responsibilities and policy provisions were still mainstreamed through different legislations. In 2003, the first country strategic document (Vision 2025) was produced to guide the country's development after 11 years of civil. Vision 2025 considered the involvement of the users in the implementation and management of WASH infrastructures as a critical element for sustainability, hence encouraging the promotion

of active user participation in the rehabilitation and/or construction and operations and maintenance of WASH facilities. In 2004, the Local Government Council Act was ratified. The ratification led to devolving the regulation functions from MDAs to Local Councils, including water service provision.

64. In 2008, the Bumbuna Watershed Management Authority and the Bumbuna Conservation Act established the Bumbuna Watershed Management Authority. The Authority was conferred the mandate to coordinate sustainable land use and agriculture programs in an environmentally compatible manner in the Bumbuna Watershed; to promote environmental management and biodiversity conservation in the Bumbuna Conservation Area; to address environmental and social needs associated with the operation of the Bumbuna Hydroelectric Dam including, the physical protection and sustainability of the Bumbuna reservoir and to provide for other related matters. In the same year, the Environment Protection Agency Act 2008 established the Sierra Leone Environment Protection Agency with the mandate to effectively protect the environment and other related matters. The Agency shall, among other things, prescribe standards and guidelines relating to ambient air, water, and soil quality.

4.1.3 Phase 3: "Water as a development sector"

65. During this period, water and sanitation evolved into an independent development sector. This process was characterized by developing water sector-specific policy provisions. In 2010, the first National Water and Sanitation Policy was developed. The water and sanitation policy responded to Sierra Leone's specific need for integrated and cross-sectoral approaches to water management and development and the provision of safe and adequate water and sanitation facilities. The Water and Sanitation Policy 2010 advocated for (a) The fundamental human right of access to safe and adequate water to meet basic human needs; (b) Provision of education to improve hygiene practices and increased access to adequate sanitation facilities; (c) Careful management of water as a socially vital economic good to sustain economic growth and to reduce poverty; (d) A participatory approach that will help the conservation and protection of water resources in the country.

66. The development of water and sanitation as a development sector required specific regulatory provisions to guide equity and fair development. The Sierra Leone Electricity and Water Regulatory Commission Act 2011 was established to regulate the provision of electricity and water services among other development sectors. Under Section 62 of the EPA Act 2008, as amended in 2010, in 2012, the Environmental Regulations for the Minerals Sector were made, adding the standards for effluent wastewater to EPA mandates to regulate procedures for applying and granting an environmental license and prescribing environmental quality standards. The National Protected Area Authority and Conservation Trust Fund Act was established in the same period. The goal was to protect and conserve protected areas and ecosystems, including promoting knowledge and participation of local communities, schools and administrations in programs and services relating to water conservation in Protected Areas 'and buffer zones, among others.

67. The next step was developing the Poverty Reduction Strategy Paper (2013-2018) in 2013. Under Pillar 2, the strategy guides water resources management. Sierra Leone has rich water resources, but water is unavailable where and when needed. This strategy draws a foundation for integrated water resources management addressing human needs, ecosystems, and conservation, responding sustainably to the needs of society and the economy. Poverty Reduction Strategy Paper (2013-2018) highlights the need to balance infrastructure with institutional, regulatory and efficiency reforms to ensure the sustainable delivery of WASH services. Further, the strategy emphasizes calls for improved coordination and harmonization of WASH delivery approaches by state, non-governmental actors and development partners. After three years, in 2016, the Sierra Leone Local Content Agency Act was the first water-for-agriculture use policy document developed requesting water access to be made available to smallholder farmers to boost productivity.

68. In 2017, the National Water Resources Management Agency (NWRMA) Act was developed, to promote equitable, beneficial, efficient, and sustainable use and management of the country's water resources. The Act established a National Water Resources Management Agency, providing the River Basin Management Boards and Water Catchment Management Committees with managing the water resources and other related matters.

69. In the same year, the Sierra Leone Water Company Act was reviewed to improve and expand the mandate and existence of Sierra Leone Water Company. Under the Act 2017, the mandate of Sierra Leone Water Company (SALWACO) was extended to provide water and sanitation services to four regions of the country (North, North-West, East and South), which accounts for an estimated 5.6 million people, representing 80 percent of the country's population (2015 census).²⁰ The same year, the **Guma Valley Water Company Act** was enacted to maintain the Guma Valley Water Company to provide a sustainable water supply for public and private purposes.

70. Responding to the gap in rural WSS planning and policy, the MoWRs, with support from the AfDB, completed the National Rural Water Supply and Sanitation Plan (NRWSSP) in 2017. This was the first comprehensive plan for Sierra Leone to achieve the SDG WASH targets by 2030. The NRWSSP covers communities of up to 5,000 people. However, the funding allocation for implementation of the plan is unclear.

71. From 2019 to the present, the sector made considerable progress in drawing sector policy direction. In 2019, a Medium – Term National Development Plan (2019-2023) was developed. In the plan, policy cluster 3.3 stresses improving the water infrastructure system. Similarly, specific sector development plans were developed. In 2019, the Ministry of Water Resources commissioned the development of an institutional Urban Water, Sanitation and Hygiene roadmap for 2030. This process has been supported financially by Millennium Challenge Corporation (MCC).

72. In 2020, the Ministry of Health and Sanitation commissioned the development of a National Strategy on Sanitation and Hygiene 2020-2030 (NSSH). The following goals were set.: (1) Strengthened leadership by the MoHS and effective and efficient stakeholder coordination at national, district and community level; (2) Established specific sanitation and hygiene budget

²⁰ <https://www.devex.com/organizations/sierra-leone-water-company-salwaco-138845>

lines and transparent financial mechanisms; (3) Empower an active participation of local communities in improving sanitation and hygiene implementation and management; (4) Reviewed implementation methodologies used for universal sanitation and hygiene expansion; (5) Innovated local and sustainable markets for sanitation and hygiene solutions/technologies; (6) Objective evidence available through data collection, monitoring, research and development/implementation of standards and protocols; (7) Continuous promotion of appropriate behaviour on sanitation and hygiene (at all levels); (8) Toilets and handwashing facilities in public institutions (schools, hospitals, Peripheral Health Units (PHUs) and public markets) which cover the special needs for people with disabilities and are sex segregated; and (9) Positioned for sanitation and hygiene improvement interventions as emergency responses, to stop epidemics and to deal with climate/change environmental challenges.

73. In the same year, the Ministry of Water Resources commissioned the development of a National Strategy for Water Safety Plans for Sierra Leone 2020-2030. The strategy's main goals were to ensure drinking water quality, provide safe, affordable, and adequate drinking water to the satisfaction of the people of Sierra Leone, and protect public health and sustain local water resources in 2020.

74. The following year (2021), the Ministry of Water Resources commissioned the review of the National Water and Sanitation Policy 2010. The Policy emphasizes the need to integrate programming exploring WASH, education, food and nutrition and health Nexus and Adopt demand-based, community-based and WASH Markets approaches to complement the CLTS approach's sanitation gains. The Government of Sierra Leone has recognized that sanitation and hygiene promotion through Community Health Clubs is not enough to create systemic change, and the need to be complemented by adequate access to sanitation products, delivery systems and services.

4.1.4 Policy Binding Constraints to WASH in Sierra Leone

75. There needs to be more comprehensive sector development plans with clear results framework to guide the sector development. The need for sector-national and sub-national planning is urgent to guide sector-wide development. The National Water Supply and Sanitation Policy dates from 2010 and is due for an update to reflect current sector needs.

76. The sanitation and hygiene sector has developed a comprehensive strategy, gameplan and implementation guidelines, but there is a need to promote and develop an integrated WASH development plan. While the extensive gap in access to sanitation and hygiene has driven the development of the comprehensive plan, a similar level of importance is needed for water service delivery through an integrated rather than a segregated development plan.

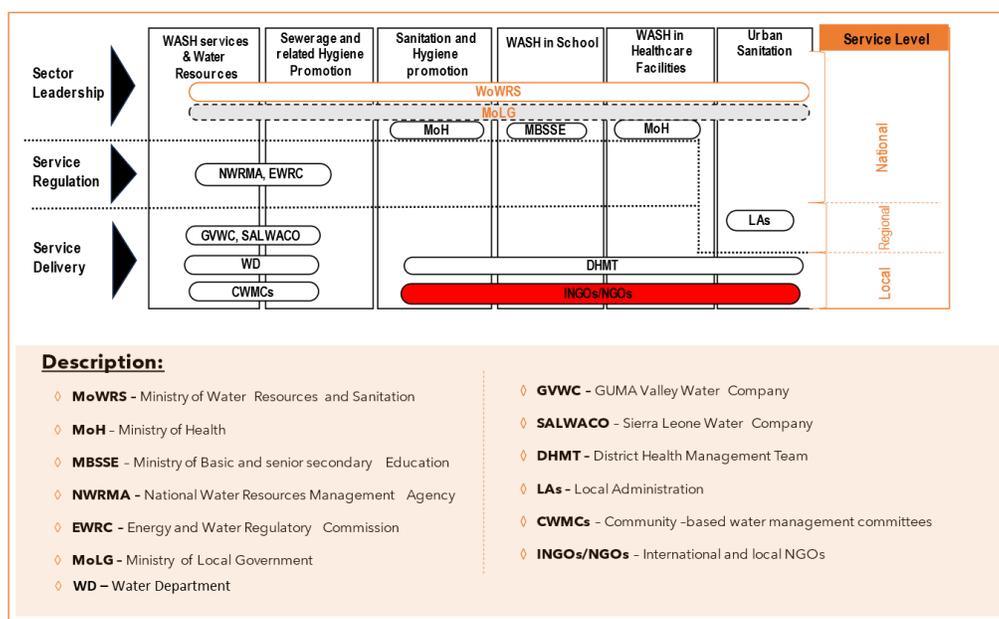
77. Despite the completion of the National Rural Water Supply and Sanitation Plan, rural WSS is in a deplorable state. Funding and budgetary allocation to the 2017 plan are unclear, and no financially viable business model exists. This results in multiple and uncoordinated approaches for different actors to fill the gap, including local and international NGOs.

78. The government has developed a monitoring framework and platforms for WASH, but these platforms still need to be fully utilized. Alignment with monitoring frameworks by sub-national governments and partners is constrained by resources and clarity on monitoring requirements. An Information Management System for water and sanitation was established with financial support from UNICEF using AkvoFlow. However, no government budget is allocated to managing this platform, leading to a lack of up-to-date sector information. The sector relies on project-specific information inconsistently collected by the ministry and NGOs. The lack of up-to-date data makes it challenging to analyze and use data for decision-making. There is no overall WASH Financing Strategy to guide investment in the sector.

4.2 Institutional framework for Sierra Leone WASH and water resources

79. The overall governance mandate of the water and sanitation sector is now with the Ministry of Water Resources and Sanitation (MoWRS) after the transfer of the sanitation mandate from the Ministry of Health to the Ministry of Water Resources in July 2023. The responsibilities of the MoWRS include setting the policy framework and overseeing the implementation of all sector interventions, water resources management and providing technical capacity for the water and sanitation sector.

Figure 4.2. Sierra Leone WASH and water institutional arrangement



Institutional Arrangement for the water sector in Sierra Leone, World Bank 2023

80. The operationalization of the merger provides an opportunity for cohesion to address inherent sector challenges. These challenges include gaps in coordination between different ministries and directorates, national and local government, and between government and partners in the WASH sector. Figure 4.2 presents the institutional framework for Sierra Leone's WASH and water resources sector and its key functions.

4.2.1 Sector leadership

81. The Ministry of Water Resources and Sanitation (MoWRS) provides overall sector leadership, including WASH services, infrastructures, and water resources management. It oversees sector agencies, including NWRMA (regulator for water resources) and the Water Directorate (providing technical oversight for water services and infrastructures). The MoWRS is the custodian of water law and policies for the water and sanitation sector. Although Urban sanitation is devolved in the functions of the local government, the MoWRS also provides the strategic direction.

82. The National Water Resources Management Agency (NWRMA) was established in 2017 to manage all water resources in Sierra Leone. It was established to provide for the equitable, beneficial, efficient, and sustainable use and management of the country's water resources. The agency became active in 2019.

83. WASH service responsibilities spread across ministries to respond to specific sector needs. These ministries include the Ministry of Health (MoH), overseeing WASH in healthcare facilities and supporting sanitation and hygiene promotion through the Environmental Health Directorate. The Ministry of Local Government (MoLG) manages district development plans, including water supply. The Ministry of Basic and Senior Secondary Education collaborates with the MoWRS to provide overall coordination of WASH programs in schools, and the Ministry of Agriculture, Forestry, and Food Security is responsible for supporting the production of all crops and livestock in an environmentally sustainable manner and ensuring food security. They also oversee all water uses for agricultural purposes.

4.2.2 Service Regulation

84. The Energy and Water Regulatory Commission (EWRC) is the main regulator for WASH and water resources. They provide the regulatory functions for electricity and water services, focusing on setting tariffs for urban water supply. The National Water Resources Management Agency (NWRMA) is the custodian for the regulation, utilization, protection, development, conservation, control, and general stewardship of water resources at all levels (national, regional, and local levels). However, its presence is still limited to the national level, where the staff are deployed in different locations from the headquarters office in Freetown on a need basis.

85. Other government entities regulate some aspects of WASH and water resources. These include (1) Environmental agencies: Sierra Leone Environmental Protection Agency (EPA) – providing measures for pollution control, prescribing and enforcement of standards and guidelines relating to ambient air, water, and soil quality and National Protected Area Authority - responsible for promoting knowledge of and participation in programs and services relating to water conservation in designated protected areas and buffer zones; and **The Sierra Leone**

Standards Bureau – responsible for developing and setting quality standards for drinking water including certification and other related uses.

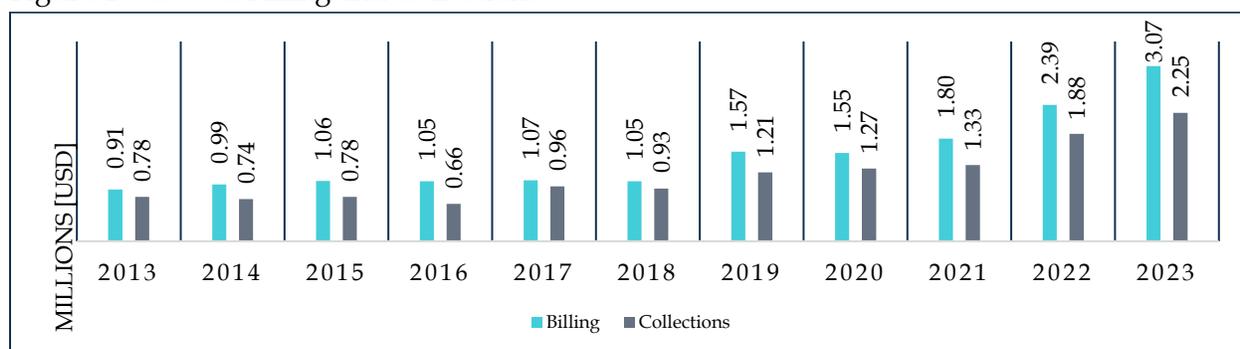
86. The Local Administrations (LAs), including Local councils, line ministries, departments, and agencies, perform some regulatory functions. While their primary responsibility is to implement water and sanitation works through District Water and sanitation committees, they provide some level of regulatory functions regulating the behaviors of contractors and service providers and setting some bylaws specific to their localities. District Health Management Team (DHMT) is responsible for health, sanitation and Hygiene promotion at the district level and works through District Environmental Health Officers (DEHOs) under the oversight of the Environmental Health Directorate.

4.2.3 Service delivery

87. Guma Valley Water Company (GVWC) and Sierra Leone Water Company (SALWACO) are the two water utility companies in Sierra Leone. GVWC is responsible for water supply in the Western Urban Area. The GVWC Act (2017) extends GVWC's supply area as the entire peninsular, including Freetown, Waterloo, and the peri-urban and rural areas along the peninsula. SALWACO supplies water and sanitation in the provinces covering regional and district headquarters towns.

88. GVWC faces service efficiency challenges. GVWC's Non-Revenue Water (NRW) is estimated at 60 percent, including physical losses of 40-45 percent and commercial losses of 15-20 percent. This is also compounded with inadequate water tariff which is approximately half to one-third of comparator utilities. Further in efficiency, GVWC's total billings and collections increased for the last 10 years (Figure 4.3). However, it did not reach the target of Le 82.6 million (approx. USD3.4) and Le88.8 million (approx. USD3.7) for 2022 and 2023, respectively, set in the GVWC Strategic Performance Improvement Plan of 2019. The collection efficiency is decreasing, and it is inconsistent. On average, 72 percent of billings are collected (Figure 4.4).

Figure 4.3 GVWC Billing and Collections



Source: Data collected from GVWC, 2023

BOX-1: AGED INFRASTRUCTURE - HINDERANCE TO GVWC OPERATIONAL EFFICIENCY AND FINANCIAL VIABILITY

Non-revenue water (NRW) refers to the portion of water that is produced and put into the distribution system but is not billed to customers. This can occur due to a variety of reasons, including physical losses such as leaks in the system, theft or illegal connections, and metering inaccuracies where water usage is not accurately measured or recorded. NRW represents a significant challenge for water utilities as it not only signifies lost revenue but also indicates inefficiencies in the water supply system that can impact overall sustainability and resource management. Reducing NRW is a critical aspect of improving water utility operations and can lead to enhanced water conservation, better financial performance, and improved service delivery.

GVWC's Non-Revenue Water (NRW) is estimated at 60 percent, including physical losses of 40-45 percent and commercial losses of 15-20 percent.

GVWC also faces a serious gap between Water Supply and Demand. The current demand estimate is 190 million litres per day (MLD), and it is projected to increase to 313 MLD by 2030 with a 2.2 million population, while the existing water supply capacity is 75 MLD. The coping strategies to manage limited supply capacity include water rationing, community water supply, and special services to urban low-income communities. This puts the utility into a vicious cycle of poor service delivery, low tariffs, low revenues, low investments, and consequently poor infrastructure.



There is an urgent need to implement a well sequenced intervention to tackle the multifaceted operational efficiency challenges. Critical steps to be taken include; prioritizing physical leakage reduction and improvements in the commercial operation of GVWC, advocacy to change people's perception towards payment for water and leveraging financial resources including from private sector to enhance the production capacity.

Figure 4.4 GVWC Collection Efficiency



Source: Data collected from GVWC, 2023

89. **There is also the need to improve GVWC's quality of service.** Only 24 percent of the customers are satisfied with the reliability. The customers connected to GVWC service receive water on average for 4 days per week, averaging 45 hours of service over the week (that is 0.27 hours per day). Only 22 percent report satisfaction with the quality of water supplied.

90. **SALWACO, on the other hand, supplies water and sanitation in the provinces covering regional and district headquarters towns.** Currently, SALWACO has fourteen functional stations located in Kenema, Bo, Makeni, Lungi, Port Loko, Magburaka, Kambia, Pujehun, Mile 91, Bonthe, Kailahun, Lunsar, Kabala, and Moyamba. They supply water to more than 533,406 population and the distribution is not proportional. Kenema and Bo stations are the biggest, with 24600 and 26000 m³/day treatment plant capacity and average monthly production of 54,998.22 m³ and 35,980.22 m³, respectively (Table 4.1). Cumulatively, SALWACO produces about 132,144.56 m³ monthly, and 92,952.22m³ is supplied monthly.²¹ This leaves SALWACO with lower water losses than GVWC, where only 39,192.34m³ (approximately 30 percent of produced water) is lost compared to 60 percent from GVWC. However, the production volume in the two cities is substantially below the plant production capacity, indicating the need to boost production before investing in the new plant.

Table 4.1: SALWACO service coverage and production capacity

NO.	STATIONS	Population Currently Service	Plant Capacity (m ³ /day)	Average Monthly Prod(m ³)	Average Monthly Supply (m ³)
1	Kenema	153,066	24600	54,998.22	32,711.78
2	Bo	167,306	26000	35,980.22	28,777.00
3	Makeni	59,581	11,300	20,425.56	14,983.33
4	Lungi	26,851	1080	4,195.56	2,281.11
5	Port Loko	14,281	3600	3,616.67	3,109.44
6	Magburaka	6,525	3600	3,310.33	2,679.33
7	Kambia	8,543	1200	3,699.89	2,916.11
8	Pujehun	3,021	3600	2,432.22	2,135.56
9	Mile 91	3200	1200	907.22	803.00
10	Bonthe	9,571	1200	2,578.67	2,555.56
11	Kailahun	8,461	2160	No data	No data
12	Lunsar	No data	1200	No data	No data
13	Kabala	73,000	13,488	No data	No data
14	Moyamba	No Data		No data	No data
		Total		132,144.56	92,952.22

²¹ The amount of water produced and supplied is based on available data from the main SALWACO's stations. The four stations (Kailahun, Lunsar, Kabala, Moyamba) did not provide the data. Although the data is not complete, it provides the overall picture of SALWACO's production capacity and NRW.

91. SALWACO faces critical performance challenges. The mixture of the rural and urban markets challenges the performance of SALWACO, which wants to adopt traditional water supply approaches. The lack of capacity in SALWACO to coordinate the work of the various service providers, including NGOs, creates inconsistent standards and a lack of streamlined systems for sustainable operations and maintenance for rural WASH.

4.2.4 Cooperating partners in WASH in Sierra Leone

92. Multilateral Development Partners and Bilateral Donors dominate the funding of WASH in Sierra Leone. Although water is considered vital for achieving the government’s “Big Five Game Changers” (Feed Salone, Human Capital Development, Youth Employment, Revamping the Public Service Architecture, and Tech and Infrastructure), the government’s commitment to WASH, especially the budget allocation, lags. There is a sector dependence on external funding, which results in donor fatigue, where bilateral stakeholders who have been the main donors for the sector withdraw or reduce their engagement (e.g., USAID and Foreign, Commonwealth and Development Office (FCDO), respectively). Coupled with a lack of enforcement of a sector-wide visioning has led to the development of short-term projects/programs as quick reliefs to the sector challenges.

93. There is a significant but uncoordinated presence of bilateral and multilateral institutions supporting WASH in Sierra Leone. Some stakeholders, including AfDB and the Government of the Netherlands, have consistently invested in the water and sanitation sector, focusing on upgrading the services of water utilities (GVWC) in Freetown and other secondary cities. Other multilateral partners supporting water utilities and the MoWRS include the Islamic Development Bank, OPEC Fund for International Development (OFID), Kuwait Fund, Green Climate Fund (GCF), Global Environment Facility (GEF), UNICEF and other UN agencies. Many bilateral donor financing subcomponents of WASH include the Government of Ireland (Irish Aid) and the Government of Japan (JICA). Other emerging donors for the sector include the Government of Iceland and the French Development Agency (FDA). While this is positive, there is a need to improve the coordination of the development partners to prevent duplication of efforts and to explore the possibility of collaboration through co-financing and complementary programming.

94. As implementing partners, there are also international and National NGOs and civil society organizations (CSOs) providing explicit and implicit support to the government. These supports include information sharing, sector financing advocacy, and participation in water and sanitation planning, programming, and service delivery. The international and national NGOs, using both in-country funding opportunities and their private donors, including foundations, play a crucial role in filling the sector’s financing gaps. They are the main actors in supplying water to vulnerable communities and rural areas.

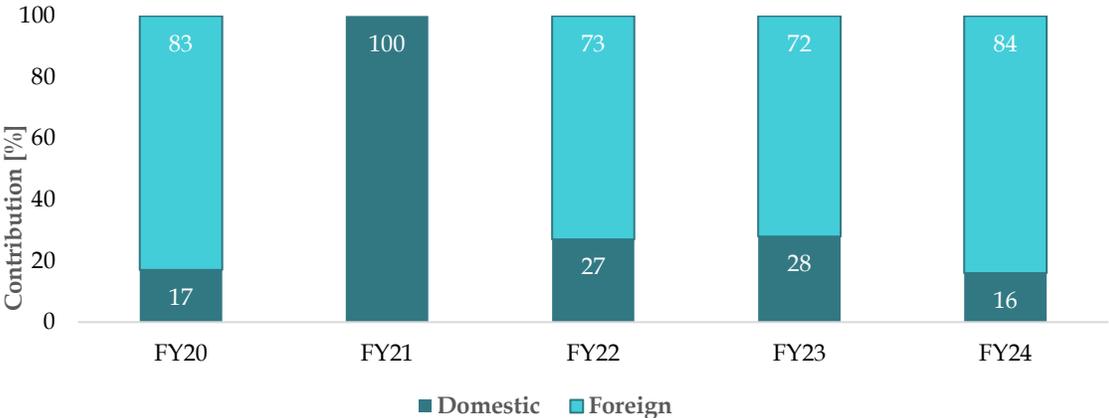
95. Other actors in the WASH sector include international water development agencies.

This category includes the African Union and African Ministers’ Council on Water (AMCOW). They support the government through regional water development, investment finance mobilization, policy guidance, and coherence. There is also a community of users. These are community-based management and delegated private-sector managed schemes, especially for rural water supply. This community includes Community Water Management Committees – managing WASH systems in the community, School management committees – WASH in schools, and Facility Management Committees – WASH in Healthcare facilities. It also includes some Youth/women associations and Private sector (MSMEs) who are involved in the management of government-owned WASH systems (through PPP) or other community-owned WASH systems supported by NGOs or the community themselves.

4.2.5 WASH sector financing

96. WASH sector financing still needs to be improved. Even though the government has made a strong commitment to improving WASH, as highlighted in the Medium-Term National Development Plan, the government budget allocated to WASH is still limited: The FY22 WASH budget commitment of 19 million USD represents only 9 percent of the total country budget of which the government contribution is only 27 percent.²² Despite the projected increase in the WASH budget, the water and sanitation sector will remain dependent on external funding (Figure 4.5), where foreign funding remains the highest (average of over 70 percent of the budget allocated to WASH).

Figure 4.5. The Trend of Domestic and Foreign Contribution to WASH Budget FY20-24

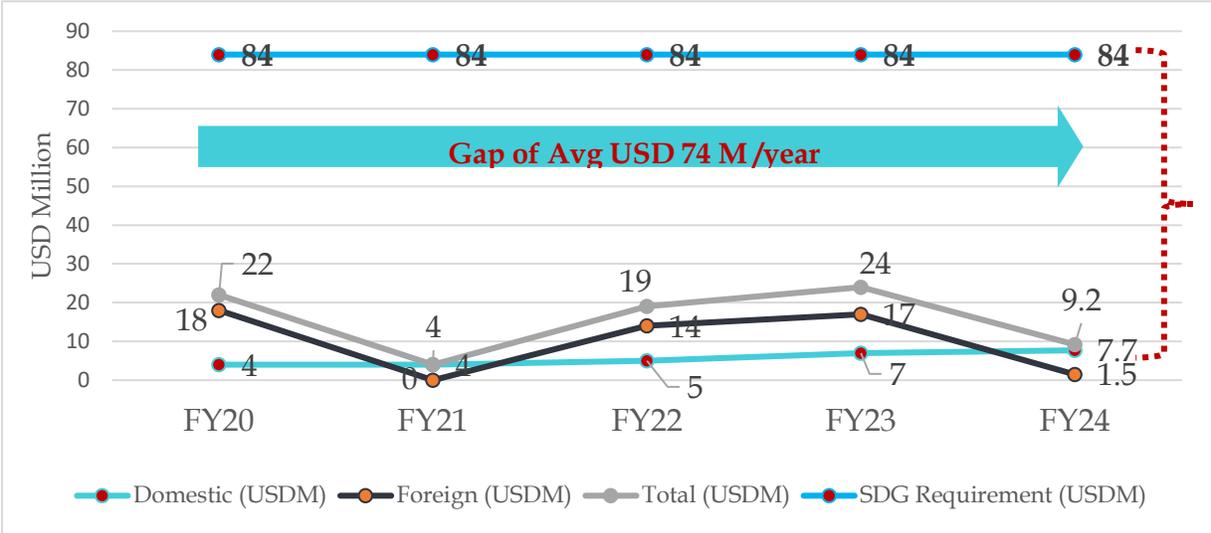


97. For the last five years, 50 million USD has been spent in the WASH sector, with the government's average annual contribution of 6 million USD, equivalent to 55 percent (Figure 4.6). While the government contribution has increased, the foreign contribution has reduced drastically with an average annual reduction of 33 percent. Therefore, the government's strong commitment to WASH remains inadequate compared to the sector's needs. There is a need to re-engage development partners to increase sector financing to support the government to meet

²²Budget-Speech-FOR-2022-FINANCIAL-YEAR. [Online] <https://www.thesierraleonetelegraph.com/wp-content/uploads/2021/11/Budget-Speech-FOR-2022-FINANCIAL-YEAR.pdf>

SDG targets. It is estimated that a per capita cost of USD 556.84 investment in the water (USD 298.98) and sanitation sector (USD 257.85) is required to achieve the SDG targets on WASH (Hutton and Varughese, 2016). The estimation shows that about USD 84 million per annum (1 percent of GDP) is required to achieve universal basic access, and USD 361 million (5 percent of GDP) annually is required for safely managed access to WASH (Hutton and Varughese, 2016).

Figure 4.6. SDG Basic WASH Allocation Vs. Demand



98. Further, the government's commitment to the water and sanitation sector has been and is still water-polarized, leaving sanitation lagging. The government budget projected for 2022 was estimated to be 5 million USD. The actual estimate is approximately equivalent to USD 8.6 million. This entire amount is allocated to improving water supply.

99. There is a limited chance of a change, considering that the government of Sierra Leone has very limited fiscal leverage to allocate sufficient finance for the water and sanitation sector. The tax revenue is only about 13 percent of the GDP, and the debt-to-GDP ratio is about 76 percent, putting the country at high risk of debt distress. This leaves WASH funding heavily depending on Development Partners through funding projects, either on-budget within the Government's planning frameworks or off-budget, planned and implemented directly by the organizations individually.

100. The private sector participation in Sierra Leone WASH could be boosted to complement the government effort. Private sector involvement in water and sanitation in Sierra Leone has evolved with time triggered by the need to complement government in improving service delivery. However, the sector market is still fragile to attract strong and at scale private sector participation. In bigger cities like Freetown the private sector is active in the faecal sludge emptying service. The Freetown City Council (FCC) innovative service level agreement presents

an opportunity to catalyze access to finance such as asset loans (lease agreement) to improve the capacity of the private sector.

101. GVWC as a water supply provider, has developed plans to increase its water production capacity to fill the huge gap and to adequately respond to the demand from the rapid urbanization. These infrastructure investments are burdensome to be shouldered by the GoSL alone, thus demanding a strong partnership with development partners including the private sector. Creating enabling policy, institutional and regulatory environment will be essential to ensuring the GVWC and service delivery entities in SL are transformed into a financially viable institutions to attract the private sector and provide efficient services.

4.2.6 Institutional Binding Constraints to WASH in Sierra Leone

102. The WASH sector is underfunded. Despite the projected increase in the WASH budget, the water and sanitation sector remain dependent on external funding, where foreign funding remains the highest (an average of over 70 percent of the budget allocated to WASH). The government of Sierra Leone faces severe fiscal constraints which limit the funding available for the WASH services and water resources sector.

103. The transfer of responsibility for sanitation from MoH to MoWRS (announced July 2023) offers opportunities for cohesion but will also need the requisite capacity transfer for success. Having the sector under one umbrella addresses the pertinent coordination issues between ministries and directorates, national and local governments, and between government and partners. However, this will require an associated matching of human resource capacity in terms of personnel and equipment for effective operation.

104. Coordination of development and implementing partners is a challenge. Sierra Leone government institutionalized a service level agreement (SLA) to all implementing partners. The line ministry manages the SLA and was initiated to reduce duplication of resources. However, some partners do not comply with the framework and continue implementing without signing an SLA. This results in sub-standard work and uncoordinated approaches. Similarly, the development partners need to be more involved in the existing coordination platforms. There is a need to strengthen the development partners' coordination platform to know who is doing what, where and when. This could be achieved by exploring the implementation of One WASH programming by learning from other countries where it is implemented, such as Ethiopia.

105. There is no established entity for the provision of sanitation services. Sanitation service is provided by private sector operators with minimal, or without regulation, leaving the service market dominated by the service provider over the buyers.

106. There needs to be a dedicated budget disbursement line for WASH. While local governments are mandated to provide WASH services, including urban sanitation, allocations to

local governments do not contain a dedicated line for WASH, making it challenging to track and understand total WASH spending.

107. There is persistent sector dependence on short-term projects/programs. Coupled with a lack of enforcement of a sector-wide visioning has led to the development of short-term projects/programs as quick reliefs to the sector challenges.

108. There is a high sector inefficiency. The GVWC reports an NRW of 60 percent and a collection efficiency rate of 73 percent in 2023. The coping strategies to manage limited supply capacity have been water rationing, community water supply and special services to urban low-income communities.

4.4 WASH regulatory arrangements in Sierra Leone

109. Regulatory responsibilities are divided across different actors and apply diverse regulatory forms. Regulatory roles are unclear for some stakeholders, and some responsibilities overlap between actors. The Water (Control and Supply) Act drafted in (1963) and the Public Ordinance Act No 23/1960 that structure the WSS sector is almost 60 years old and does not adequately meet present and emerging challenges for WSS in the country. Modernizing the legislation and related regulations is necessary to create an enabling legal framework to deal with the WSS sector's challenges that clearly differentiate stakeholder roles. Nevertheless, some legal instruments have been developed for Water supply and sanitation.

110. Urban and peri-urban water supply regulation is well defined. Sierra Leone has well-defined regulatory arrangements for urban and peri-urban water supply. Urban water supply is based on regulation by the agency. Sierra Leone Energy and Water Regulatory Commission (SLEWRC) is an independent commission in charge of the economic and technical regulation of urban water supply services.

111. Rural and small towns' rural water supply resort to sub-national regulation where Local Government Service Commissions oversee WSS service provision, and Local councils approve standards and monitor service provision performance. The Local Government Service Commissions are commissions appointed by the President of Sierra Leone, independent of the local government (elected), and responsible for regulating Local Governments.

112. There are also cross-sectoral regulatory functions. Ministerial regulation is applied to some aspects of the WSS provision. The MoHS, through the Directorate of Environmental Health and Sanitation, sets standards or guidelines and enforces their compliance with statutory instruments for sanitation and drinking water quality. There are conflicting ministerial regulations for drinking water quality. Both the MoHS and MoWRs have the mandate to monitor

and ensure compliance with drinking water quality standards.²³ Other actors regulate different aspects of Water supply and sanitation. These actors include the EPA regulating wastewater discharges and sludge disposal; NWRMA regulating water resources; and the Sierra Leone Standards Bureau (SLSB) setting the standards to ensure consumer protection and trade promotion for socio-economic growth in a safe and stable environment.

113. SLEWRC has developed a comprehensive regulatory framework for regulating piped water supply services. Interestingly, packaged water distribution is widely regulated in Sierra Leone. There is a regulatory instrument designed specifically for this, and it is being regulated at scale by the SLEWRC, which audits and monitors the water quality and imposes sanctions and fines whenever there is no compliance with the standards.

114. There is an indicator to monitor coverage by point water sources as well as more general water quality regulations that relate to point water sources, but technical regulations are yet to be developed to ensure service quality. Off-site and on-site sanitation are regulated but not at scale. Private service providers for on-site sanitation must register with the local council that charges discharge sludge and wastewater fees and is in charge of tariff setting. The extent to which these regulations are applied still needs to be improved. Guidelines are the responsibility of the local council and must be approved by the parliament. However, Freetown has been the only local council that has drafted and submitted sanitation guidelines for approval to the parliament. Even if there has been some progress in formalizing and regulating sanitation service provision, further work is required to build off-site and on-site sanitation regulations.

4.4.1 Service provider regulation

115. Water supply in urban areas and small towns is provided by the GVWC and the Sierra Leone Water Company (SALWACO). SLEWRC's regulatory activities focus on SALWACO and GVWC that provide piped water supply services in urban and peri-urban areas and packaged water companies. Water service delivery in rural areas is provided by community-owned organizations and local authorities that are not currently being regulated, and, in many cases, water is provided for free with tariffs for these services not being standardized or regulated.

116. Local councils finance the operation of water supply systems in rural areas where SALWACO does not operate through the council tax, but the end-user does not pay a tariff. Moreover, some community-based water supply organizations collect a fee amongst the users, but the tariffs must be standardized and regulated. Also, informal service providers like water tankers and private wells operators must register with local councils; however, there are no regulations and standards for these service providers, nor any control over the quality of the service they provide.

²³ The transfer of the Sanitation Directorate to the Ministry of Water Resources (2023) is expected to have an impact on the regulatory functions formerly held by the Ministry of Health.

117. Rural water supply needs to be adequately regulated. NGOs provide water to fill SALWACO’s gap. Regulations are applied through a service-level agreement that they sign with the Ministry of Economic Planning and Development. However, there is a lack of compliance at the implementation level.

118. Sanitation services are provided by the local councils directly who own vacuum trucks along with private companies with service agreements in the form of public-private partnerships with the local councils or the private sector using their own assets. Sewered sanitation is only provided in some areas in Freetown. Wastewater and sludge treatment is undertaken by local governments and, in theory, regulated by EPA. However, wastewater and sludge are not appropriately treated or controlled in practice. The Local Government Service Commission regulates all sanitation services. The local entity ensures accountability and transparency in the management and delivery of the local councils’ services, including WSS.

119. A comparatively well-developed set of mechanisms is available to and applied by SLEWRC and other regulatory actors to regulate service provision. These are mainly applied to GVC and SALWACO. Most existing regulatory mechanisms have been developed for urban water supply, with little attention paid to the rural sector. The Water Code includes technical guidelines and parameters for water supply systems, and the Water Quality of Supply Regulation 2019 sets the parameters for water supply. Table 4.2 summarizes WASH service provider, their domain of operation and the institutions that regulate them.

Table 4.2. Regulated Service Providers

	Service Provider	Service Provider Type	Regulatory Actor	Regulatory Form
Urban Water	SALWACO	National Publicly Owned Utility	SLEWRC	Regulation by Agency
	GVC for Freetown	Publicly Owned Utility		
	Packaged water producers	Privately owned		
	Water 4 Ever - Waterloo district Freetown	Social Enterprise	Local Councils	Sub-National Regulation
Water tankers and private well operators	Privately owned			
Urban Sanitation	SALWACO- Vacuum tankers	Publicly Owned Utility	Local Government Service Commissions	Sub National Regulation
	GCWC Sewerage	Publicly Owned Utility		
	Vacuum Tankers	Private Operator		
	Vacuum Truck Operators under Service Level Agreement	Private Operator		
	Vacuum Truck Operators	Local Councils		
	Manual Pit Emptiers	Private Operators	EPA	Regulation by Agency
	Sludge treatment plants	Local Governments		

	Service Provider	Service Provider Type	Regulatory Actor	Regulatory Form
Rural Water	SALWACO	Publicly Owned Utility	SLEWRC	Regulation by Agency
	Packaged water producers	Privately owned		
	Local councils	Local governments	Local Government Service Commissions	Sub National Regulation
	Water committees	Community-Based Organisations	No regulatory arrangements defined	
	Water tankers and private well operators	Privately owned	Local Councils	Sub-National Regulation
	INGOs/NGOs	Non-government organization	MoPED	N/A
Rural Sanitation	Vacuum Truck Operators	Private Operator	Local Government Service Commissions	Sub National Regulation
	Vacuum Truck Operators under Service Level Agreement	Public-private partnerships		
	Vacuum Truck Operators	Local Government entity		
	Manual Pit Emptier	Private Operators		

4.4.2 Monitoring and Performance Reporting

120. SALWACO and GVWC submit quarterly data to SLWERC on several important service quality and economic efficiency indicators that primarily relate to the delivery of water supply services (see Table 4.3). There are, however, some important gaps in the indicators tracked. Since 2019, SLEWRC has published information on its website once a year. Nevertheless, reports do not contain service providers' performance information. The reports mention that the data is being collected but not published. These are more focused on reporting regulatory developments that show the sector's overall performance. For service providers, different from SALWACO and GVWC, there is essentially no structured or consistent monitoring and performance reporting.

Table 4.3 Monitored indicators.

Service Quality				Economic Efficiency				Operational Sustainability	
Water Coverage	Sanitation Coverage	Hours of Supply	Water Quality	Metering Ratio	Non-Revenue Water	O&M Cost Coverage	Revenue Collection Efficiency	Staff Cost as % of O&M	Staff per 1,000 Connections
✓	✗	✓	✓	✓	✓	✗	✓	✗	✗

4.4.3 Incentives and Sanctions

121. SLEWRC, EPA and NWRMA have a range of sanctions available that can be employed by SALWACO, GUMA, local authorities, and packaged water companies. Punitive measures are applied frequently to packaged water companies, with SLEWRC reporting the removal of licenses and the suspension of commercial activities. However, enforcement remains the main challenge.

122. There are plans for result-based financing in the WASH sector. Result-based disbursements to the best-performing utilities on key performance indicators are planned to be implemented with the financial support of the Millennium Challenge Corporation program of the United States. However, there is no indication when this will be implemented.

123. Also, award schemes are developed to promote WASH best practices. For instance, an Open Defecation Free Certification award is given by the former Ministry of Health and Sanitation to the local councils. A protocol for this certification process and monetary awards are given to localities that reach and maintain an ODF status. As service provision for sanitation is under the responsibility of local councils, this is a form of indirect financial and reputational incentive for good service provision performance, although not consistent.

124. Sanctions are applied frequently to packaged water providers if there is no compliance with quality standards. SLEWRC has the authority to enforce piped water supply regulations per the Enforcement of Regulations of 2019. However, this authority is not exercised due to limited infrastructure (e.g., the water meters are just being installed), which does not allow SLWRC to enforce regulations, resulting in huge non-revenue water and linkage in user fee collections. Local councils can levy a fine if sanitation service providers do not comply with discharge parameters. The extent to which this is done is unclear and not harmonized, as no ratified guideline or legal document exists.

4.4.5 Regulatory binding constraints.

125. The Water (Control and Supply) Act drafted in (1963) and the Public Ordinance Act No 23/1960 that structure the WSS sector is almost 60 years old and does not adequately meet present and emerging challenges for WSS in the country. Modernizing the legislation and related regulations is necessary to create an enabling legal framework to deal with the WSS sector's challenges that clearly differentiate stakeholder roles. Nevertheless, some legal instruments have been developed for Water supply and sanitation.

126. Most existing regulatory mechanisms have been developed for urban water supply, with little attention paid to the rural sector. The Water Code includes technical guidelines and parameters for water supply systems, and the Water Quality of Supply Regulation 2019 sets the parameters for water supply mainly applied in urban areas. Rural water supply is not adequately regulated. NGOs provide water to fill SALWACO's gap. Regulations are applied through a

service-level agreement that they sign with the Ministry of Economic Planning and Development. However, there is a lack of compliance at the implementation level.

127. There are overlapping regulatory functions that blur clarity in responsibilities and accountability. Regulatory responsibilities are divided across different actors and apply diverse regulatory forms. Regulatory roles are unclear for some stakeholders, and some responsibilities overlap between actors. For instance, while the Local Government Service Commission regulates all sanitation services, the same local entities are in charge of ensuring accountability and transparency in the management and delivery of services.

128. There is a need to develop further regulation in specific sub-sectors, for example, sanitation and fecal sludge management. Sewered sanitation is only provided in some areas in Freetown. Wastewater and sludge treatment is undertaken by local governments and, in theory, regulated by EPA. However, wastewater and sludge are not appropriately treated or controlled in practice.

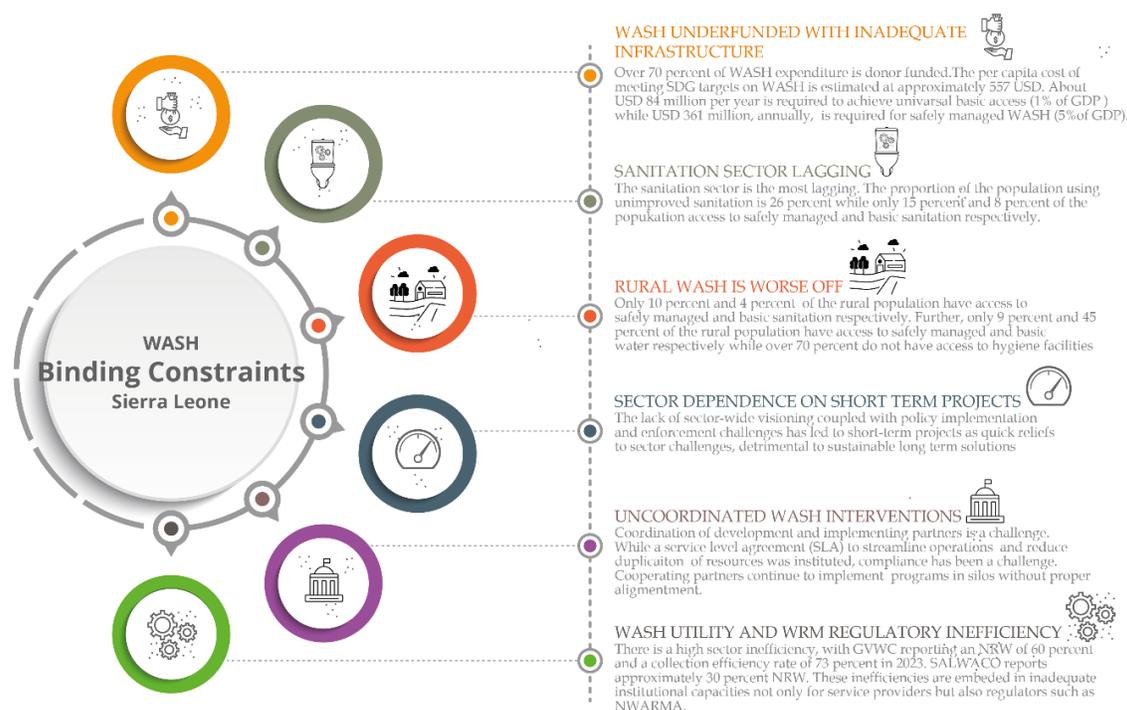
129. There is a need to ensure that the existing tariff-setting process for regulated utilities continues to balance commercial realities with affordability. This will allow utilities to accommodate the sector development and major country contextual dynamics. There is a tariff-setting process for regulated utilities, but there is a need to ensure this continues to balance commercial realities with affordability.

Chapter 5

Key WASH Binding Constraints and Recommendations

130. This section highlights the key WASH binding constraints in Sierra Leone. It summarizes constraints to WASH access, policies, institutions, and regulations from the previous chapters. Six key service-binding constraints are highlighted (Figure 5.1) with preliminary recommendations for action.²⁴ The recommendations are supported with case studies across countries that have faced similar challenges within and outside the sub-region.

Figure 5.1 Key WASH service delivery challenges in Sierra Leone



5.1 Constraints and Recommendations (Learning from peers to improve WASH delivery in Sierra Leone)

131. Sierra Leone faces significant challenges in achieving Sustainable Development Goal (SDG) 6, which aims to ensure the availability and sustainable management of water and sanitation for all. While there has been progress, substantial gaps remain with the proportion of people with access to safely managed and basic drinking water increasing marginally (safely managed 10 percent in 2022 from 5 percent in 2000 and basic water 36 percent in 2000 to 55 percent in 2022). Many Sierra Leoneans (3.9 million) rely on limited, unimproved, and surface water sources. This lack of access to safe water puts them at increased risk of waterborne diseases, such as diarrhea, which is a major cause of death among children under five.

²⁴ The challenges in Figure 5.1 are not in any particular order or priority.

132. The sanitation sector is particularly lagging, with nearly half of Sierra Leoneans lacking access to basic sanitation facilities. Sierra Leone's open defecation rate reduced from 25 percent in 2000 to 16 percent in 2022. However, the portion of the population using unimproved sanitation is still high (26 percent), while only 23 percent of the population have access to at least safely managed and basic sanitation, and 34 percent have limited sanitation. Thus, Close to 1 in 2 Sierra Leoneans do not have access to at least basic sanitation. The sanitation situation is direr in rural areas, where only 14 percent of the rural population has access to safely managed sanitation and basic sanitation services. Further, only 9 percent and 45 percent of rural dwellers have access to safely managed and basic water, respectively. Over 70 percent do not have access to handwashing facilities. This poses serious public health risks, especially in light of the well-documented health impacts of the 2014-16 Ebola crisis. The binding constraints to WASH in Sierra Leone are elaborated on in the next sections.

Binding constraint #1. The WASH sector is underfunded with inadequate infrastructure.

133. Investments in the WASH sector are limited. It is estimated that a per capita cost of USD 556.84 investment in the water (USD 298.98 million) and sanitation sector (USD 257.85 million) is required to achieve the SDG targets on WSS (Hutton and Varughese, 2016). This sums to approximately USD 84 million per annum and USD 361 million per annum to achieve basic access and safely managed access to WASH, respectively. Despite projections for increased WASH budget allocation, external funding remains the primary source, with foreign funding accounting for over 70 percent of the expenditure. This reliance on external funding exposes the sector to fluctuations in donor support and limits the government's ability to make strategic investments. Compounding these challenges is the lack of a dedicated budget disbursement line for WASH.

Recommendation #1 Improve WASH funding with pro-poor tax and trust funds.

134. A guaranteed and sustainable fund flow is necessary for investment in WASH in Sierra Leone, and the government can take cues from the Ghana PURC and the Water Sector Trust Fund in Kenya to generate funds. The Public Utilities Regulatory Commission, PURC in Ghana, for instance, guarantees a 20 percent levy on electricity and natural gas transmission services to their pro-poor water. Anchored in the PURC (Amendment) Act, 2010 (Act 800), the PURC is committed to providing a leadership role in resolving pro-poor issues in the urban water sector, as enshrined in the PURC social policy and strategy for water regulation. Since 2018, PURC has undertaken pro-poor water projects to improve water accessibility to communities facing challenges with potable water supply.

135. A similar intervention is the Water Services Trust Fund (WSTF) to finance services in low-income areas in Kenya. Kenya has a specific institution, the Water Sector Trust Fund (Water Fund), a State Corporation under the Ministry of Water & Sanitation and Irrigation established under the Water Act, 2016, with the mandate to provide conditional and unconditional grants to the Counties and to assist in financing the development of and management of water and sanitation services in the marginalized and underserved areas. The criteria for WSTF fund

allocation are based centrally upon demonstrating a well-planned project with pro-poor aims. The WSTF manages an output-based aid program that “provides financial incentives to water services providers (WSPs) to invest in rehabilitation and expansion of water and sanitation infrastructure,” specifically household water connections, sewer connections, public water kiosks, and public toilets. A project must be in an urban low-income area defined by WSTF’s Maji data database to be eligible. Since its inception, the Fund has entered into financing agreements and MOUs totalling Ksh.18 billion and has cumulatively (as of 2019) received Ksh.14 billion out of this total for water supply, sanitation, and water resources management projects to the underserved areas in Kenya, reaching 4.1 million Kenyans.

136. The Government of Sierra Leone could also develop a WASH financing strategy and review the recurrent budget allocation to maintain and operate WASH infrastructures and services. This can be done by establishing a dedicated budget line for WASH infrastructure, operations and maintenance, which the development of a WASH financing strategy can support. The Government of Kenya, for instance, set an ambitious target of universal access to water, sanitation, and hygiene services (WASH) by 2030. To achieve this, \$12.9 billion in WASH investments was estimated to expand and improve WASH services. With a water and sanitation budget of \$5.6 billion, a gap of \$7 billion had to be filled. To bridge this gap, the Water, Sanitation and Hygiene Finance (WASH-FIN) program explores new sources of market finance to complement funding from traditional sources such as transfers, taxes, and tariffs. WASH-FIN works with Water Service Providers (WSPs) and private sanitation service providers to access capital for sustainable, climate-resilient water and sanitation infrastructure. WASH-FIN achieves this by partnering with national and county governments, development partners, local financial institutions, and other stakeholders. As of 2021, key achievements included over \$16.5 million in new funding to the water and sanitation sectors (USAID 2022). Partnering with the private sector is also an option to improve financing. However, this would require, first, demonstrating the financial viability of the sector and providing the enabling environment for private sector participation.

Binding constraint #2 Sanitation sector lagging.

137. Access to sanitation lags in Sierra Leone. Open defecation rate reduced from 25 percent in 2000 to 16 percent in 2022. However, the portion of the population using unimproved sanitation is still high (26 percent), while only 23 percent of the population have access to at least safely managed and basic sanitation, and 34 percent have limited sanitation. Thus, Close to 1 in 2 Sierra Leoneans do not have access to at least basic sanitation. A lack of established entities to provide sanitation services, among other factors, contributes to the sanitation access gap.

Recommendation #2 Lagging Sanitation: Clear policy direction but requires a sustained government commitment.

138. The sanitation sector is the least developed in Sierra Leone, and this is not an issue of policy development but rather policy implementation. In 2020, the Ministry of Health and

Sanitation commissioned the development of a National Strategy on Sanitation and Hygiene 2020-2030 (NSSH). While the policy recognized the dire need to address sanitation issues in Sierra Leone, there is a need for the government to be committed to its implementation with a requisite allocation of resources.

139. Thailand faced a similar sanitation challenge and developed Thailand's National Safe Sanitation Strategy Challenge. In the 1960s, the Government initiated a village health and sanitation project to promote the use of sanitary latrines. The project was subsequently scaled up nationwide and led to the development of the Rural Environmental Sanitation Programme as part of the National Health Development Plan. Household sanitation coverage is 98.9 percent, and almost all households have access to a safe water supply. The key success factor of this strategy was the strong political commitment to the policy, with clear institutional roles and responsibilities assigned to focal ministries responsible for inter-ministerial coordination. The issue of funding and human resources is also key. In Thailand's experience, training was delivered to build the capacity of government and community leaders on project management, sanitation supervision, and monitoring for sustainability. A revolving fund for sanitation was established at the village level to loan money for household investments. Further, the government created an award scheme for provinces achieving 100 percent access. Coupled with intense social mobilization, this created competition between provinces to expand access to sanitation.

Binding constraint #3 Rural WASH is worse off.

140. While the country faces a general WASH challenge, access and service delivery levels are worse in rural areas. Completing the National Rural Water Supply and Sanitation Plan (2017) has not translated into improved rural WSS. Only 10 percent of the rural population has access to safely managed sanitation, and 4 percent has access to basic sanitation services. Only 9 percent and 45 percent of rural dwellers have access to safely managed and basic water, respectively, while over 70 percent do not have access to hygiene facilities.

Recommendation #3 Rural WASH will require innovative performance-based financing arrangements.

141. Inadequate funding underlines the limited development of WASH in rural areas. However, with 70 percent of the sector funding coming from donor agencies, innovative financing modules (performance-based financing) can be adopted for the effective use of these resources. Lessons can be drawn from the Benin Rural Water Supply Universal Access Program for Results (PforR) which supports the establishment of regional performance-based *affermage* contracts, which delegate service delivery to private operators to improve the quality and sustainability of newly expanded water supply systems. The performance-based *affermage* contracts introduce strong incentives for the regional operators to expand access and improve service quality and sustainability. This is because the contracts cover larger service areas to attract more professional and experienced operators to provide the financing necessary to deliver good

quality and sustainable services to avoid reputational risk. In addition, signing a limited number of regional contracts supports performance monitoring and data collection to monitor service performance effectively and enforce citizens' oversight for accountability.

142. Similarly, Senegal undertook major reforms across the water sector in both rural and urban areas. Among these is the implementation of performance-based lease agreements (*affermages*) to private operators in rural areas previously operated by local non-profit committees (called "ASUFOR"). Under the new *affermages*, ownership of water resources remains with the state, but private operators handle operation and maintenance. Revenue comes from tariffs, and the operator's fee is paid out of revenues. Contracts typically stretch over ten years, during which the operators must maintain the infrastructure and are obliged to invest in the renewal of equipment and assets with a lifespan cycle shorter than the contract period. After a first successful ten-year project with Flexeau S.A., two follow-up projects in the urban and rural areas are currently being implemented, including the bidding for new *affermage* contracts.

Binding constraint #4 Sector dependence on short-term projects and programs

143. There is an over-dependence on short-term projects and programs. The absence of a long-term vision and proper planning, along with weak implementation and enforcement of existing policies, creates a constant need for quick fixes. This heavy reliance on short-term projects and programs might offer temporary relief from challenges, but it ultimately undermines efforts to develop sustainable solutions for the long haul. This cycle traps the sector in a reactive mode, and thus window dressing the root causes of its problems.

Recommendation #4 Address sector dependence on short-term programs by developing a consolidated sector development plan/roadmap.

144. Donor interventions favor quick-win projects with short-term horizons, seeking quick returns. WASH infrastructure is typically capital-intensive, long-lived and with high sunk costs. This calls for a high initial investment followed by a long pay-back period of about 20 to 30 years. A fragmented and short-term solution to the WASH challenges in Sierra Leone should be avoided. Sector-reviving interventions can be streamlined strategically in a sector-wide vision. It is expected that the development of the National Water and Sanitation Policy (Draft as of 2021) will be critical in driving integrated programming with partnerships to strengthen linkages between WASH, education, food nutrition and health. Beyond the policy, a consolidated sector development plan/roadmap will be critical in shaping and directing sector investment.

Binding constraint #5 Uncoordinated WASH interventions

145. WASH interventions are uncoordinated among stakeholders. A major hurdle to effective WASH interventions in Sierra Leone is the lack of coordination between the government

and its development partners. While the government implemented a Service Level Agreement (SLA) framework to improve collaboration, some partners continue to operate independently. This leads to uncoordinated approaches, ultimately hindering the overall effectiveness of WASH programs in the country.

Recommendation #5 Address uncoordinated WASH interventions by reviving cooperating partner platforms.

146. The Sierra Leone government institutionalized a Service level agreement (SLA) to all implementing partners, but this has not been functionally effective. There is a need to establish a development partners coordination platform to know who is doing what, where and when. This could be achieved by exploring the implementation of One WASH programming by learning from other countries where it is implemented, such as Ethiopia. Since 2013, Ethiopia has established a unique Water, Sanitation, and Hygiene (WASH) sector-wide approach (SWA) under the umbrella of the ONE WASH National Programme (OWNP), which brings together ministries, development partners, academia, and civil society organizations (CSOs) to a common goal of one plan, one budget, and one report (UNICEF 2018).

Binding constraint #6 WASH utility and WRM regulatory inefficiency

147. Lastly, there is a high inefficiency of key water utilities in the sector. The GVWC reports an NRW of 60 percent and a collection efficiency rate of 73 percent in 2023, while SALWACO reports approximately 30 percent NRW. These inefficiency gaps are embedded in inadequate institutional capacities for the service provider and regulators such as NWRMA. The inefficiencies are a leaking bucket to the sector and an opportunity cost to sustaining and expanding access to WASH in Sierra Leone.

Recommendation #6 Engage in capacity-building interventions to improve the WASH sector and utility efficiency.

148. Inefficiencies in the WASH sector in Sierra Leone can be addressed on two fronts. Capacity building and standards regulation. While issues of NRW (60 percent) may be a technical and economic challenge, fixing the responsible institutions, their arrangement and capacity is key to managing the WASH sector inefficiencies. Sector regulation is also crucial in this regard. For instance, the outdated Water (Control and Supply) Act (1963) and the Public Ordinance Act No 23/1960 need to be revised to create an enabling legal framework that sets and enforces standards in service provision.

149. Capacity-building support for all service delivery and regulatory institutions is important to improve sector efficiency. Insufficient human resource capacity and logistics remain among the most significant barriers to effective and sustainable WASH services. It is important to ensure that relevant technical assistance in the form of capacity building and

training related to management and systems improvements, investment appraisal, optimization and related areas are imbedded in the service delivery institutions. Capacity in service delivery management, utility operational efficiencies, systems improvement, and related organizational and technical matters, including universal metering, improving data management systems, network rehabilitation and replacement, are critical to reducing operational losses.

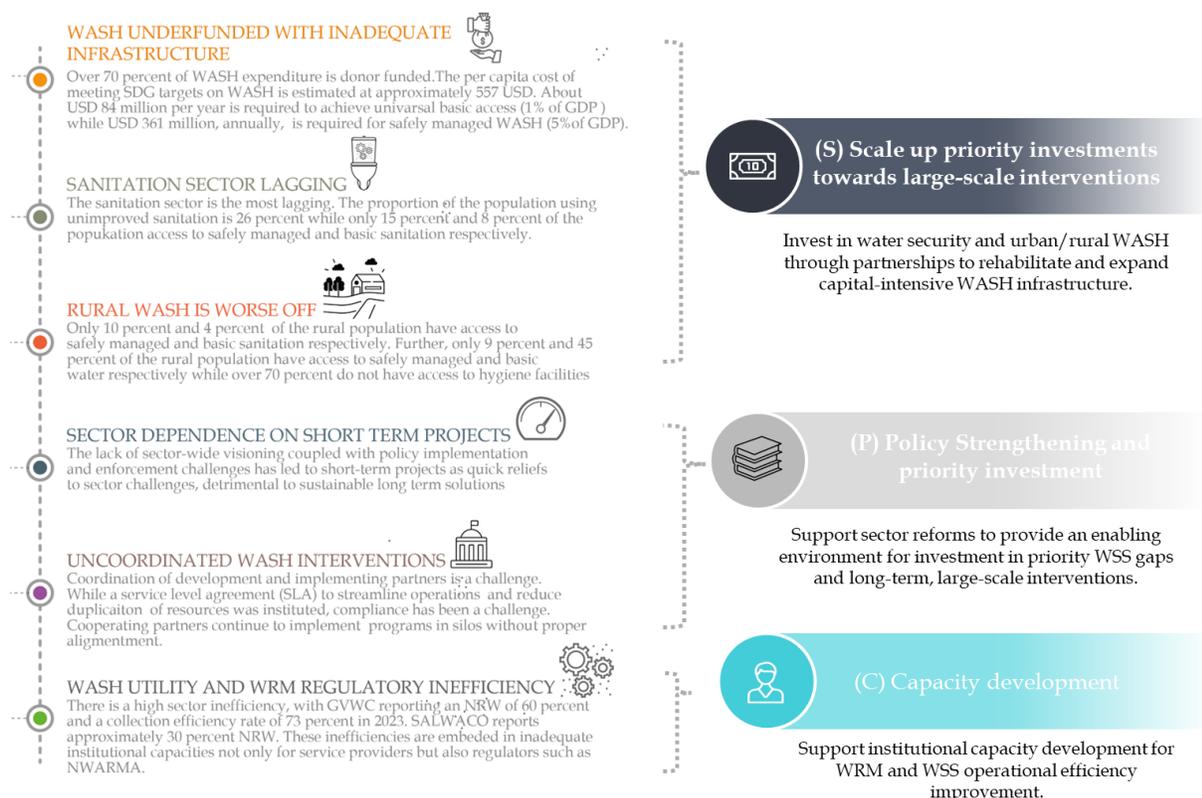
150. Another way of ensuring sector efficiency is by enforcing regulations and standards. In Zambia, the 1997 Water Supply and Sanitation Act instituted the National Water Supply and Sanitation Council (NWASCO) to ensure the establishment of commercial utilities (CUs), their licensing and above all regulation. As an independent regulator, its core function includes licensing service providers, developing and enforcing sector standards and guidelines, and setting and approving tariffs for WSS services. Over the years, NWASCO has successfully rolled out regulatory tools, including benchmarking, monitoring, licensing, service level guarantees and agreements, and water supply and sanitation guidelines. NWASCO has also successfully enforced these regulations, such as suspending the operating licenses for non-compliance, illustrating the importance of maintaining separation between regulation and service provider roles.

Chapter 6

The Way Forward is Capacity Development, Policy Strengthening along with Priority Interventions and Scale-up Investment.

151. The issue of WASH in Sierra Leone reflects a paradox of scarcity in abundance. While Sierra Leone boasts of abundant water resources, there is economic scarcity which reflects a lack of significant investment in water infrastructure (Bajaj et al. 2022). This report benchmarks key WASH indicators and builds sector knowledge relevant to improving WASH service delivery and water resource management. The analysis highlighted six key challenges (Figure 6.1) that can be resolved by reviving the sector through three blocks of intervention to catch up on the SDG targets, which close in the next five years. Sierra Leone must consider sector capacity development for service delivery, regulation, and governance. Secondly, there is the need to update, strengthen and enforce existing sector policies along with priority interventions to improve water resource management and urban and rural access to WASH. Lastly and critically, there is the need to engage in scaled-up investment to reduce the pertinent sector infrastructure gap.

Figure 6.1 Key WASH service delivery challenges and preliminary recommendation for action



6.1 Capacity development (WASH/WRM) for improved access to WASH

152. Reversing the WASH challenges will require concrete but incremental and realistic interventions that build on low-hanging fruits to rip benefits that can be plugged back into the further development of the WASH sector (Figure 6.2). Improving WASH financing would be key to revamping the sector. However, for a more sustainable approach to achieve this, it is relevant to start with improving the sector's inefficiencies to unlock finances that can be plowed back into the sector as an investment. This can be achieved by offering technical assistance in the form of capacity building and training related to management and systems improvements, optimization and related areas. The capacity building needed for WRM and WASH service delivery could focus on institutional strengthening, efficiency improvement, logistical support in data management systems, universal metering, network rehabilitation and replacement. Associated management training can also cover investment proposal development and appraisal, utility operational systems improvements, and related organizational and technical matters, such as hydraulic modeling, monitoring, and GIS capabilities.

6.2 Policy strengthening and short-term priority investment in WSS.

153. As access to WASH lags, especially in rural areas, the expansion of the service needs to be done in a manner that does not undermine operational sustainability. Opportunities lie in the presence of cooperating partners investing in the sector. This should, however, be streamlined and better coordinated for efficiency. A platform for cooperating partner cooperation would be ideal to organize and systematically address gaps in WASH access for the urban and rural.

154. In the short term, an enabling policy environment and investment in urban and rural access to WASH is needed. This will require policy provisions for targeted inclusive interventions to increase access to basic water and sanitation to curb the use of unimproved (17 percent) and surface water (11 percent) on one hand and unimproved sanitation (26 percent) and open defecation (16 percent) on the other. Increasing water storage capacity and nature-based solutions to catchment protection will be essential in the short term.

155. In the medium term, the sector's financial sustainability can also improve through greater user contributions. It is feasible for the urban water and sanitation sector to make a substantial, albeit not full, contribution towards the capital costs of investments in the sector, especially for the rehabilitation and replacement of existing infrastructure. When this contribution is made, it will enable loan finance to be used and repaid, expanding the pool of available finance for the sector. Sustained financing of the sector is critical. In addition to setting realistic tariffs for service delivery, an escrow account (reserved capital cost contribution) that requires service providers to reserve a proportion of revenue to be deposited in the account can create a significant fund base. When tariffs are approved, the regulator can determine a factor to be applied to the tariff revenue that is to be set aside as a contribution to capital costs and deposited into an escrow account. This will prevent tariff revenues meant for recovering capital costs from being absorbed into the operating costs.

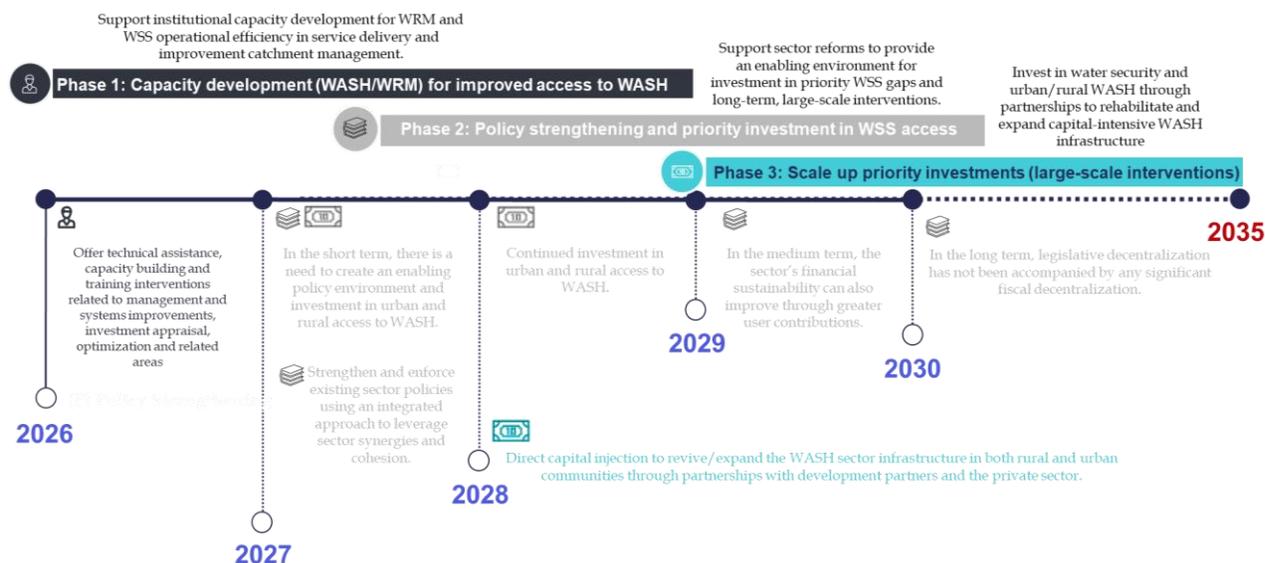
156. In the long term, legislative decentralization has to be accompanied by significant fiscal decentralization. While local governments have a mandate to provide WASH services, including

urban sanitation, the absence of a specific budget line makes it difficult to track total WASH spending, hindering accountability and transparency. Deepening fiscal decentralization and ensuring a dedicated budget line for WASH in Sierra Leone through structural reforms is a major reform exercise extending beyond the water sector. Along the lines of decentralization, sector regulation must extend to the fragmented rural WASH service delivery through the local government structures.

6.3 Impact at scale to achieve the SDG 6

157. To relieve sector challenges, particularly regarding access to WASH, capital injection is required to rehabilitate and expand infrastructure. A dedicated fund pooled through partnerships with development partners and private capital can be a solution. The dedicated pooled fund can provide the financial resources needed to invest in rehabilitation and water and sanitation infrastructure expansion—specifically, household water connections, sewer connections and wastewater treatment.

Figure 6.2 Proposal for a transformative WASH program in Sierra Leone



158. Despite significant challenges, a path towards achieving SDG 6, clean water, sanitation, and hygiene for all, lies ahead. The way forward for Sierra Leone's WASH sector is paved with immense potential. While the government has made significant strides in water sector planning, evident in, among others, the National Water and Sanitation Policy (2010), the National Water Resources Management Agency (NWRMA) Act No. 5 of 2017, the NWRMA- Strategic Development Plan, the National Rural Water Supply and Sanitation Programm, and Guma Valley Business and Investment Plan, concerted efforts are needed to actualize the reform proposal (Figure 6.2)

- The government should embark on developing a well-structured WASH and WRM program together with cooperating partners that takes stock of the capacity challenges in the sector. The program must include a plan of action cognizance of funding sources and

priority investments. Improved capacity for service delivery and management will address efficiency issues that would generate savings for re-investment in the sector.

- It will be prudent for the government to have a committed budget stream for the WASH sector. Besides budgetary allocation, the government should consider options for cost recovery where tariffs reflect the cost of water provision in a tiered pricing structure where higher usage and proximity to the urbanized areas incur higher costs to encourage conservation.
- There is a need to build on policy milestones by committing resources to implementation and making the requisite updates where necessary. Strengthening and enforcing existing sector policies using an integrated approach to leverage sector synergies and cohesion will be crucial for the sector's development.
- Also, the government should invest in water security and urban/rural WASH through partnerships to rehabilitate and expand infrastructure. Climate-resilient interventions are needed to ensure water security. The monthly/seasonal variability of rainfall, which causes scarcity during the dry season, should be addressed with an increase in storage capacity and nature-based solutions to catchment protection.
- Forging strong partnerships and embracing innovative solutions is critical if Sierra Leone can incrementally break free from persisting water scarcity constraints. These partnerships should be effectively coordinated through a well-structured WSS and WRM program to avoid overlaps and duplications.
- Lastly, the government must set its priorities for the water sector's development in the short term. There is a need to focus on addressing the most critical and quick-win type of interventions (basic access to WASH) while preparing the ground and laying the foundation for long-term, large-scale investment and engagement to build a brighter WASH future where clean water, sanitation, and hygiene are a reality for all.

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Appendix

Appendix 1. JMP SDG service ladders for drinking water, sanitation, and hygiene service level

Drinking Water	
Safely Managed	Drinking water from an improved water source that is located on-premises, available when needed, and free from fecal and priority chemical contamination.
Basic	Drinking water from an improved source , provided collection time is not more than 30 minutes for a roundtrip, including queuing.
Limited	Drinking water from an improved source for which collection time exceeds 30 minutes for a roundtrip, including queuing.
Unimproved	Drinking water from an unprotected dug well or unprotected spring.
Surface Water	Drinking water directly from a river, dam, lake, pond, stream, canal, or irrigation canal.
Sanitation	
Safely Managed	Use improved facilities that are not shared with other households and where excreta are safely disposed of in situ or transported and treated off-site.
Basic	Use of improved facilities which are not shared with other households.
Limited	Use of improved facilities shared between two or more households
Unimproved	Use pit latrines without a slab or platform, hanging latrines, or bucket latrines.
Open Defecation	Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches, and other open spaces or with solid waste.
Hygiene	
Basic	Availability of a handwashing facility on premises with soap and water.
Limited	Availability of a handwashing facility on premises without soap and water.
No Facility	No handwashing facility on premises.

Source: JMP 2023

Appendix 2. Legislation and Policy Framework for the Sierra Leone water and sanitation sector

Legislation	Description	Date
Crown Lands Ordinance (Act) (as amended)	An Ordinance to make Further and Better Provision for the Management and Disposal of Crown Lands. Under the Ordinance, the Minister may make grants of land; but a grant under this Ordinance shall not, unless express provision to the contrary is contained therein, confer any right to: (a) The water of any spring, river, lake or stream other than such water as may be required for domestic purposes upon the land which is the subject of the grant; (b) The foreshore or to the banks of any navigable water-way; or any mineral or to any mineral oil	1960
Public Health Ordinance (now Act)	This Act provides for matters of public health in Sierra Leone, including, among other things, water supply, drainage, water pollution, sanitation, hygiene and wholesomeness of food, the control of animals, and nuisances	1960
Forestry Act	This Act deals with forest management. There are also provisions for the Minister to declare protected areas for soil, water, flora, or fauna conservation and protected trees anywhere in Sierra Leone. It is important to assess the synergy with the EPA, The NPAA, and the NWRMA.	1988
Vision 2025	Promote active user participation in rehabilitation/construction, maintenance and care of WASH facilities	2003
Local Government Council Act 2004	Regulations to assign specific functions from MDAs to Local Councils including water service provision.	2004
Bumbuna Watershed Management Authority and the Bumbuna Conservation Act	An Act to provide for the establishment of the Bumbuna Watershed Management Authority; to coordinate sustainable land use and agriculture programmes in an environmentally compatible manner in the Bumbuna Watershed; to promote environmental management and biodiversity conservation in the Bumbuna Conservation Area; to address environmental and social needs associated with the operation of the Bumbuna Hydroelectric Dam including, the physical protection and sustainability of the Bumbuna reservoir and to provide for other related matters.	2008
Environment Protection Agency Act	An Act to establish the Sierra Leone Environment Protection Agency, to provide for the effective protection of the environment and other related matters. The Agency shall, among other things: (a) Advise the Minister on environmental issues; (b) Provide measures for the control of pollution; (c) Issue environmental permits and pollution abatement notices; and (c) Prescribe standards and guidelines relating to ambient air, water, and soil quality, etc.	2008
National Water and Sanitation Policy	The water and sanitation policy responds to the need in Sierra Leone for integrated and cross-sectoral approaches to water management and development as well as the provision of safe and adequate water and adequate sanitation facilities. Specifically In particular, it advocates for (a) The fundamental human right of access to safe and adequate water to meet basic human needs; (b) Provision of education to improve hygiene practices and increased access to adequate sanitation facilities; (c) Careful management of water as a socially vital economic good to sustain economic growth and to reduce poverty; (d) A participatory approach that will help the conservation and protection of water resources in the country.	2010

Sierra Leone Electricity and Water Regulatory Commission Act	This Act establishes the Sierra Leone Electricity and Water Regulatory Commission to regulate the provision of electricity and water services and to provide for other related matters.	2011
Environmental Regulations for the Minerals Sector	This was made under Section 62 of the EPA Act 2008, as amended in 2010, by these Regulations, the Environment Protection Agency is to regulate procedures for the application for and granting of an environmental license and for prescribing environmental quality standards, including standards for effluent wastewater among others	2012
National Protected Area Authority and Conservation Trust Fund Act	Protection and conservation of protected areas and eco-systems (including promoting knowledge and participation of local communities, schools and local administrations in programmes and services, relating to socioeconomic and environmental issues including, fisheries, agricultural and forestry best practices, forest management, land, soil, and water conservation in Protected Areas 'and buffer zones.	2012
Poverty Reduction Strategy Paper (2013-2018)	Under Pillar 2, Managing natural resources, Water resource management. Sierra Leone has rich water resources, but water is not available where and when needed. Policy will develop water resources, ensuring water is used in an integrated manner, addressing human needs, ecosystems, and conservation, and responding sustainably to the needs of society and the economy. In addition to providing safe water and improved sanitation the Agenda for Prosperity, advocates the need to balance infrastructure with institutional, regulatory and efficiency reforms to ensure the sustainable delivery of WASH services. Specifically, efforts be directed at improved coordination and harmonization of WASH delivery approaches by state, and non-state sector development actors/ partners.	2013
Sierra Leone Local Content Agency Act	This Act provides for greater access to credit, and market information and requires that access to water be made available to smallholder farmers to boost productivity. For the supply of food products to public institutions, first consideration shall be given to locally produced food.	2016
National Water Resources Management Agency Act	This Act provides for the equitable, beneficial, efficient, and sustainable use and management of the country's water resources; to establish a National Water Resources Management Agency; to provide River Basin Management Boards and Water Catchment Management Committees for the management of the water resources and for other related matters.	2017
Sierra Leone Water Company Act	This is the Act to provide for the continued existence of the Sierra Leone Water Company; to provide more efficient and effective management of community and rural water supply systems in specified areas; to provide for the facilitation of water-related sanitation and delivery in Sierra Leone and to provide for other related matters.	2017
Guma Valley Water Company Act	Act to provide for the continuance in existence of the Guma Valley Water Company; to provide for the sustainable supply of water for public and private purposes and to provide for other related matters.	2017
Medium-Term National Development	<ol style="list-style-type: none"> 1. Policy Cluster 1 stresses the need for human capital development 2. Policy cluster 3.3 stresses improving the water infrastructure system. 3. Policy cluster 7 focuses on addressing vulnerabilities and building resilience 	2019

Plan (2019-2023)		
2019-2030 Urban Water, Sanitation and Hygiene road map	Ministry of Water Resources commissioned the development of an institutional urban WASH roadmap to 2030. This process has been supported financially by Millennium Challenge Corporation (MCC).	2019
National Strategy on Sanitation and Hygiene 2020-2030 (NSSH)	<p>The goals of the NSSH are:</p> <ol style="list-style-type: none"> 1. Strengthened leadership by the MoHS and effective and efficient stakeholder coordination at the national, district, and community levels. 2. Established specific sanitation and hygiene budget lines and transparent financial mechanisms. 3. Empower the active participation of local communities in improving sanitation and hygiene implementation and management. 4. Reviewed implementation methodologies used for universal sanitation and hygiene expansion. 5. Innovated local and sustainable markets for sanitation and hygiene solutions/technologies. 6. Objective evidence available through data collection, monitoring, research, and development/implementation of standards and protocols. 7. Continuous promotion of appropriate behavior on sanitation and hygiene (at all levels). 8. Toilets and handwashing facilities in public institutions (schools, hospitals, Peripheral Health Units (PHUs), and public markets) that cover the special needs of people with disabilities and are sex-segregated. 4. Positioned for sanitation and hygiene improvement interventions as emergency responses, to stop epidemics and to deal with climate/change environmental challenges. 	2020
National Strategy on Water Safety Plans for Sierra Leone 2020-2030	The goal of the strategy is to ensure drinking water quality; enable the provision of safe, affordable, and adequate drinking water to the satisfaction of the people of Sierra Leone; and protect public health and sustain local water resources	2020
National Water and Sanitation Policy (Draft)	<p>The Policy draws attention to:</p> <ul style="list-style-type: none"> • Integrated programming: MoHS will create partnerships to strengthen linkages between WASH, education, food and nutrition and health • Adopting demand-based, community-based, and WASH Markets approaches in accelerating access to sustainable improved sanitation and drinking water along with sustainable management – Sierra Leone made commitments to scale up demand-based and community-based approaches for sanitation and management of water facilities. So far demand creation has predominantly focussed on the CLTS approach. The government recognized that awareness and promotion through Community Health Clubs are not enough to create systemic change, rather it should be combined with adequate products, delivery systems, and services so that sanitation products last 	2021

