



**PERFORMANCE
AUDIT REPORT**

**ON THE
DISTRIBUTION**

OF WATER

**SUPPLY IN THE
WESTERN AREA**

BY THE GUMA

VALLEY WATER

COMPANY

MARCH 2024

FOREWORD

In submitting this Performance Audit Report for tabling in Parliament, we refer to Section 11 of the Audit Service Act of 2014, which clearly indicates the role of the Audit Service Sierra Leone (ASSL) thus: “To audit and report on all public accounts of Sierra Leone and public offices including the Judiciary, the central and local government institutions, the University of Sierra Leone and other public sector institutions of like nature, all statutory corporations, companies and other bodies and organisations established by an Act of Parliament or statutory instrument or otherwise set up wholly or in part out of public funds.”

Section 11 (2c) of the Audit Service Act of 2014 also gives the mandate to the Audit Service to carry out value-for-money and other audits, to ensure that efficiency and effectiveness are achieved in the use of public funds. Section 65 (6) of the Public Financial Management Act of 2016 states: "Nothing in this Section shall prevent the Auditor-General from submitting a special report for tabling in Parliament on matters that should not await disclosure in the annual report. "

In line with our mandate as described above, we have the pleasure and honour to submit a detailed performance audit report on the Distribution of Water Supply in the Western Area by the Guma Valley Water Company.

A handwritten signature in blue ink, appearing to read 'Aiah Gbondo-Tugbawa', is written over a light blue circular stamp or watermark.

Aiah Gbondo-Tugbawa

F/ACTING AUDITOR-GENERAL

ABBREVIATIONS AND ACRONYMS

GoSL	Government of Sierra Leone
GVWC	Guma Valley Water Company
IWA	International Water Association
IWRM	Integrated Water Resources Management
KRA	Key Result Areas
LGA	Local Government Act
MDAs	Ministries Departments and Agencies
MWR	Ministry of Water Resources
NGO	Non-Governmental Organisation
NPAA	National Protected Area Authority
NRW	Non-Revenue Water
NWSP	National Water and Sanitation Policy
NWRMA	National Water Resources Management Agency
NWRMA-SDP	National Water Resources Management Agency - Strategic Development Plan
SL MET	Sierra Leone Meteorological Agency
SALWACO	Sierra Leone Water Company
SDGs	Sustainable Development Goals
SPIP	Strategic Performance Improvement Programme 2019-2023
UNEP	United Nations Environment Programme
WASH	Water and Sanitation Hygiene
WATSAN	Water and Sanitation
WHO	World Health Organisation
WRM	Water Resources Management
WSD	Water Supply Division



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EXECUTIVE SUMMARY

Water is the basic necessity for the functioning of all life forms that exist on earth, and the demand is expected to increase as human population continues to grow. Access to safe and readily available water is essential for a healthy life, and it is a basic human right. Contaminated water is the basis for the transmission of all waterborne diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid etc.

Goal 6 of the Sustainable Development Goals (SDGs) advocates for access to water and sanitation for all. Target 6.1 calls for universal and equitable access to safe and affordable drinking water. The Target is tracked with the indicator of “safely managed drinking water services.”

The Guma Valley Company Act of 2017 gives the Company the mandate to produce, distribute and conserve water within the limits of supply and other areas as may be determined by the Commission. According to the Sierra Leone Medium-Term National Development Plan 2019-2023, poor sanitation and hygiene and use of unsafe water cause ill-health and contribute to about half of the preventable diseases.

Sierra Leone is endowed with abundance of water resource potentials, yet struggle to meet the needs of the growing population in the face of climatic variability for sustainable and equitable water demand and supply management¹. The Guma Valley Water Company relies principally on that single source, the Guma Dam and the Guma Water Treatment Plant at Mile 13, with over 90% of the total water supply distributed to over 1.5 million people in the capital city of Freetown. The Dam was built during colonial times to serve about 500,000 inhabitants residing in the city then. With the passage of time which comes along with the ever-growing population of inhabitants in the city, water is rationed to many areas in the city with almost no customers getting 24-hour supply. With rapid and uncoordinated expansion of urban settlements, more urban residents are likely to continue depending on vendors and water delivery bowsers, at costs far in excess of utility rates. This situation has affected the educational growth of the youth in the country, as most of them spend more time fetching water than studying to improve their educational standards. It has also increased teenage pregnancy among young girls who had to wake up early or stay late at night in various parts of the city to access and fetch safe drinking water.

Despite efforts made by the Government over the past years with assistance from development partners, access to improved source of water has been a challenge.

Against this backdrop, the Audit Service Sierra Leone in line with its legal mandate, conducted a performance audit to assess the distribution of water supply by the Guma Valley Water Company, and suggest recommendations for improving the distribution. The following is a summary of findings, recommendations and conclusion arising from the audit.

¹ National Water Resources Management Agency (NWRMA) Five-year Strategic Development Plan (2019 -2023), page ii

KEY FINDINGS LIMITED WATER SUPPLY COVERAGE

The team reviewed the Company's website, the Strategic Performance Improvement Programme (SPIP) for 2019-2023 and interviewed key staff of the GVWC. These investigations revealed that the capacity of the Guma Dam was inadequate to meet the demand of the population in the Western Area. The situation, they said was due to the rapid population growth, as the Dam was only built to provide a reliable water supply to about 500,000 people. The current population is estimated at over 1.5 million people, which is significantly higher than the original figure.

Despite efforts by the Company to erect water tanks that could be filled by bowsers in hard-to reach communities within the western area, this has not salvaged the situation of water supply in the city, as it is still rationed, while long queues are formed to fetch water. As a result, the unserved (deprived) population have continued to fetch drinking water from untreated water wells and other sources which have the potential to transmit waterborne diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid, etc. This situation has also made life difficult, particularly for women and children who are often responsible for carrying water over long distances, exposing them to risks such as increase in teenage pregnancy and more. Women and children have to wake up early or stay up late at night outside the safety of their homes to access safe drinking water.

ENCROACHMENT IN WATER CATCHMENT AREAS

A review of the Stakeholders Assessment Report on the Western Area Water Catchment Areas revealed that deforestation and massive logging around the catchment areas which stretch about 22km from Kaningo in the West to Thunder Hill in the East is alarming. This is due to population density and demand for land and other forest reserves in the western area. This was also confirmed through interviews with key staff of the MWR, NWRMA, and GWVC, and site inspection carried out by the audit team.

This situation is as a result of non-enforcement of laws relating to the protection of water catchment areas by key stakeholders like the Ministry of Environment, the Ministry of Lands, the Environmental Protection Agency, and the National Protected Area Authority. The failure to take preventive measures has swept major water catchments leading to the reduction of water in the Congo and other reserved dams, thereby creating water scarcity in the new settlements. In addition, illegal logging has had a huge impact on climate change and this has made it almost impossible for the GVWC to provide safe drinking water in the nearest future. Despite the legal framework in place to protect the reserve, unregulated human activities have also not stopped people from invading these catchment areas.

LEAKAGES IN THE DISTRIBUTION NETWORK

Leakage is a significant issue for the GVWC distribution system, resulting in an estimated 40% non-revenue water (NRW) (water loss between the production point and the customer or end-user point). The leakages are primarily due to burst pipes, illegal connections, and age distribution infrastructure. Most times, residents continue to grapple with water shortage due to leakages and burst pipes which are either not properly buried or dug out lying on the surface of the ground, which could be tampered with, causing serious water wastage. This impedes GVWC's ability to generate revenue to recover operations and maintenance costs, and further decline in quality service delivery.

UNACCOUNTED WATER LOSS

The audit team noted through interviews with key staff that the report on water balance has not been maintained, as there are limited metering systems; thus, the GVWC could neither accurately measure the



amount of water that flows into the operational areas, nor account for water losses. This could lead to economic loss, as the GVWC would not be able to put in place interventions to minimise revenue losses caused by the NRW and increase the capacity of the water supply by managing water losses.

MAINTENANCE OF THE WATER SUPPLY INFRASTRUCTURE

The team noted that aging infrastructure is a serious issue affecting the Company, even though there has been some interventions through government and donor supported projects. These projects include the Rehabilitation of Freetown Water Supply Systems funded by FCDO, the Freetown Emergency Response Project funded by World Bank and the Waterloo Water Supply funded by the GoSL for the expansion and rehabilitation of the existing infrastructure during the period under review. This situation is still prevalent due to resource constraints. The Company could not undertake capital investments to expand and replace the aged network. This poses high risk of frequent service interruptions and the water quality is contaminated.

LIMITED TECHNICAL STAFF IN THE RESEARCH UNIT

We noted through document review and interviews with key staff that there is a Planning, Research, and Development Unit that is responsible for the provision of first-hand information for planning, research, and development. This Unit is however faced with the challenge of limited technical personnel.

INADEQUATE EQUIPMENT

A review of the SPIP 2020 – 2023 and interviews with key managers revealed that there were inadequate working tools such as Leak Detection Machines, Ultra-Sonic Machines, Bulk Flow Meter, turbines, transmission valves, cock valves to carry out work efficiently and effectively.

This is as a result of limited resources which has not only adversely affected their planned activities, but has had delays and decreased water supply to the consumers.

OVERALL CONCLUSION

The findings from the report have led us to the conclusion that the capacity of the Guma Dam is inadequate to meet the demands of the population in the Western Area. The increase in population growth, deforestation and massive logging has swept major water catchments leading to the reduction of water in the Congo and other reserved dams, thereby creating water scarcity in the new settlements. Leakage is a significant issue affecting the distribution network between production point and consumers or end-users point due to burst pipes, illegal connections, aging distribution infrastructure and pipes tampered with; causing serious water losses. This also impedes the Company's ability to generate revenue to recover operations and maintenance costs, which is also a recipe of water contamination.

The aging infrastructure is affecting service delivery, and causes water contamination. The Company cannot embark on capital investments to expand and replace the aged network due to resource constraints. There are inadequate technical staff. The required equipment such as leak detection machines, ultra-sonic machines, bulk flow meter, turbines, transmission valves, cock valves, for effective and efficient operations are also inadequate. This is as a result of resource constraints which is adversely affecting planned activities.

OVERALL RECOMMENDATIONS We recommend the Managing Director to ensure the following:

- Prioritise the expansion of the Dam to accommodate and cater for the ever-growing population.
- Collaborate with other stakeholders including Ministry of Environment, Ministry of Lands and EPA for the enforcement of regulations and other measures to discourage encroachment and protect the catchment areas in order to prevent water shortage and climate hazards.
- Prioritise preventive maintenance and set strategies to gradually replace all aging infrastructure for sustainable distribution system and constant monitoring of the distribution network to reduce leakages and water losses.
- The recruitment of adequate technical staff to effectively discharge the functions of the Company.
- The required equipment are provided for the enhancement of effective and efficient operations. The Chief Engineer should periodically maintain records on water balance in order to set strategies and performance indicators that would minimise NRW.

1 INTRODUCTION

1.1 BACKGROUND

Water is an essential precondition for human existence, and the demand for it keeps increasing by the day, as human population continues to grow. Access to safe and readily available drinking water is essential to health, and it is a basic human right. Contaminated water is linked to transmission of waterborne diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid. Water Resources Management is the process of planning, developing and managing water resources, in terms of both water quantity and quality across all uses. These include the institutions, infrastructure, incentives and information systems that support and guide water management.²

Water Resource Potential in Sierra Leone has an area of 71,620 km² with an estimated population of about 7 million people. The country is drained by nine major rivers, with lengths ranging from 90 km to 430 km and watershed areas ranging from 612 km² to 19,022 km². The total average annual renewable water from all the watersheds is estimated at 160 km³ (160,000 million cubic meters). Four of these watersheds are shared with neighbouring Liberia and Guinea. The average annual rainfall is more than 3000 mm and the climate is tropical with temperature ranging from 22°C to 35°C. Despite an abundance of water resources in Sierra Leone, the distribution is uneven. Hence, in the dry season, the water resources are scarce to meet water needs in various parts of the country.

The Ministry of Water Resources is in charge of setting regulations and formulating policies for water management within the Government. As part of its mandate, the MWR exercises policy oversight on the GVWC. Conventional water supply in the Freetown Municipality started with the creation of the Freetown Waterworks on 16th December 1901 by an Ordinance of Parliament which states: “For the purpose of providing Freetown with a supply of water, proper and sufficient, for public and private purposes”.

Sixty years later, the Freetown Waterworks Ordinance of 1901 was repealed and replaced by the Guma Valley Water Company Ordinance on 14th April, 1961.

The 1961 Ordinance that created the Guma Valley Water Company has also been repealed and replaced by the Guma Valley Water Company Act No. 6 of 8th June, 2017.

Whereas as the Freetown Waterworks Ordinance of 1901 and the Guma Valley Water Company Ordinance of 1961 limit the area of supply to between Sussex and Allen Town; the Guma Valley Water Company Act No. 6 of 2017 expanded the mandate of the company to cover the whole of the Western Area with a population of over 1.5 million residents.³

² <https://www.worldbank.org/en/topic/waterresourcesmanagement#2>

³

<https://gumavalley.sl/>

1.2 MOTIVATION OF THE AUDIT

Sierra Leone is blessed with abundance of water resources, yet can hardly meet the needs of the growing population in the face of climatic variability for sustainable and equitable water demand and supply management.⁴

Goal 6 of the Sustainable Development Goals (SDGs) advocates for access to water and sanitation for all. Target 6.1 calls for universal and equitable access to safe and affordable drinking water. The Target is tracked with the indicator of “safely managed drinking water services”. Particularly, water resource management is tackled in SDG 6.5, which states: “By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate”, but other SDGs and targets require water resource management for their achievement.⁵

The Guma Valley Water Company Act of 2017 gives the Company the mandate to produce, distribute and conserve water within the limits of supply and other areas as may be determined by the Commission. According to the Sierra Leone Medium-Term National Development Plan 2019-2023, poor sanitation and hygiene and use of unsafe water cause ill-health and contribute to about half of the preventable diseases.

In August 2021, it was expressed by UNEP water quality expert Kilian Christ in a publication at the United Nations Environment Programme (UNEP) website that for the first time, the West African countries submitted a report to the United Nations on the quality of water in one of their river basins. An assessment done on River Rokel catchment and supported by the UNEP, revealed that more than half of the stretches of river tested failed to meet national quality standards⁶. Millions of people living in rural and urban areas of Sierra Leone largely rely on water wells or boreholes for their daily water needs.

The African Development Bank has implemented the Rural Water Supply and Sanitation Project between 2013 and 2021, in order to increase access to safe drinking water by 13% and safe basic sanitation by 3%. Approximately, 720,000 people have benefited from rural water supply developments, while 25,371 households have gained access to safe basic sanitation.⁷

The urbanisation rate in Sierra Leone exceeds current levels of urban water supply. In Freetown, GVWC’s average daily output is 18 million litres per day as against a daily estimated demand of 35 million gallons per day. Water is rationed to many areas in the city with almost no customers getting 24hour supply. In the peri-urban and the densely populated poor urban communities, customers receive supplies once a month or none at all. Nationally, only about 50% of the urban population have access to water from improved water sources. With rapid and uncoordinated expansion of urban settlements, more urban residents are likely to continue depending on vendors and water delivery bowsers, at costs far in excess of utility rates. In addition, water supply sources like the Guma Dam in Freetown, are no longer able to meet current demand. Water scarcity has worsened mainly due to population growth in the Western Area, as compared to the available water supplied by the GVWC to meet the demand. This has led to increase in

⁴ National Water Resources Management Agency (NWRMA) Five-year Strategic Development Plan (2019 -2023), page ii

⁵ <https://www.who.int/news-room/fact-sheets/detail/drinking-water>

⁶ <https://www.unep.org/news-and-stories/story/how-sierra-leone-taking-water-pollution>

⁷ <https://www.afdb.org/en/news-and-events/sierra-leone-improved-access-safe-drinking-water-more-700000-peoplerrural-areas-thanks-african-development-bank-53608>

teenage pregnancy among young girls who had to wake up early or stay up late at night in various parts of the city to access safe drinking water. It has also affected the educational growth of the youth in the country, as most of them spend more time fetching water than studying to improve their educational standard.

Leaking pipes and illegal connections are major contributing factors to Freetown's poor water supply system. People who do not have taps in their homes resorting to cutting pipes that run into the homes of other residents to access water. Others divert the pipes to their personal homes. Poorly supervised constructions have also contributed to the problem, as residents have indiscriminately cut down connections, which has left many homes without water supply.

Furthermore, the quality of water is increasingly polluted as a result of contamination by human as well as industrial activities.⁸ This was mentioned in the Auditor-General's Annual Report on the Account of Sierra Leone 2021, that the level of encroachment and deforestation on the Company's water catchment area at Mile 13 is alarming. It can be viewed as a national security threat if appropriate interventions are not instituted.

It was also published in the Calabash Newspaper dated 23rd April 2022, that the President visited the Guma Valley Dam at Mile 13. The visit was geared towards seeing the enormity of the water catchment areas faced by massive encroachment, and called for the re-establishment of the Western Area Forest Green Belt and an immediate investigation into the activities of the Ministry of Lands and Housing concerning environmental infractions⁹.

It must be noted that the Guma Valley Water Company relies principally on that single source, the Guma Dam and the Guma Water Treatment Plant at Mile 13, with over 90% of the total water supply to over 1.5 million people in the capital city of Freetown, as it was built during colonial times to serve about 500,000 inhabitants residing in the city at the time.

Despite efforts by the Government over the past years with assistance from donors, access to improved sources of water has been a serious challenge.

Against this backdrop, the Audit Service Sierra Leone following its legal mandate, conducted a performance audit to assess the management of water resources and suggest recommendations for improving water resources management.

⁸ Ministry of Energy and Water Resources the National Water and Sanitation Policy July 2010, page 7

⁹ <https://thecalabashnewspaper.com/encroachment-on-guma-valley-dam-to-come-to-a-halt-investigated/>

1.3 AUDIT OBJECTIVE

The objective of the audit was to assess the measures put in place by the GVWC to ensure an efficient distribution and improve access to water by customers in the Western Area.

1.4 AUDIT QUESTIONS

In order to achieve the audit objective, the following questions were designed to gather evidence:

1. Has the GVWC ensured that water is adequately supplied to meet the needs of its consumers?
 - Is the supplied water of acceptable quality, and equitably distributed to meet the needs of its consumers?
2. To what extent has the distribution network been maintained?
 - What systems are in place to efficiently address water leakages?
 - Are preventive repairs and maintenance done to the distribution network?
3. Are there adequate resources (manpower, equipment, etc.) to maintain the distribution network?

1.5 AUDIT SCOPE

The audit focused on the Distribution of Water Supply in the Western Area by the GVWC covering the period 2020 - 2022. The audit covered a period of three years (1st January 2020 to 31st December 2022) and took into consideration current information. It was carried out at the GVWC headquarters, sub offices in Freetown and site visitation was done at Mile 13 Guma Dam and Babadorie Reservoir.

1.6 METHODS OF DATA COLLECTION

The audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAIs) which are issued by the International Organisation of Supreme Audit Institutions (INTOSAI). These standards require that the audit is planned and performed in order to obtain adequate and appropriate evidence to provide a reasonable basis for the findings and conclusions based on the audit objective. During this engagement, we collected data through interviews with key officials at the MWR, the GVWC headquarters and sub offices in Freetown. We also reviewed relevant documents in these offices and observation was done at Mile 13 Guma Dam and Babadorie storage.

Interviews

Key officials of the MWR, the GVWC headquarters and sub offices in Freetown were interviewed to obtain relevant information and get better understanding of their roles and responsibilities in the Management of Water Supply. This was done to obtain corroborative information from documents reviewed and physical observations conducted. The details of personnel interviewed are shown in Appendix I.



Document Review

Documents were reviewed in order to obtain sufficient; appropriate audit evidence on the operations, processes and procedures involved in the management of water supply and to source corroborative information from interviews and site observation.

See Appendix II for details.

Observation

Site observation were carried out at the Mile 13 Guma Dam and Babadorie reservoirs in order to assess their conditions.

1.7 SAMPLE SELECTION

The team used the judgemental sample method based on the fact that the Guma Valley Water Company relies principally on a single source, with over 90% of the total water supply to Freetown supplied from the Guma Dam and the Guma Water Treatment Plant at Mile 13.

Other sources include Kongo Dam, Sugar Loaf, Charlotte Weir, Blue Cemetery, White Water. However, all these secondary sources are seasonal and only supply during the rainy season to early dry season.

1.8 SOURCE OF ASSESSMENT CRITERIA

The criteria used to assess the management of water supply in the Western Area were obtained from the relevant acts, regulations and policies as mentioned in Appendix III

2. DESCRIPTION OF THE AUDIT AREA

This chapter gives a brief description of the subject matter including government undertakings during the period under review. It outlines the regulatory framework governing the management of water resources including the mandate, mission and vision of the responsible institutions. It also describes the functions and organisational structures of these institutions and gives a detailed analysis of the expenditure incurred by the GoSL. A detailed process description together with the roles and responsibilities of the key players were also presented.

2.1 GUMA VISION AND MISSION

Vision

Universal and effortless access to reliable and sustainable potable water supply and well-managed water resources to ensure availability for other uses – irrigation, hydropower, mining and tourism.

Mission

To provide strategic leadership for the sustainable management of water resources to enhance socioeconomic development for the benefit of all Sierra Leonean households, commercial and industrial entities.

Mandate

The Ministry's mandate is to:

- provide water sector leadership;
- formulate policies, regulations and standards for the water sector;
- ensure that the population is provided with an adequate and reliable potable water supply;
- ensure that the country's water resources are properly managed; and
- engender collaboration and corporation amongst water Sector stakeholders.

2.2 REGULATORY/POLICY FRAMEWORK

The Government of Sierra Leone has a range of legislations and policies to regulate the management of water resources in the country.

These comprise the following:

▪ **Guma Valley Water Company (GVWC) Act of 2017 (Act No. 6 of 2017):**

The GVWC is charged with the responsibility of providing access to portable water supply in Freetown and its environs. It produces, distributes and conserves water within the limits of supply and other areas as may be determined by the Commission. It should ensure that water is supplied to customers in accordance with quality standards as prescribed by law or by the Sierra Leone Standards Bureau; and to encourage private sector participation in the provision of safe water supply, including production and distribution of water as well as billing and collection of revenue.

▪ **Guma Valley Water Company Strategic Performance Improvement Plan 2019 – 2023**

The Guma Valley Water Company's Strategic Performance Improvement Plan (SPIP) sets out a rolling 5-year strategy that will set the utility on the path to achieving the vision of providing access to safe, affordable, and sustainable water for all by 2028. The SPIP is structured around making progress against five key result areas. Each department and unit of the utility has articulated focus areas and deliverables that contribute to the 5 key result areas. These undertakings are time-bound and will be monitored to ensure the utility remains on track

▪ **National Water Resources Management Agency (NWRMA) Act of 2017:**

The NWRMA is responsible for granting water rights and allocating resources among competing users.

It was established to:

1. regulate, utilise, protect, develop, conserve, control, and generally manage water resources throughout the country;
2. propose comprehensive plans and strategies for the utilisation, conservation, development, and improvement of water resources;
3. supervise and regulate the Water Basin Management Boards and Water Catchment Area;
4. management committees;
5. grant water rights and collect raw water charges;
6. monitor and evaluate programmes for the operation and maintenance of water resources;
7. advise the Minister on pollution control on any matter likely to have an adverse effect on the control of pollution and water resources of the country; and
8. cooperate and collaborate with relevant international organisations for the management and utilisation of international transboundary watercourses.

▪ **Sierra Leone Electricity & Water Regulatory Commission (SLEWRC) Act of 2011:** The SLEWRC was established for the following responsibilities:

1. To regulate the provision of the highest quality of electricity and water services to consumers and act as an independent and transparent regulatory authority for the electricity and water industries issue, and as the case may be, renew, amend, suspend, revoke, and cancel licences.
2. Provide guidelines on rates chargeable for the provision of electricity and water services.
3. Protect the interests of consumers and providers of electricity and water services.
4. Monitor standards of performance for the provision of electricity and water services.
5. Promote fair competition among public utilities, and conduct studies relating to the economy and efficiency of public utilities.

▪ **National Water and Sanitation Policy of 2010**

The principal objective of the Policy for Water Resources Management is to develop a comprehensive framework for promoting optimal, sustainable, and equitable development and use of water resources. It provides an overall direction for addressing the challenges the sector faces currently and in the future.

2.3 ROLES AND RESPONSIBILITIES OF KEY PLAYERS

a) Ministry of Water Resources (MWR)

The Ministry formulates and implements policies for the development and management of water resources, to ensure all communities have improved access to safe drinking water, in a sustainable manner, and for socio-economic development. It exercises supervisory and monitoring control over SALWACO, GVWC, NWRMA. It is also responsible through its technical Water Directorate to provide effective technical and backup support to local councils and the broader WASH sector.

b) Guma Valley Water Company (GVWC)

This Company is responsible for providing water supply services to the entire western area. The Company relies principally on a single source, the Guma Dam, with over 90% of the total water supply to Freetown sourced from the Guma Dam and the Guma Water Treatment Plant at Mile 13. Other sources include Kongo Dam, Sugar Loaf, Charlotte Weir, Blue Cemetery, White Water. These secondary sources are however seasonal and only supply during the rainy season to early dry season.

c) Sierra Leone Water Company (SALWACO)

This Company has the mandate to provide potable water supply services to six provincial towns in the country. Under the SALWACO Act of 2017, the mandate was extended to provide water and sanitation services to four regions of the country (North, North-West, East and South) The Company currently provides pipeborne water supply services to a total of 12 towns namely; Bo, Kenema, Makeni, Lungi, Kambia, Lunsar, Magburaka, Mile 91 & Yonibana, Port Loko, Kabala, Pujehun and Kailahun.

d) National Water Resources Management Agency (NWRMA)

The National Water Resources Management Agency is responsible for granting water rights, water resources allotment among competing users, formulation of regulatory measures, information/data collection, and sharing on water resources, with also a view to controlling pollution. Trans-boundary water resource issues also fall under the mandate of the Agency.

e) Electricity and Water Regulation Commission (EWRC)

The Electricity and Water Regulation Commission is established primarily to formulate, implement, monitor quality and compliance, provide tariff guidelines, licences and implement regulatory frameworks for the safe, secure, affordable and reliable supply of water and electricity in Sierra Leone.

f) Ministry of Lands

This Ministry is responsible for mapping of catchments areas, watersheds, rivers and lakes with the involvement of the National Water Resources Board (NWRB).

g) Ministry of Environment

This Ministry is mandated to formulate and facilitate the implementation of appropriate policies and programmes for sustainable management of the Environment. This task gives them the authority to supervise and monitor activities carried out in the environment.

h) Local Councils

The local councils have a devolved function that is responsible for all urban water supply activities (except Freetown) and peri-urban water supply schemes.

i) Standards Bureau

The Standards Bureau has a mandatory responsibility to declare standard for any commodity, manufacture, production, processing or treatment of a commodity to be a mandatory standard in relation to the commodity.

The following are other key stakeholders and their roles and responsibilities in the management of water resources:

i. Foreign Commonwealth & Development Office

The support for the Freetown Water Supply Rehabilitation Project by the Foreign Commonwealth and Development Office has increased sustainable access to safe drinking water in Freetown through the rehabilitation of water infrastructure for improved public service delivery.

ii. World Bank

The intervention of the World Bank on the Freetown Emergency Recovery Project (FERP) has improved selected critical infrastructure on water management in Freetown, and has also strengthened Government's capacity for managing disaster risk.

iii. African Development Bank

The Freetown Water and Sanitation Hygiene Aquatic Environment Revamping Project supported by the African Development Bank has promoted water supply and sanitation services and also ensured the sustainability of the vital aquatic ecosystem in the Western Area (Freetown).

iv. Concern Worldwide

With funding from Concern Worldwide, an international NGO, the FCC installed rainwater harvesting systems in 50 locations across Freetown as part of its response to COVID-19, whilst simultaneously improving general water access to vulnerable communities and PHUs.

2.4 RESOURCE/FUNDING

Allocations are given to the GVWC on a quarterly basis by the Government of Sierra Leone through the Ministry of Finance after the budgets have been approved by Parliament.

The table below shows budgetary allocation to the GVWC to carry out activities during the period under review.

Year	Amount(Le) Old Leones
2020	31,336,186,321
2021	19,729,497,581
2022	9,232,030,794
Total	60,297,714,696

Source: *Expense Analysis from Ministry of Finance*

2.5 THE MANAGEMENT OF THE WATER SUPPLY

The GWVC relies principally on a single source, the Guma Dam, with over 90% of the total water supply to Freetown sourced from the Guma Dam and Water Treatment Plant at Mile 13 which was built in the 1960s and can only reliably provide water to around 800,000 people¹⁰.

Other secondary sources including Kongo Dam, Sugar Loaf, Charlotte Weir, Blue Cemetery and White Water are seasonal, and only supply during the rainy season to the early part of the early dry season. The GVWC supplies 83 million litres a day; entering the city from the West, where more affluent residents reside. Freetown has a water supply system that experiences many issues despite having a high amount of annual rainfall. The current status of most functional water infrastructure in Freetown is characterised as aged and of insufficient capacity to cover current demand.

The MWR also works closely with international organisations such as the World Bank and the United Nations Development Programme (UNDP) to secure funding and technical support for water management projects in the country.

¹⁰ Sierra Leone: Providing Improved Water Service for Urban Citizens. <https://dt-global.com/projects/freetown-water>



The GWVC has over the years undertaken extensive laying of submains to many communities to control the massive leakages in the Western Area totaling about 20km which represents an increase of 240% since 2018, and this has ensured that the distribution mains can retain more water leading to more people receiving the service.

On access to water supply, there has been considerable improvements in terms of service reliability and predictability as a result of the robust daily rationing schedule that has been in place since April 2019. Consumers now know the times they should receive water supply. The Company has also increased its customer base from 22,000 in 2018 to 24,000 in 2022, representing a 10% increase.

The ProPoor and Community Services Unit of the Company is expanded, and working with communities that are either underserved or unserved. The Unit is currently implementing a 3-year Water Operators Partnership Programme funded by the European Union and the UN Habitat with Ghana Water Company Limited and VEI (a consortium of water utilities in the Netherlands).

3 FINDINGS AND RECOMMENDATIONS

This chapter presents the detailed audit findings on whether the distribution of water supply in the Western Area was efficiently managed by the GVWC for the period under review. It also proffers recommendations that could help alleviate/curtail the identified weaknesses/problems in the management process of the distribution of water. It presents findings and recommendations in respect of the three audit questions that are related to the GVWC: accessibility, distribution of water supply and preventive maintenance of the water supply network infrastructure.

3.1 LIMITED WATER SUPPLY COVERAGE

High quality and sufficient water supply is essential for human health. Section 12 (1) of the GVWC Act of 2017 states: "The object for which the Company is established shall be to produce, distribute and conserve water within the limits of supply and other areas as may be determined by the Commission". Section 15 (1&2) indicate that the Company shall provide, in its mains, sufficient water supply for the domestic purposes of its consumers and in compliance with the water quality standards prescribed by the Sierra Leone Standards Bureau.

The audit team reviewed the Company's website, Strategic Performance Improvement Programme (SPIP) for 2019-2023 and also interviewed key staff of the GVWC which revealed that the capacity of the Guma Dam is inadequate to meet the demand of the population in the Western Area. This is due to the increase in population, as the Dam was built to provide reliable water supply to about 500,000 people, but the current population is estimated at over 1.5 million, significantly higher than the original figure.

Despite efforts by the Company to erect water tanks that are filled by bowsers at hard-to-reach communities within the Western Area, that has not salvaged the situation of supply, as water is still rationed, while queues are still formed to fetch water.

As a result, the unserved population continues to fetch drinking water from untreated wells that could lead to diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid. This situation has made life difficult, particularly for women and children, who are often responsible for carrying water over long distances, exposing them to risks such as increase in teenage pregnancy. Women and children have had to wake up early or stay up late at night outside the safety of their homes to access safe drinking water.

Recommendation

We recommend that the Managing Director should Prioritise the expansion of the Dam to accommodate and cater for the growing population.

Management's Response

There is regular maintenance of the transmission and distribution mains. Also Guma has embarked on the extension of distribution submains of the communities with a view to replace spaghetti pipes and reduce leakages. The Company in the last two years has implemented or is implementing the following projects which will increase service coverage by certain percentage values:

- The Waterloo Water Supply System involves the construction of a mini dam, transmission pipes, disinfection system, distribution network, water kiosks and provision for household connection - This system is 80% completed and will extend service coverage by 3%; serving around 30,000 people.
- The Mambo/Hamilton Water Supply System involves the construction of a mini dam, transmission pipes, service reservoir, disinfection system, distribution network, water kiosks and provision for household connections - The system is 95% completed and will extend service coverage by 2%; serving around 20,000 people.
- The IMATT Water Distribution Project involves the extension of pipe network to IMATT community, S S Camp and Regent - This project has extended the GVWC coverage area by 0.5% by providing access to more than 400 households. This Project is 100% completed.
- The Angola Water Supply Project also involves the construction of two mini dams, treatment plants with a capacity of 3MLD, a 2.6ML service reservoir, transmission pipes and 42.5km distribution - Despite improving the supply hours for residents leaving between Hamilton and Emergency Hospital, it will increase the coverage area by 2%. This project is 80% completed and is expected to start operations in June 2024.
- The construction of additional storage tanks at Babadorie Treatment Plants - An additional 72m³ storage is being built, which is more than 100% storage expansion (from 60m³ to 132m³). Upon completion, the residents served by this will be increased. The Project is 40% completed and expected to be handed over 2024.
- Through our robust rationing and leakage management, GVWC has also in the last few years increase coverage, particularly in the East (Personage Street, Wellington, Mountain cut etc.). 4% coverage extension has been achieved due to such intervention.

In summary GVWC have increased the coverage by 4% in 2022 and by the end of 2024, an additional 8% coverage expansion would have been achieved.

Auditor's Comment

We note your response, we would verify the progress in the follow-up reviews.

3.1.1 ENCROACHMENT IN WATER CATCHMENT AREAS

Section 26 of the National Water Resources Management Agency Act of 2017 states: "The Agency may, for the purpose of efficient water management declare any area to be a Protected Water Catchment Area." A review of the Stakeholder Assessment Report on the Western Area Water Catchments done by the NWRMA, revealed that deforestation and massive logging around the catchment area which stretches about 22km from Kaningo in the West to Thunder Hill in the East is alarming due to increase in population density and demand for land and other forest reserves in the Western Area. This was also confirmed through interviews with key staff of the MWR, NWRMA and GWVC and site visitation carried out by the audit team.

This is as a result of non-enforcement of laws relating to the protection of water catchment areas by key stakeholders like the Ministry of Environment, the Ministry of Lands, the EPA, the National Protected Area Authority. The failure to take preventive measures has swept major water catchments leading to the

reduction of water in the Congo and other reserved dams, thereby creating water scarcity in the new settlement.

Illegal logging has had a huge impact on climate change that will make it almost impossible for the GVWC to provide potable water in the near future. Despite the legal framework in place to protect the reserve, unregulated human activities have not stopped people from invading these catchment areas.

See below:



Photo 1: Showing massive encroachment at the GVWC catchment area at mile 13. Photo taken by the audit team on 23rd March, 2023.



Recommendation

The Managing Director in collaboration with other stakeholders including the Ministry of Environment, the Ministry of Lands and the EPA should ensure the enforcement of regulations and other measures to discourage encroachment and protect catchment areas in order to prevent water shortage and climate hazards.

Management Response

The protection of the catchment areas is the responsibility of various MDAs like the Ministry of Environment and Climate Change, the EPA, the National Protective Area Authority and the NWRMA. The GVWC has been engaging these institutions with the sole objective of stopping people engaging in deforestation of the catchment areas. The GVWC had also delineated all its catchments and submitted its maps and coordinates to the Ministry of Lands, Housing and Country Planning. The Ministry should use these coordinates to superimpose in their system and stop signing any survey that falls within these areas. As a result of the intense campaign on the deforestation of the catchment areas carried out by the GVWC, H.E. the President visited the GVWC Dam in 2022 in order to have a first hand view of the extent of deforestation. Following the presidential visit at Mile 13, directives on the protection of the catchment areas were given for which the Office of the Chief Minister took the lead in the implementation.

A Technical Committee (including GVWC, NWRMA, NDMA etc.) was set up to carry out an assessment on the encroachment on the National Park. The report prepared has been submitted to the Office of the Chief Minister. The GVWC Act, 2007 also stipulates penalties for encroachment and damages to catchment areas.

Auditor's Comment

We note your comment whilst we await verification of the progress on measures taken to discourage encroachment and protect catchment areas.

3.2 LEAKAGES IN THE DISTRIBUTION NETWORK

Section 12 (2c, 2h) of the GVWC Act of 2017 states: "The Company shall manage and maintain the waterworks in good working order; construct, reconstruct, rehabilitate, repair; maintain waterworks buildings and other infrastructure of the Company." Leakage is a significant issue for the GVWC distribution system resulting in water loss between production point and the customer or end-user point. These leakages are primarily due to burst pipes, illegal connections, non-registered meters and aged distribution networks. They account for about 40% of non-revenue water. In addition, in some areas, residents continue to grapple with water shortage in most times of the day, partly due to leakages and burst pipes which are either not properly buried or dug out by erosion and could be seen lying on the surface of the ground, resulting to water losses. This impedes GVWC's ability to generate revenue and to recover operations and maintenance costs and further decline in service quality. It is also a source of water contamination.



Recommendation

The Distribution and Transmission Manager should ensure constant monitoring of the distribution network in order to reduce leakages and water losses.

Management's Response

Burst pipes, illegal connections, aged distribution infrastructure are key factors that cause leakages and increase the non-revenue water. Management has taken proactive steps to reduce these leakages. The Company has extended distribution submains by over 8 kilometers in various locations in the last two years. The Company has also been engaging communities through regular radio programmes on the management of water supply and weeding out illegal connections. Communities with improved water supply include the following: Beach Road Lumley, Aberdeen, Greenville Lane, Lower Savage Square, Grey Bush, Solo B Drive in Goderich, Wilberforce, IMATT etc.

Auditor's Comment

We acknowledge the steps taken to reduce these leakages. The progress will however be verified in follow-up reviews.

3.2.1 UNACCOUNTED WATER LOSS

The International Water Association Standards (IWA) provides the computation of water balance in order to analyse the trends of Non-Revenue Water (NRW) and determine the causes of water losses and to identify all components (both physical and commercial losses) that contribute to water losses. This will enable the Company to set strategies and performance indicators for reducing water losses by measuring the amount of water that flows into the operational areas and account for water losses for each area.

The audit team interviewed the Chief Engineer who stated that report on water balance has not been maintained, as there are limited metering system; thus, GVWC could neither accurately measure the amount of water that flows into the operational areas, nor account for water losses. The current situation, if not addressed could lead to huge economic loss, as GVWC will not be able to put in place interventions that would minimise revenue losses caused by NRW, and increasing the capacity of the supply water by managing water losses.

Recommendation

The Chief Engineer should periodically maintain records on water balance in order to set strategies and performance indicators that would minimise NRW.

Management's Response

There is an ongoing prepaid and postpaid meter installation programme which includes the establishment of District Metering Areas within the area of supply. The objective of the Company is to implement universal metering as management strongly believes that having meters installed will create awareness for consumers to conserve and manage their water supplies effectively, thereby increasing access to pipe borne water supply to poorly served communities. The District Metering System will also provide management with vital information on areas where water supply is relatively good and where it is insufficient.



Auditor's Comment

We note your response. However, the periodic records on water balances derived from the installation of prepaid and postpaid meters will be verified in a follow-up review.

3.3 PREVENTIVE MAINTENANCE OF THE WATER SUPPLY NETWORK INFRASTRUCTURE

According to Section 12(h), of the GVWC Act of 2017, it is the Company's responsibility to construct, reconstruct, rehabilitate, repair and maintain waterworks, buildings and other infrastructure.

The general condition of mains, service pipes, service reservoirs and other fittings of a water system is the most significant factor that affects the level of leakage in the distribution network.

We noted through document review and interviews with key staff of the GVWC that aging infrastructure is a serious issue affecting the Company, even though there have been some interventions through the Government and donor supported projects. These projects include the Rehabilitation of Freetown Water Supply Systems, funded by FCDO, the Freetown Emergency Response Project, funded by World Bank, Waterloo Water Supply funded by the GoSL for the expansion and rehabilitation of the existing infrastructure during the period under review. We noted that this situation is still prevalent due to resource constraints. The Company could not undertake capital investments to expand and replace the aged network. This poses high risk of frequent interruptions and water contamination.

Recommendation

The Managing Director should prioritise preventive maintenance, and set strategies to gradually replace all aging infrastructures for sustainable distribution system.

Management's Response

In 2022, the GVWC completed the rehabilitation of 3.1km of the transmission pipeline and valves through the Freetown Water Supply Rehabilitation Project that was funded by the FCDO. The Project also rehabilitated the main treatment plant at Mile 13 with a state-of-the-art disinfection and backwash systems. The main pumping station at Spur Road has been upgraded to a new system with new MCC, transformer, pumps, metering, etc. Further to that, the Company continues to undertake regular maintenance of the distribution systems whilst at the same time engaging donors and Government for investments in capital projects identified and reported in the Freetown Water Supply Master Plan Studies.

Auditor's Comment

Your response is noted and will be verified in follow-up reviews.



3.3.1 LIMITED TECHNICAL STAFF IN THE RESEARCH UNIT

Section 27(2) of the GVWC Act of 2017 states: “There shall be appointed by the Board such other employees on such terms and conditions as the Board may determine for the effective discharge of the functions of the Company.”

We were however informed through document review and interviews held with key staff that there is a Planning, Research, and Development Unit (which is the think tank of the Company) to provide firsthand information for planning, research, and development.

Optimising the use of water through better planning, research, and development will help improve welfare and increase economic growth. Economic instruments such as water bills and connection fees, if well implemented and enforced, can improve the stewardship of the water used.

This is faced with the challenge of limited technical personnel which could lead to delay with the challenge faced by the unit, there could be delays in work, lower water output and compromised quality of work. Additionally, it can impede economic growth by limiting the capacity of the GVWC to expand and meet consumer demand.

Recommendation

The Managing Director should ensure the recruitment of adequate technical staff to effectively and efficiently discharge the functions of the Company.

Management’s Response

The GVWC has high staff per connection ratio compared to the industry best practice (14 staff per 1,000 connections). The industry’s average is below 10 staff per 1,000 connections. As we continue to improve our performance and connections, we would endeavour to recruit staff that will complement the GVWC efforts to increase performance. The GVWC is committed to have the right number of staff to perform our functions.

Auditor’s Comment

We note your response and shall confirm your intervention during follow-up reviews.

3.3.2 INADEQUATE EQUIPMENT

Water fittings such as pipes, taps, cocks, valves, ferrules, meters, cisterns, baths, water closets and similar apparatus used in connection with the supply and use of water are essential. ¹¹

We noted from the review of the SPIP 2020 – 2023 and interview with the key managers that there were inadequate working tools including leak detection machines, ultra-sonic machines, bulk flow meter, turbines and transmission valves to carry out their duties efficiently.

According to the clients, the lack of vital working tools was as a result of limited resources which has also adversely hampered planned activities which has the tendency to lead to improper maintenance of equipment and delays in the water supply to the consumers.

¹¹ Section (1)- Part 1 of the Guma Valley Water Company’s Act, 2017



Recommendation

The Managing Director should ensure that the required equipment are provided for the enhancement of effective and efficient operations.

Management's Response

The GVWC is also implementing the strategy of outsourcing to private sector. We are also in the process of outsourcing metering, leakage management and installation of new service connections. This will create space for some staff to redeploy to other areas. The Company has also engaged in the use of technology to improve efficiency.

Auditor's Comment

We note your response, we would verify the progress in the follow-up reviews.

4 CONCLUSION

The conclusion of this chapter is aligned with the audit objective. It reflects our views and explanations derived from analysis and findings supported by audit evidence as presented in the previous chapter. Water plays a vital role in life sustenance on earth, and will become increasingly critical in the future given the continuing population growth and economic development. There is growing demand for water for domestic, agricultural and industrial purposes in the face of water scarcity, inadequate infrastructure and limited access, and habitat destruction and pollution, all of which affect water quality and quantity.

The audit findings made us conclude that despite efforts made by the Government and some donor supported projects, there is still a challenge facing the distribution of water supply. The distribution of water in the Western Area is characterised by limited water supply coverage, leakages in the distribution network, and inadequate preventive maintenance of the water supply infrastructure. The following are specific conclusions:

LIMITED WATER SUPPLY COVERAGE

It is evident that the capacity of the Guma Dam is inadequate to meet the demand of the population for Western Area due to the increase in population. Deforestation and massive logging around the catchment areas are not only alarming due to population density and demand for land and other forests reserves in the Western Area, but have also swept major water catchments leading to the Congo and other reserved dams, thereby creating water scarcity in the growing cities.

LEAKAGES IN THE DISTRIBUTION NETWORK

Leakage is a significant issue for the GVWC distribution system, resulting in water loss between production point and consumers or end-users point. The leakages are primarily due to burst pipes, illegal connections, non-registered meters, age distribution network pipes causing serious water losses. It also impedes the Company's ability to generate revenue to recover operations and maintenance costs, and a source of water contaminations.

MAINTENANCE OF THE WATER SUPPLY INFRASTRUCTURE

The aging infrastructure is a serious issue affecting the Company due to resource constraints to make capital investments to expand and replace the aged network. This poses high risk of frequent service interruptions and water contamination.

INADEQUATE RESOURCES TO MAINTAIN THE DISTRIBUTION NETWORK

The team noted that there were inadequate technical staff such as engineers, pipe fixers pipe layers, general workers. This is as a result of resource constraints to enhance the recruitment of these staff. In addition, the required equipment for effective and efficient operations are inadequate such as leak detection machines, ultra-sonic machines, bulk flow meter, turbines, transmission valves and cock valves. This is as a result of resource constraints which is adversely hampering their planned activities.



The above conclusion suggests that the distribution of water supply in the Western Area remains a challenge for the GWVC. The Management of the GVWC should therefore collaborate with key stakeholders to address the issues raised in this report. This will ensure an efficient system of control; and operational effectiveness of activities for the distribution of water supply in the future.

5 **APENDICES**

APPENDIX I - LIST OF DOCUMENTS REVIEWED AND REASONS FOR REVIEW

Document Reviewed	Reasons for Review
Guma Valley Water Company Act, 2017	To understand the legal instruments that regulate the water production, distribution, conservation of water in the Western Area
National Water Resources Management Agency Act, 2017	To understand the laws or rules governing the management of the country's water resources.
Ministry of Finance, Expense Analysis 2020 – 2022	To quantify the actual expenditure on the management of water to GVWC
Report on the investigation into the extent, causes, and implications of human encroachment into the forest reserve area around the Guma Dam. September 2022.	To get an understanding of the extent, causes, and implications of encroachment, and the recommendations made by the Investigation Committee to guide the GoSL in reserving the effects of encroachment activities.
Strategic Performance Improvement Programme 2019-2023	To have a clear understanding on the development plans which set out a 5-year strategy on the path to achieving the vision of providing access to safe, affordable, and sustainable water for all by 2028.
The National Water Resources Management Agency (Dam Safety) Regulations, 2021	To get an understanding of the management of water resources
International Water Association (IWA) Standards	To ascertain the International Standards for Water Balance in order to analyse the trends of Non-Revenue Water (NRW) and determine the causes of water losses
GoSL Ministry of Energy and Water Resources, the National Water and Sanitation Policy 2010	To get an understanding of the activities and operation of the management of water resources.
The 1991 Constitution of Sierra Leone	To ascertain the rights and mandates given to the Audit Service to audit all MDAs
Sierra Leone Electricity and Water Regulatory Commission Act, 2011	To get an understanding of the laws or rules governing the provision of electricity and water services in the country.
Sustainable Water and Sanitation in Sierra Leone Impact evaluation of the 'improved WASH services in WAU and WAR Districts' project. Effectiveness Review Series 2019/20.	To get an understanding of how the project aimed at improving the availability, accessibility, affordability, and sustainability of the integrated WASH services in the country.
Operationalisation of Western Area Peninsular Water Fund Annual Progress Report 2022	To get an understanding of how they directly contribute towards achieving Goal 3 of the NWRMA strategic plan (2019-2023) on watersheds and catchment areas and whether these areas are protected against deforestation and other environmental problems or not.



National Water Resources Management Agency (NWRMA) Annual Report 2020 & 2021	To get an overall understanding of the activities/operations, challenges, and successes of the Agency over the years.
GVWC Institutional strengthening, Urban WASH Sector Coordination, and District Metering Area and Water Kiosk Demonstration Pilot.	To get an understanding of the rights and responsibilities of the GVWC and consumers, and also spell out the level of service customers might expect.
Customer Service protocols and charter	It gives insight of the Company's services rendered customers and mode of payment
Rationing Schedule - Guma Valley Water Company	To get a better an understanding how rationing is done to meet customers' demands in the Western Area.
Customer Complaint Form - Guma Valley Water Company	To ascertain complaint reported by customers and response time in solving the problem
Report on Stakeholder Assessment of the Western Area Water Catchment Area	To get an understanding on the protection of water catchment areas

APPENDIX II - LIST OF STAKEHOLDERS INTERVIEWED AND REASONS

Stakeholder	Reason for Interview
Permanent Secretary - Ministry of Water Resources	To understand his role on the management of the Water Resources
Managing Director - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Director of Water & Technical Services - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Director of Corporate Services - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Director of Operations and Maintenance - Sierra Leone Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Chief Engineer - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Production Manager - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Transmission and Distribution Manage - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Area Manager West - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Area Manager Central - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Area Manager East - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Garage Manager - Guma Valley Water Company	To understand his role on the management of the distribution of Water Supply in the Western Area
Director of Water Resources - Ministry of Water Resources	To understand the role of MWR in the management of the Management of Water Resources
Head of Water - Water Directorate, Ministry of Water Resources	To understand the role of MWR in the management of the Management of Water Resources
Monitoring and Evaluation Officer - Water Directorate, Ministry of Water Resources	To understand the role of MWR in the management of the Management of Water Resources
Director General - National Water Resources Management Agency	To understand the role of NWRMA in the management of the Management of Water Resources
Director of Planning, Research & Operations - National Water Resources Management Agency	To understand the role of NWRMA in the management of the Management of Water Resources
Monitoring and Evaluation Officer - Water Directorate, Ministry of Water Resources	To understand the role of MWR in the management of the Management of Water Resources
Director General - National Water Resources Management Agency	To understand the role of NWRMA in the management of the Management of Water Resources
Director of Planning, Research & Operations - National Water Resources Management Agency	To understand the role of NWRMA in the management of the Management of Water Resources

APPENDIX III: SOURCES OF CRITERIA

Audit Question	Audit Criteria
<p>1. Has GVWC ensured that water is adequately supplied to meet the needs of its consumers?</p> <ul style="list-style-type: none"> ▪ Does the water provided sufficient, of acceptable quality, and equitably distributed to meet the needs of its consumers? 	<p>According to GVWC Act 2017 sections:</p> <p>12. (1) The object for which the Company is established shall be to produce, distribute and conserve water within the limits of supply and other areas as may be determined by the Commission.</p> <p>12. (2b) develop and expand on existing waterworks as it may consider necessary to meet the needs of consumers within the limits of supply;</p> <p>12.(2d) ensure that water is supplied to customers in accordance with quality standards as prescribed by law or by the Sierra Leone Standards Bureau;</p> <p>15. (1) The Company shall provide, in its mains, a supply of sufficient water for the domestic purposes of its consumers and in compliance with the water quality standards prescribed by the Sierra Leone Standards Bureau</p> <p>The National Protected Area Authority (NPAA) sole mandate is to protect the forest reserve</p>
<p>2.To what extent has the distribution network been maintained?</p> <ul style="list-style-type: none"> ▪ What systems are in place to efficiently address water leakages? ▪ Are preventive repairs and maintenance done to the distribution network? 	<p>The GVWC Act 2017 sections:</p> <p>12. (2c) Manage and maintain the waterworks in good working order;</p> <p>12.(2h) Construct, reconstruct, rehabilitate, repair, and maintain waterworks, buildings, and other infrastructure of the Company;</p>
<p>2. Are there adequate resources (manpower, tools, equipment, etc.) to maintain the distribution network?</p>	<p>GVWC Act 2017, section 27(2): There shall be appointed by the Board such other employees on such terms and conditions as the Board may determine for the effective discharge of the functions of the company.</p> <p>Section (1)- Part 1 of the Guma Valley Water Company's Act, 2017 Water fittings such as: pipes, taps, cocks, valves, ferrules, meters, cisterns, baths, water closets and similar apparatus used in connection with the supply and use of water are essential. ¹²</p>

¹² Section (1)- Part 1 of the Guma Valley Water Company's Act, 2017