



Expanding Public Utility Service Delivery in Rural and Small-Town Contexts

Ghana Report



CONRAD N. HILTON
FOUNDATION



Headline Enablers and Barriers

Enabling Environment



Enablers

Broad policy and political support has enabled the Community Water and Sanitation Agency (CWSA) to pilot the utility model even as efforts to finalise its legal mandate continue. The 2024 National Water Policy provides a framework for CWSA to deliver services and take over schemes from Water and Sanitation Management Teams (WSMTs) and District Assemblies, and political support has remained sufficient through changes in government to sustain the stalled reform process.

Indirect cross-subsidisation through the 2% rural water levy on Ghana Water Company Limited (GWCL) customers provides a critical mechanism for keeping tariffs below the full cost of service provision, generating approximately GH¢ 14 million (~USD 1.2 million) in 2023 and GH¢ 20 million (~USD 1.8 million) in 2024.



Barriers

The fragmented and poorly sequenced nature of the reform process has itself discouraged broader development partner engagement, creating a vicious cycle that further compounds CWSA's capacity constraints.

CWSA's legal mandate remains unconfirmed, pending Cabinet approval of the necessary reforms and accompanying Legal Instrument. This creates fundamental uncertainties around regulation, asset ownership, service area boundaries, and CWSA's relationship with District Assemblies, all of which constrain the utility's ability to expand with confidence across all stakeholders.

Ambiguities in service area delineation, particularly at the interface between CWSA and GWCL, create ongoing tensions over scheme responsibilities, especially where population growth has caused settlements to cross over from rural to urban classifications. These are sector-level issues that require clearer ministerial guidance and are not yet directly addressed by the ongoing reform process.

CWSA may have underestimated the scale of reforms, particularly the operational and institutional demands of direct service delivery in areas such as commercial operations and asset management, and the significant shift in both institutional structure and operational priorities that this has entailed.

CWSA operates in a fragmented and weak regulatory environment. Operating under self-regulation and pegging tariffs to GWCL urban tariffs approved by the Public Utilities Regulatory Commission (PURC), CWSA risks having a tariff structure that is insufficient to cover costs and/or unjustifiable to customers.

The absence of a clear, standardised asset transfer process, combined with community resistance and political interference, significantly impedes the uptake of new schemes by CWSA.

Operational Context



Enablers

Integration of solar and hybrid energy systems across schemes is improving resilience to erratic grid power supply and reducing energy costs, with new infrastructure now designed to include solar as a standard feature.



Barriers

Chronic infrastructure challenges persist, driven by limited financing from revenues and the uptake of aged, poorly maintained schemes. Access to substantial capital investment for rehabilitation and construction is critical to CWSA's long-term success, and current funding is insufficient to address this at scale.

Business viability challenges typical of rural and small-town contexts, including low population density, dispersed settlements, and seasonal drops in water demand due to rainwater harvesting, raise per-capita costs and constrain financial sustainability.

Significant resilience challenges from climate change, illegal mining, and anthropogenic pressures, including declining borehole yields, seasonal flooding, saline intrusion along the coastal belt, and surface water contamination, increasingly threaten water source sustainability.

Institutional Capacity



Enablers

- CWSA has developed a logical three-tier national/regional/water system level staffing structure and formed internal steering committees and identified internal champions. However, the organisational transition remains largely incomplete.
- A smaller-scale piloting approach, cascaded across the utility alongside targeted staff training, has provided a model for managed, incremental change. While sensible in principle, the pace and reach of this approach is insufficient relative to the scale of the transition challenge to date.
- Sustained development partner support, including from WSUP, IRC, Aquaya, and Safe Water Network, has contributed incrementally to improving CWSA's operational and institutional capacity. This support has, however, been modest relative to the scale of the challenge.



Barriers

- The pace and sequencing of change outstripped CWSA's institutional readiness, with the utility taking on a direct service delivery mandate before the necessary systems and capacities were in place. The rapid early expansion starting in 2017 was followed by a marked stall, with only 65 additional schemes taken up since 2019, suggesting that CWSA absorbed more water facilities than it could manage.
- Key service delivery capacities remain underdeveloped, including in pump installation and maintenance, water system design, water quality management, non-revenue water (NRW) measurement, contract management, and procurement. The transition from facilitator to utility was rapid and the required capacity adjustments were underestimated.
- CWSA has a high staff-to-customer ratio of 71 staff per 1,000 connections in the Western Region against an average of five staff per 1,000 connections across 12 sub-Saharan African utilities benchmarked by ESAWAS. This, combined with high staff turnover, generates significant staffing costs and undermines operational continuity.
- ICT and financial management systems are not yet sufficiently developed to support efficient commercial and technical operations at scale, with management information and asset management systems still being strengthened across a geographically dispersed portfolio of schemes.



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Acronyms

CWSA Community Water and Sanitation Agency

GSS Ghana Statistical Service

GWCL Ghana Water Company Limited

NRW Non-Revenue Water

PURC Public Utilities Regulatory Commission

WSMTs Water and Sanitation Management Teams

Introduction

1

1.1. Study Background

In many countries, recent sector policies and regulatory revisions have led to the adoption or expansion of public utility models for rural and small-town water supply services. This includes establishing dedicated rural-focused utilities (e.g., in Ghana, Ethiopia, Kenya, Tanzania, and Uganda) and expanding the mandate of existing urban-focused utilities to include rural areas and small towns (e.g., in Ethiopia, Kenya, Uganda, and Zambia). These developments represent a critical transition that can help accelerate progress towards national targets and drive sector professionalisation over time. However, effective service delivery in rural and small-town contexts poses a combination of challenges different from urban and peri-urban areas (WSUP, 2022). These include:

-  The often-poor state of infrastructure and the wide range of infrastructure types.
-  The remote and dispersed nature of rural customers, making aggregation challenging.
-  Seasonal demand variations and low willingness or ability of users to pay cost-reflective tariffs.
-  Difficulty attracting and retaining skilled staff and ensuring sufficient technical support.
-  The absence of sustained or sufficient funding to overcome these challenges.

This study seeks to fill a gap in sector literature concerning the actions required to effectively support expanded utility provision in small towns and rural areas. Several existing resources detail the ongoing and emergent processes of expanded utility provision in rural and small-town contexts (ESAWAS, 2022; REAL-Water, 2023a; IRC, 2021; USAID, 2023b; WaterAid, 2024). At the same time, several guidance materials outline factors and processes that can help utilities provide safe, sustainable, and equitable water supply services (World Bank, 2018a; World Bank, 2018b; World Bank, 2024; GWOPA, 2024a; GWOPA, 2024b). However, there is a shortage of cross-country learning and guidance explicitly focused on the actions required to support utility provision in small towns and rural areas, especially the transition processes for existing utilities to take up new mandates and new utilities establishing operations. This study, which was conducted across Ethiopia, Ghana, Kenya, Uganda, and Zambia, fills this gap through:

-  Detailing the status of utility provision in rural areas and small towns.
-  Outlining the enablers and barriers to the expansion of utility service provision.
-  Presenting existing good practices from the five countries.
-  Identifying common lessons for supporting utility expansion into small towns and rural areas.

1.2. Report Overview and Structure

This report focuses on Ghana's Community Water and Sanitation Agency (CWSA), a rural- and small-town-focused utility established in 1998 as a technical facilitating agency for rural water. CWSA initiated reforms in 2017 to become a rural water utility; however, these have faced significant challenges, and CWSA's transition into a legally mandated utility remains incomplete. The remainder of this report is structured as follows:

Section 2 details the status of utility service provision in rural areas and small towns.

Section 3 outlines the factors enabling and constraining expanded utility service provision.

Section 4 presents lessons learnt for utility expansion into small-town and rural contexts.

The report was developed based on a desk review, a utility survey, focus group discussions at the utility and national levels, and a series of targeted key informant interviews.



Service Delivery Context

2

2.1. Country Context

Ghana is a lower-middle-income country with a rapidly growing and increasingly urbanised population. Table 1 provides an overview of Ghana's demographic and socio-economic situation.

Table 1. Ghana's Demographic and Socio-Economic Overview (World Bank, 2024)

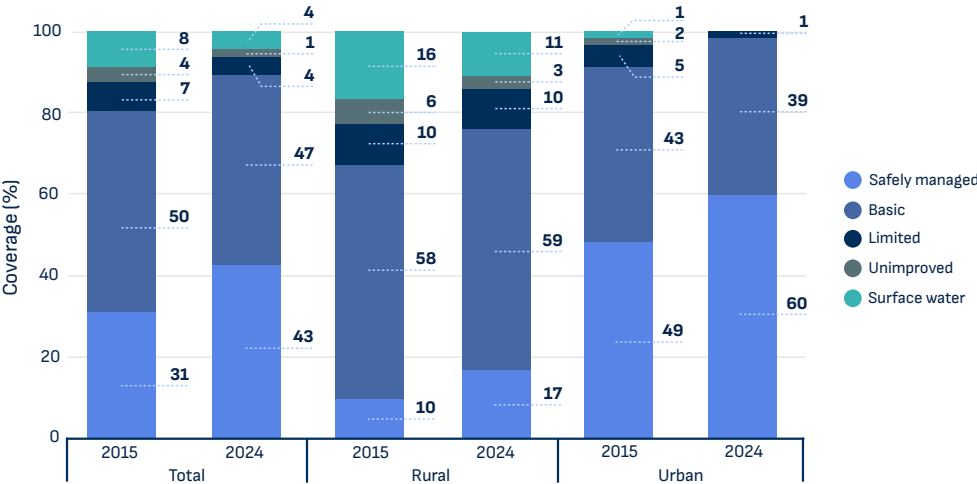
Indicator	National	Urban	Rural
Population	34.4 million	20.1 million	14.3 million
Share of total population	100%	58%	42%
Annual average population growth rate	1.9%	2.8%	0.5%
Population density (2023)	148 people/km ²		
Population living on less than \$3/day (2016)	39%		
GNI per capita	2310 USD		
Human Development Index	0.628 (Medium)		

The Ghana Statistical Service (GSS) (GSS, 2014) and the National Water Policy (MSWR, 2024) classify small towns and rural areas as (i) **Rural areas:** All areas with a population of less than 5,000, and (ii) **Small towns:** Areas with a population of 5,000 to 19,999.

2.2. Water Supply Status

Ghana has made steady progress in increasing access to water supply services. Figure 1 shows that access to at least basic water services at the national level increased from 81% to 90% between 2015 and 2024. Both rural and urban areas contributed to this progress: rural access increased from 68% to 76%, while urban access increased from 92% to 99% over the same period. Despite this progress, safely managed water supply was only at 17% in rural areas in 2024, compared to 60% in urban areas, highlighting the persistent service disparities between rural and urban areas.

Figure 1: Access to Water in Rural Ghana between 2015 and 2024 (WHO/ UNICEF, 2024)



The Government of Ghana has articulated an ambitious vision for the WASH sector; however, commitments to operations and maintenance remain limited. The Ghana WASH Sector Development Programme 2021–2030 envisages universal access to at least basic drinking water in both rural and urban areas by 2030 (MSWR, 2023). Public financing has also improved significantly, with the Government committing \$1.75 billion per annum since late 2025 under the Presidential Compact on Water, Sanitation, and Hygiene. However, this remains largely targeted towards capital investments, with limited government support for operations and maintenance.

2.3. Utility Service Provision

2.3.1. Expansion Pathway

Several challenges with the predominant community-based management model led to the promotion of utility service provision. A very high number of non-functional water schemes, with low sustainability and unreliable service delivery by Water and Sanitation Management Teams (WSMTs), represented a long-standing and deep-rooted challenge. Consequently, sector reforms promoted the expansion of utility service provision, which aimed to professionalise rural and small-town water supply. Nonetheless, the Government of Ghana still recognises the role of small water enterprises and small-scale providers in managing piped schemes, along with the continued role of WSMTs in managing point source water facilities (MSWR, 2024).

Since 2017, CWSA, which previously served as a facilitating agency for rural water supply, has been transitioning to a designated rural water utility. CWSA is a public corporation established by Act 564 of Parliament, mandated to facilitate rural and small-town water supply and sanitation services by supporting other actors that directly provide water services (MSWR, 2024). In 2017, CWSA initiated a process to transform into a public utility with a direct service provision role and mandate to manage piped water schemes. CWSA has taken over direct management of 196 piped schemes previously managed by other actors, predominantly WSMTs. The utility is also handling infrastructure newly constructed by other parties, including government and non-government actors. The National Water Policy (2024) recognises CWSA's expanded role to include managing publicly funded piped schemes in rural areas and small towns (MSWR, 2024). However, as of March 2026, this new mandate had not yet been legally codified through an amendment to CWSA's Act.

Globally, two broad pathways exist for utility service provision in rural areas. **Pathway 1** involves a historically urban-focused utility expanding into rural areas and small towns. Although GWCL is managing some facilities serving small towns (and falls into this pathway), this report focuses on CWSA¹. CWSA follows **Pathway 2**, which involves establishing rural-focused utilities (Figure 2).

The following sub-sections present detailed data on the scale and performance of CWSA.

¹ The Ghana Water and Sewerage Corporation (GWSC) served as the national water utility until the early 1990s. Its Rural Water Department was subsequently hived off to establish the Community Water and Sanitation Department, which was later transformed into an autonomous agency, CWSA.



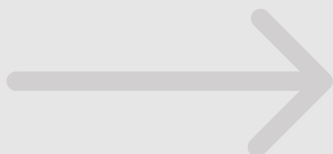
Figure 2: Triggers and Pathways for Utility Expansion in Rural Growth Centres and Small Towns

The Challenge



Limited access to safe water supply services in rural areas of Ghana.

A recently established public utility taking over previously poorly managed services and aged infrastructure, constrained by weak systems, and unable to sustainably deliver reliable, safe, and affordable water services.



External triggers for utility expansion



Political and policy support of utility provision and piped water supply services at the national and sub-national levels



Substantial government and development partner support



Increased demand for improved services

Internal triggers for utility expansion



Vision and strategic growth, especially for CWSA expansion



Strong internal drive to establish CWSA as a utility

PATHWAY 1

A historically urban-focused utility expanding its services into rural areas and small towns

- Not applicable

PATHWAY 2

CWSA is a rural-focused utility established in 2017 to take up rural WSS services

- In 2017, CWSA, which had previously provided technical backstopping and played a facilitation role to rural and small-town schemes, sought a mandate to directly provide water services as a public utility.
- CWSA plans to continue expanding its services in rural areas and small towns through consolidation by taking over existing publicly funded schemes, expanding existing schemes, and taking up the management of newly constructed schemes.
- Since 2017, the utility has taken up 196 rural and small-town schemes out of a total of about 2,000 systems. This consolidation process has slowed since 2019.

The Desired Situation



Utilities contributing to achieving the 2030 sector target of 100% access to safe water in Ghana.

A rural utility that is well-managed, adaptive to rural conditions, and operating within a strong enabling environment to incrementally and sustainably deliver safe, reliable and affordable water services.

2.3.2. Mandate and Scale

Delays in clarifying CWSA's legal mandate have significantly slowed growth in coverage, with CWSA currently managing only a small proportion of piped schemes within its intended operational area. Table 2 provides an overview of the technologies used, service area definitions, and the scale of operations of CWSA. Since the 2017 reforms began, CWSA expanded relatively quickly, taking over 196 rural and small-town piped water schemes out of over 2,000 nationwide. However, since 2019, the number of schemes has increased by only 65, highlighting a sharp slow-down in expansion. In the Ashanti Region, for example, CWSA had taken over 15 out of 42 small-town piped schemes by early 2021. Since then, CWSA has focused mainly on managing these 15 schemes, rather than further expansion. Several factors help explain this stalling, including the immense investment needs, CWSA's unconfirmed legal mandate, and wider capacity constraints.

Table 2. Technology, Scale, Coverage, and Utility Expansion Progress (CWSA, 2024)

Dimension	CWSA Operational Scope
 Technology	Primarily publicly funded piped schemes with standpipes and household connections. CWSA primarily manages larger small-town piped schemes which serve a relatively large population (about 10,000 to 15,000) rather than smaller rural schemes.
 Service Area Definition	Official service area covers all rural areas and small towns, with a population of about 25 million people in the nominal area of responsibility, split into 16 regions.
 Scale and Coverage (Approximate)	No verifiable data on the exact number of people served. Manages 196 systems in rural areas and small towns.
 Water Production (Annual)	10 million m ³ /year.
 Expansion Progress	Since the initiation of the 2017 reforms, CWSA has taken up 196 rural and small-town piped water schemes out of about 2,000 nationwide, increasing from 131 in 2019. The remaining schemes are still managed under WSMTs and small water enterprises.

2.3.3. Technical Performance

CWSA faces significant service delivery challenges. The utility faces widespread water quality issues, poor reliability, and high non-revenue water (NRW) due to ageing infrastructure, illegal connections, and frequent pipe failures. Table 3 summarises CWSA's technical performance.

Table 3. Technical Performance and Challenges Faced by CWSA (CWSA, 2024; CWSA, 2023; GSS, Ghana, & CWSA, 2023; REAL-Water, 2024)

Dimension	Performance
 Water Quality	CWSA faces considerable water quality challenges, including high levels of iron, manganese, arsenic, fluoride, hardness, and bacteriological contamination above the Ghana Standards Authority's (GSA) acceptable standards. Only 22% of CWSA schemes met the Ghanaian residual chlorine standard. In the Western Region, 62% of schemes reported conducting water quality testing every year, with only 12.5% of schemes conducting testing every quarter. Water safety plans have been implemented in at least 190 schemes.
 Reliability and Functionality	Faces major challenges with inadequate supply from existing boreholes with low yields, erratic power supply from the national grid, and illegal connections, consequently affecting reliability and failing to meet demand. Across five regions and 50 schemes, 65% of schemes achieved 12 hours/day of supply in 2024. In the Western Region, the functionality of CWSA schemes was 90%, and reliability was 73% in 2023 ² .
 Non-Revenue Water	NRW is high and rising from 29.57% in 2019 to 37.94% in 2024. In the Western Region, NRW across 15 schemes was 34% in 2023. This has been attributed to the uptake of aged infrastructure, illegal connections, frequent pipe bursts, and insufficient resources to conduct necessary maintenance and repairs.

² This was based on a measure of how often the water supply is available and how consistent the water quality is.

2.3.4. Financial Performance

CWSA's financial performance is fragile, with low operating cost recovery and considerable dependence on external support. Table 4 presents key indicators of financial and operational performance, including cost recovery, billing, and collection, and CWSA's ability to finance operation and maintenance.

Table 4. Financial Performance of CWSA (CWSA, 2023; GSS, Ghana, & CWSA, 2023; CWSA, 2024)

Dimension	Performance
 Operational Cost Recovery	CWSA has very low operating cost coverage by revenue ³ , with revenues far below expenses. In 2023, internally generated revenue was GH¢ 61.7 million (~USD 5.5 million), and expenditure was GH¢ 94 million (~USD 8 million), for an operating cost coverage ratio of only 66% . In 2024, internally generated revenue was GH¢ 78.5 million (~USD 7.0 million), and expenditure was GH¢ 123 million (~USD 11 million), with operating cost coverage ratio dropping further to just 64% .
 Water Sales, Billing, and Collection	Average annual billed amounts were GH¢ 72 million (~USD 6.6 million) in 2024 versus collections of GH¢ 65 ⁴ million (~USD 6 million), with a collection ratio of 89% . Water sales typically drop during the rainy season because of rainwater harvesting.
 Functional Ability to Carry out Operations and Maintenance	External sources of funding support CWSA to cover operation and maintenance costs, including a 2% rural water levy charged to GWCL customers, which amounted to about GH¢ 14 million (~USD 1.2 million) in 2023 and GH¢ 20 million (~USD 1.8 million) in 2024. CWSA also received government subventions of GH¢ 52 million (~USD 4.6 million) in 2023 and GH¢ 102 million (~USD 9.1 million) in 2024.

³ Total internally generated revenue as a percentage of operational costs (excluding capital expenditure)

⁴ This is less than the total internally generated funds in 2024 (GH¢ 78.5 million) because the latter includes "Other Incomes".



Enabling and Constraining Factors

3

3.1. Operational Context

3.1.1. Infrastructure and Water Resources

- CWSA faces severe infrastructure challenges due to limited funding and the uptake of aged, poorly managed schemes. Consequently, the uptake of rural and small-town schemes has come to a near-halt.
- CWSA faces significant resilience challenges related to climate change, energy constraints, and anthropogenic pressures, particularly illegal mining.

CWSA faces severe infrastructure challenges due to limited funding and the uptake of aged, poorly managed schemes. After schemes are adopted, CWSA faces asset management challenges, such as a lack of information on customer and key asset locations. This means addressing high NRW and energy costs remains difficult; consequently, schemes cannot be run efficiently and effectively, resulting in high operational and maintenance costs. Investment requirements for new infrastructure are a key barrier, and CWSA has insufficient funds to improve schemes upon uptake. Although newer schemes built since 2017 (when CWSA initiated the reforms) are generally in good condition, most schemes are older and in poor condition. For example, about 73% of schemes in the Western Region were more than 10 years old in 2023 (GSS, Ghana, & CWSA, 2023), significantly constraining CWSA's ability to deliver services. Access to substantial capital investment for rehabilitation and construction will be a critical determinant of the utility's long-term success.

CWSA faces significant resilience challenges related to climate change and energy constraints. Prolonged droughts and flooding increasingly threaten the sustainability of water sources, while infrastructure faces growing climate risks that cause asset damage, operational disruptions, and reduced service reliability. CWSA experiences declining and limited ground-water yields in some areas, especially in northern Ghana, as well as salinity challenges along the coastal belt. While saline water can be treated, the associated operational costs are high, and data on safe freshwater zones for high-yield boreholes remain limited. Surface water development offers a viable alternative but requires additional investment, and seasonal variability in the Volta River leads to high turbidity, complicating treatment processes.

Anthropogenic pressures, particularly illegal mining and harmful fishing practices, threaten water resources. Pollution, encroachment, and deforestation further constrain water resources and infrastructure. Illegal mining (referred to in Ghana as “galamsey”) represents an escalating national threat to water sources, with surging gold prices in recent years intensifying activity and driving widespread contamination of water bodies by mercury and other heavy metals. Competition for water resources with the mining industry represents a further challenge. In Akrokeri, for example, borehole yields have declined markedly due to excessive abstraction from a nearby mining operation. Additional pressures stem from sand mining, antibiotics use in fish farming, and pharmaceutical contamination of surface waters. CWSA also faces significant energy challenges due to its reliance on an erratic national power grid. To address this, plans are underway to integrate solar energy across schemes, with new infrastructure to include solar as a standard feature.

3.1.2. Business Viability, Affordability, and Accessibility

- Fragile business viability remains a central challenge for CWSA, with government subventions and the 2% rural water levy covering substantial operational shortfalls.
- Affordability remains a major concern due to relatively low incomes, limited willingness and ability to pay, higher service provision costs in rural areas, and poor economies of scale.

Fragile business viability remains a central challenge for CWSA, with the substantial operational shortfalls covered by government subventions and the 2% rural water levy. Table 5 highlights progress between 2023 and 2024, with modest improvements in payment rates, water sales revenue, and new connections. Although the timeframe is limited, it reflects CWSA's limited growth over the last eight years and illustrates the broader context of very slow uptake of additional schemes. Low population density and dispersed settlements further constrain viability, resulting in fewer connections per unit of infrastructure, compromising economies of scale. Constructing and operating piped schemes in these areas is often costly per capita. However, this relatively higher cost of service provision is not reflected in the tariff-setting process. In the absence of a clear process for tariff setting, CWSA pegs its tariff to GWCL's urban tariffs as approved by the Public Utilities Regulatory Commission (PURC), which are inadequate to cover operational and maintenance costs. CWSA also receives significant external financial support from the 2% rural levy and yearly government subventions.

Table 5. CWSA Tariffs, Payments, Sales Revenue, and Connections (CWSA, 2023; CWSA, 2024)

Dimension	2022/23	2023/24
Average tariffs GH¢/m ³ (~\$) ⁵	6.9 (~0.62)	9 (~0.80)
Number of schemes managed	177	196
Payment rate for domestic customers	85.6%	88.6%
Payment rates for commercial customers	73%	82%
Water sales revenue (GH¢)	60,857,130.96	69,369,734.33
New connections	4,638	5,305

Affordability remains a significant challenge for CWSA, driven by the low incomes and limited willingness and ability to pay characteristic of rural and small-town contexts. Higher service provision costs per capita, driven by dispersed settlements, limited economies of scale, and costly infrastructure, compound this challenge because these costs are not reflected in tariff levels. The primary mechanism currently supporting affordability is the indirect cross-subsidisation through a 2% rural water levy charged to GWCL customers, which generated approximately GH¢ 14 million (~USD 1.2 million) in 2023 and GH¢ 20 million (~USD 1.8 million) in 2024. While this levy enables CWSA to keep tariffs below the full cost of service, it does not resolve the underlying structural tension between what customers can afford to pay and what it actually costs to deliver services sustainably in rural areas. Customer resistance to tariff payments and political interference remain persistent, and without a cost-reflective tariff-setting process and stronger revenue collection, affordability challenges will continue to constrain financial sustainability.

⁵ Where tariff changes occurred mid-year, a simple average of applicable rates was used. All GH¢ figures converted to USD at a rate of GH¢11.21 = USD1.

3.2. Institutional Capacity

3.2.1. Organisational Structure and Human Resources

- CWSA's transition has resulted in a broadly appropriate organisational structure; however, the implementation of several critical governance elements, including autonomy, incentives, and capacity at the water system level, remains a work in progress.
- Staffing levels have significantly outpaced actual expansion, driving an unsustainably high staff-to-customer ratio and elevated costs.
- Despite this significant increase in staffing volume, key service delivery capacities remain underdeveloped, with significant gaps persisting across core technical and operational functions.

CWSA's transition has resulted in a broadly appropriate organisational structure; however, the implementation of several critical governance elements, including autonomy, incentives, and capacity at the water system level, remains a work in progress. CWSA adopted a three-tier structure comprising national, regional, and water facility levels. While the national and regional offices were already in place under the previous facilitation model, the key structural addition was the introduction of water facility management offices, alongside new functional departments at the national and regional levels, most notably a commercial department in 2022. CWSA implemented targeted capacity-building efforts to manage the change process, including a staff engagement survey, an internal steering committee comprising all CWSA directors, and the identification of internal champions to support information dissemination within the utility.

Staffing levels have significantly outpaced actual expansion, driving a high staff-to-customer ratio and elevated costs. Since 2017, CWSA's staff numbers have increased from approximately 200 to over 1,000, reflecting anticipated further expansion that has not materialised. For instance, in the Western Region, CWSA's staff per 1,000 connections was 71 in 2023 (GSS, Ghana, & CWSA, 2023), significantly higher than the average of five staff per thousand connections across 12 sub-Saharan African utilities benchmarked by ESAWAS in the same year (ESAWAS, 2024). At the same time, CWSA faces high staff turnover, particularly at the water system level, with Revenue Officers and Community Relations staff most affected.

Despite this significant growth in staffing volume, key service delivery capacities remain underdeveloped, with significant gaps persisting across core technical and operational functions. A smaller-scale piloting approach, alongside training for engineering staff, has proven an effective enabler of the transition, and CWSA plans to roll these efforts out across the entire organisation. However, additional capacity development is needed in areas such as pump installation, repair and troubleshooting, water system design, use of detection equipment, identification and management of new water resources, contract management, procurement, and report writing. Water Quality Officers have also highlighted the need for adequate laboratory equipment and field-testing kits to effectively perform their roles. This transition has required significant support and is still ongoing.

3.2.2. Financial Management, ICT Systems and Procurement

- CWSA struggles to cover its operational and maintenance costs with revenue and depends on government contributions to sustain operations.
- CWSA has rolled out financial management measures and systems, but billing and revenue collection remain only partially digitised.
- CWSA conducts periodic customer satisfaction surveys and maintains mechanisms for collecting customer feedback.
- Procurement and supply chain management remain challenging, and notable gaps persist in the availability of operational tools and equipment at both the system and regional levels.

CWSA struggles to cover its operational and maintenance costs with revenues and is highly dependent on government contributions to sustain operations. CWSA's operational cost coverage by revenue ratio was just 66% and 64% in 2023 and 2024, respectively. In 2024, CWSA's total inflows amounted to GH¢ 210.9 million (~USD 19.3 million), dominated by government subventions of GH¢ 102.7 million (~USD 9.36 million) (48.7%). Internally generated funds accounted for GH¢ 78.5 million (~USD 7.15 million) (37.2%), including revenues from water sales and related charges. Additional funding came from the 2% rural water levy, which contributed GH¢ 20.5 million (~USD 1.87 million) (9.7%), while donor inflows amounted to GH¢ 9.1 million (~USD 0.8 million) (4.3%) (CWSA, 2024). In 2023, staff costs accounted for 29.65% of total revenue (against the target of 22.69%), administrative expenses accounted for 37.47% of total revenue (against the target of 18.67%) and recurrent expenditure (other operational expenses) accounted for 152.25% of internally generated revenue (against the target of 85.62%) (CWSA, 2023).

CWSA has rolled out financial management measures and systems, but billing and revenue collection remain only partially digitised. These improvements are reflected in CWSA's reported high collection rate (89%) (CWSA, 2024). CWSA has introduced smart taps for standpipes, and e-billing software enables e-payment and mobile phone-based meter reading. However, for a large proportion of household connections, billing still relies largely on paper bills, with some bills issued via text messaging. While the core billing systems exist, their functionality has not been fully rolled out or consistently applied across all water facilities. Further digitalisation could improve efficiency, but progress is constrained by limited funding and weak digital infrastructure, particularly poor internet connectivity at the water facility level and within communities.

CWSA conducts periodic customer satisfaction surveys and maintains mechanisms for collecting customer feedback, which it analyses and uses to inform operational improvements. CWSA investigates water quality-related complaints as a priority. At the regional level, CWSA has established formal channels for receiving and addressing customer complaints through Customer Relations Officers, with more complex issues escalated to regional management for resolution.

Procurement and supply chain management present ongoing challenges, and notable gaps remain in the availability of operational tools and equipment at both facility and regional

levels. Procurement processes are highly centralised, and bureaucratic procedures often delay the acquisition and distribution of tools, materials, and spare parts. While central oversight from headquarters has some advantages, such as bulk purchasing and quality control, it also limits responsiveness at the individual facility level. Headquarters maintains stocks of selected tools, materials, and spare parts and distributes them to water schemes based on requests, which has helped improve reliability in some cases. However, a comprehensive, systematised spare parts inventory management system is not yet in place, constraining timely maintenance and repairs. At the water facility level, staff lack transportation to support routine operations, monitoring, and rapid response. Existing vehicles are ageing and urgently need replacement. Shortages of laboratory equipment and field-testing kits limit effective monitoring and compliance. Consequently, facility-level staff remain highly dependent on regional teams for routine maintenance, resulting in inefficiencies, longer response times, and increased system downtime.

3.2.3. Resilience

- Increasing attention is being given to climate change and resilience across Ghana's WASH sector, but institutionalising these efforts within CWSA has shown less progress to date.
- CWSA is implementing some risk management and resilience measures but planning and documentation are insufficient.

Increasing attention is being given to climate change and resilience across Ghana's WASH sector, but institutionalising these efforts within CWSA has shown less progress to date.

At a sector level, several initiatives have been implemented to address climate resilience. For instance, UNICEF supported the Ministry of Works, Housing and Water Resources to strengthen the sector's contribution to Ghana's Nationally Determined Contribution process. However, despite these broader sectoral efforts, implementation at the utility and water facility level is hindered by a lack of resources to retrofit and adapt infrastructure, and an overall focus on more immediate operational challenges.

CWSA is implementing some risk management and resilience measures but planning and documentation are insufficient. Risk assessments are incorporated into project design, and many schemes have water safety plans and emergency response plans. CWSA is also addressing energy shortages by adopting solar power across its facilities and using hybrid (solar/electric) pumps. However, planning and documentation of climate risks and resilience measures are limited. CWSA's 2024 annual report does not explicitly identify climate-related risks or articulate corresponding mitigation or adaptation measures, indicating a gap between sector-level resilience initiatives and day-to-day operations and utility-level planning and reporting.

3.3. Enabling Environment

3.3.1. The Expansion Process

- Broad policy and political support has enabled CWSA to pilot the utility model, even as key elements of the reform process, including CWSA's legal mandate, the broader regulatory framework, and clarity over asset ownership and service area boundaries, remain unresolved. At the utility level, CWSA appears to have underestimated the scale of the transition, particularly the operational and institutional demands of direct service delivery.

Broad policy and political support has enabled CWSA to pilot the utility model, even as key elements of the reform process remain unresolved. The National Water Policy (2024) provides a framework for CWSA to deliver services in rural areas and small towns, including the transfer of rural piped water schemes from WSMTs and District Assemblies to CWSA. Efforts are currently underway to finalise the reform of CWSA and the accompanying Legal Instrument, though Cabinet approval is required to legitimise and formalise CWSA's status as a utility. Assuming Cabinet grants approval, CWSA is exploring conversion to a utility through an Executive Instrument supported by an act of conversion under the Statutory Corporations (Conversion to Companies) Act. Although there were concerns that the reform process might stall following the change in government, political support has remained sufficient to allow piloting to proceed.

CWSA's transition has been hampered by the fragmented reform process. CWSA is legally recognised as a facilitator rather than a direct service provider (utility). Simply redefining CWSA's role will not automatically resolve broader structural issues, including relationships with District Assemblies. The absence of a structured reform roadmap has made it difficult to sequence priorities, align sector actors, and maintain momentum. It is also unclear whether key sector actors, including the Ministry of Local Government, Chieftaincy and Religious Affairs, fully understand CWSA's shift in mandate. Recent ministerial restructuring, which split the former Ministry of Sanitation and Water Resources into separate sanitation and water functions under the Ministry of Local Government, Chieftaincy and Religious Affairs and the Ministry of Works, Housing and Water Resources, respectively, has further complicated an already fragmented coordination landscape.

CWSA appears to have underestimated the scale of the transition. This is particularly evident regarding the operational and institutional demands of direct service delivery in areas such as commercial operations and asset management, as well as the significant shift in institutional structure and operational priorities this entails. The transition lacked a clearly articulated strategy and change management process to secure stakeholder buy-in and establish effective partnerships. Although CWSA indicates that projects are in the pipeline for it to adopt and rehabilitate existing schemes and construct new ones, the twin gaps of

3.3.2. Regulation

- CWSA operates in a fragmented and weak regulatory environment.
- Ambiguities in service area delineations are a key issue. In some cases, CWSA and GWCL contest responsibility for service provision.
- CWSA has no clearly documented process for taking up new facilities from communities, and it faces community resistance and political interference during asset transfers.

CWSA operates in a fragmented and weak regulatory environment. Regulatory arrangements remain fragmented, and CWSA currently operates under self-regulation. The Public Utilities Regulatory Commission Act applies only to Ghana Water Company Limited. Although PURC expects to take up the mandate once CWSA is confirmed as a utility, the challenge persists in the interim. Oversight is therefore internal, with CWSA's Head Office supervising regional offices, and regions overseeing operations at the system level. District Assemblies also have a regulatory function under the Local Governance Act 936 (2016), but they face significant challenges due to a lack of adequate human, financial and logistical capacity to fulfil this role (REAL-Water, 2025). Without independent regulation to enforce minimum service standards and protect customers, service delivery remains inconsistent, and accountability is limited. Key aspects such as defining service areas, supporting an evidence-based transition process, promoting access to capital, and robust tariff setting processes are not adequately addressed. For instance, without an external regulator, CWSA sets its own tariffs, which are loosely aligned with GWCL's, creating a risk of tariffs that are unjustifiably high or are too low to support sustainable service provision.

Ambiguities in service area delineations are a key issue. In some cases, CWSA and GWCL contest responsibility for service provision, particularly where settlements originally classified as rural have grown and taken on urban characteristics. At times, GWCL interprets population thresholds in a way that leads to requests for CWSA to hand over schemes that have effectively transitioned into urban areas. These challenges should not be attributed solely to CWSA; they reflect broader sector-level issues. Ultimately, the Ministry of Works, Housing and Water Resources and PURC are responsible for providing clearer guidance on service area delineation, transition processes, and the institutional arrangements required to support effective implementation of the utility reform.

CWSA has no clearly documented process for taking over facilities from communities, and it faces challenges with community resistance and political interference during asset transfers. CWSA has developed an internal process to support a smooth transition when assuming management of existing schemes, which the organisation intends to share with stakeholders. The Water Policy (2024) includes a measure to establish a systematic process for taking over schemes, including facilitating the transfer of ownership of piped water assets from district assemblies to CWSA; however, this process has yet to be finalised. In practice, once District Assemblies and communities sign agreements, CWSA must navigate challenges such as community resistance to asset transfer and political interference.

3.3.3. Technical and Financial Support

- In recent years CWSA has received comparatively limited development partner support, further constraining its ability to effectively transition into a successful rural and small-town focused utility.
- The fragmented and poorly sequenced reform process has discouraged broader development partner engagement, creating a vicious cycle that further compounds CWSA's capacity constraints.

CWSA has received comparatively limited development partner support, further constraining its ability to effectively transition into a successful rural and small-town focused utility. While some technical assistance has been provided – notably from WSUP, IRC, Aquaya, and Safe Water Network – this has been modest relative to the scale of the challenge. Support has focused on professionalisation, operational efficiency, and early steps towards establishing functional commercial and technical operations, including clarifying staff roles and establishing standard operating procedures. Assistance has also begun to address critical data and systems gaps, particularly in asset management, by mapping water schemes and customers, and introducing dashboards and management tools to support decision-making. Partners have also supported assessments and capacity building on NRW and energy efficiency, including establishing district metered areas and improved NRW calculation practices, alongside more recent contributions to system expansion efforts and the development of rural water subsidy models.

The fragmented and poorly sequenced reform process has discouraged broader development partner engagement, creating a vicious cycle that further compounds CWSA's capacity constraints. The absence of a clear and stable institutional framework, including unresolved questions over CWSA's legal mandate, regulation, and service area boundaries, has made it difficult for development partners to commit resources with confidence. As a result, while existing partner contributions have delivered incremental improvements in operational capacity, they have not been sufficient to address the fundamental institutional and systems gaps that CWSA faces, and the broader support that could help accelerate the transition has not materialised. One significant example is the withdrawal of a planned major multi-lateral development bank loan and technical assistance package for CWSA in 2026 due to the slow progress of the reform process.



Conclusions and Lessons Learned



The expansion of utility service provision into rural areas and small towns in Ghana responded to genuine and well-documented failures of the community-based management model. Driven by high rates of non-functional schemes and unreliable service delivery under WSMTs, sector reforms from 2017 onwards aimed to reposition CWSA from a facilitating agency into a direct rural water utility. Ghana has also made steady progress in access to at least basic water services, with rural access increasing from 68% to 76% between 2015 and 2024, and the Government has signalled strong political will through the \$1.75 billion per annum commitment under the Presidential Compact on Water, Sanitation, and Hygiene.

The transition process has faced many challenges in its design and sequencing, creating a vicious cycle. CWSA currently manages only around 196 of the over 2,000 piped schemes within its nominal area of responsibility, a fraction that points to a process stalled well short of its ambitions. The expansion was initiated without first securing a confirmed legal mandate, establishing independent regulation, or putting in place standardised processes for asset transfer. Critically, CWSA assumed direct responsibility for aged and poorly maintained infrastructure without the commercial systems, asset management capacity, technical skills, or sustainable financing needed to operate these schemes effectively.

Taking over poorly performing schemes without the required operational and institutional fundamentals in place has weakened CWSA's already constrained financial position, with operating cost recovery falling to just 64% in 2024 and NRW rising to 38%. Deteriorating performance erodes customer trust and willingness to pay, further undermining revenues. Weak systems and unclear service areas discourage development partner engagement, depriving CWSA of the sustained support that could help break the cycle. The absence of independent regulation and a confirmed mandate for CWSA compounds the problem, leaving CWSA without the institutional foundations needed to arrest the decline. The result is a utility under growing strain, precisely the outcome the shift away from community-based management was intended to avoid.

4.1. Lessons Learned

The Ghana experience offers important cautionary lessons for other countries pursuing similar transitions. While the rationale for professionalising rural water service delivery remains sound, the CWSA case demonstrates that expanding a utility mandate without first establishing the required enabling environment, operational systems, and institutional capacity risks reproducing, rather than resolving, the failures of the model it replaces. The transition can still be salvaged, but doing so requires an honest assessment of where the process has gone wrong alongside sustained and coordinated commitment from government, development partners, and sector stakeholders.

From the analysis of CWSA, the following main barriers and enablers can be identified, clustered according to the enabling environment, operational context, and institutional capacity.

4.1.1. Enabling Environment



Enablers

Broad policy and political support has enabled the Community Water and Sanitation Agency (CWSA) to pilot the utility model even as efforts to finalise its legal mandate continue. The 2024 National Water Policy provides a framework for CWSA to deliver services and take over schemes from Water and Sanitation Management Teams (WSMTs) and District Assemblies, and political support has remained sufficient through changes in government to sustain the stalled reform process.

Indirect cross-subsidisation through the 2% rural water levy on Ghana Water Company Limited (GWCL) customers provides a critical mechanism for keeping tariffs below the full cost of service provision, generating approximately GH¢ 14 million (~USD 1.2 million) in 2023 and GH¢ 20 million (~USD 1.8 million) in 2024.



Barriers

The fragmented and poorly sequenced nature of the reform process has itself discouraged broader development partner engagement, creating a vicious cycle that further compounds CWSA's capacity constraints.

CWSA's legal mandate remains unconfirmed, pending Cabinet approval of the necessary reforms and accompanying Legal Instrument. This creates fundamental uncertainties around regulation, asset ownership, service area boundaries, and CWSA's relationship with District Assemblies, all of which constrain the utility's ability to expand with confidence across all stakeholders.

Ambiguities in service area delineation, particularly at the interface between CWSA and GWCL, create ongoing tensions over scheme responsibilities, especially where population growth has caused settlements to cross over from rural to urban classifications. These are sector-level issues that require clearer ministerial guidance and are not yet directly addressed by the ongoing reform process.

CWSA may have underestimated the scale of reforms, particularly the operational and institutional demands of direct service delivery in areas such as commercial operations and asset management, and the significant shift in both institutional structure and operational priorities that this has entailed.

CWSA operates in a fragmented and weak regulatory environment. Operating under self-regulation and pegging tariffs to GWCL urban tariffs approved by the Public Utilities Regulatory Commission (PURC), CWSA risks having a tariff structure that is insufficient to cover costs and/or unjustifiable to customers.

The absence of a clear, standardised asset transfer process, combined with community resistance and political interference, significantly impedes the uptake of new schemes by CWSA.

4.1.2. Operational Context



Enablers

Integration of solar and hybrid energy systems across schemes is improving resilience to erratic grid power supply and reducing energy costs, with new infrastructure now designed to include solar as a standard feature.



Barriers

Chronic infrastructure challenges persist, driven by limited financing from revenues and the uptake of aged, poorly maintained schemes. Access to substantial capital investment for rehabilitation and construction is critical to CWSA's long-term success, and current funding is insufficient to address this at scale.

Business viability challenges typical of rural and small-town contexts, including low population density, dispersed settlements, and seasonal drops in water demand due to rainwater harvesting, raise per-capita costs and constrain financial sustainability.

Significant resilience challenges from climate change, illegal mining, and anthropogenic pressures, including declining borehole yields, seasonal flooding, saline intrusion along the coastal belt, and surface water contamination, increasingly threaten water source sustainability.



4.1.3.

Institutional Capacity



Enablers

- CWSA has developed a logical three-tier national/regional/water system level staffing structure and formed internal steering committees and identified internal champions. However, the organisational transition remains largely incomplete.
- A smaller-scale piloting approach, cascaded across the utility alongside targeted staff training, has provided a model for managed, incremental change. While sensible in principle, the pace and reach of this approach is insufficient relative to the scale of the transition challenge to date.
- Sustained development partner support, including from WSUP, IRC, Aquaya, and Safe Water Network, has contributed incrementally to improving CWSA's operational and institutional capacity. This support has, however, been modest relative to the scale of the challenge.



Barriers

- The pace and sequencing of change outstripped CWSA's institutional readiness, with the utility taking on a direct service delivery mandate before the necessary systems and capacities were in place. The rapid early expansion starting in 2017 was followed by a marked stall, with only 65 additional schemes taken up since 2019, suggesting that CWSA absorbed more water facilities than it could manage.
- Key service delivery capacities remain underdeveloped, including in pump installation and maintenance, water system design, water quality management, NRW measurement, contract management, and procurement. The transition from facilitator to utility was rapid and the required capacity adjustments were underestimated.
- CWSA has a high staff-to-customer ratio of 71 staff per 1,000 connections in the Western Region against an average of five staff per 1,000 connections across 12 sub-Saharan African utilities benchmarked by ESAWAS. This, combined with high staff turnover, generates significant staffing costs and undermines operational continuity.
- ICT and financial management systems are not yet sufficiently developed to support efficient commercial and technical operations at scale, with management information and asset management systems still being strengthened across a geographically dispersed portfolio of schemes.



References

- CWSA. (2023). Annual Report . Accra: Ministry of Sanitation and Water Resources.
- CWSA. (2024). Annual Report . Accra: Ministry of Sanitation and Water Resources.
- CWSA. (2024). Annual Report 2024. Accra: Ministry of Sanitation and Water Resources.
- ESAWAS. (2022). The Water Supply and Sanitation Regulatory Landscape Across Africa: Continent-Wide Synthesis Report.
- ESAWAS. (2024). Multi-country Benchmarking of Water Supply and Sanitation Utilities 2023/24 Report. Lusaka: ESAWAS.
- GSS. (2014). Population and Housing Census 2010. Accra: Ghana Statistical Service.
- GSS, Ghana, I., & CWSA. (2023). Rural water utilisation project: State of water services in the Western Region – Ghana report. Accra: GSS, IRC Ghana, CWSA.
- GWOPA. (2024a). GWOPA, Resources, Library. Retrieved from <https://gwopa.unhabitat.org/resources/library>
- GWOPA. (2024b). GWOPA and IRC Join Forces to Develop Flagship Report on Water and Sanitation Utilities. Retrieved from <https://gwopa.unhabitat.org/resources/news/gwopa-and-irc-join-forces-develop-flagship-report-water-and-sanitation-utilities>
- IRC. (2021). Utility-Managed Rural Water Services: Models, Pathways, Drivers, Performance and Areas for Support.
- MSWR. (2023). Ghana WASH Sector Development Programme (GWASHSDP) 2021–2030. Accra: Ministry of Sanitation and Water Resources.
- MSWR. (2024). National Water Policy. Accra: Government of Ghana.
- REAL-Water. (2023a). Is Consolidation the Answer to Improving Rural Water Services in Low-Income Countries: Lessons from OECD Country Experience.
- REAL-Water. (2024). What Drives the Performance of Rural Piped Water Supply Facilities in Ghana? A Mixed Methods Observational Study. United States Agency for International Development (USAID), Rural Evidence and Learning for Water Project.
- REAL-Water. (2025). Political Economy Analysis of Rural Water Performance under Different Management Arrangements in Ghana. USAID Rural Evidence and Learning for Water (REAL-Water) Project.
- UNDP. (2023). Human Development Reports – Ghana Country Insights. Retrieved from <https://hdr.undp.org/data-center/specific-country-data#/countries/GHA>
- USAID. (2023a). Is Consolidation the Answer to Improving Rural Water Services in Low-Income Countries: Lessons from OECD Country Experience.
- USAID. (2023b). Emerging Trends in Rural Water Management.
- WaterAid. (2024). Professionalising Rural and Small-Town Water Supply Management: The Need to Enhance External Support Arrangements.
- WHO/UNICEF. (2024). Joint Monitoring Programme – WASH Data. Retrieved from <https://washdata.org/data/household#!/dashboard/new>

World Bank. (2018a). Water Utility Turnaround Framework: A Guide for Improving Performance.

World Bank. (2018b). Building the Resilience of WSS Utilities to Climate Change and Other Threats.

World Bank. (2024, June). IBNET. Retrieved from World Bank Water Data:
<https://wbwaterdata.org/ibnet/>

World Bank. (2024). World Development Indicators – Ghana. Retrieved from
<https://data.worldbank.org/country/ghana>

WSUP. (2022). The Challenge of Small Towns: Professionalising Piped Water Services in Western Uganda.



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