Ghana Synthesis Report

Review of the Conrad N. Hilton Foundation's Investments in Service Delivery Models for Rural Water Provision

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Executive Summary

As part of its Safe Water Initiative (SWI), the Conrad N. Hilton Foundation commissioned a review of its investments in Ethiopia, Ghana, and Uganda. The review's primary aim is to investigate the relevance of the Conrad N. Hilton Foundation portfolio as well as the effectiveness and sustainability of supported service delivery models (SDMs), including community-based management, publicly owned water utilities, and private-sector approaches, such as Safe Water Enterprises (SWE). This report presents the findings of the review in Ghana.

Ghana has received more SWI funding than any other country. This has largely focused on the Asutifi North and Wassa East districts. Since 2019, 76% of funding has supported a plurality of SDMs (SWE, Community Water and Sanitation Agency (CWSA), and Water and Sanitation Management Team (WSMT) direct provision), with SWE direct provision receiving the most support. Other supported areas include strengthening WASH systems (21% of funding) and national-level advocacy (3%).

In the two focus districts, SWE and CWSA direct provision were found to deliver markedly higher quality services than WSMTs. CWSA was the best-performing SDM for reliability, with all facilities meeting the criteria for functionality, reliability, and yield. However, CWSA struggles to provide safe drinking water in Wassa East. SWE-managed facilities performed marginally worse than CWSA on reliability and functionality but performed very well on water quality. WSMTs provided the least reliable services and the lowest quality of water.

SWEs perform better than CWSA against key sustainability criteria, including the ability to cover operational expenditures, institutional capacities, and the performance of key technical functions. However, the higher performance of SWEs should be viewed within the context of this SDM receiving by far the greatest share of financial support from the Conrad N. Hilton Foundation and the fact that facilities managed by CWSA are markedly older and rely on the national electricity grid. Despite markedly better-than-expected financial performance, WSMTs performed the least well against the assessed sustainability criteria, especially concerning institutional capacities and the performance of key technical functions.

Several important findings were observed concerning the relevance of initiatives funded by the Conrad N. Hilton Foundation in Ghana. These included:

- The primary focus on the district level has constrained the replication of promising innovations, the financial viability of SDMs, and the ability to address root causes of several systemic weaknesses, which require interventions at regional and/or national levels.
- The portfolio is aligned with the overall trajectory of Ghana's water supply sector but does not align with key provisions of the draft Revised National Water Policy (2023), relating to CWSA's proposed role as a rural and small-town utility.
- Grantee interventions have broadly complemented one another; however, more deliberate efforts to link interventions towards common strategic priorities are required to enable true collective action based on deeper collaboration and the integration of activities.
- Conrad N. Hilton Foundation-supported interventions are beginning to be replicated, but replication is generally occurring at a modest scale, and further efforts are required to anchor interventions within government systems. Common barriers to replication include limitations of the district focus, government policy ambiguity, the absence of more substantive forms of collective action, and a lack of clear replication pathways set out by grantees.

The report provides forward-looking commentary and suggests opportunities for evolving the Conrad N. Hilton Foundation portfolio in Ghana, including continuing to zoom out from the current district focus and placing greater emphasis on replication.

Contents

Acronyms

CBM Community-Based Management

CFU Colony Forming Unit

CWSA Community Water and Sanitation Agency

GoG Government of Ghana

MMDA Metropolitan, Municipal and District Assemblies

ODA Overseas Development Assistance

OpEx Operational Expenditure

PAYF Pay-As-You-Fetch

PURC Public Utilities Regulatory Commission

SDM Service Delivery Model

SWE Safe Water Enterprise

SWI Safe Water Initiative

SWN Safe Water Network

WASH Water, Sanitation and Hygiene

WQAF Water Quality Assurance Fund

WSMT Water and Sanitation Management Team

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1. Introduction

The Conrad N. Hilton Foundation funds the Safe Water Initiative (SWI) to ensure reliable and safe water for one million people in low-income households, health facilities, and schools in sub-Saharan Africa. As part of the SWI's five-year strategic plan, the Conrad N. Hilton Foundation commissioned a review of its portfolio investments in the target geographies of Ethiopia, Ghana, and Uganda. The primary aim of this review's is to investigate the relevance of the Conrad N. Hilton Foundation portfolio and the effectiveness and sustainability of supported service delivery models (SDMs), including community-based management (CBM), publicly owned water utilities, and private-sector approaches, such as Safe Water Enterprises (SWE) since 2019.

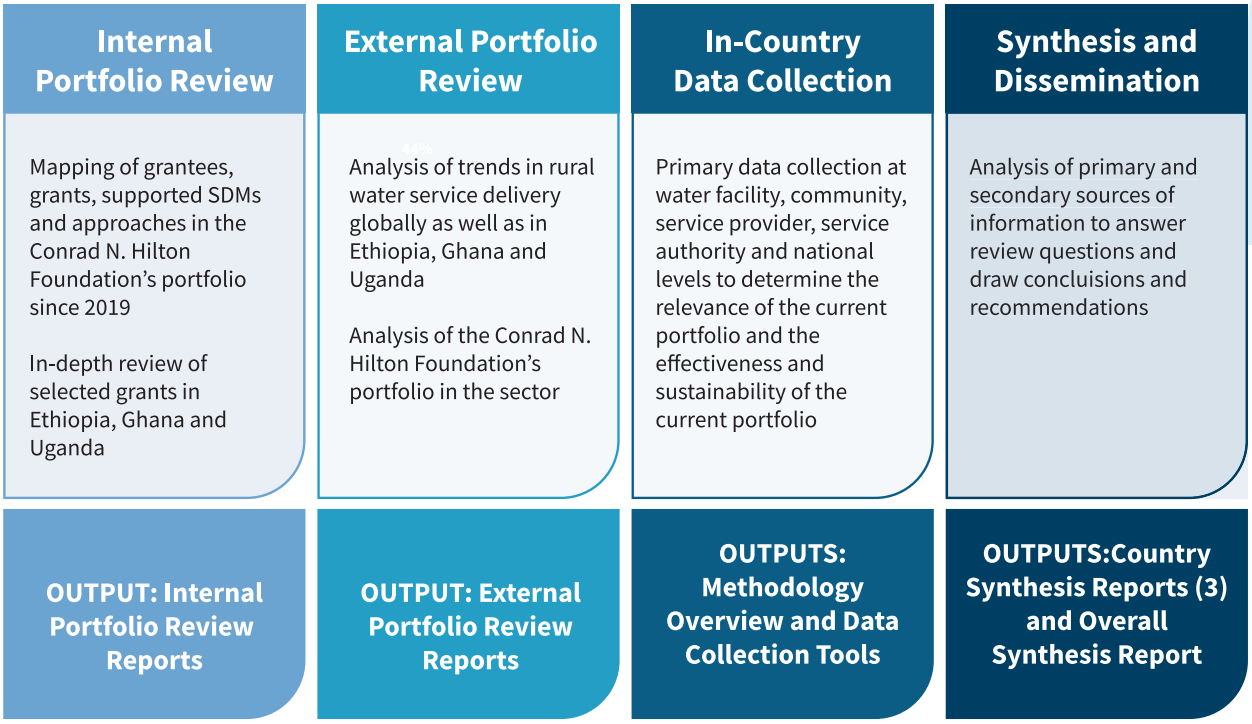
The review was conducted in four steps (see Figure 1). The internal portfolio review mapped and categorized the grants under the SWI in the three countries (Step 1) and was followed by an external review, which identified trends in rural water service delivery globally and in Ethiopia, Ghana, and Uganda (Step 2). Primary data was subsequently collected in all three countries to further determine the relevance of the portfolio in each target district and the effectiveness and sustainability of supported SDMs (Step 3). Findings from each of these steps were analyzed to answer the overarching review questions and draw conclusions and recommendations (Step 4).

The report presents the findings of the review in Ghana and is structured as follows:

- Section 2 presents the methodology followed to answer the review questions.
- Section 3 provides an overview of Ghana's water sector and, within this context, the Conrad N. Hilton Foundation's portfolio of grants.
- Section 4 summarizes the review findings in relation to the portfolio's relevance to the context and the effectiveness and sustainability of supported SDMs.
- Section 5 highlights key conclusions emerging from the analysis.
- Section 6 contains recommendations to the Conrad N. Hilton Foundation to strengthen the relevance, effectiveness, and sustainability of its portfolio in Ghana.

Annex 1 contains the list of grants included in the review. Similar reports are available for Ethiopia and Uganda, and a global synthesis report has also been produced.

Figure 1: Key Review Steps and Deliverables



2. Methodology

The review focused on assessing the relevance of the overall portfolio in strengthening district WASH systems and supporting the delivery of effective and sustainable services by the capacity building of service providers and system strengthening of district-wide institutional support. Accordingly, the review did not focus on analyzing the effectiveness of individual grants or grantees but rather determined the strengths and weaknesses of collective efforts across the portfolio in Ghana. See Annex 1 for an overview of the grants included in the portfolio review.

The methodology reflects the Conrad N. Hilton Foundation's vision, as articulated in its Strategy 25, while accounting for the reality of SDMs in the three countries and the scope of the current portfolio. Specifically, the methodology was developed around the broader SWI approach using the district as the predominant unit of scale, its commitment to seven target districts, and recognition of the need to strengthen WASH systems and the importance of strong partnerships with national and sub-national government, grantees, collaborators, and communities to achieve SDG 6.1. At the same time, the methodology accounts for the fact that some of the SDMs, for example, public utilities in Ghana and Uganda, operate at a larger scale than individual districts. It also accounts for indirect support provided to SDMs not currently present in the target districts, but which are important for rural water service provision at scale (i.e., Area Service Providers in Uganda).

Annex 2 provides the comprehensive review matrix and overarching framework for conducting the assessment. Further details on the methodology are available in an internal methodology overview note.

SDMs are defined as a combination of infrastructure (either a water point fitted with handpump or piped water facilities to either individual households or standpipes) and the management arrangement required to ensure and deliver safe and affordable water services for users, which combines a service provider, a service authority, and the associated regulatory mechanisms at the national level.

The review matrix comprises nine review questions and 35 sub-questions, focused on three strategic questions related to relevance, effectiveness, and sustainability:

- **Strategic question 1: Have the Conrad N. Hilton Foundation's investments been relevant to the challenges of delivering rural water services in the target districts and countries?** This question analyzed the relevance of the portfolio to strengthen district-wide systems by determining whether these are targeting key gaps, have been designed and managed according to the principles

of collective action, and are being replicated in other non-target districts. [1]

- **Strategic question 2: To what extent are SDMs supported by the Conrad N. Hilton Foundation delivering safe water services?** This question focused on the effectiveness of rural water services in terms of their functionality, reliability, seasonality, water quality, accessibility, affordability, and inclusivity across all SDMs.
- **Strategic question 3: Are SDMs supported by the Conrad N. Hilton Foundation sustainable?** This question aimed at determining the likely sustainability of various SDMs taking into account financial viability, the performance of key technical functions, the existence of sufficient institutional capacity at the service provider and service authority levels to fulfill key functions, water resource management, and accountability measures.[2]

To answer these questions, multiple sources of primary and secondary data were utilized. All available documentation was reviewed, complemented by community transect walks, direct water facility inspections, and Key Informant Interviews (KII) at the grantee HQ level and national, sub-national, and service provider levels.

To assess effectiveness and sustainability, an SDM-specific sampling approach was adopted that focused on water supply facilities within target districts. Table 1 provides an overview of sampled water supply facilities visited as part of primary data collection. Due to the significant number of water facilities operating under CBM management, purposive random sampling was conducted, and the review was limited to facilities directly supported by grants from the Conrad N. Hilton Foundation. For WSMT direct provision, the sample included a mixture of hand pumps and piped schemes (two relatively large small-town schemes and seven smaller rural community schemes). For CWSA, each water supply facility in the district operating under this arrangement was evaluated (these were all piped schemes serving communities through a mixture of household and institutional connections and public standpipes).[3] For SWE direct provision, a tailored approach was adopted. All SWN-managed facilities in Asutifi North District were included in the sample; however, in Wassa East, the large number of 4Ward Development-managed water supply facilities meant it was not feasible to include all facilities in the sample. Overall, this sampling strategy ensured representation across different grantees, technologies, and users (i.e., communities, schools, and healthcare facilities) in the target districts. However, the limited sample size means caution is required when looking to extrapolate the findings relating effectiveness and sustainability beyond the target districts.

1 Replication was conceptualized in four broad, often overlapping and not always linear steps: (i) initial grantee-led piloting of interventions; (ii) grantee-led replication through intervention uptake by other grantees or leveraging external funding for replication in other districts; (iii) comparatively ad-hoc government-led replication; and (iv) the final step of government uptake and promotion in sector documents (i.e., plans, policies, strategies, legal instruments) and roll-out at scale (either directly through government programs or indirectly through other actors such as the private sectors).

2 Sustainability, relating to water management, was encapsulated by using the framework denoted as «FIETS» (Financial, Institutional, Environmental, Technical, and Social). A multi-tiered approach was also used that recognizes the inter-connectedness between three pivotal levels: the water facility itself, the service provider overseeing its operations, and the governing authority responsible for regulation. The sustainability findings are presented accordingly.

3 This represented two of the 11 total facilities managed by CWSA in the Western Region at the time of the assessment.

Table 1: Water Supply Facilities Sampled per Target District

District	WSMT	SWE	CWSA	Total
Asutifi North	15	3	0	18
Wassa East	-	8	2	10
Total	**15**	**11**	**2**	**28**

Figure 2: Evolution of approaches to Rural Water Service Provision

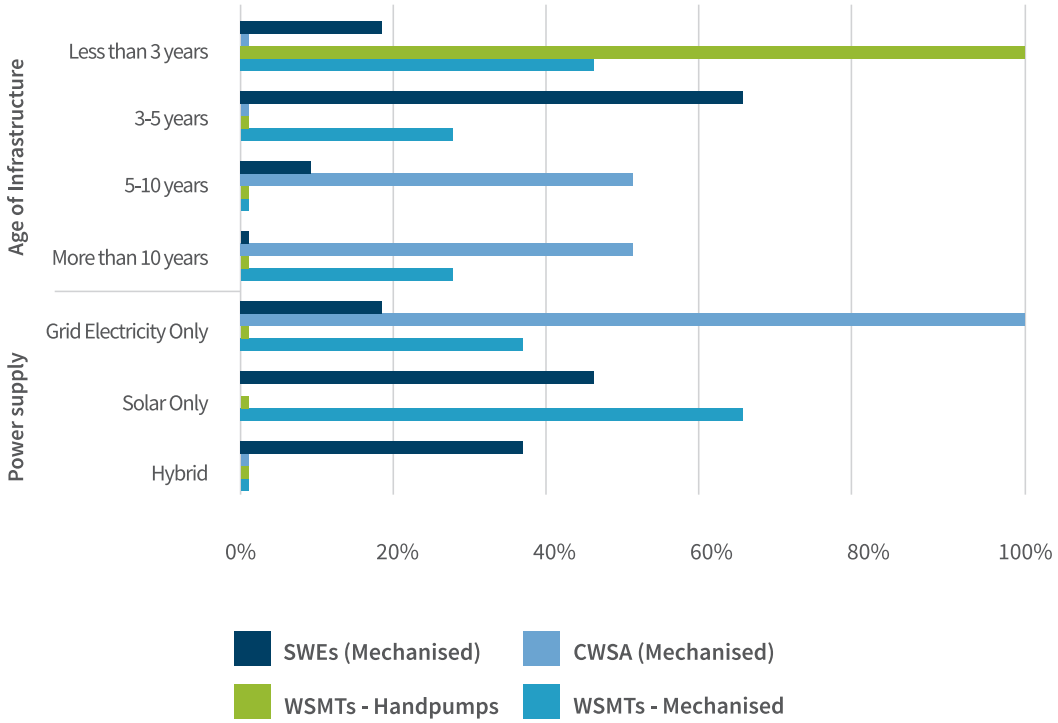


Figure 2 provides background information on the age and power source of assessed facilities. It shows that facilities managed by SWEs were typically less than five years old, with only one out of 11 facilities in the five to 10-year range. Similarly, all assessed handpumps managed by WSMTs were less than three years old, and eight of the 11 assessed mechanized facilities managed by WSMTs were less than five years old. By contrast, under CWSA direct provision, one facility was older than 20 years old, and the other was six years old. All facilities under CWSA direct provision were fully dependent on the national electrical grid, whereas facilities managed by SWEs were a mixture of grid-powered (18%), solar-powered (45%), and hybrid facilities (36%) using both grid and solar power. WSMT-managed facilities were mostly solar-powered (64%), with the rest connected to the national grid (36%).

3. Country Context and Portfolio Overview

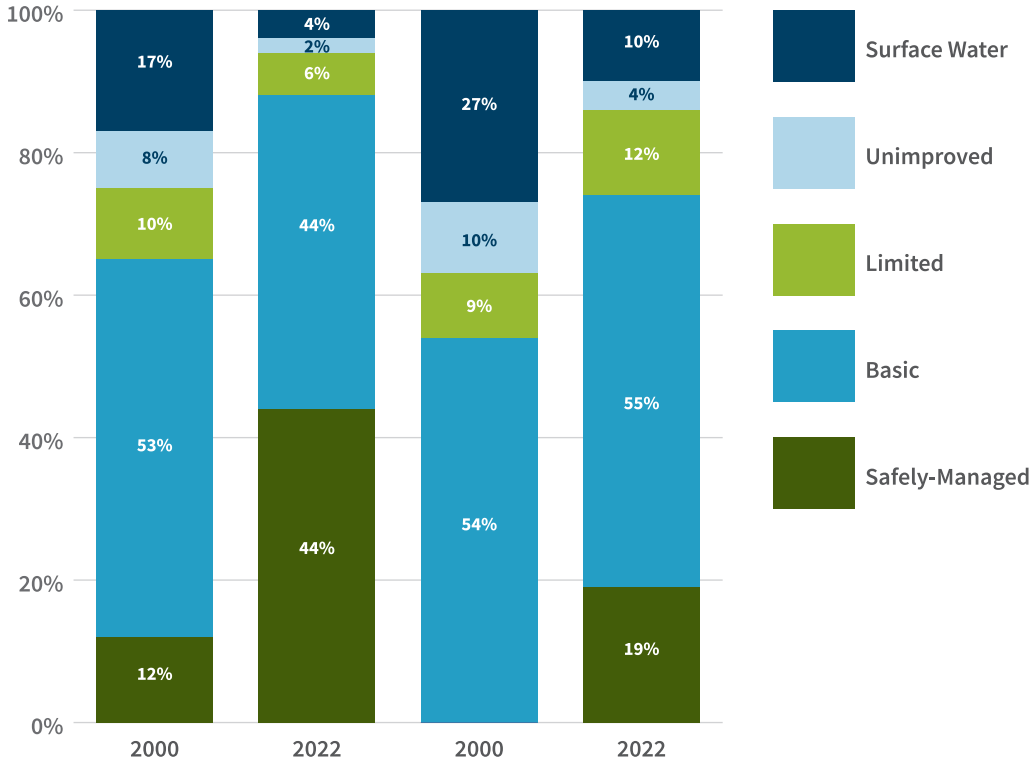
3.1. Socio-Economic Context

Ghana is a lower-middle-income country located in West Africa. It has a population of 30.8 million, which is predominantly urban (58%) and rapidly urbanizing (annual average urban population growth is over 3%) (Ghana Statistical , 2022). Ghana has achieved sustained economic improvements over the last three decades and performs well against many vital economic and developmental indicators. Its per capita Gross National Income of US$2,280.00 and Human Development Index value of 0.632 (the highest in Western Africa) reflect this progress (World Bank, 2022).

3.2. Rural Water Supply Management in Ghana

Ghana has made considerable progress in expanding access to 'basic' and 'safely managed' water supply services, but it remains off-track to meet the SDG 6.1 targets. Figure 3 highlights that the percentage of Ghana's population accessing an at least 'basic' water supply service has increased from 65% to 88% from 2000 to 2022, while the proportion accessing a 'safely managed' service increased from 12% to 44% over the same period. Vital progress has also been made in expanding access to rural water supply services. Figure 3 highlights that access rates

Figure 3: Evolution of Water Supply Coverage, Ghana (JMP, 2022)



to an at least 'basic' water supply service in rural areas increased from 54% to 74% from 2000-2020. Nevertheless, Ghana remains off-track to meet the SDG 6.1 targets.

Ghana's government emphasizes expanding access to piped water supply facilities in rural and small-town contexts. The Government of Ghana (GoG) has not developed specific targets for expanding access to piped water supply facilities. However, the GoG emphasizes the importance of expanding access to piped water supply services. Ghana has made considerable progress in expanding access to these services, with the proportion of the population with access to a piped water supply service increasing from 39% in 2000 to 57% in 2022 (JMP, 2022) Over the same period, the proportion of the rural population with access to a piped water supply service increased from 14% to 34%.

Ghana is transitioning from CBM to more professionalized models for piped water supply facilities. CBM was rolled out at scale in Ghana from the 1990s onwards. In recent years, however, Ghana's management arrangements for rural and small-town water supply services have been undergoing significant changes. Most notably, CWSA, which traditionally focused on facilitating the provision of safe drinking water and sanitation-related services to rural communities and small towns, initiated reforms in 2017 to transform itself into a public utility responsible for directly managing small-town piped water systems. Reforms of CWSA are at the center of the draft Revised National Water Policy (2023), which contains a range of policy objectives and targets, including a transition from CBM to ensuring the professionalized management of piped water supply schemes through utility management (CWSA) and the active participation of the private sector. Additionally, several SWEs have operated in Ghana for up to 15 years and directly manage a growing number of water supply facilities. As of October 2023, this revised policy remains to be fully approved by the GoG.

Four main arrangements exist for managing rural and small-town water supply facilities in Ghana. Figure 4 details the four primary rural and small-town water supply facility management arrangements that the Government of Ghana has sanctioned. These are summarized as:

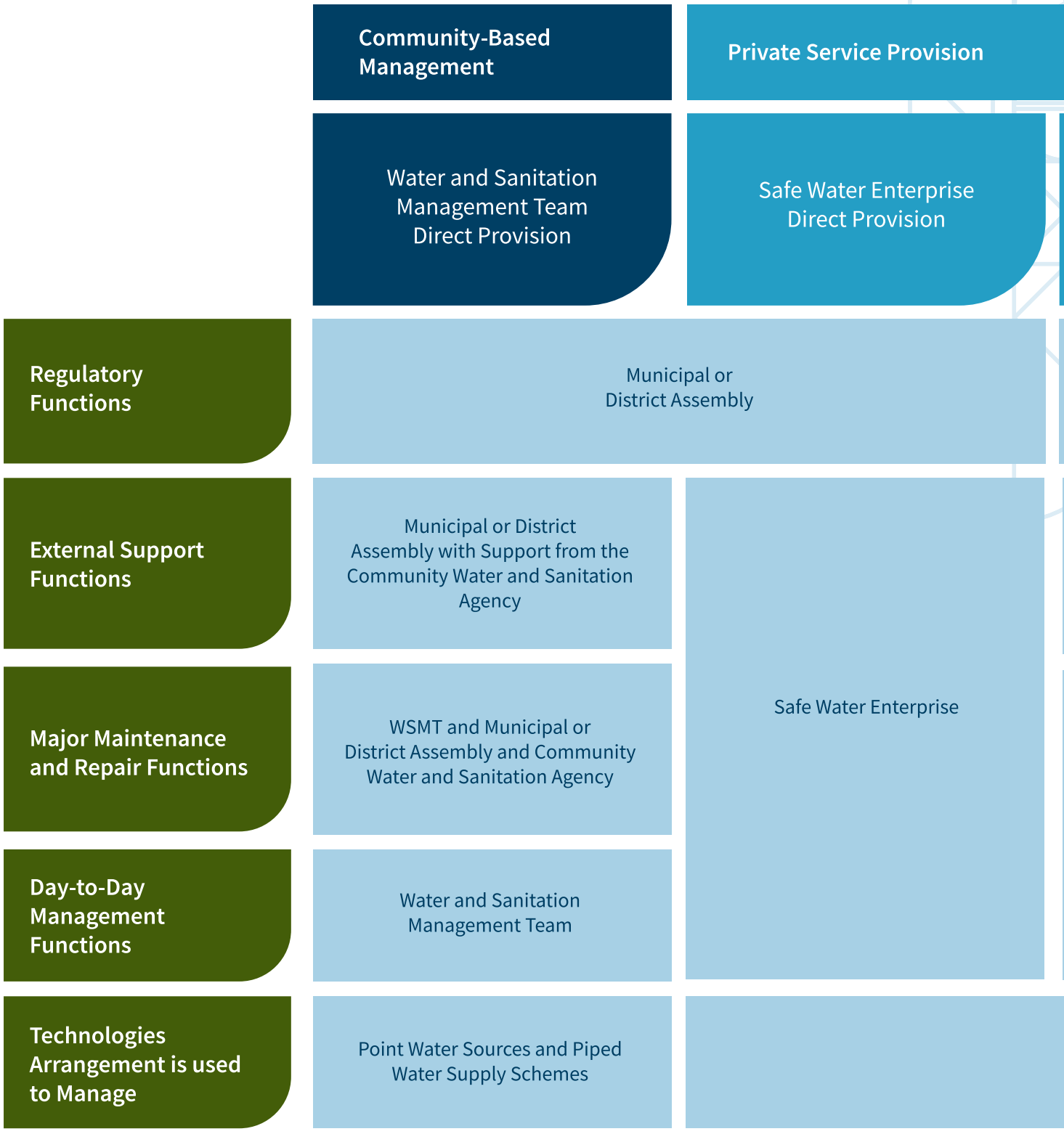
i. ***Water and Sanitation Management Team Direct Provision.*** Under this arrangement, WSMTs are responsible for key service provider functions (e.g., day-to-day operations, revenue collection, minor maintenance), with assemblies holding typical service authority functions. This is the predominant arrangement for point sources and piped water supply facilities.

ii. ***Safe Water Enterprise Direct Provision.*** SWEs are typically social enterprises that manage (and often own) water supply facilities. Several SWEs have emerged in Ghana over the last 15 years, including Safe Water Network (SWN), 4ward Development, Water Health Ghana, Project Maji, and Saha Global. Each SWE functions somewhat differently, but they typically operate under an MoU with the respective district assembly and perform a wide-ranging set of service provider functions.

iii. ***Private Operators Delegated Operations and Management Functions by CWSA.*** This is a form of public-private partnership for managing rural and small towns piped water supply schemes. Under this arrangement, CWSA delegates operations and management responsibilities to a private operator and subsequently performs monitoring and oversight functions to ensure compliance with contractual provisions regarding water quality, tariffs, and asset management. The arrangement is currently only applied to one facility, but CWSA has plans to scale up this approach.

iv. ***Community Water and Sanitation Agency Direct Provision.*** This is a rapidly evolving form of public service provision where CWSA directly manages rural and small-

Figure 4: Government of Ghana Sanctioned Rural Water Supply Management Arrangements




Public Service Provision
Private Operators Delegated Operations and Management Functions by Community Water and Sanitation Agency
Community Water and Sanitation Agency Direct Provision
Community Water and Sanitation Agency
Public Utility Regulatory Commission (once CWSA utility role is formally approved)
Community Water and Sanitation Agency
Private Operator
Community Water and Sanitation Agency
Piped Water Supply Schemes

town piped water supply facilities. Currently this applies to some 177 piped water supply schemes, and policy and legislative documents are being updated to formally institutionalize these arrangements. However, this process has faced delays, and key questions remain about the scale at which CWSA can operate and the pace at which such direct provision can be scaled up.

Rural and small-town water supply service provision in Ghana benefits from a range of innovations. Several technical and financial innovations are helping to ensure more effective water supply facility management through increasing operational efficiencies. These include:

i. Substantially increasing the number of **solar-powered facilities** to reduce service providers' operational expenditures (OpEx), reliance on costly fossil fuels, and downtime due to disruptions on the electricity grid.

ii. Utilizing **pre-paid and smart meters** to increase service providers' revenue collection efficiency.

iii. Expanding the number of **household connections** for small-town piped water supply schemes to improve service levels, as well as households' water usage and revenue for operators' expenditures.

iv. Utilizing online **billing software** and forms of **online payment** (e.g., mobile money) to increase service providers' revenue collection efficiency and improve transparency.

v. Improving water quality testing practices by piloting and subsequently upscaling a **Water Quality Assurance Fund** to ensure regular and affordable testing for rural and small-town water supply facilities and promote more effective water quality management practices.

vi. Utilizing forms of **remote monitoring** to enable evidence-based decision-making and reduce service providers' OpEx.

vii. Enhancing revenue mobilization for maintaining water facilities in **schools** and **health care facilities** by constructing water facilities for these institutions and extending distribution lines to serve nearby communities to generate revenue.

3.3. Conrad N. Hilton Foundation's Portfolio Overview

Of the Safe Water Initiative's three focus countries, Ghana has received the most funding. The Conrad N. Hilton Foundation has invested a total of US$91,983,557 in its SWI portfolio between 2019 and 2022. The present review focuses on a sub-set of this portfolio in Ghana, Uganda, and Ethiopia in the six target districts, corresponding to a total of US$64,872,368, with 53% allocated to activities in Ghana, 27% in Ethiopia, and 20% in Uganda. Within each country, grants were classified into one of three groups:[4]

i. **Support to SDMs.** The main objective of these grants is to support and improve rural water service delivery models.

ii. **Strengthening of WASH Systems.** The primary objective of these grants is to improve the enabling environment and elements of the WASH system, with the principal objective of achieving district-level improvements.

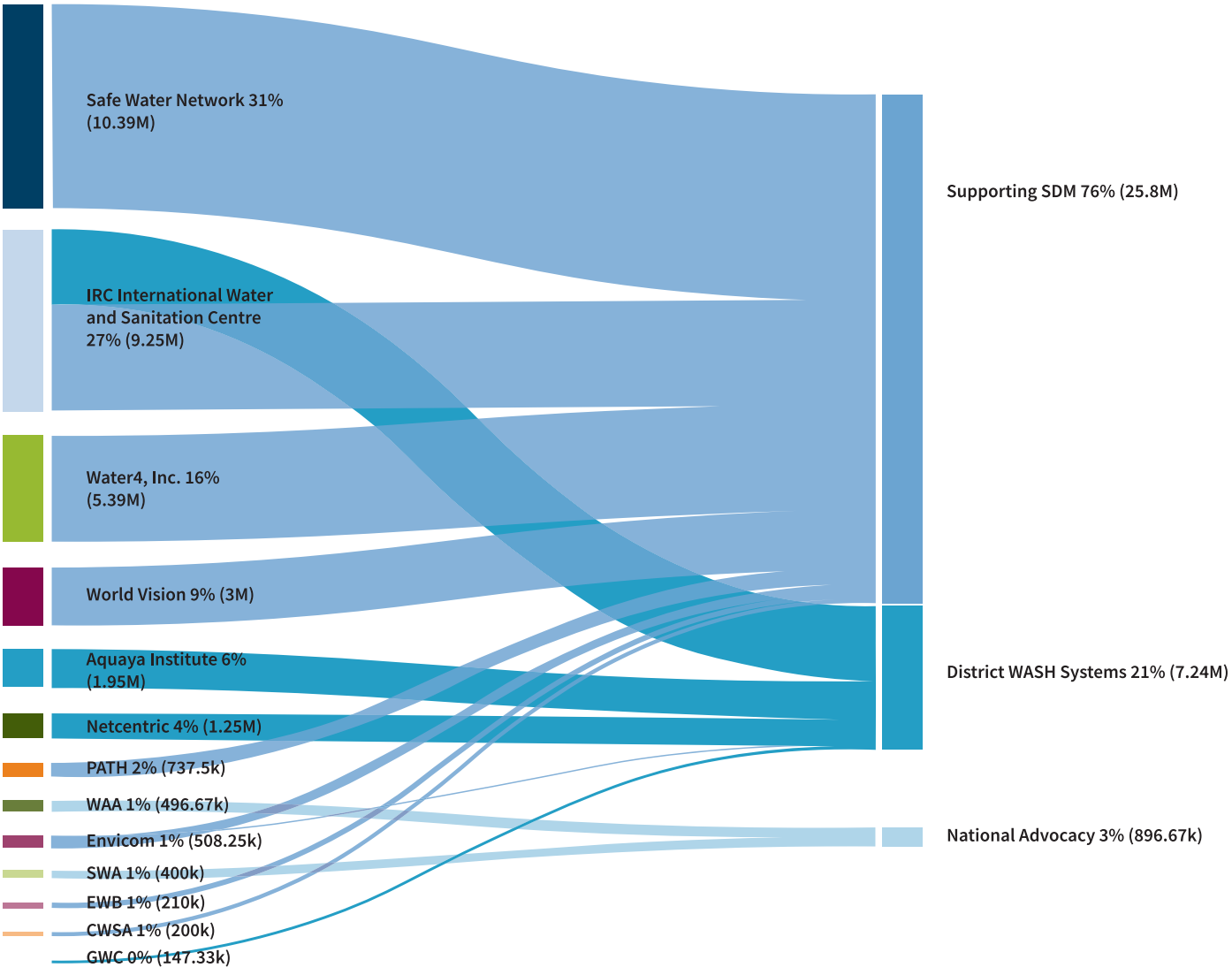
iii. **National-Level Advocacy.** This classification of the grant aims to mobilize political

4 The categorization of grants is based on the type of intervention and overall focus. In several cases, particularly for larger grants, not all interventions fall neatly into these categories. Therefore, the distribution of funding should be taken as indicative of the breakdown by both grantee and focus area.

will, strengthen stakeholder coordination and communication, and increase accountability at the national level.

In Ghana, SWI investments focused on support to SDMs. Figure 5 shows the proportion of funding allocated to each of these approaches and each grantee since 2019. Overall, US$25.8 million (76%) was allocated for support to SDMs, combining the capacity strengthening of service providers (SWEs, WSMTs, and CWSA) and infrastructure development. This was followed by US$7.24 million (21%) allocated to strengthen WASH systems. This was mostly done at the district level across several thematic areas, including, among others, institutional strengthening and coordination, facilitating collective action, and water quality monitoring. Finally, US$897,000 was allocated towards national-level advocacy.

Figure 5: Funding Allocated per Focus Area in Ghana



In Ghana, the Conrad N. Hilton Foundation has supported a combination of SDMs. The Conrad N. Hilton Foundation has supported three SDMs in Ghana providing direct service delivery, namely SWE, CWSA, and WSMT. In the first instance, through grants totaling US$10.4 million and US$5.4 million, respectively, substantial support has been provided to SWEs, namely SWN[5] and 4Ward Development (via Water4). SWN implemented interventions in the focus district of Asutifi North but grants funded improvements in several other regions. Conversely, 4Ward Development's support was focused in Wassa East District. CWSA direct provision was also supported through a US$5.4 million grant led by IRC-WASH, and CWSA obtained direct funding totaling US$200,000. In Asutifi North, the Conrad N. Hilton Foundation also provided support to WSMT direct provision through a US$3 million grant to World Vision primarily used for infrastructure development.

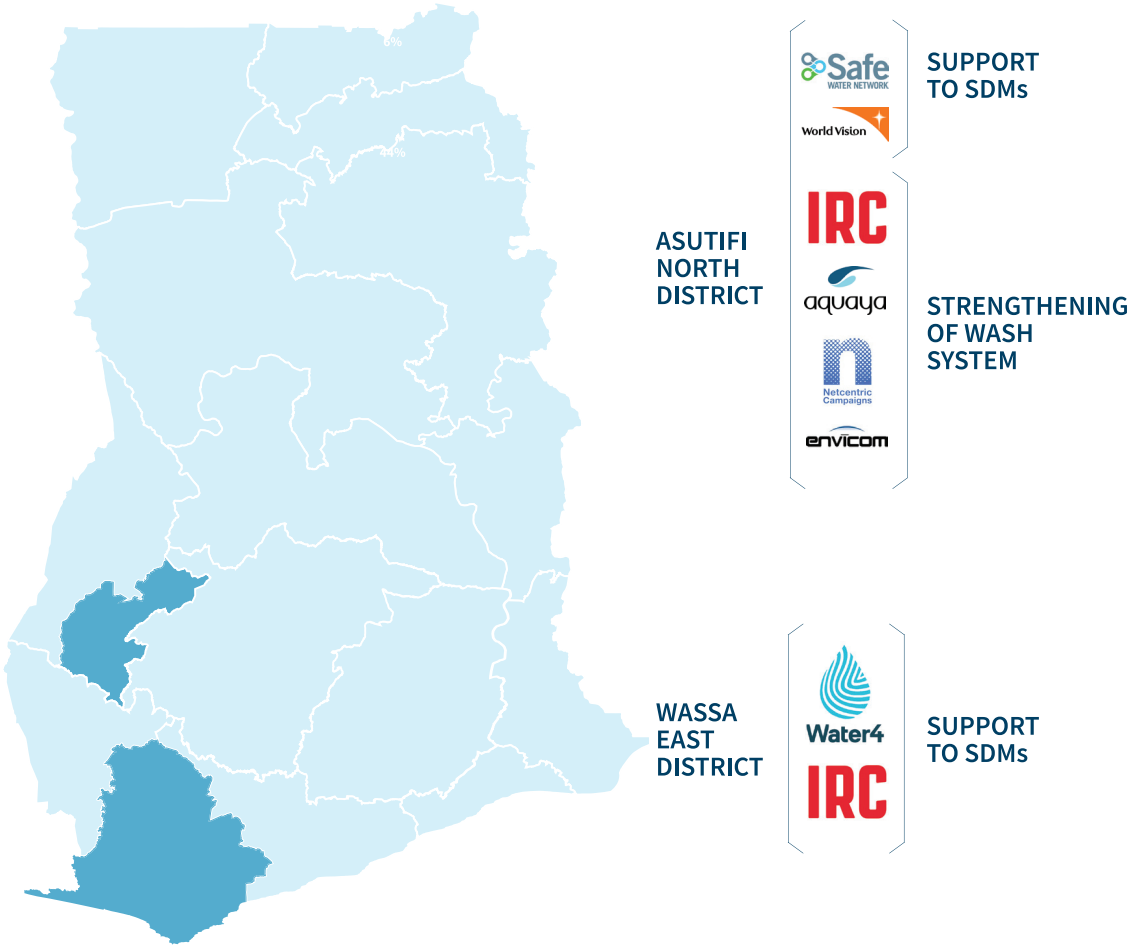
The Conrad N. Hilton Foundation supported a range of interventions to strengthen the wider WASH system at the district, regional, and national levels. IRC-WASH received a total of US$3.85 million targeted towards WASH systems strengthening at the district (focused in Asutifi North District), regional (focused in Ahafo Region), and national levels. Aquaya supported water quality monitoring and innovative financing approaches through a US$1.95 million grant. Additionally, Netcentric, in partnership with IRC-WASH, focused on improving coordination and communication between key actors and enabling collective action through a US$1.25 million grant. Finally, Global Water Challenge received a US$147,000 grant to improve data collection, harmonization, and decision-making regarding communal rural water services.

In Ghana, the Conrad N. Hilton Foundation focuses on two target districts, which present different profiles. The Conrad N. Hilton Foundation's focus districts in Ghana are Asutifi North and Wassa East. They have populations of 73,556 (51.5% rural) and 99,641 (85.2% rural), respectively. Asutifi North District Assembly is in a comparatively strong financial position, relative to Ghana's other district assemblies. Notably, it has received markedly more funding from key revenue sources (and especially the Minerals Development Fund) than Wassa East. In 2020, for example, it received a total of GHC13.86 million (equivalent to US$2.475 million in 2020) from internally generated funds, the District Assembly Common Fund, the Member of Parliament's Common Fund, the Persons with Disability Common Fund, the District Development Fund and other sources, such as the Minerals Development Fund and donors (Asutifi North District Assembly, 2021). Conversely, in the same year, Wassa East District Assembly, which has a 35% larger population, received GHC5.88 million from the same revenue sources (equivalent to US$1.05 million in 2020) (Wassa East District Assembly, 2021).

Asutifi North and Wassa East districts received varying levels of support from the Conrad N. Hilton Foundation. Figure 6 details the grantees operating in the Conrad N. Hilton Foundation's two focus districts in Ghana. In Asutifi North, there has been a focus on supporting SDMs directly and systems strengthening. Conversely, In Wassa East, the Conrad N. Hilton Foundation's funding has been allocated almost entirely towards supporting SDMs through 4Ward Development. Precise data on the level of funding per district could not be disaggregated; however, Asutifi North District received markedly more funding than Wassa East District despite being a wealthier district and having a smaller population.

5 SWN received support from Envicom (geospatial datasets, software solutions) and Engineers without Borders (infrastructure design and construction) through grants totaling US$404,000 and US$210,000, respectively.

Figure 6: Overview of Grantees and their Top-Level Focus in Target Districts[6]



6 IRC did not directly implement a Conrad N. Hilton Foundation grant in Wassa East District; however, it leads a grant with CWSA focused on the Western Region (which Wassa East is part of), and CWSA manages multiple facilities in Wassa East District.

4. Review Findings

This section of the report focuses on the relevance of the Conrad N. Hilton Foundation portfolio in Ghana and the effectiveness and sustainability of supported SDMs. When reviewing the findings presented against each of these dimensions, and especially those presented concerning effectiveness and sustainability, the following key contextual considerations are required:

- SWE direct provision has received the most financial support.
- Facilities managed under CWSA direct provision are markedly older than those managed by SWEs and WSMTs.
- Facilities managed by WSMTs are a mixture of piped water supply facilities (60%) and hand pumps (40%), while those managed by SWEs and CWSA are all piped water supply facilities.
- Facilities managed by CWSA are powered by the national electricity grid, while those managed by SWEs and WSMTs are typically solar-powered or hybrid facilities.

4.1. Are Interventions Relevant to the Context?

- Considerable improvements have occurred in the strength of the WASH system in both target districts, especially in Asutifi North District.
- The portfolio is aligned with key elements of the trajectory of Ghana's water supply sector; however, the portfolio does not sufficiently align with important provisions of the draft Revised National Water Policy (2023) relating to CWSA's likely role as a rural and small-town utility, assuming this is approved in its current form.
- Grantee interventions have broadly complemented each other; however, more deliberate efforts to link interventions toward common strategic priorities were required to enable true collective action based on deeper collaboration and integration.
- A wide-ranging set of Conrad N. Hilton Foundation-supported interventions is beginning to be replicated, but this is generally occurring at a modest scale, and further efforts are required to anchor interventions within government systems.
- Common barriers to replication include the district-focus, policy ambiguity, the absence of more substantive forms of collective action, and limited progress in determining clear replication pathways by grantees.

4.1.1. Are Interventions Addressing Key District Gaps?

Interventions were based on a comparatively detailed understanding of the WASH system. A wide-ranging set of assessments informed grantees' initiatives in Ghana, especially in Asutifi North. In the first instance, the process of several grantees, collaborating under the leadership of IRC-WASH, to develop a District WASH Master Plan provided a crucial understanding of the district WASH system and priorities for improving WASH services. Additionally, the Conrad N. Hilton Foundation enabled grantees to undertake a wide-ranging set of further assessments. These included, among others, the situation assessment conducted for Asutifi North's District WASH Master Plan, a district baseline survey and development of water point inventory for Wassa East District, studies on specific topics (e.g., water quality), and comprehensive stakeholder engagement and community-level data collection. More broadly, grantees reported the considerable benefits of operating in the same districts for several years because of the deep understanding this enabled them to generate regarding the WASH system and the most appropriate interventions.

Impressive progress has been made in strengthening the WASH system in Asutifi North and Wassa East. **Table 2** presents a summarized version of this information focused on the level of performance per building block and the evolution in performance since 2019. The table shows impressive improvements in the strength of the district-level WASH system, especially in Asutifi North.

Table 2: WASH System Strength – Asutifi North and Wassa East

Building Block	Asutifi North		Wassa East	
	Change since 2019	Current Situation (2023)	Change since 2019	Current Situation (2023)
Institutional Arrangements and Coordination	▲		▲	
Service Delivery and Infrastructure	▲		▲	
Regulation and Accountability	▲		▶	
Inclusive and Connected Planning	▲		▶	
Finance	▲		▲	
Monitoring	▲		▶	
Water Resources and Environment	▲		▲	
Learning and Adaptation	▲▲		▶	
Demand and Political Will	▲▲		▲	

Current Strength

Weak | Emerging | Strengthening | Desired

Evolution Since 2019

▼ Deterioration ▶ No Change ▲ Some Improvement ▲▲ Substantial Improvement

Improvements to WASH system strength in Asutifi North have spanned all building blocks while, in Wassa East, they have centered on building blocks and indicators closely linked to the predominant service delivery model. In Asutifi North, the wide-ranging set of grantees and holistic set of interventions have resulted in significant improvements across all nine building blocks. Conversely, in Wassa East, improvements have centered on the building blocks and indicators most closely linked to 4Ward Development's management arrangement (i.e., finance, service delivery and infrastructure, water resources, and environment). In both districts, the level of support provided by the Conrad N. Hilton Foundation has been substantial and resulted in other development partners largely not operating in the districts (see Sub-Section 3.2.). Accordingly, a high degree of attribution can be provided to Conrad N. Hilton Foundation-supported grantees for the improvements made to WASH systems in both districts.

Across both districts, initiatives did not sufficiently focus on addressing deep-rooted weaknesses. While a wide range of interventions were implemented, it is important to note that grantee initiatives often did not sufficiently tackle deep-rooted challenges such as staffing levels and capacity or weaknesses in fiscal decentralization. Interventions focused on tackling challenges within grantees' sphere of influence at the service provider level, as well as headline indicators from the building block diagnostics where they could more easily bring about change (e.g., the presence of a district WASH master plan). Consequently, while some progress has been made, crucial deep-rooted weaknesses such as service authority staffing levels, districts' capabilities to perform key functions without external assistance, and the acceptance of SWE direct provision by stakeholders at the national level remain insufficient. This raises fundamental questions about the sustainability of improvements. This situation can be explained by the highly challenging nature of these cross-cutting issues, a tendency to focus on the symptoms rather than the more challenging deep issues, and the district-level focus of the portfolio.

4.1.2. Are Interventions Designed and Managed According to Collective Action Principles?

Asutifi North District Assembly has been substantively engaged during program design and implementation and displays strong district leadership across several key areas. In Asutifi North District, grantees aligned with the principle of supporting and facilitating government leadership and took essential steps to enable the District Assembly to play a key role during program design and implementation. This included co-designing interventions, ensuring alignment with the District WASH Master Plan, setting up a WASH desk to enable the district to see the challenges communities face, and supporting district personnel to lead the implementation of a wide-ranging set of key activities. Ultimately, this ensured interventions and initiatives were closely aligned with the district's priorities and has contributed to Asutifi North District Assembly displaying strong leadership in several aspects of water supply service provision. For example, it provided considerable financial resources to support the funding of new piped water supply facilities and led the implementation of the Pay-As-You-Fetch (PAYF) tariff modality.

Important gaps in district leadership were evident in Wassa East District and for SWEs more broadly. In Wassa East district, 4Ward Development has taken some steps to support the district to play a key role in the design and implementation of interventions. These include working with the district

to produce an asset inventory, providing training on the SDM, operating under an MoU, and developing a service level agreement with the District Assembly and community members. Nevertheless, 4Ward Development is the only grantee operating in Wassa East District that has a long-term presence. A pressing gap exists concerning the absence of grantees in Wassa East District that are well-placed to help strengthen key elements of the WASH system outside of the direct purview of 4Ward Development's SDM, and adequate support has not been provided to the district to perform key service authority functions (e.g., planning, coordination, and monitoring). This has resulted in a situation whereby the district assembly performs only a light-touch set of functions related to creating the enabling environment for 4Ward Development (e.g., conflict resolution and agreements on tariff setting and reviews) and does not sufficiently perform its mandated monitoring and regulatory functions. There is also an opportunity to further support Asutifi North District, where the district is not fully performing its monitoring and regulatory functions in relation to Safe Water Network (see Sub-Section 4.3.3).

The portfolio is currently aligned with key elements of the trajectory of Ghana's water supply sub-sector. Ghana's rural water supply sector is currently in flux, with the Revised National Water Policy having remained in draft form since January 2023. This naturally creates challenges in ensuring alignment with the trajectory of the rural water supply sector and GoG's vision. Nevertheless, in the absence of an explicitly defined government position on the management of rural and small-town water supply services, the Conrad N. Hilton Foundation portfolio aligns with the core elements and priorities of the rural water supply sub-sector. These include professionalizing rural and small-town water supply service provision, improving service levels and financial viability, and strengthening local and regional government capacity.

The portfolio does not fully align with key provisions of the draft Revised National Water Policy related to CWSA. It is not realistic for the Conrad N. Hilton Foundation's portfolio and the work of individual grantees to be fully aligned with the draft Revised National Water Policy. Nevertheless, it is important to note that while the portfolio broadly aligns with the direction of travel of Ghana's rural water supply sub-sector, there is less clarity with a central provision of the draft National Water Policy, namely CWSA's likely future role. The current proposal is that CWSA's role is changing to that of a water utility that will focus on small towns and will continue to provide support to the district assemblies and communities (Ministry of Sanitation and Water Resources, 2023). Although *de facto* this has been the case on a pilot basis since 2017, the policy is yet to be approved. Some observations can be made regarding the alignment of the portfolio with this key provision in the draft policy:

1. Two-thirds (66%) of the SWI portfolio's support has gone to SWE direct provision, followed by 22% to CWSA direct provision and 12% to WSMT direct provision.[7] While both private (SWEs) and CBM (WSMTs) will remain important SDMs going forward, once the draft Revised National Water Policy (2023) is approved and necessary legislative changes are enacted, greater levels of support to CWSA will be warranted.
2. Several best practices and innovations have been implemented, which are of particular relevance to CWSA. These include the Water Quality Assurance Fund (WQAF), expanding the use of pre-paid and smart meters, expanding the number

7 Most of the support to WSMT direct provision relates to point water sources, such as hand pumps; however, in Asutifi North, several piped water supply facilities are managed by WSMTs.

of household connections for small-town piped water supply schemes, customer service call centers, and utilizing online billing software and forms of online payment (e.g., mobile money). Some support is being provided to CWSA to integrate some of these innovations, but greater efforts would be warranted to ensure their integration and adoption by CWSA once the draft Revised National Water Policy (2023) is approved.

Grantees' interventions have complemented each other. In Asutifi North, the wide-ranging set of grantees and their interventions and initiatives have complemented each other and enabled more effective implementation. This is most clearly evident in the development of the District WASH Master Plan, the WASH Desk and hotline, and the heightened district leadership, which have each enabled more effective implementation of interventions, such as the WQAF, the PAYF tariff modality, SWN's expansion, and infrastructure improvements. This has enabled Asutifi North to make accelerated progress towards universal WASH coverage, with the proportion of the district's population accessing at least a 'basic' and 'safely managed' service increasing from 71% and 5% in 2017 to 80% and 15% in 2022, respectively (ANAM WASH, 2022).

More deliberate efforts to link interventions towards common strategic priorities would have been beneficial and enabled more substantive forms of collective action. The 'hub' in Asutifi North played a key information sharing and coordination role and helped to ensure alignment of grantees' activities to accelerate progress towards universal access in Asutifi North.[8] However, the Conrad N. Hilton Foundation did not properly define or articulate the hub's role, and the hub did not sufficiently capitalize on potential opportunities for more substantive forms of collective action on specific topics based on deeper collaboration and integration.[9] For example, multiple grantees are working to strengthen aspects of CBM (e.g., water quality, financial viability), but these were not sufficiently joined together as part of a coherent strategy or overall approach for strengthening CBM that could be put forward for replication. These more substantive forms of collective action will require the Conrad N. Hilton Foundation to take the lead in ensuring that this is established in program design from the outset.

4.1.3. Are Interventions Being Replicated?

A wide-ranging set of interventions, not all of which originated through Conrad N. Hilton Foundation support, are beginning to be replicated. A range of promising initiatives and innovations have originated from Conrad N. Hilton Foundation-supported programs in Ghana that warrant replication and are beginning to be replicated:

1. IRC-WASH has worked with the regional coordinating council and respective District Assemblies to develop **district WASH master plans** for three of Asutifi North's neighboring districts in the Ahafo Region.
2. IRC-WASH is working with the National Development Planning Commission to adapt the **national WASH planning guidelines** for WASH planning to make these more comprehensive.

8 Information-sharing refers to stakeholders who meet to share information about their individual activities, while coordination refers to stakeholders who meet to improve information flow or reduce duplication of efforts in line with a shared vision.

9 Collaboration refers to representatives from all relevant stakeholders working together to understand and solve common problems, while integration refers to representatives from relevant stakeholders solving common problems through joint planning and interdependent actions.

3. IRC-WASH is working with the National Development Planning Commission and the Office of the Head of the Local Government Service to **train local government** using a WASH Toolkit and the WASH Systems Academy.
4. Aquaya's **WQAF** with support from USAID and the Helmsley Trust Fund, is being expanded to 11 districts in Ghana (34 water systems) as well as two additional countries (Kenya and Tanzania).[10]

A range of other ongoing innovations already underway in Ghana have received further support from the Conrad N. Hilton Foundation under the SWI, including (i) scaling up of SWEs as an SDM, (ii) the PAYF tariff modality for WSMT direct provision, (iii) expanding the use of pre-paid and smart meters, (iv) expanding the number of household connections for small-town piped water supply schemes, and (vi) utilizing online billing software and forms of online payment (e.g., mobile money). The latter three of these innovations (pre-paid and smart meters, household connections, and online bill software) supported by the Conrad N. Hilton Foundation are especially relevant to CWSA.

Replication is generally only occurring at a modest scale, and further efforts are required to anchor interventions within government systems. The above-noted instances of replication represent important developments, which provide a promising foundation for future efforts to build upon. **Figure 7** is a schematic[11] showing four broad and overlapping stages of replication:

1. Initial grantee-led piloting of interventions.
2. Grantee-led replication through intervention uptake by other grantees or leveraging external funding for replication in other districts.
3. Comparatively ad-hoc government-led replication.
4. Government uptake and promotion in sector documents (i.e., plans, policies, strategies, legal instruments) and roll-out at scale (either directly through government programs or indirectly through other actors such as the private sector).

Figure 7 illustrates that most of the above-noted Conrad N. Hilton Foundation-initiated or supported innovations that are starting to be replicated are comparatively nascent and not yet fully anchored or embedded within government systems at scale. In most instances, replication remains either driven by grantees or is supported by the government in an ad-hoc manner.

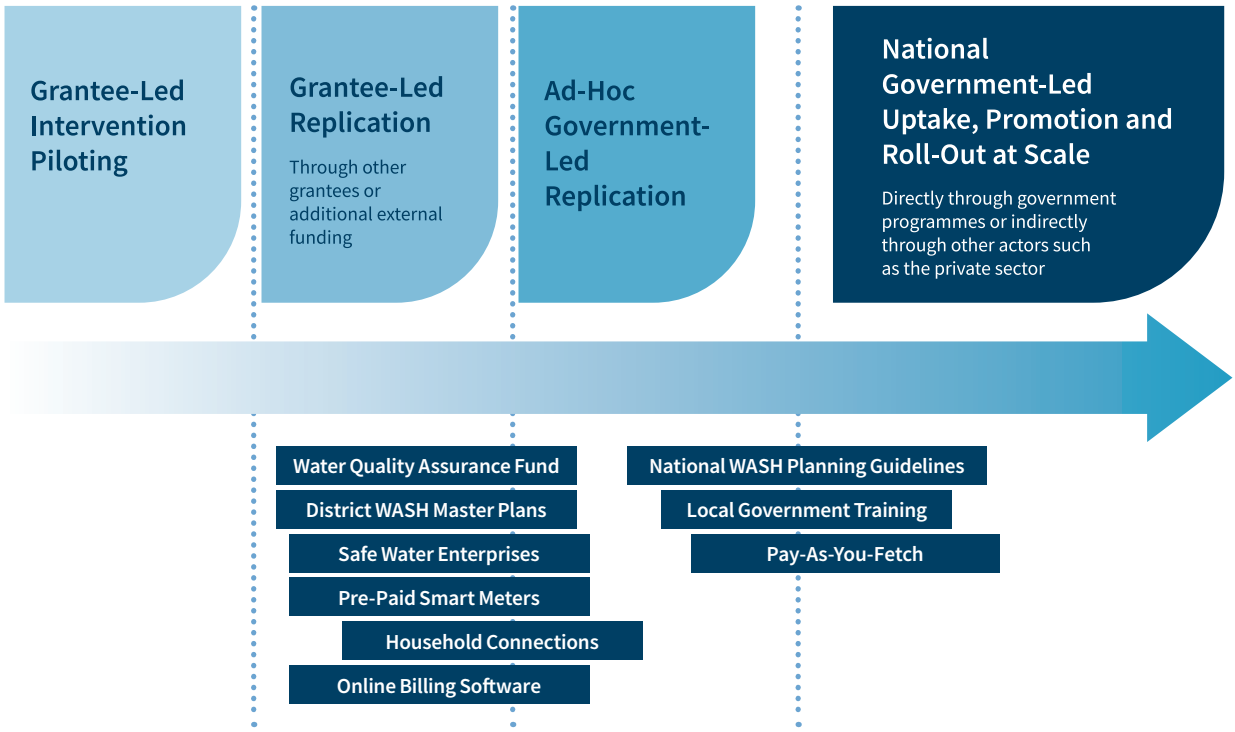
Common barriers to replication include the district focus, policy ambiguity on behalf of the GoG, the absence of more substantive forms of collective action, and the failure to determine clear pathways for replication beyond grant funding. Grantees cited a range of factors that impeded the replication of Conrad N. Hilton Foundation-supported improvements and innovations. Beyond the challenge of securing the necessary funding, the following points stood out as being particularly relevant:

1. **Absence of defined replication pathways.** Many grantees were currently unable to offer a clear pathway for replicating their interventions that centered on the initiatives being promoted, anchored within, and owned by the government and instead emphasized attracting further donor funding to simply replicate themselves. This relates to the Conrad N. Hilton

10 The WQAF is also being upscaled to Uganda with support from the Conrad N. Hilton Foundation.

11 Innovations were determined based on KIIs with grantees, and the relative positioning of the innovations along the continuum was determined based on insights from the external portfolio review and consultations with grantees.

Figure 7: Replication Continuum



Foundation's broader shortcoming in not placing sufficient emphasis on defined replication pathways during grant design and ongoing interactions with grantees.

2. **Policy ambiguity.** The current GoG policy ambiguities surrounding CWSA and SWE's role create a barrier to scaling up SDM-related innovations and improvements. In particular, a range of the improvements primarily driven by SWEs (i.e., pre-paid and smart meters, household connections, online billing software, WQAF) are highly relevant to CWSA but challenging to integrate given the current state of flux in policy.
3. **Limited national and regional engagement.** There was a limited number of grants that included technical assistance at the regional and national levels focused on supporting what are often comparatively low-resource organizations to anchor interventions within their processes for roll-out at scale. Additionally, 4Ward Development does not engage extensively at the national and regional levels due to concerns over the implications this would have on their ability to operate as desired at the district level.
4. **District-level focus.** Asutifi North and Wassa East are comparatively small (i.e., less than 100,000 people in each district) and represent unique contexts because of the levels of Conrad N. Hilton Foundation support provided. Proof-of-concept was recognized across the grantees as typically being needed at a larger scale (i.e., regional) to develop evidence of sufficient rigor. While grantees are starting to operate outside of the two target districts, this is only starting, and previous, strictly applied requirements for focusing solely on either of the two districts represented a critical barrier.

Greater progress has been made in replicating Conrad N. Hilton Foundation-supported interventions where these barriers have been subsequently addressed or removed. For example, IRC-WASH's promising progress at the national level concerning strengthening district WASH planning and local government capacity building has been enabled by their willingness to provide technical assistance at the national level and a clear understanding of the required pathways for replication based on government uptake and leadership. Additionally, progress in scaling up innovations by Aquaya, 4Ward Development, and SWN have all been enabled by moving away from a core focus on the district as the sole focus, and a recognition of the importance of proof-as-concept at a larger scale.

4.2. How Do Water Facilities Perform?

- CWSA performed very well on functionality and reliability. SWEs also performed well on both functionality and reliability but provided services for the least hours per day. WSMTs' performance was the weakest.
- SWEs provide the safest water, with CWSA performing moderately on water quality, and WSMTs performing worst.
- SWEs performed the worst on affordability and charged higher tariffs compared to other SDMs.

4.2.1. How Reliable are the Services?

CWSA direct provision is the best-performing SDM on functionality and reliability, followed by SWE direct provision. Figure 8 shows the performance of the three SDMs against functionality and reliability measures. Based on a binary (yes/no) criterion of whether facilities were functional on the day of the visit, both facilities managed by CWSA were fully functional. These facilities also meet the criteria for yield[12] (at least 10 liters per minute) and reliability (extent of disruptions).[13] By contrast, 4% and 15% of facilities managed by SWEs and WSMTs, respectively, are unreliable with good yield, and 7% and 6% of SWE and WSMT-managed facilities, respectively, are unreliable with poor yield. Performance does not vary significantly across technology types.[14] However, there is a clear difference in the levels of performance

12 It is recognized that a facility›s yield is influenced by a variety of factors, both in terms of design and aquifer capacities and operational features.

13 The CWSA Framework for Assessing and Monitoring Rural and Small-town Water Supply Services in Ghana states that reliability refers to virtually uninterrupted water supply (at least 95% of the time), year-round. Functionality for Handpumps equals 40 strokes to fill 18 liters in one minute. Functionality for piped schemes equals intake and boreholes, including mechanical and electrical equipment functioning.

14 Although 50% of handpumps did not meet the criteria for yield, all handpumps were fully functional and reliable.

Figure 8: SDM Performance – Functionality, Reliability, and Yield

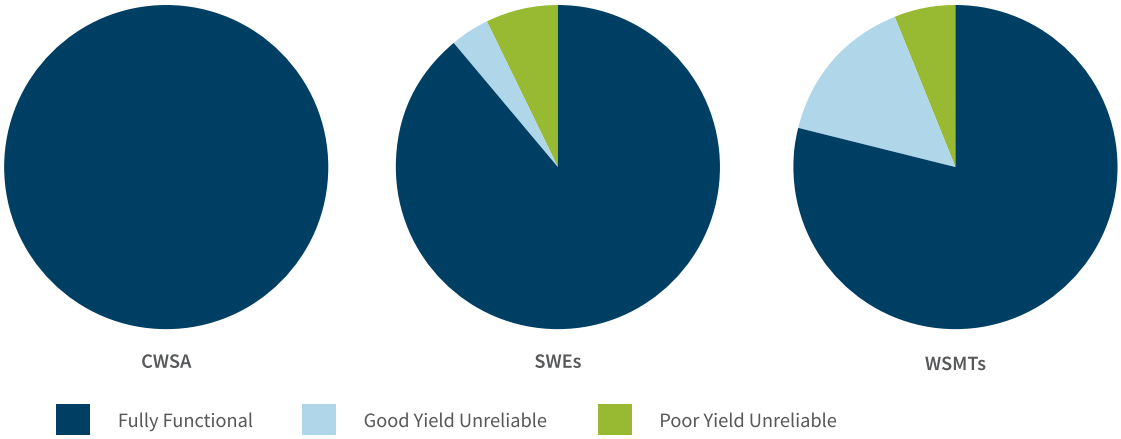
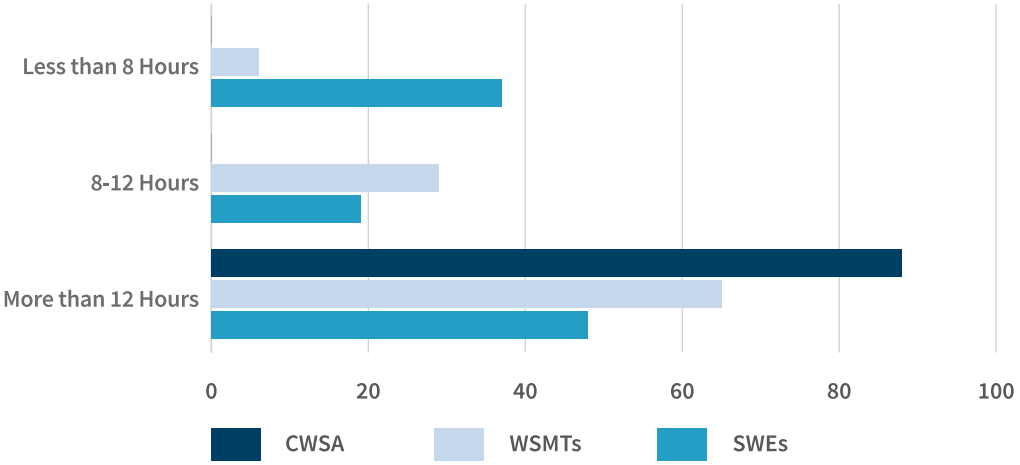


Figure 9: SDM Performance – Hours of Supply



between the two SWEs, with 4Ward Development performing better than SWN.[15]

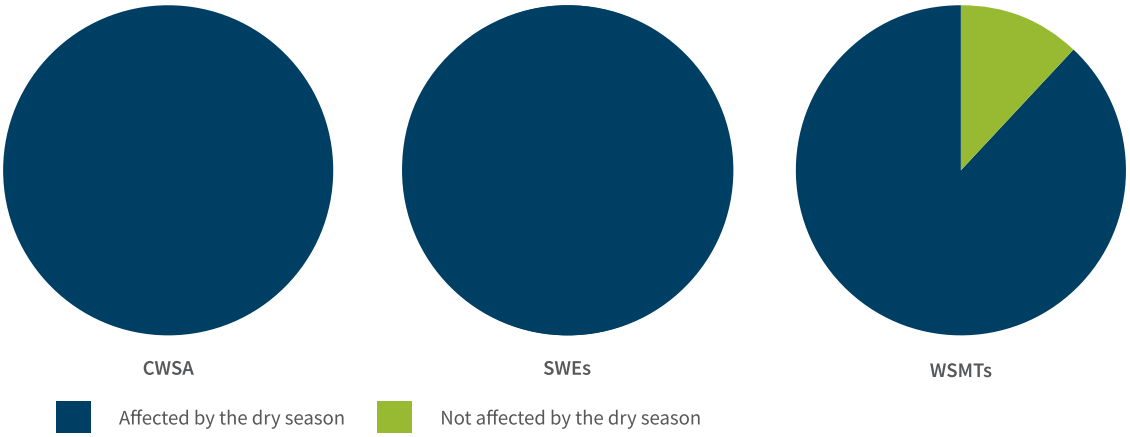
Although facilities managed by SWEs are generally reliable and functional, they provide services for the least hours per day. Figure 9 shows the number of service hours provided per day according to the respective SDMs. SWE direct provision has an average of 48% of facilities open for more than 12 hours per day, with 45% of 4Ward Development facilities open less than 8 hours per day.[16] By contrast, 65% and 88% of facilities managed by WSMTs and CWSA are open for more than 12 hours per day, respectively.

Seasonality is not a major factor affecting the performance of facilities; however, some facilities managed by WSMTs are susceptible to seasonal variations in water supply. Figure 10 shows whether facilities managed under the three SDMs were affected by seasonality.

15 100% of 4Ward Development facilities were functional, compared to 80% for SWN. 100% of 4Ward facilities had good yield, compared to 80% for SWN.

16 This refers to the hours when vendors are available to sell water at the service points.

Figure 10: How different SDMs were Affected by Seasonality



None of the facilities managed by CWSA and SWEs experience disruptions due to low water levels at the source in the dry season. Conversely, 12% of the facilities managed by WSMTs experience disruptions due to lower water levels at the source in the dry season. These were both piped facilities.[17] For one piped facility constructed in 2012, it was reported that households connected to the network at higher elevations had no access to water during the dry season. For the other facility, community members complained about low water levels and increased queueing time, with some unable to access water.

4.2.2. How Safe is the Water?

SWEs provide the safest water, with CWSA performing moderately on water quality and WSMTs performing worst. Figure 11 details the performance of the three SDMs against Ghanaian and WHO standards for total coliforms (0 colony forming units (CFUs) / 100 milliliter), fecal coliforms (undetectable in 100 milliliters), nitrates (< 50 milligrams per liter), nitrites (< 3 milligrams per liter), arsenic (0 milligrams per liter), and PH (between 6.5 and 8.5).[18] As can be expected, WSMT direct provision performs poorly on water quality, with only 62% of sampled water points meeting the WHO standards for Total Coliforms and 14% of sampled water points being contaminated with fecal coliforms. Facilities under the WQAF perform better on water quality than those that are not. CWSA performs relatively poorly on biological contamination, with 10% of water points contaminated with fecal coliforms and 30% with total coliforms. SWE direct provision performs very well on water quality, with limited cases of contamination (total coliforms < 10 CFU), and no fecal contamination recorded. The performance of 4Ward Development managed facilities is particularly good, considering the water quality challenges affecting Wassa East District. Finally, water quality generally does not vary across technologies, with both handpumps and piped systems performing variably on water quality.

17 Four handpumps were included in the assessment (all of which are less than five years old). While two had low yield, they were all functional on the day of the visit, and none were affected by seasonality or reported downtime in the previous year.

18 37 points were sampled for WSMT direct provision, 29 for SWEs, and 10 for CWSA.

Figure 11: Percentage of Water Points under each SDM that meet WHO Water Quality Standards

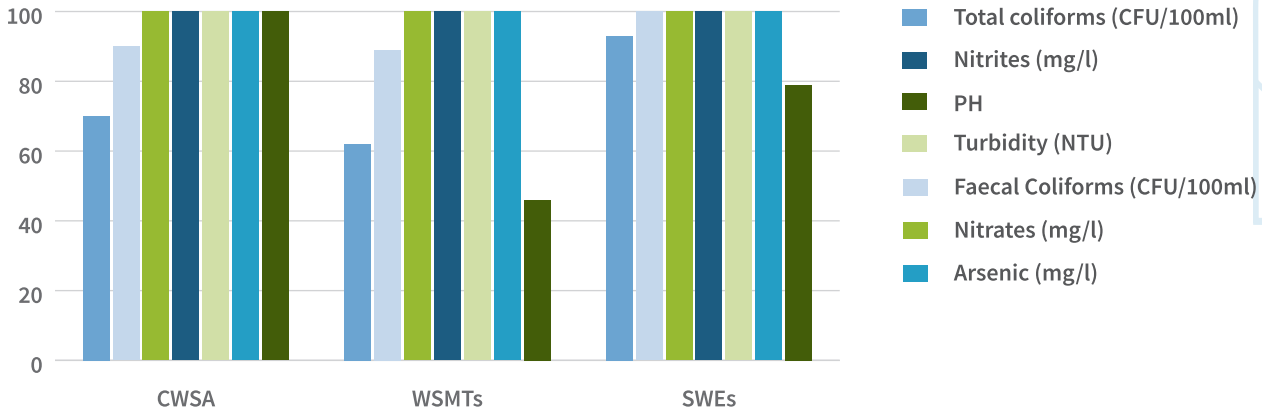


Figure 12: Accessibility and Affordability of Water According to the SDM

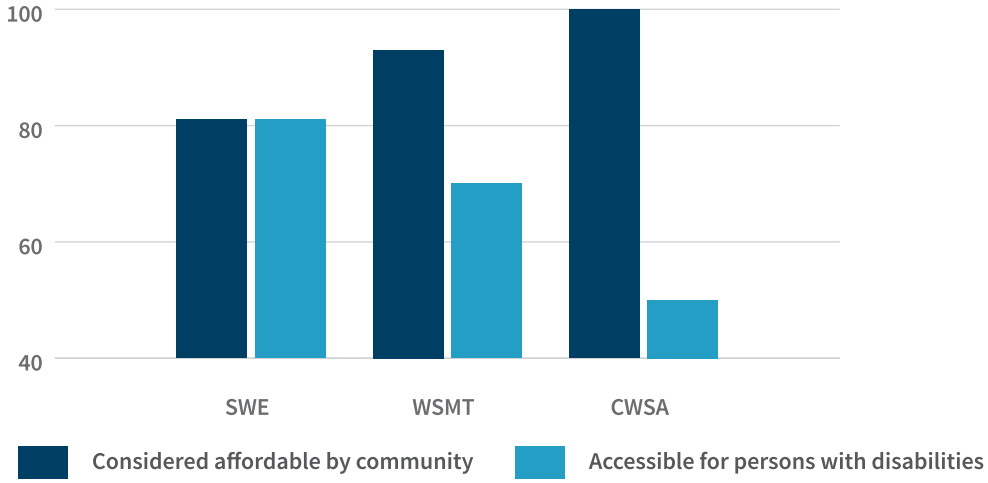
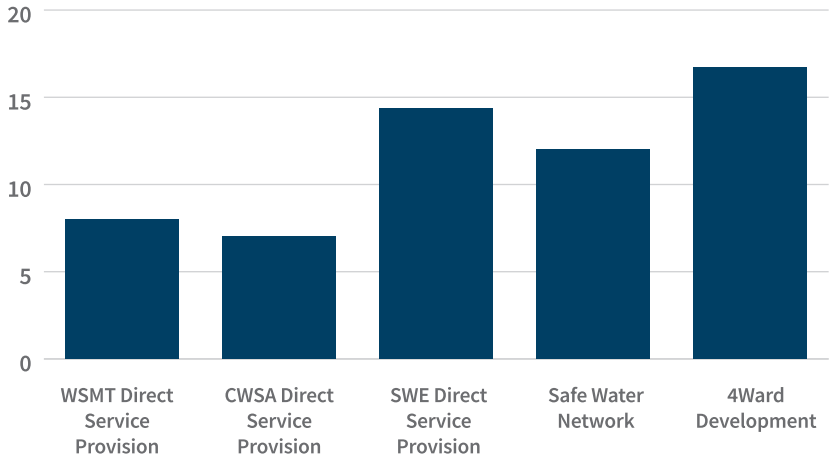


Figure 13: Average Tariff Rates in GHCs per Cubic Meter for Different SDMs[19]



19 Unit volumes for sales differ by technology type and community, with house connections tariffs typically charged per 1m3, and standpipe rates typically charged per 20L, 25L, or 36L. An average value was used for this calculation. USD equivalents are WSMT: 0.7US$/m3, CWSA: 0.6 US$/m3, SWEs Average: 1.22 US$/m3, SWN: 1 US$/m3, 4Ward: 1.4 US$/m3.

4.2.3. How inclusive are the Services?

Performance varied between SDMs concerning accessibility, with SWE direct provision performing best. Figure 12 shows the levels of accessibility[20] for facilities managed under the three SDMs. SWE direct provision provided the most accessible services for persons with disabilities,[21] followed by WSMT direct provision. CWSA was the worst-performing SDM in this category. 81% of SWE-managed facilities provided access to people with disabilities by ensuring aprons and taps were at an appropriate height and ensuring pathways leading to the water supply facilities were free of any obstacles or hazards that may impede users with disabilities. This is compared with 70% and 50% of facilities managed by WSMTs and CWSA, respectively.

All SDMs provided services that were accessible to vulnerable groups, such as women, children, and elderly users. There were some clear efforts under all SDMs to accommodate vulnerable groups at water facilities, including women, the elderly, and people with disabilities. Service providers highlighted measures they employed to ensure vulnerable groups were not marginalized when accessing water facilities. For instance, a key group that was continuously referenced was the elderly, who were often assisted in utilizing water supply facilities by providing water free of charge.

Many users of facilities managed by SWEs cited affordability challenges. As Figure 12 highlights, 93% and 100% of the facilities managed by WSMTs and CWSA were considered affordable by households. Figure 13 shows that SWE direct provision has the highest average tariff levels. This aligns with findings from the transect walks, with various households having negative sentiments regarding the affordability of tariffs set by SWN, with some households resorting to alternative sources of water, especially during the rainy seasons. Although all these reports were made for SWN-managed facilities, it was clear that this is an issue directly related to both SWN and 4Ward Development. Wassa East District Assembly reported resistance from community members to 4Ward Development's tariffs and 4Ward Development reported that some facilities were closed due to lack of financial viability and the unwillingness of local communities to purchase water.

20 his was determined based on criteria related to ease of access for persons with disabilities: (i) ramps and handrails, (ii) appropriate height of apron, (iii) appropriate height of the taps, and (iv) pathway leading to the water facility free from any obstacles or hazards that may impede users with disabilities.

21 Due to the diversity and complexity of disabilities, there are unique challenges faced by individuals with different abilities, and the criteria used may not encompass all aspects of accessibility.

4.3. How Sustainable are the Service Delivery Models?

- SWE direct provision was unable to cover operational costs through tariffs due to high staff and running costs, with an average operational cost recovery rate of 85%. CWSA had the lowest financial performance, with high operational and capital maintenance costs and low revenue generation because of inefficiencies in billing and revenue collection. Supported WSMTs faced financial challenges but performed markedly better than expected as a result of recent improvements in revenue generation, low staff costs, and low capital maintenance costs.
- Under CWSA and SWE direct provision, technical functions are regularly conducted. By contrast, WSMTs struggle to carry out key technical functions but are generally better in functions related to monitoring water quality.
- SWEs have the required institutional capacity, while CWSA faces challenges concerning insufficient technical support for water systems management staff. WSMTs mostly comprise community volunteers with minimal capacity to perform key technical functions.
- Although accountability is a cross-cutting challenge for all SDMs, in Asutifi North, the district has played a leading role by establishing various platforms for user involvement and complaints handling.

4.3.1. Are Service Delivery Models Financially Viable?

SWEs and CWSA have adopted and now carry out important financial management practices, but most WSMTs have struggled to perform basic financial management practices. **Figure 14** shows the levels of adoption of basic financial management practices by the different SDMs in Ghana. All facilities by SWEs and CWSA were found to have all the assessed financial management practices in place. Although 73% of the surveyed facilities collected tariffs in the case of the WSMTs, less than 30% had tariffs set according to the CWSA-approved process. Moreover, only 46% of WSMTs kept financial records according to the CWSA requirements, with particularly poor performance for WSMTs managing handpumps (only 25%).

SWE direct provision could not cover operational costs through tariffs due to comparatively high staff and running costs, with an average operational cost recovery rate of 85%. **Figure 15** shows the average operational cost coverage for the three SDMs. Although 4Ward Development's financial information was withheld as proprietary information and not included in the analysis, SWN had an average operational cost coverage of 85%[22] (one out of the three facilities was achieving full operational cost recovery). This is despite innovations implemented to increase revenue collection efficiency (such as pre-paid billing) and that, in Asutifi North, the SWN facilities serve comparatively large rural growth centers (with populations of 3,500, 4,500, and 7,000).[23] This can be attributed to high staffing and operational costs. Although the lean institutional structure of SWEs at the facility level is expected to have lower staff costs, with

22 The average operational cost recovery for SWN increases to 163% when exclusively considering on-site staff. Staff costs for field operators responsible for managing multiple facilities were included on a pro-rata basis.

23 The number of users based on SWN's reported populations served, although it is likely that the actual customer base for SWN is lower than the population.

Figure 14: SDM Performance - Adoption of Financial Management Practices

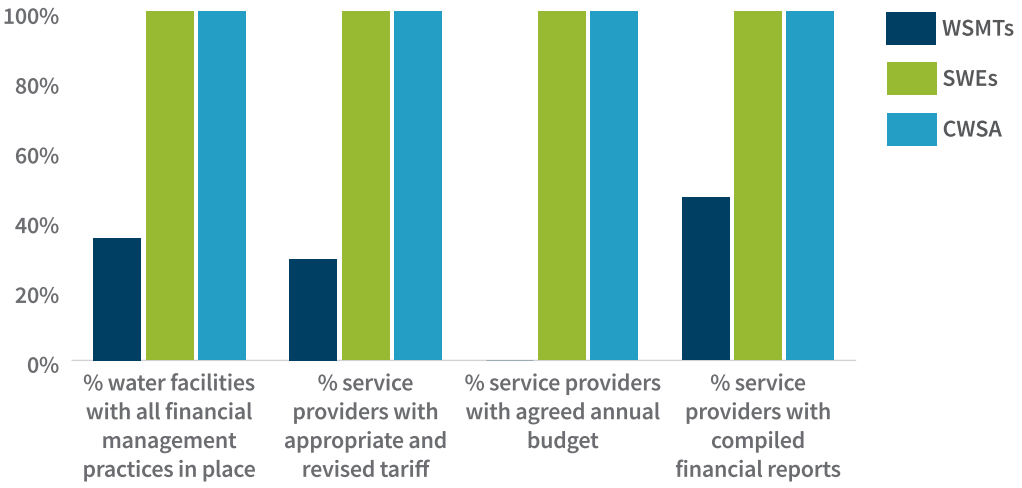


Figure 15: Average Operational Cost Coverage in Ghana

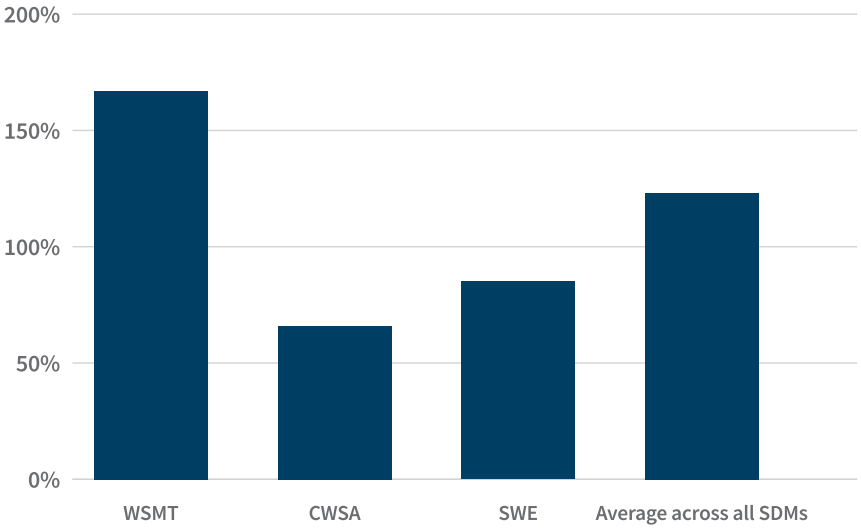
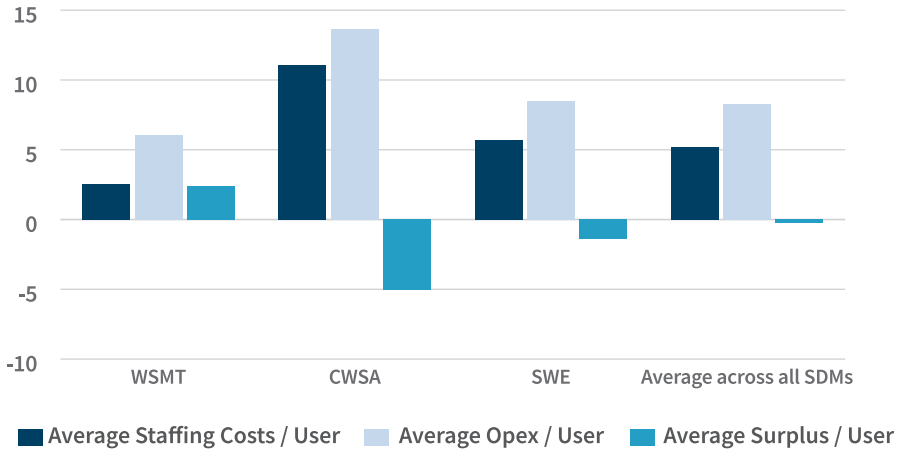


Figure 16: Average User Costs per SDM[24]



24 Figures used for calculating SWN's average tariff per user and average OpEex per user are "population served" rather than exact customer numbers as this was the only data that could be provided. Since the actual number of users is likely lower than the population served, Average Staffing Costs / User, Average OPEX / User, and Average Surplus / User are all likely higher than indicated in the graph.

technical staff at regional or district levels overseeing the affairs of a cluster of facilities, the structure also results in increased costs for the supervision of facilities by regional staff. The revenue collected at the SWN facility level was insufficient to cover these additional costs when these were allocated to facilities on a pro-rata basis. These additional costs are also correlated to the non-performance of technical functions (see **Sub-Section 4.3.2**). More broadly, the overall financial performance of SWE direct provision must be viewed in the context of the high levels of financial support provided to SWEs by the Conrad N. Hilton Foundation (and other sources) (see **Figure 5**). This includes support covering substantive overhead costs at the international, national, and sub-national levels that are not captured in the operational costs detailed in **Figures 15 and 16**.

CWSA has high operational costs and suffers from inefficiencies in revenue generation, which negatively impact its financial viability. As shown in **Figure 16**, CWSA-managed facilities had an average operational cost recovery of just 66%, with neither of the two facilities fully recovering operational costs.[25] This is closely linked to operational inefficiencies, such as the use of poor billing and revenue collection methods, often resulting in inaccurate billing and the late or non-payment of tariffs. CWSA's poor financial performance must be viewed within the realities of the context it operates within and the comparatively limited levels of support so far provided through the SWI. Aging infrastructure is a major challenge, with both CWSA facilities included in this survey having major repairs and rehabilitations internally funded by CWSA. Additionally, the high cost of electricity, and the heavy pollution of source water in Wassa East all undermine CWSA's financial performance. Another key barrier is low willingness to pay, leading to low demand for CWSA services, presenting a further barrier to recovering operational costs. This is despite CWSA's relatively low tariffs (see **Figure 13**).

WSMTs showed a surprisingly high operational cost recovery rate. As shown in **Figures 15 and 16**, the facilities surveyed under WSMT direct provision show a very high average operational cost recovery rate (167%) and a positive average surplus per user. This can be attributed to the implementation of PAYF and Asutifi North District Assembly's requirement for all WSMTs to accumulate savings to cover future operational costs, as well as the very low staff costs. WSMT's improved operational cost recovery must also be viewed in the context of the age of these facilities, which has resulted in no major capital maintenance expenditure having yet been incurred.

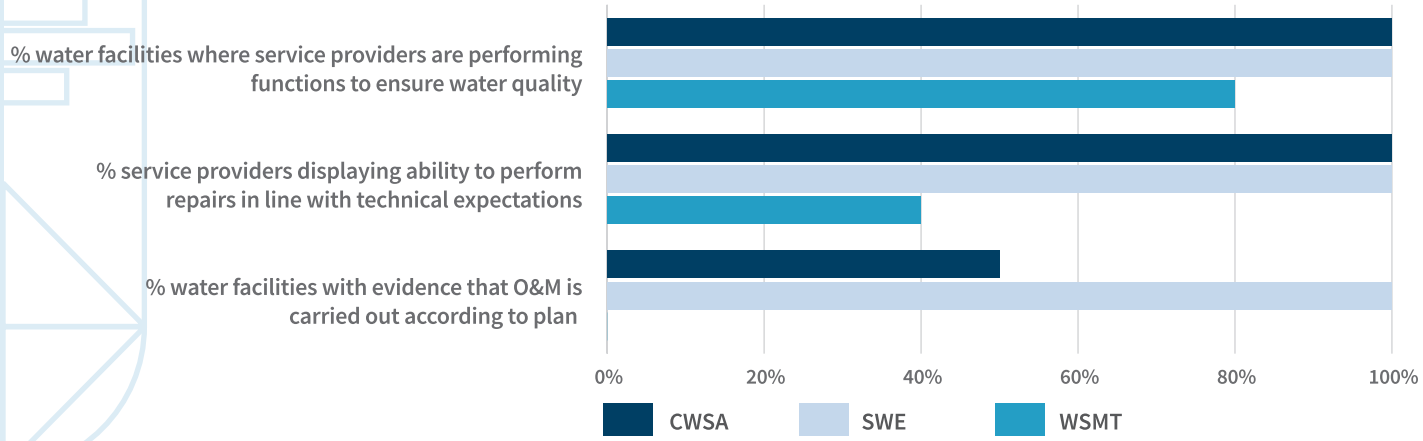
4.3.2. Are Technical Functions Performed by Service Providers?

Under CWSA and SWE direct provision, technical functions are generally conducted regularly, including O&M and water quality testing and treatment. Figure 17 shows the extent to which technical functions are performed under each of the three SDMs. In the first instance, 100% of SWE-managed facilities had documented O&M plans, while this was true for only 50% of CWSA-managed facilities. Both CWSA and SWEs are implementing water safety planning. Water quality monitoring is a headline issue for CWSA, and although all facilities reported carrying out water quality monitoring (treatment and testing), the poor quality of infrastructure and frequent flooding create challenges for CWSA staff in addressing issues with water quality. Additionally, the lack of resources, such as vehicles and poor road infrastructure, limits the ability of regional staff to visit rural facilities and perform required technical functions.

WSMTs struggle to carry out key technical functions but showed comparatively good performance in functions related to water quality monitoring. WSMTs generally carried

25 Only 2022 data was used. 2020 and 2021 data were provided but not included in the analysis as this data was heavily skewed by the GoG's free water program.

Figure 17: SDM Performance - Adoption of Financial Management Practices



out key operational and maintenance activities on an ad-hoc basis, with a lack of technical knowledge and expertise representing a key barrier to performing minor O&M activities. Only 30% of water facilities were undertaking the expected maintenance of key infrastructure in the last year, and an additional 30% were only partially performing these activities. The performance of other functions, such as water quality monitoring, was an area of comparatively good performance.

CWSA and SWN have similar challenges around staff resource constraints, and WSMTs generally expressed dissatisfaction with the available resources and tools for performing technical functions. CWSA and SWN water systems management staff continuously referred to a lack of resources and tools to carry out required technical functions. Staff generally referred to the poor quality of available equipment and inadequate expertise at the facility level to carry out repairs, leading to a high dependence on staff from the regional offices for routine maintenance works. This was not the case for 4Ward Development, whose staff were generally satisfied with the resources available for performing their functions.[26] Over two-thirds (71%) of WSMTs self-reported having insufficient equipment to fulfill their functions, with some having completely no tools available to perform necessary tasks.

4.3.3. Are Institutional Capacities In Place?

SWEs benefit from having the required institutional capacity, while CWSA faces challenges concerning limited technical support for water systems management staff. Figure 18 shows the performance of SDMs on institutional capacity. SWEs generally benefit from high levels of institutional capacity and well-trained staff managing the water facilities, with 100% of water facility management staff under SWE direct provision self-reporting that they have adequate technical and financial skills. Nevertheless, some challenges still exist for SWN regarding inadequate support for water facility management staff with the tools and resources needed to perform their roles, possibly causing low job satisfaction and high management staff turnover. CWSA staff reported that they have adequate technical and financial skills. However, there was no clear evidence of any staff capacity building over the previous year (i.e., to fill vacant positions or increase the skills of existing personnel) and insufficient technical and financial support was reported by CWSA staff at the facility level in the two schemes under the portfolio assessment.

26 4Ward Development stocks spare parts for the maintenance of the water systems at the district level. This is in contrast with CWSA, which has no warehouse to stockpile spare parts at the systems and regional level.

WSMTs mostly comprise community volunteers with minimal financial and technical capacity and weak institutional structures. Apart from the two small-town piped schemes, which have full-time paid staff in addition to the voluntary members of the WSMT, most WSMTs were generally composed of community volunteers. 53% of the surveyed WSMTs self-reported having inadequate technical and financial skills, and only 33% of WSMTs met CWSA guidelines concerning their composition.[27] Although there is clear drive for the District Assembly in Asutifi North to provide more support to WSMTs, this is still somewhat limited. Only 30% of WSMTs surveyed reported having received regular technical support from the District Assembly, and 33% provided evidence of submission of monitoring data to the service authority in line with requirements.[28]

District assemblies play only a very limited role in monitoring and regulating SWEs and CWSA. Both CWSA and SWEs have internal mechanisms for monitoring through their district, regional, and national offices and largely operate independently of the district assemblies. Of note, Wassa East District Assembly plays a very minimal role in monitoring 4Ward Development's activities and considering Wassa East District Assembly's crucial service authority role, there was insufficient collaboration between the two entities. CWSA rarely shared data with Wassa East District Assembly, and while both SWEs shared data with their respective district assembly, it was evident that this was not properly reviewed in detail and rarely, if ever, led to the district assemblies taking significant actions.

4.3.4. Are Water Resources Effectively Managed?

Service providers are largely carrying out basic water resource protection measures at the facility level. Figure 19 shows that SWEs and CWSA carry out basic measures to manage water resources through fencing water sources, encroachment protection, control of drainage, and carrying out sanitary inspections. Such activities to protect water resources were carried out by 87% of WSMTs, compared to 100% of CWSA and SWE-managed facilities. However, the performance of more technical functions, such as monitoring of water abstraction, is constrained by the lack of information and the absence of plans and documents to implement water resource management measures.

Monitoring of water resource availability and levels of abstraction is inadequate across all SDMs and represents a key weakness. Various factors threaten water resource availability and quality in Wassa East and Asutifi North districts, including human activities, such as mining, and climate-related phenomena, such as droughts and floods. However, there is no clear evidence of monitoring water abstraction and water resource availability across the three SDMs for any of the facilities they are managing.

27 For small-town systems: A well-composed, trained, and gender balanced WSMT is in place with 10-15 members. Handpumps: A gender-balanced (minimum 30% women) WSMT is in place, consisting of 5-9 members.

28 CWSA guidelines require that the MMDA monitors O&M of water facilities in terms of financial, technical, and administrative performance every quarter, provides direct support when needed, and does periodic auditing of WSMT accounts.

Figure 18: SDM Performance - Institutional Capacities

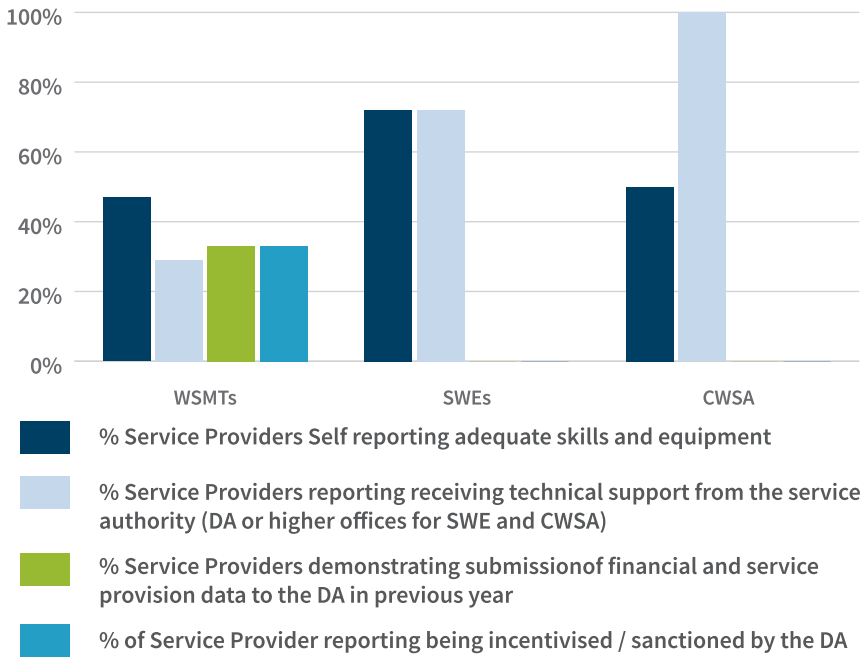


Figure 19: SDM Performance – Basic Water Resource Management Practices

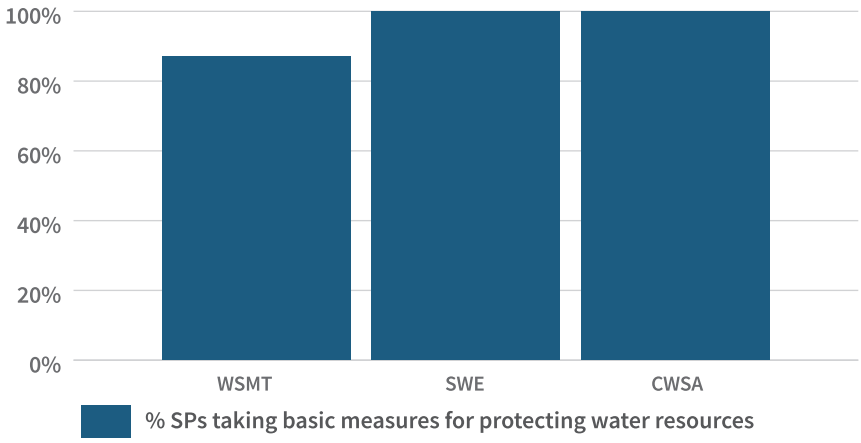
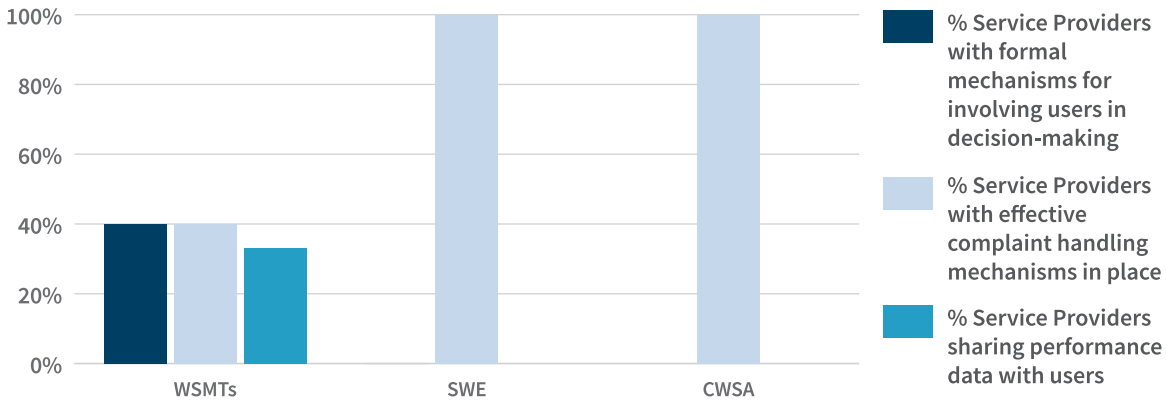


Figure 20: SDM Performance – Service Provider Accountability



4.3.5. Are Service Providers Accountable?

Accountability is an area of weakness for all three SDMs. Figure 20 shows the performance of the three SDMs concerning three dimensions of accountability. 40% of WSMT-managed facilities have formal mechanisms to involve users in decision-making, compared to 0% under CWSA and SWE direct provision. Additionally, 40% of facilities under WSMT direct provision had effective complaint handling mechanisms in place, compared to 100% managed by CWSA and SWEs, which both had more formal complaint handling mechanisms through their respective offices (e.g., complaint registers available at the office of the service provider or phone lines to make complaints). 33% of WSMT-managed facilities self-reported sharing performance data with users, compared to 0% for both CWSA and SWE direct provision, which both predominantly use a top-down approach for decision-making, and neither involve users in decision-making nor share information with users.

In Asutifi North, the District Assembly has played a leading role by establishing various platforms for user involvement and efficient complaint handling. Through initiatives such as the WASH desk at the District Assembly office, a dedicated toll-free line for water-related complaints, a monthly radio program dedicated to water and sanitation, core group meetings held internally by District Assembly staff to discuss complaints and outstanding issues, and announcements over the radio and in churches for customers, users have had more avenues to hold service providers accountable. Other innovations in the district include the use of bulk SMS messaging and the engagement of traditional leaders. In Wassa East, district-level mechanisms simply center on users directly visiting the District Assembly or CWSA offices. The strong contrast between Asutifi North and Wassa East districts demonstrates an imbalance in approaches to accountability across the SWI portfolio in Ghana.

5. Conclusion

Ghana has received considerable funding under the SWI, which has principally focused on support to SDMs. Since 2019, Ghana has received more funding than any other country under the SWI. 76% of this funding has focused on supporting a range of SDMs including SWE, CWSA, and WSMT direct provision, albeit with SWE direct provision receiving the most financial support. This was followed by the strengthening of WASH systems (21% of funding) and national-level advocacy (3% of funding). In Wassa East, funding centered on support to SDMs. In Asutifi North, a more balanced mixture of support for SDMs and WASH systems strengthening was provided.

Impressive progress has been made in strengthening WASH systems, but deep-rooted and systemic weaknesses have not been adequately addressed. In Asutifi North, noteworthy improvements have, to varying extents, occurred across all nine building blocks. Conversely, in Wassa East, improvements have centered on the building blocks linked to 4Ward Development's SDM. There would have been a clear benefit in having additional grants focused on addressing key gaps in the WASH system not directly linked to service delivery. Moreover, interventions often focused on challenges within the grantees' direct sphere of influence. Consequently, there remain crucial deep-rooted weaknesses, such as staffing levels, service authority reliance on external assistance, and the acceptance of SWE direct provision at the national level.

SWEs and CWSA both deliver markedly higher quality services than WSMT direct provision. SWEs and CWSA provide reliable services. CWSA was the best-performing SDM for functionality and reliability. SWE direct provision performed best on water quality, with CWSA performing relatively poorly. WSMTs suffered from having the least reliable services and the lowest quality of water.

SWE direct provision performs better than CWSA against key sustainability criteria, but this must be viewed within the context of the financial support received and the infrastructure this SDM typically manages. Although SWE direct provision performed better, neither SWE nor CWSA direct provision could cover operational expenditures through tariff revenue. Surprisingly, WSMTs outperformed the other SDMs, with a very high operational cost recovery rate of 167%. SWEs performed better than CWSA on institutional capacity and the performance of key technical functions. This higher level of performance should be viewed within the context of SWE direct provision having received by far the most financial support from the Conrad N. Hilton Foundation and that facilities managed by CWSA are markedly older and powered by the national electricity grid (those managed by SWEs are typically solar-powered or hybrid facilities). As expected, WSMT direct provision performed poorly concerning institutional capacities and the performance of key technical functions.

The portfolio currently aligns with key elements of the trajectory of Ghana's rural water supply sector but is less well positioned with important provisions of the draft Revised National Water Policy relating to CWSA. The portfolio aligns with several core elements of the trajectory of Ghana's rural water supply sub-sector. These include professionalizing rural and small-town water supply service provision, increasing service levels, improving financial viability, and strengthening local and regional government capacity. It is not realistic for the Conrad N. Hilton Foundation's portfolio and the work of individual grantees to be fully aligned with the draft Revised National Water Policy. Nevertheless, it is important to note that the current portfolio does not align with a central provision of Ghana's draft Revised National Water Policy (2023), namely that CWSA will become a water utility focused on small-town service provisions. Clear observations can be made regarding the alignment of the portfolio with this key provision:

1. While SWE and WSMT direct provision will remain important SDMs, once the draft Revised National Water Policy (2023) is approved and necessary legislative changes are enacted, greater levels of support for CWSA direct provision will be warranted.
2. More attention will need to be given to the relevance of Conrad N. Hilton Foundation-supported best practices and innovations for replication by CWSA and, subsequently, supporting CWSA to adopt and integrate several of these. The most promising innovations and best practices include the WQAF, expanding the number of household connections and the use of pre-paid and smart meters, and utilizing online billing software and forms of online payment.

Grantees' interventions have broadly complemented each other; however, more deliberate efforts to link interventions toward common strategic priorities are required. In Asutifi North, the 'hub' has helped to ensure that the wide-ranging set of grantees and their interventions and initiatives have complemented each other and enabled more effective implementation. Nevertheless, the Conrad N. Hilton Foundation did not sufficiently define or articulate the hub's role, and more deliberate efforts to align interventions toward common strategic priorities would have been beneficial and enabled true collective action based on deeper collaboration and integration.

A wide-ranging set of interventions are beginning to be replicated, but replication is generally only occurring at a modest scale. Promising initiatives and innovations (e.g., the WQAF, strengthening of district-level WASH planning) have originated from SWI-supported programs in Ghana and are beginning to be replicated. Additionally, a range of further innovations and initiatives (i.e., SWEs, PAYF, pre-paid and smart meters, household connections, and online billing software) are supported by the SWI and promoted for replication but did not originally emerge from SWI programs. However, most instances of replication are comparatively nascent, not yet fully anchored or embedded within government systems at scale and are either dependent on external financial assistance or supported by the government only in an ad-hoc manner. Barriers to replication include grantees' absence of defined replication pathways, policy ambiguities, the district-level focus, and limited national and regional engagement.

Several opportunities exist to evolve the portfolio in Ghana to address these challenges and build on the successes achieved to date. Following the completion of this review, more substantive consultations should be held with government, other key stakeholders in Ghana's rural water supply sub-sector, and grantees to determine necessary modifications to the portfolio. Nevertheless, looking forward, key

priorities for the Conrad N. Hilton Foundation portfolio in Ghana should include:

- Once passed, begin to evolve the portfolio focus to ensure greater alignment with key provisions of the draft Revised National Water Policy (2023) related to CWSA's role as a rural and small-town utility. This does not mean stopping support for grantees focused on other SDMs as it is evident that a plurality of SDMs will remain necessary to achieve universal service delivery.
- Continue zooming out from the district focus to address deep-rooted, systemic issues at the national level and, at the same time, support the development of grants focused across regions or multiple districts within regions rather than individual districts.
- Place a greater emphasis on replication, especially through enabling CWSA to adopt and replicate relevant best practices supported, and tested, by other Conrad N. Hilton Foundation grantees.
- Strengthen existing – and identify and fund additional – grantees with the ability to address systemic challenges and bottlenecks at the national and regional levels; this should include supporting the GoG to achieve key elements of its vision for managing rural and small-town water supply services (e.g., CWSA direct provision of services).
- Ensure grantees abide by key principles of collective action and that collective action is established in program design from the outset. This will require an explicit focus on the part of the Conrad N. Hilton Foundation, including ensuring that this is established in program design from the outset.
- In collaboration with the GoG Ghana and grantees, develop a country-level strategy, with the aim of contextualizing the SWI in Ghana.

Annex 1: Reviewed Portfolio – Ghana

Grant Number	Grantee
17284	Aquaya Institute
25582	Aquaya Institute
27064	Aquaya Institute
25901	Community Water and Sanitation Agency
17317	Engineers Without Borders-USA (EWB-USA)
20327	Envicom Corporation
20425	Envicom Corporation
25057	Envicom Corporation
25806	Envicom Corporation
26895	Envicom Corporation
27401	Envicom Corporation
27414	Envicom Corporation
24917	Global Water Challenge
17393	IRC International Water and Sanitation Centre
26631	IRC International Water and Sanitation Centre
27654	IRC International Water and Sanitation Centre
27654	IRC International Water and Sanitation Centre
17283	Netcentric Campaigns, Inc.
20310	Netcentric Campaigns, Inc.
18205	PATH
18205	PATH
16685	Safe Water Network
25575	Safe Water Network
25575	Safe Water Network
27058	Safe Water Network

Annex 1:
Reviewed Portfolio – Ghana

Grant Number	Grantee
27058	Safe Water Network
27402	Safe Water Network
28459	Sanitation and Water for All
18348	Water4, Inc.
18348	Water4, Inc.
24558	Water4, Inc.
25454	Water4, Inc.
25454	Water4, Inc.
26632	Water4, Inc.
26632	Water4, Inc.
27407	Water4, Inc.
28123	WaterAid America, Inc. WAA
17392	World Vision

Annex 2: Review Matrix

CRITERIA	CODE	REVIEW QUESTION	SUB-QUESTION
RELEVANCE	R.1.1	Are interventions strengthening key district-wide gaps?	What are the key strengths and gaps of the district-wide WASH system?
			Are interventions in each target district designed to address these gaps?
	R.1.2	Are interventions designed and managed by the principles of collective action?	Are interventions in the target districts based on an assessment of the WASH system?
			Are interventions coordinated/designed under the leadership of the district?
			To what extent is the support provided to the service delivery models complementary to other Conrad N. Hilton Foundation (CNHF) grants in the district and the support of other development partners where relevant?
			Are interventions aligned to the trajectory of the rural water supply sub-sector?
	R.1. 3	What stage of replication are the interventions currently at?	Have grantees mobilized external funding to replicate interventions in other districts or countries?
			Have local or national governments anchored interventions in their systems (vision, policy, funding) and mobilized funding to replicate in other districts?
			What are the barriers to replication and external funding leveraging?
EFFECTIVENESS	E.2.1	How do water facilities perform in terms of service delivery?	To what extent are water facilities functional?

Annex 2: Review Matrix

CRITERIA	CODE	REVIEW QUESTION	SUB-QUESTION
EFFECTIVENESS	E.2.1	How do water facilities perform in terms of service delivery?	To what extent does the water facility meet the national criteria for continuity, reliability, and seasonality?
			To what extent do water facilities provide water services that meet safe water quality standards and targets?
			To what extent do water facilities meet accessibility criteria?
			To what extent are water facilities accessible to disabled users?
			To what extent are water services affordable to users?
			To what extent are water facilities serving vulnerable groups?
SUSTAINABILITY	S.3.1	Are the service delivery models financially viable?	To what extent are service providers performing key financial management practices?
			To what extent are the service delivery models able to cover operational expenditure (OpEx)?
			To what extent are service delivery models able to cover capital maintenance expenditure (CapManEx)?
			What are the key barriers to reaching the financial viability of service delivery models?
	S.3.2	Are key technical functions performed for the water supply facilities across SDMs?	To what extent are operations, minor, and major maintenance activities regularly carried out?
			To what extent is water being treated and its quality monitored routinely?
			What are the key barriers to ensuring the proper technical management of service delivery models?

Annex 2: Review Matrix

CRITERIA	CODE	REVIEW QUESTION	SUB-QUESTION
SUSTAINABILITY	S. 3.3	What is the level of institutional capacity across the service delivery models?	To what extent are service authorities and service providers equipped with the relevant technical and financial skills?
			To what extent does the service authority provide regular technical support to service providers?
			To what extent does the service authority monitor the performance of the service provider?
			To what extent are resources (vehicles, cash, personnel, time, etc.) available to fulfill key functions at the service provider and service authority levels?
			To what extent are key governance requirements (i.e., leadership, committed workforce) met at the service provider and service authority levels?
			To what extent are appropriate regulatory measures in place, adhered to, and enforced?
			What are the barriers to strengthening the institutional capacity of service delivery models?
	S.3.4	How are water resources managed across the service delivery models?	To what extent are appropriate measures adopted to protect water resources?
			What are the barriers to managing water resources adequately?
	S.3.5	To what extent are service providers accountable?	To what extent are users represented in the decision-making structures of the service provider?
			To what extent are service providers accountable to users, and local and national governments?
			What are the barriers to the transparent management of water facilities?

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Conrad N. Hilton Foundation: Safe Water Initiative

The Conrad N. Hilton Foundation's Safe Water Initiative, using the district as a unit of scale, focuses on system-strengthening and service delivery to ensure reliable, affordable, and safely managed water to 1 million people in low-income households, health facilities, and schools in sub-Saharan Africa. The Safe Water Initiative contributes to building local capacity, narrowing gaps between those living in disadvantage and others, and generating evidence to inform regional, national, and global actors—with the end goal of improved health and socioeconomic outcomes for all.

Learn more about the Hilton Foundation's Safe Water Initiative

Asutifi North Ahonidie Mpontuo (ANAM) Initiative