

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

Multi-Country
Synthesis Report



Executive Summary

The expansion of public utility service provision into rural and small-town contexts represents one of the most significant shifts in rural water service delivery in sub-Saharan Africa.

In many countries, recent sector policies and regulatory reforms have led to the adoption or expansion of public utility models for rural and small-town water supply services. This trend is occurring through two main pathways:

Pathway 1

Historically urban-focused utilities whose mandates are extended to rural and small-town areas

(e.g., in Ethiopia, Kenya, Rwanda, Uganda, and Zambia)

Pathway 2

Dedicated rural-focused utilities created from scratch, by modifying the mandate of an existing institution, or by consolidating smaller service providers

(e.g., in Ghana, Kenya, Tanzania, Ethiopia and Uganda)

External drivers include new mandates, legislation, and policies; political pressure and rising demand; the poor performance of community-based management; and the growth of small towns and rural growth centres. Expansion is also sometimes driven from within utilities themselves, through their ambition to grow, reinvestment of operating surpluses, and leadership changes. A defining feature of this shift is that these utility models are overwhelmingly established within core government systems, giving them a stronger institutional basis for scaling than the many externally funded, donor-supported operators that have proliferated in recent years.

This report synthesises lessons from:



ETHIOPIA



GHANA



KENYA



UGANDA



ZAMBIA

Evidence is drawn from 20 utilities and a wide range of policymakers, regulators, and other sector stakeholders. The utilities studied span a wide range of scale and maturity but represent a purposive subset of providers rather than a statistically representative sample.

Successful public utility service provision in rural areas and small towns depends on two interdependent dimensions: the external enabling environment and the utility's internal capacity.



Sustained political and policy support that provides a strong basis for the utilities and maintains momentum over the long timeframes involved, beyond individual electoral cycles.



Clear legal mandates and well-defined service areas that provide legitimacy and clarity on the scope of the utility's responsibility.



Proactive regulation that sets service standards, protects customers, and actively shapes the transition, including by enabling delegated arrangements with third-party providers.



Adequate and predictable financing that matches transferred responsibilities with recurrent funding and blends tariffs, cross-subsidies, government transfers, and partner investment, since tariff revenue alone cannot sustain rural services.



Targeted external support to utilities that builds foundational operational and commercial systems during the early phases of a new mandate, when utilities are most vulnerable.



The four components of **internal capacity** include:



Organisational culture and strategic direction: The organisational culture, institutional credibility, strategic direction, and leadership autonomy that underpin sustained performance and expansion.



Staffing and human resources: The recruitment, retention, and deployment of appropriately skilled staff in key areas such as financial management and customer service, and the alignment of organisational structure, incentives, and training with the specific demands of rural service delivery.



Infrastructure management: How utilities acquire, rehabilitate, and maintain rural schemes, including infrastructure assessment, phased takeover, preventive maintenance, and the systems needed to sustain service standards.



Technology and operational efficiency: The adoption of appropriate energy, digital, and operational technologies, as well as the internal capability and supply chains needed to maintain and benefit from them over time.



Public utility models can improve service quality; however, expanding public utility service provision in rural and small-town settings should not be treated as a panacea. Uganda's sustained commitment to professionalisation over two decades, Zambia's proactive regulatory leadership, and Kenya's structured approach to utility-to-utility support all illustrate what is achievable. However, where key elements of a supportive enabling environment are lacking, significant challenges typically occur. Notably, Ghana's experience of advancing a utility transition before the legal and institutional architecture was established illustrates the risk of moving too fast without ensuring core enabling factors are in place.

Other service delivery models, including forms of community-based management and private service provision, will continue to play an essential role. A mixture of service delivery models, tailored to different demographic and socio-economic contexts and technologies, is typically required to meet the diverse range of contexts and service types found in rural and small-town settings. Public utility models are one option, but they are not suitable in all settings. In particular, public utility models are more common in small towns and rural growth centres and largely absent from dispersed rural settings where direct utility management is not yet feasible, and the risk of utilities “cherry-picking” more viable schemes is high.

To translate the study’s findings into practice, the report previews a practitioner-focused Roadmap for Expanding Utility Service Provision in Rural and Small-Town Contexts, currently under development. Aimed at policymakers, legislators, regulators, utility managers, and practitioners, the roadmap is organised around four broadly sequential phases, progressing from initial situation analysis and building buy-in through to institutionalisation and scale. Because strengthening utility provision requires progress on both the enabling environment and utility capacity simultaneously, each phase includes two parallel tracks that address these elements.

Contents

...	Executive Summary	02
...	Acknowledgements	07
1	Introduction	08
2	Utility Overview and Transition Pathways	10
	2.1. Transition Pathways	11
	2.2. Utility Overview	14
3	Facilitating Factors	16
	3.1. Enabling Environment	18
	3.1.1. Political and Policy Support	18
	3.1.2. Mandates and Service Areas	20
	3.1.3. Regulation and Accountability	22
	3.1.4. Financing	24
	3.1.5. Direct Support to Utilities	26
	3.2. Utility Capacity	28
	3.2.1. Organisational Culture and Strategic Direction	28
	3.2.2. Staffing and Human Resources	30
	3.2.3. Infrastructure Management	32
	3.2.4. Technology and Operational Efficiency	34
4	Conclusions and Roadmap	36
	4.1. A Roadmap for Expanding Utility Provision	38
...	Bibliography	42

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Introduction

1

**Public Utility
Definition:**

Publicly owned and legally established entities with professional paid staff and management, responsible for directly providing water services to fee-paying customers (IRC, 2021).

In many countries, recent sector policies and regulatory reforms have led to the adoption or expansion of public utility models for rural and small-town water supply services. This includes establishing dedicated rural-focused utilities (e.g., in Ghana, Kenya, Tanzania, Ethiopia and Uganda) and expanding the mandate of existing urban-focused utilities to include rural and small-town contexts (e.g., in Ethiopia, Kenya, Rwanda, Uganda, and Zambia). These developments represent a critical trend that can help accelerate progress towards national targets and drive sector professionalisation over time. However, professional service delivery in rural and small-town contexts faces a combination of entrenched, long-standing challenges beyond those found in urban and peri-urban areas (WSUP, 2022; WaterAid, 2024; IRC, 2021; REAL-Water, 2023a). These include:

- Poorly designed and constructed infrastructure that is not well maintained.
- The remote and dispersed nature of rural customers, making aggregation challenging.
- Seasonal demand variations and low willingness or ability of users to pay cost-reflective tariffs.
- Difficulty attracting and retaining skilled staff and ensuring adequate technical support.
- The absence of sustained or sufficient funding to overcome all the above challenges.

This study fills a gap in sector literature concerning the actions required to effectively support expanded utility provision in rural and small-town contexts. Many resources have documented the ongoing and emergent processes of expanded utility provision in rural and small-town contexts (ESAWAS, 2022; REAL-Water, 2023a; IRC, 2021; USAID, 2023b; WaterAid, 2024; World Bank, 2017). At the same time, several guidance materials outline factors and processes that can help utilities provide safe, sustainable, and equitable water supply services (World Bank, 2018a; World Bank, 2018b; World Bank, 2024; GWOPA, 2024a; GWOPA, 2024b). However, there is a shortage of multi-country learning and guidance explicitly focused on utility provision for rural and small-town contexts.¹

This report synthesises lessons from five comprehensive country studies (Ethiopia, Ghana, Kenya, Uganda, and Zambia) outlining the critical factors enabling and constraining effective public utility service provision in rural and small-town contexts. It was informed by data from over 20 utilities and key informant interviews with policymakers, regulators, service providers, local government officials, and development and implementing partners, alongside detailed global and country-specific literature reviews. These lessons and insights are ultimately intended to inform policymakers and sector practitioners (e.g., regulators, utility managers, development partners) supporting utility service provision. The utilities examined in each country represent a subset of providers. Findings therefore reflect the specific utilities studied and do not fully capture the range of performance and experience across all comparable providers. The remainder of this report is structured as follows.

Section 2

details the expansion pathways for public utility provision in rural and small-town contexts.

Section 3

presents the key factors enabling effective public utility service provision, including good practices and cautionary lessons.

Section 4

concludes and introduces a separate practitioner-focused roadmap for effectively expanding public utility provision in rural and small-town contexts.

¹ There is no universal definition of rural areas and small towns. The boundaries of these demographic settings are typically defined at the country level, and important distinctions exist across the study countries. The expansion of public utility provision is most common in small towns and rural growth centres. Public utilities usually do not serve highly dispersed rural settings. Rural utilities also typically operate piped systems, which remain uncommon in remote areas.

Utility Overview and Transition Pathways

2

2.1. Transition Pathways

While the specifics differ between countries, utility mandates in rural and small-town contexts are expanding through two main pathways:

Pathway 1 : Urban-focused utilities expanding into rural and small-town contexts.

Triggered by a mix of formally expanded mandates and internally driven growth through extending existing services and infrastructure. These utilities bring established capacity, commercial systems, and, in some cases, revenue bases that can cross-subsidise rural operations. Nonetheless, such expansion can reduce utilities' financial viability and risk deprioritising rural and small-town contexts as they compete with urban operations for resources and management attention.

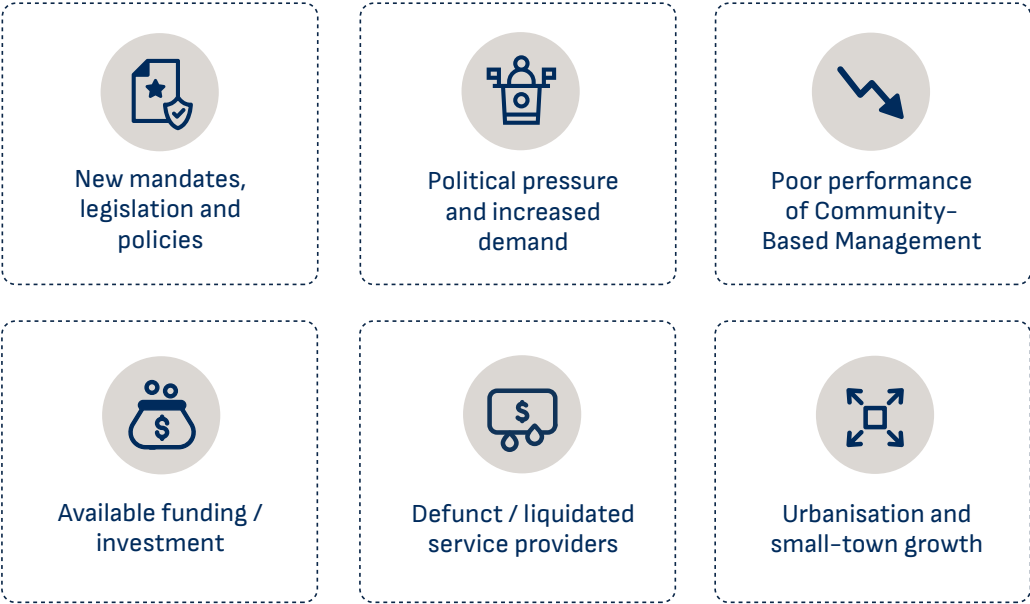
Pathway 2 : Dedicated rural-focused utilities are established.

A rural-focused utility is established, either from scratch, by modifying the mandate of an existing institution (e.g., a technical agency), or through consolidating several small service providers under one rural utility or several regional utilities. These utilities are more readily tailored to rural needs, but face challenges in building organisational systems and capacity.

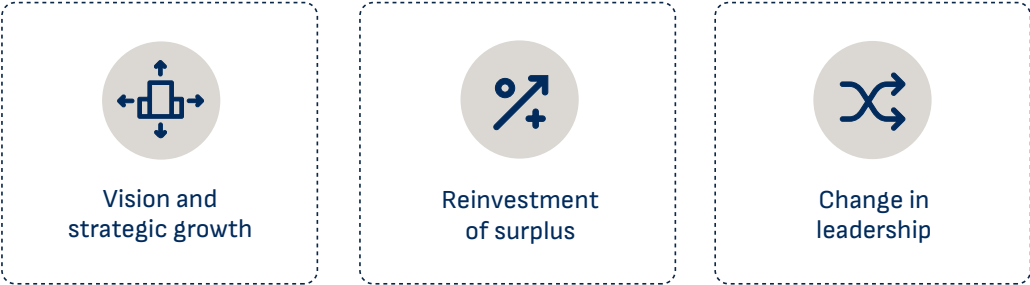
Figure 1 presents further detail of the expansion pathways, noting the main triggers for expansion, primary expansion mechanisms, and key strengths and risks. These pathways span varied contexts, operating models, and scales. As such, they are not rigid typologies but observed patterns along a spectrum. Both pathways may be present in a single country, and neither is inherently superior; each carries distinct advantages and risks. **Evidence from Ethiopia, Ghana, Kenya, Uganda, and Zambia indicates that success is determined less by the choice of pathway and more by whether several foundational requirements are in place.**

Figure 1: Public Utility
Expansion in Rural and
Small-Town Contexts
– Triggers, Pathways,
Strengths and Risks

External triggers for utility expansion



Internal triggers for utility expansion



PATHWAY 1

Historically urban-focused utilities expanding services into small towns and rural growth centres

Expansion mechanisms include:

- Extending existing urban networks into nearby rural areas and small towns
- Constructing new schemes in rural areas and small towns
- Absorbing newly constructed schemes built by government or development partners
- Taking over existing schemes previously managed under community-based management or other providers



Key strengths

- Existing institutional capacity, systems, and brand
- Possible cross-subsidisation from urban revenue
- Possible economies of scale



Key risks

- Rural areas may be deprioritised; unattractive areas may be left out or bypassed
- Rapid expansion can outpace capacity; pressure on urban resources
- Inherited infrastructure is aged and costly to rehabilitate

PATHWAY 2

Rural-focused utilities established to take up services in small towns and rural growth centres

Establishment takes place through three main routes:

- Repurposing an existing institution, such as a facilitation agency or technical support body, into a utility
- Aggregating many smaller community-managed schemes or operators under a single consolidated provider or several regional providers
- Creating an entirely new entity from scratch



Key strengths

- Closer proximity to communities served
- Dedicated focus on rural areas and small towns supports the adoption of context-appropriate approaches



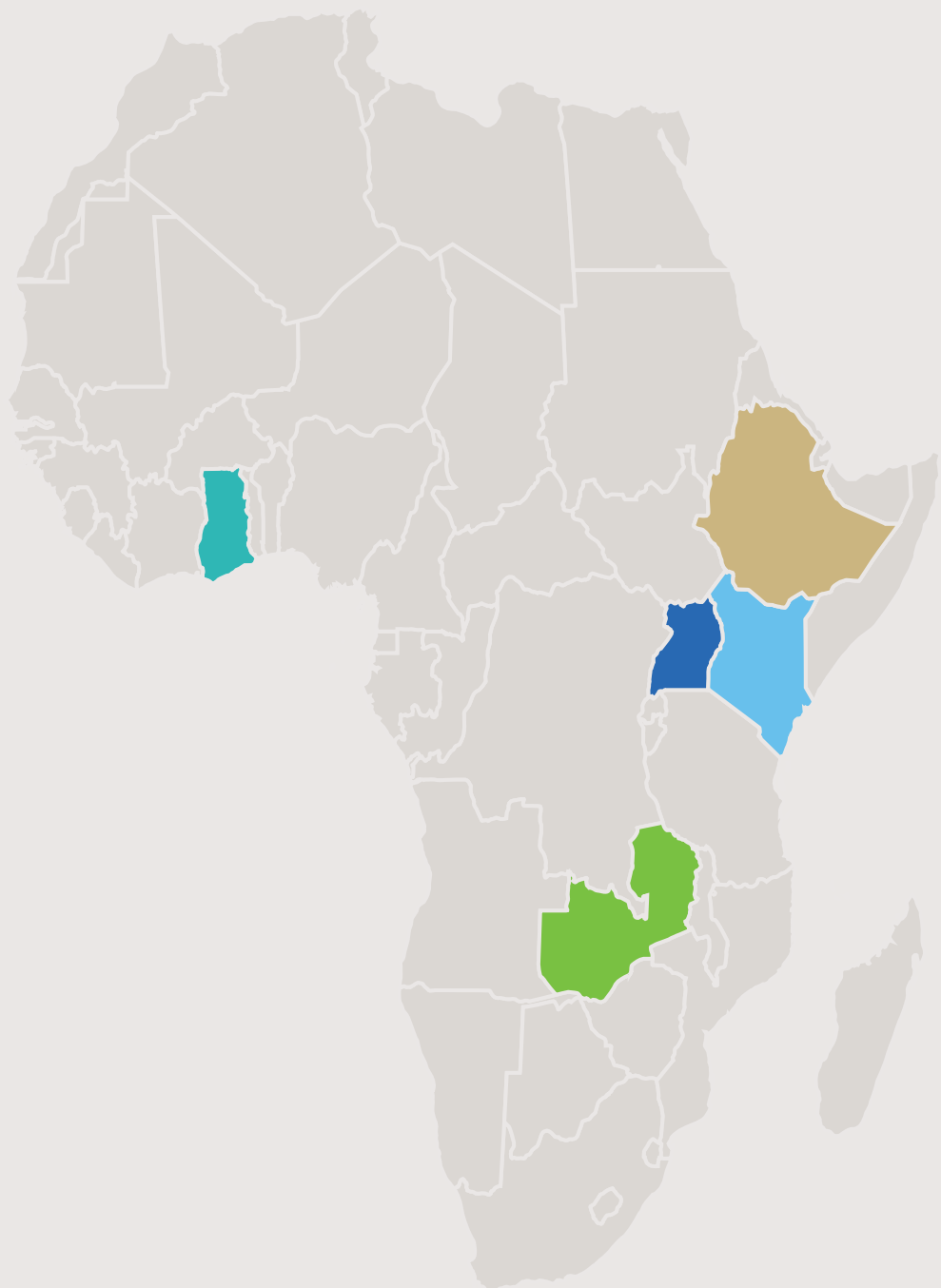
Key risks

- Context often limits economies of scale and viability
- Difficulty attracting and retaining staff
- Need to establish new operational practices and approaches from scratch
- Competition between public utilities

2.2. Utility Overview

This study was conducted across Ethiopia, Ghana, Kenya, Uganda, and Zambia and included 20 utilities of varying scale and organisational maturity (see Figure 2).² The utilities range from large, established national providers serving millions of people to small, recently professionalised rural service providers with fewer than 200 connections. All five countries are at different stages of the transition towards utility-led service provision in rural areas and small towns; some are comparatively well advanced, while others are early-stage or stalled.

Figure 2: Utility Overview, scale, performance, and status of rural utility service provision



² Figure 2 presents the sample of studied utilities. It should not be read as representative of all providers; where a country has multiple public utilities serving rural and small-town contexts, those shown may not reflect typical performance across the sector.

PATHWAY 1

Historically urban-focused utilities expanding services into small towns and rural growth centres

UGANDA

National Water and Sewerage Corporation, Uganda



Background: Historically urban utility (est. 1972) that began expanding into small towns and rural growth centres at scale from 2014, growing from 3 towns to 276 by mid-2024.

Scale: Serves ~19 million people; 940,000+ connections.

Performance: NRW stable at ~34%; water quality compliance 98.5%; ~18 hours/day supply; covers O&M with an operating surplus.

Status: Advanced transition.

KENYA

Malindi Water and Sewerage Company and Naivasha Water and Sanitation Company, Kenya



Background: Urban utilities running fully integrated urban-rural service delivery under county-wide mandates.

Scale: Collectively serve ~758,000 people (39,000+ connections).

Performance: NRW of 21% to 24%, 20 to 24 hours of supply, costs exceeding revenue, ageing infrastructure and vandalism pressures.

Status: Early to mid-transition.

ZAMBIA

4 Commercial Utilities (Lusaka, Nkana, Southern, and Luapula Province Water Supply and Sanitation Companies), Zambia



Background: 2018 reforms extended all commercial utility mandates to rural areas; LpWSC's rural operations predate this by over a decade.

Scale: Population served ranges from ~182,000 (Luapula Province) to ~2.8 million (Lusaka).

Performance: NRW is high across all commercial utilities (ranging from 39% to 61% against a 25% benchmark); typical supply of 12 to 18 hours/day; full cost coverage below 100% for all (54 to 86%).

Status: Early transition.

PATHWAY 2

Rural-focused utilities established to take up services in small towns and rural growth centres

GHANA

Community Water and Sanitation Agency (CWSA), Ghana



Background: Technical facilitation agency (est. 1998) transitioning to a direct rural utility since 2017.

Scale: Nominal service area up to ~25 million across 16 regions. Manages 196 of ~2,000 piped schemes.

Performance: NRW rising (29.6% in 2019 to 37.9% in 2024); only 22% water quality compliance; 65% of schemes achieve ≥12 hours/day; operating cost coverage 64%.

Status: Early/stalled transition. Expansion stalled since 2019; legal mandate unconfirmed.

UGANDA

Mid-Western Umbrella for Water and Sanitation Services (MWUWS), Uganda



Background: One of six Umbrella Authorities established in 2017.

Scale: Serves ~863,000 people across ~89 small towns; ~24,000 connections.

Performance: NRW ~40% (rising); water quality compliance improved to 97%; supply up from 14 to 18 hours/day; own revenue covers only ~44% of operating costs, with O&M met through government subventions.

Status: Early to mid-transition.

ETHIOPIA

9 Rural-Focused Utilities, Ethiopia



Background: Small-scale rural-focused utilities operating at the woreda level. Each established after 2019.

Scale: Customers range from ~119 connections (Gena Mechawecha) to ~24,000 (Woliso-Goro), with one multi-town enterprise (Heben Negelle Arsi) serving 800,000+ people.

Performance (indicative): High NRW; tariffs well below cost recovery; intermittent supply represents the main service concern; chlorination generally practised.

Status: Early transition.

KENYA

3 Emerging rural Water Service Providers, Kenya



Background: Counties are forming dedicated rural Water Service Providers with structured technical backstopping from established urban utilities. Being progressively formalised toward independent licensing.

Scale: Three study utilities collectively serve ~467,000

Performance: Performance not yet separately reported for the new rural entities.

Status: Early to mid-transition.

Facilitating Factors

This section presents the critical factors that can facilitate effective public utility provision in rural and small-town contexts, considering the enabling environment and the utility's internal capacity to deliver services.





1. Enabling Environment: Utilities operate within a broad enabling environment comprising several foundational components required to ensure their legitimacy as operators and support their operations. The broad enabling environment is complex and includes intangible aspects such as the socio-economic conditions within the country and the political economy of the sector. This study reinforces the particular importance of five components that sector stakeholders can more directly influence, several of which determine whether a utility has genuine political and financial autonomy – in practice one of the most persistent constraints on performance:



Political and Policy Support: The deliberate, sustained political and policy commitment to utility-managed service delivery and good governance.



Mandates and Service Areas: The legal mandates and rules that govern critical aspects, including clearly outlining service delivery responsibilities, defining service areas, and employing appropriate asset transfer arrangements.



Regulation and accountability: The regulatory frameworks that create accountability, incentivise performance, and provide the predictability that utilities and investors require.



Financing: The adequacy and predictability of the financial architecture underpinning rural utility expansion.



Direct support to utilities: The external technical and financial support that helps utilities build and sustain the capacity to deliver services.



2. Utility Capacity: The internal capacity of a utility refers to its ability to fulfil its mandate, including organisational culture, leadership and strategic direction and having sufficiently capacitated and resourced staff. Four primary components stood out as especially important:



Organisational culture and strategic direction: The organisational culture, institutional credibility, strategic direction, and leadership autonomy that underpin sustained performance and expansion.



Staffing and human resources: The recruitment, retention, and deployment of appropriately skilled staff in key areas such as financial management and customer service, and the alignment of organisational structure, incentives, and training with the specific demands of rural service delivery.



Infrastructure management: How utilities acquire, rehabilitate, and maintain rural schemes, including infrastructure assessment, phased takeover, preventive maintenance, and the systems needed to sustain service standards.



Technology and operational efficiency: The adoption of appropriate energy, digital, and operational technologies, as well as the internal capability and supply chains needed to maintain and benefit from them over time.

Together, the enabling environment and utility capacity represent the factors that shape whether utility service provision in rural and small-town contexts can succeed or fail. Utilities operating in a weak enabling environment need even stronger internal capacity to perform their functions effectively. However, even in the context of a strong enabling environment, deliberate actions need to be taken to develop the capacities and competencies required to deliver services in rural areas and small towns.

3.1. Enabling Environment

3.1.1. Political and Policy Support

Consistent political support for utility-managed service delivery, alongside other service delivery models, is essential to ensuring that high-level policy objectives result in legal and institutional reform, unlock financing, and signal to sector stakeholders a coherent direction around which to align. However, political support is often uneven across tiers of government, and policy intent is not always matched with the sustained political support required to operationalise reforms. When adequate levels of political and policy support are in place:

- **Governments make a deliberate policy choice to support utility service provision.** This means explicitly designating utilities as one of the preferred models for rural and small-town service delivery, rather than leaving the sector's future direction unclear. That choice provides utilities the institutional backing to expand into rural and small-town contexts and gives other sector actors a clear framework for planning and alignment. In Zambia, the government's decision to expand utility mandates to rural areas and small towns triggered the development of the 2018 Rural Water Supply and Sanitation Framework for Regulation and Service Provision, which extended utilities' mandates to cover rural areas and small towns.
- **Political commitment is sustained over time.** Utility transitions take decades rather than years, so commitment needs to outlast individual electoral cycles. This is reinforced by technocratic leaders who actively engage successive political leadership to preserve momentum. The Ugandan government has maintained a clear policy commitment for utility-led water service delivery over several decades, placing the National Water and Sewerage Corporation in a strong position to progressively take up services. This provided a basis for establishing six Umbrellas for Water and Sanitation; however, the Umbrellas for Water and Sanitation continue to face politically driven directives, and political interference constrains their operational autonomy (Box 1).
- **Political champions exist at both sub-national and national levels.** Champions at both levels help ensure nationally set policy intent translates into action at the point of delivery, where implementation depends heavily on local political actors. Where local leaders do not champion the reforms, or where local interests conflict with the utility model, national policy intent can be blocked or diluted locally. In Kenya, for example, political support varies widely across counties, with some county leaders actively championing rural utility reforms while others obstruct formalisation to preserve their local influence.
- **Government coordinates development partners around a coherent vision for professionalisation.** Coordinated partners align their support behind the government's vision, reinforcing institutional roles and a common pace of reform rather than pulling in different directions. When this coordination is absent and partners pursue different service delivery models, fund parallel structures, or work outside the government's direction, funding efforts are fragmented, institutional roles are confused, and the transition can be actively undermined. In Ghana, the fragmented government vision for rural water has discouraged development partners from committing resources to the water sector.

Constraining

Enabling

GHANA Political support has remained sufficient through changes in government, but the reform process has stalled, with political will not yet translating into decisive legal action.

UGANDA Broad political support over decades has driven expansion of both National Water and Sewerage Corporation and the Umbrella Authorities, but Umbrella Authorities still face political interference.

ETHIOPIA Broad political support for rural-focused utilities, but the absence of an explicit sector vision for professional service delivery has resulted in a fragmented set of service delivery models.

KENYA Successive reforms from the Water Act 2002 onwards have progressively broadened utility mandates. Political support at county level is uneven but national direction is clear.

ZAMBIA National political endorsement has created momentum for utility-led rural service delivery.



Uganda - Sustained political championship

The government has maintained a clear policy commitment to professionalised, utility-led water service delivery. Deliberate policy choices to expand the mandates of both the National Water and Sewerage Corporation and the more recent Umbrellas for Water and Sanitation have been sustained without significant reversal or reprioritisation. Critically, this political support has been accompanied by targeted policy objectives to increase piped water supply coverage, financial support through the Service Coverage Acceleration Project (SCAP 100) and sovereign loans, and consistent government leadership that has given confidence to development partners and investors, creating a mutually reinforcing dynamic between political will and public and private investment in the utility. The result has been substantial progress in expanding utility coverage into rural and small-town contexts. The Corporation expanded from three towns in 1972 to 276 towns by mid-2024 (with most of that growth since 2014), serving about 19 million people (albeit still mainly in urban and peri-urban areas).

The Umbrellas for Water and Sanitation have also grown significantly, with connections increasing at about 20% annually since their establishment in 2017. However, political support for the Umbrellas for Water and Sanitation should be qualified, as politically driven directives still significantly constrain their room to manoeuvre and ability to take necessary operational and financial decisions.

3.1.2. Mandates and Services Areas

Clear legal mandates, well-defined service areas, and standardised asset transfer processes are foundational to utility expansion, ensuring responsibilities are clearly assigned, agreed, and transferred smoothly across service delivery actors. Without a strong legal basis, tensions with other service providers and stakeholder groups with conflicting interests easily undermine utilities' legitimacy. When utilities' mandates are effectively defined:

- **Utilities operate under a confirmed legal mandate.** This removes ambiguity around the utilities' responsibilities and their relationships with other actors, including regulators. Where mandates remain unconfirmed or incomplete, fundamental questions about regulation, asset ownership, and service area boundaries persist, constraining utilities' ability to plan, invest, and attract development partner support. In Uganda, the National Water and Sewerage Corporation and the six Umbrellas for Water and Sanitation are appointed as water authorities under the Water Act, Cap. 152, providing an explicit legal mandate that underpins their operations.
- **Service area boundaries are clearly defined and formally agreed.** This is especially essential at the interface between different service providers, where ambiguity creates ongoing tensions over service area responsibilities. The mechanisms for defining service areas should be dynamic enough to account for settlements growing from rural to urban areas. In Zambia, the National Water Supply and Sanitation Council's 2018 regulatory framework assigns each commercial utility a defined regional service area and makes it accountable for water services across the entire region, urban and rural. Because one provider is responsible throughout, the interface disputes and rural-to-urban hand-offs common where several providers share a territory are largely eliminated by design.
- **Standardised asset inventory assessments and transfer processes are in place.** These cover assessing available assets, including audits of infrastructure condition, and a process for asset transfer. Without them, each transfer becomes an individual negotiation subject to local power dynamics, traditional authority interests, and contested ownership claims, with selective uptake of more profitable schemes. Although asset transfer processes across the study countries were generally weak, utilities have frequently conducted inventory assessments before uptake. Zambia's Luapula Water Supply and Sanitation Company mapped the extent, condition, and investment needs to decide which schemes to operate directly and which to delegate.

Constraining

Enabling

GHANA Community Water and Sanitation Agency's legal mandate remains unconfirmed pending cabinet approval, creating fundamental uncertainties around regulation, asset ownership, and service area boundaries. There is no standardised asset transfer process and service area ambiguities persist.

UGANDA Gazetting and degazetting are discretionary and politically influenced, resulting in overlapping service areas and tensions between service providers.

ETHIOPIA Governance responsibility overlap between regional and local levels slows decision-making and blurs accountability.

KENYA and ZAMBIA have standardised instruments for managing delegated service models, though implementation challenges persist.

ZAMBIA Mandate clearly designates utilities as accountable for services across their regions.

KENYA A clear legal basis for rural service delivery is in place.



Cautionary lesson: Ghana – The consequences of proceeding without a legally-backed mandate

The Community Water and Sanitation Agency's experience illustrates the consequences of proceeding with a utility transition before the legal and institutional architecture is in place. Although the 2024 National Water Policy provides a framework for the utility to deliver services and take over schemes, its legal mandate as a utility remains unconfirmed. This is despite the Community Water and Sanitation Agency commencing the direct management of services on a pilot basis in 2017.

Linked to this, fundamental uncertainties persist around regulation, asset ownership, service area boundaries, and the Community Water and Sanitation Agency's relationship with District Assemblies. The pace of scheme uptake has consequently slowed – only 65 additional schemes were added between 2019 and 2026 – to the point where it manages only 196 of over 2,000 piped schemes within its nominal area of responsibility. Ambiguities in service area delineation at the interface with Ghana Water Company (the urban provider), Safe Water Enterprises, community-based organisations and several informal operators have also created ongoing tensions, especially where settlements originally classified as rural have taken on urban characteristics. The absence of a standardised asset transfer process, combined with community resistance and political interference, has further impeded scheme uptake.

3.1.3. Regulation and Accountability

Robust regulatory frameworks play an important role in creating accountability, incentivising performance, and providing the predictability that utilities and investors need. Regulation does not need to be perfect to be useful, and even limited regulatory frameworks provide a degree of predictability and accountability. What matters is that regulators play a proactive role in shaping the transition and provide sufficient oversight of the process to facilitate improved performance and help address emerging bottlenecks. For regulation to support utilities in rural areas and small towns effectively:

- **An independent regulator proactively shapes the transition.** This means providing procedural guidance for the expansion process, mediating institutional barriers, holding utilities accountable for performance, and ensuring consumer engagement and satisfaction are prioritised. Without this regulatory anchor, utilities operate in a vacuum where service standards are unclear, accountability lines are fragmented, and investors lack the predictability they need to commit. In Zambia, the economic regulator, the National Water Supply and Sanitation Council, has played a pro-active role, issuing procedural guidance to utilities during scheme takeovers and partnership negotiations, mediating institutional and political barriers, and developing standard contracts and Memoranda of Understanding that clarify roles, performance expectations, and accountability in delegated arrangements.
- **Regulatory and contractual frameworks support delegated service delivery.** Standardised instruments allow utilities to contract third parties, such as small-scale service providers, water user associations, or private operators, to operate schemes where direct utility management is not yet viable, extending reach without fully taking over every scheme. Clear contracting instruments set out roles, performance expectations, and termination rights, so that all parties understand who is responsible for what and how risk is shared. In Kenya, the Water Services Regulatory Board's 2019 guidelines enable utilities to engage small-scale providers as a foundation for consolidation. In Zambia, the National Water Supply and Sanitation Council has developed permitting conditions which allow utilities to contract third parties to provide services in rural areas and small towns. For example, Luapula Water Supply and Sanitation Company partnered with [4Ward Development Zambia Limited](#), a private operator providing services in the utility's service area.

Constraining

Enabling

GHANA Regulator, Public Utilities Regulatory Commission, does not currently cover rural water supply; Community Water and Sanitation Agency operates under self-regulation.

ETHIOPIA Regional regulatory frameworks are still emerging, and enforcement mechanisms are not yet formalised.

UGANDA Water Utility Regulatory Division provides sector benchmarking and performance monitoring, but insufficient resources and weak legal backing constrain its enforcement capacity. The regulator lacks the independence and authority to prevent political interference in tariff-setting and service area allocation.

ZAMBIA and KENYA have independent, proactive regulators actively shaping the rural transition.

ZAMBIA 2018 regulatory framework designates commercial utilities as accountable for services across their regions including rural areas.

KENYA The Water Services Regulatory Board's 2019 guidelines provide counties with structured options for rural service delivery.



Good practice: Zambia – the National Water Supply and Sanitation Council's proactive regulatory leadership

The National Water Supply and Sanitation Council, Zambia's regulator for water supply and sanitation services, has played a proactive and stabilising role in Zambia's transition to utility-led rural service delivery. The [2018 Rural Water Supply and Sanitation Framework for Regulation and Service Provision](#) provided a clear basis for extending the mandates of all 11 public utilities to cover rural areas within their service boundaries, including arrangements for delegated service provision. Additionally, the regulator has been engaging closely with utilities on several fronts to develop monitoring and reporting mechanisms that account for other stakeholders in the rural space, including local authorities, and is currently providing support to utilities to address chronic challenges, such as non-cost-reflective tariffs through implementing a cost-of-service study. The National Water Supply and Sanitation Council has a precedent of using performance-based incentives, including sector performance awards and financial incentives, although these have not so far been specifically applied to rural water supply. These and other efforts demonstrate the Council's proactive approach to regulation that is not merely punitive but also supportive to utilities.

3.1.4. Financing

The financial architecture underpinning rural utility expansion varies significantly, but the adequacy and predictability of financing are critical determinants of success. In most countries, the transfer of operational responsibilities has not been matched by adequate recurrent funding, leaving utilities expected to deliver professional services where tariff-based revenue cannot cover the true costs of provision. Building utility creditworthiness is also an important aspirational milestone, although it is a rare achievement for rural and small-town focused utilities. These utilities should more realistically aim to progressively improve financial performance by reducing inefficiencies and losses such as high non-revenue water, with the target of meeting a higher proportion of their operational costs through tariffs. For rural utility expansion to be financially sustainable:

- **A comprehensive financing model supports rural service delivery.** This combines tariff revenue, structured cross-subsidies, government transfers, and development partner investment. The structural economics of rural water provision, with low population density, dispersed settlements, seasonal demand, and lower incomes, means tariff revenue alone is unlikely to sustain the cost of provision. The financial model must acknowledge this from the outset. This was a major area of weakness across the study countries. However, the National Water and Sewerage Corporation in Uganda presents the strongest example of a comprehensive model, using a mix of internal cross-subsidy from its urban revenue base, government transfers, and commercial finance.
- **Tariff frameworks support progressive movement towards cost recovery.** Frameworks consider affordability and include measures to safeguard vulnerable populations, with mechanisms such as inflation-linked reviews allowing utilities to adjust to rising costs without politically challenging ad hoc increases. Tariff design is a regulatory and policy function, and political interference that sets tariffs on political rather than technical grounds undermines financial viability. In Kenya, the Water Services Regulatory Board's regular inflation-linked tariff reviews reduce reliance on ad hoc tariff increases, which are often subject to political interference.
- **Transferred responsibilities are matched with recurrent funding.** Operational responsibilities passed to utilities need to be accompanied by recurrent funding and sufficient information on the true cost of rural service provision, whether through public subsidies for core operational costs or other mechanisms. Rural utility responsibilities are frequently transferred without the funding needed to carry them out. This transfer assumes that rural utilities can fully recover costs – an assumption that, as noted above, is unrealistic.

Constraining

Enabling

In **ETHIOPIA** and **ZAMBIA**, responsibility has been transferred without matching recurrent funding.

ETHIOPIA Tariffs are too low to recover operating costs and service providers remain near-totally dependent on external capital expenditures.

ZAMBIA The absence of cost-reflective tariffs, lengthy funding approval processes, and weak creditworthiness exclude most utilities from private finance, reinforcing donor dependence.

GHANA The 2% rural water levy provides a structured cross-subsidy mechanism.

KENYA Blended financing arrangements combining tariffs, county funding, and development partner investment enable rural expansion, with inflation-linked tariff reviews supporting financial resilience.

UGANDA The National Water and Sewerage Corporation's strong financial management and progressive creditworthiness have enabled access to commercial finance. This represents the aspirational destination for other utilities in the study but is still a unique situation.

However, the Mid-Western Umbrella's financial maturity is still limited, and it relies heavily on government transfers and grants.

The financing spectrum: Multi-country lessons

In **Uganda**, the National Water and Sewerage Corporation's progressive path to creditworthiness represents the aspirational destination. Built over decades through structured financial reviews, early bond market exploration in 2008, a comprehensive financial assessment in 2018, and the achievement of a domestic credit rating of AA in 2019, the Corporation's creditworthiness enabled it to secure commercial loans totalling approximately USD 41 million for infrastructure development.

Ghana's 2% rural water levy on Ghana Water Company's urban customers represents one of the few examples of a dedicated fiscal mechanism for cross-subsidising rural water service delivery without requiring organisational integration of urban and rural operations under a single utility. In 2024, the levy generated approximately GHS 20 million (approximately USD 1.8 million), helping to bridge the fact that the Community Water and Sanitation Agency's own revenue covers only roughly 64% of its operational costs.

Kenya's inflation-linked tariff reviews enable utilities to adjust to rising operational costs without requiring politically difficult ad hoc increases. By embedding regular, formula-based adjustments in the regulatory framework, the Water Services Regulatory Board ensures greater financial predictability for utilities.

3.1.5. Direct Support to Utilities

Consistent external technical and financial support, particularly during the early phases of utility operations, is an important aspect of the utility's enabling environment. Such support may come from multiple sources, including development partners, government agencies, and more established utilities through structured peer-to-peer support. Where capacity-building support is effective:

- **Support is targeted at the early phases of utility establishment.** This support focuses on building foundational commercial and operational processes as utilities take up rural and small-town mandates. These early phases are when the utility is most vulnerable, and this support is essential to ensure that leadership, institutional culture, and basic operational systems are in place. For newly established utilities (Pathway 2) in particular, the gap between assuming a mandate and having the internal capacity to deliver is significant. The utility needs more deliberate support from appropriate partners (e.g., peer utilities, implementing partners with the requisite technical, financial and commercial management, and institutional and governance skills and experience) to build systems from scratch. In Uganda, the six Umbrellas for Water and Sanitation were created in 2017 with limited initial capacity, so the Ministry of Water and Environment seconded technical staff, and development partners embedded resident mentors and provided seed funding to help them establish basic operational systems.
- **More established utilities provide structured technical backstopping to newer ones.** Mentoring, troubleshooting, quality oversight, and on-the-job training can expand sector capacity without requiring each utility to build it from scratch. This utility-to-utility support is grounded in practical operational experience of managing water services in similar contexts. It can be sustained through formalised peer arrangements rather than project funding, with facilitation from government or regulators. Broad sector planning should identify such opportunities. In Kenya, established urban utilities such as Kisumu Water and Sanitation Company and Eldoret Water and Sanitation Company provide hands-on technical backstopping to emerging rural water companies.
- **The institutional and policy framework gives development and implementing partners confidence.** Partners need confidence that they are aligning behind a well-defined government vision and that the recipient utility has the credibility, autonomy, and systems in place to sustain infrastructure constructed with capital investments. Where the enabling environment is fragmented, even committed supporters are reluctant to invest at scale. In Ghana, the fragmented institutional framework and unresolved questions over the Community Water and Sanitation Agency's mandate made development partners reluctant to commit resources at scale. By contrast, in Uganda, the National Water and Sewerage Corporation's functioning systems and financial credibility, culminating in a domestic AA credit rating in 2019, gave development partners and commercial lenders the confidence to invest at scale, including commercial loans of around USD 41 million for infrastructure.

Constraining

Enabling

GHANA The fragmented and poorly sequenced reform process has discouraged broader development partner engagement. The absence of a clear institutional framework makes it difficult for partners to commit resources with confidence.

ETHIOPIA Too many rural utilities still depend on donor inputs for basic operational requirements.

ZAMBIA Water operator partnerships with more experienced utilities and targeted support from partners has enhanced staff skills and water quality management.

In both countries, external partnerships have catalysed progress, but support remains largely project-based and episodic.

UGANDA Sustained government and partner support during the early phases of utility establishment has helped both the National Water and Sewerage Corporation and the Umbrella Authorities navigate the transition.

KENYA Utility peer-to-peer learning and water quality assurance partnerships have strengthened rural service delivery capacity.



Good practice: Kenya – Utilities supporting other utilities

In Kenya, urban utilities are playing a pivotal role in building the capacity of emerging rural water service providers through structured technical backstopping. Kisumu Water and Sanitation Company and Eldoret Water and Sanitation Company provide on-the-job training, mentoring, troubleshooting, and oversight to three emerging rural water companies serving a combined ~467,000 people, strengthening treatment practices, metering, and operational procedures. This support is resource-intensive and often described as competing with core urban responsibilities. However, it represents a practical, operationally grounded form of capacity building distinct from development partner assistance: it is rooted in experience managing water services in similar contexts and can be sustained through formalised peer arrangements. While there is a political dimension – urban utilities may view this targeted support as preferable to taking on a full expanded rural mandate – the model nonetheless delivers tangible capacity gains for emerging rural providers.

3.2. Utility Capacity

3.2.1. Organisational Culture and Strategic Direction

Strong organisational culture, institutional credibility, and clear strategic direction support better performance and form the foundation for sustained improvement. This takes time to develop, but creates a stable platform for expansion, with a clear vision and strategy that guides the utility. Where the organisational culture, leadership, and strategic direction have been strengthened:

- **Strong leadership establishes the strategy, with realistic expansion ambitions.** Board and executive leadership ensure that the utility has a clear strategy for professionally managing rural and small-town water supply services. Leadership needs to ensure that the pace of uptake of additional services is managed so that the demands of growth do not outpace internal capacity development. Where the scale of transition has been underestimated, particularly the operational and institutional demands of taking up additional schemes and service areas, the result has been a decline in performance. In Ghana, the Community Water and Sanitation Agency's transition lacked a clearly articulated strategy and change-management process. By contrast, in Uganda, the Mid-Western Umbrella paced its uptake of new schemes, consolidating at a manageable rate, so that expansion did not outstrip its developing capacity.
- **The board and senior leadership have sufficient operational and financial autonomy from undue political interference.** When utility leadership lacks decision-making independence, utilities cannot plan strategically or allocate resources based on operational needs. In multiple countries, political interference is a major issue, with utilities having to make decisions not merely based on business and service delivery considerations, but also to satisfy political preferences. Across the study countries, this requirement is evident in its absence. Political interests commonly constrain autonomy over operational, financial, and staffing decisions. In Uganda, the finances and procurement of the Umbrellas for Water and Sanitation are centrally controlled, and senior staff are reassigned at the government's discretion, limiting room for independent operational and strategic decisions.
- **Institutional culture values performance, accountability, and professional identity.** A strong institutional culture is essential for staff to perform at high levels consistently and deliver professional services. This is built over time through investing in internal systems and management practices, establishing incentives for positive performance, and fostering a professional work ethic and culture; it cannot be fast-tracked. Newer utilities cannot skip these stages of institutional development, so expectations about the pace of maturity need to be realistic. In Ethiopia, while still a nascent process, the transformation of voluntary community committees into accountable, salaried service enterprises has established the legitimacy of professional providers, and the overall professionalisation of the utilities has improved job stability and security.
- **The utility is oriented around its customers, actively seeking and responding to their needs.** A customer-oriented culture treats customer trust and satisfaction as central to the utility's legitimacy and revenue base, and builds the routines to listen, respond, and act. This is vital in rural and small-town areas, as many customers are new to a formal utility relationship, and weak satisfaction quickly turns into non-payment and inactive connections. In Kenya, Kisumu Water and Sanitation Company and Naivasha Water and Sanitation Company have begun integrating digital tools into customer relations and billing to strengthen this engagement.

Constraining

Enabling

GHANA The Community Water and Sanitation Agency has struggled to build a utility-oriented organisational culture; the scale of the transition from facilitator to direct service provider was underestimated.

ETHIOPIA Rural utilities have established legitimacy and normalised tariff collection, but organisational systems and strategic planning remain nascent.

ZAMBIA Utilities are at different stages of institutionalising their expanded mandate; some have developed rural strategies and assigned internal responsibility, but organisational structures remain heavily centred on urban operations and head office.

KENYA Clear strategic plans and strong board guidance integrate rural service delivery into utility planning.

UGANDA The National Water and Sewerage Corporation benefits from decades of deliberate investment in institutional systems, accountability, and creditworthiness, although Umbrellas have much lower organisational maturity.



Uganda (Mid-Western Umbrella) – Building institutional culture from scratch after a mandate change

Since 2017, the Mid-Western Umbrella has made notable progress in building a utility from the ground up. It has established a three-tier operational structure, introduced incentive-and-penalty mechanisms that have measurably improved staff productivity, and expanded to 89 towns with ~24,000 connections serving ~863,000 people. Challenges persist (e.g., non-revenue water rose from 38% to 42% between 2019 and 2024), but impressive improvements have occurred: water quality compliance improved from 90% to 97%, and hours of supply improved from 14 to 18. The Mid-Western Umbrella's experience is instructive because it demonstrates what the early years of institutional development look like for a Pathway 2 utility.

3.2.2. Staffing and Human Resources

Persistent human resource constraints, including difficulties in recruiting, retaining, and deploying skilled staff to work in rural and small-town contexts, are a universal challenge across the study countries. Aligning staffing levels, skills, and the actual demands of rural service delivery is critical. Building the right workforce is not simply a matter of headcount but requires aligning organisational design, incentives, and training with the specific realities of operating in dispersed, low-resource settings. For the workforce to match the demands of rural service delivery:

- **The utility's organisational structure is adapted to the geographic scale and operational demands.** Organisational structures are designed to serve rural and small-town contexts, and existing urban utilities must be deliberately restructured so that rural operations receive adequate management attention. Without this, structures tend to remain focused on the utility's headquarters and a few urban centres. In Uganda, the National Water and Sewerage Corporation and the Mid-Western Umbrella cluster nearby small towns administratively to optimise staff use and reduce overheads, an area-based approach the ministry is now considering extending across all Umbrellas for Water and Sanitation. In Zambia, Luapula Water Supply and Sanitation Company established decentralised business units in rural districts, a deliberate organisational design that gives rural areas dedicated management focus.
- **Rural-focused incentive structures attract and retain skilled staff.** Without incentives, rural positions remain difficult to fill, and the utility's operational reach is constrained by where it can deploy competent staff, since personnel would otherwise gravitate towards urban postings for better pay and conditions. Incentives need to go beyond salary to include career progression, housing, transport, and recognition of the specific demands of rural postings. In most study countries, service providers still lack engineers, finance professionals, and trained operators, and staff retention remains weak, constraining delivery. In Kenya, rural posts are widely seen as less attractive due to remoteness, lower pay, heavier workloads, and limited career progression, making skilled technicians difficult to place outside urban centres. In Uganda, the Mid-Western Umbrella has introduced an incentive-and-penalty mechanism to improve performance and productivity. The utility reports that this initiative has motivated staff and lifted productivity. The scheme sits within an increasingly performance-oriented management culture: since 2018 the Mid-Western Umbrella has run performance improvement plans under its senior leadership, which staff identify as the single most important driver of its growing service-delivery focus.
- **Upskilling in rural-specific competencies is integrated into the utility's operations.** These competencies include maintenance, water quality management, community engagement, and contract management. Training works best when it is built into how the utility operates and linked to performance incentives. It also needs to be matched with the budgets, spare parts, and equipment that staff need to put their skills into practice. Where these conditions are met, training is more likely to build lasting capability. In Uganda, the Mid-Western Umbrella has run continuous technical training for plumbers, electro-mechanical technicians, lab technicians, and area managers as it has grown, embedding upskilling alongside its expansion. In Kenya, Eldoret Water and Sanitation Company's water quality assurance partnership pairs training with the field equipment needed to apply those skills with regular coordination and supervision, showing how competencies take hold when matched with tools and routine oversight.

Constraining

Enabling

GHANA Staffing levels have significantly outpaced actual expansion, yet key service delivery capacities remain underdeveloped.

ETHIOPIA Rural utilities lack engineers, finance professionals, and trained operators. Adoption of rural utility models has also resulted in a more stable working environment.

KENYA, ZAMBIA, UGANDA All three countries face persistent difficulties attracting and retaining skilled staff in rural areas, with personnel gravitating toward urban postings. Reliance on seconded staff and informal arrangements limits oversight and sustainability. Organisational structures remain oriented toward urban services despite the geographic scale of rural responsibilities.



Cautionary lesson: Ghana – When staffing growth outpaces operational expansion

The Community Water and Sanitation Agency's experience illustrates the risk of staffing growth that is disconnected from the pace of service delivery expansion. Since 2017, the utility's headcount has grown from roughly 200 to over 1,000, yet the utility manages only 197 piped schemes. The resulting staff-to-customer ratio of 71 staff per 1,000 connections in the Western Region compares to a sub-Saharan African average of approximately 5 per 1,000. Despite this growth, key service delivery capabilities remain underdeveloped, including in pump installation and maintenance, water system design, water quality management, non-revenue water measurement, contract management, and procurement. The utility has made some structural progress, introducing water system management offices and new functional units such as a commercial department in 2022 as part of its shift to a utility model. Even so, its organisational structure and staffing plan are not yet aligned to the functions of a water operator. Ultimately, workforce expansion must be driven by operational demands rather than institutional ambitions.

3.2.3. Infrastructure Management

Rural and small-town utilities typically inherit older and poorly managed infrastructure from volunteer or community groups with limited capacity. How utilities manage the acquisition, rehabilitation, and ongoing operation and maintenance of such schemes is a critical determinant of whether the utility can effectively perform its functions. Infrastructure management is an important institutional function that requires systems, resources, skills, and strategic discipline. When infrastructure management is prioritised to strengthen utility performance:

- **Schemes are taken over in an evidence-based, phased and sequential manner.** Utilities with new mandates for rural and small-town services can be exposed to significant external pressure to take on existing schemes. However, phased expansion allows the utility to build capacity incrementally and avoid overextending by taking on too many poorly performing schemes at once. This includes the autonomy and discipline to pace infrastructure uptake with capacity to manage it effectively. The utility should undertake comprehensive infrastructure mapping and assessment before taking over schemes to establish the investment required. This not only provides an evidence-based case against external pressure but also helps attract the financial support required for expansion. Where utilities have assumed responsibility for existing schemes without this assessment, performance is likely to deteriorate as the true costs of inherited liabilities become apparent.
- **Strategic clustering of schemes and shared technical expertise offset poor economies of scale.** Strategically clustering schemes allows utilities to service multiple small schemes from a common operational base, which is particularly important for newer or smaller utilities that lack the resources to deploy dedicated staff to every scheme. Uganda's Mid-Western Umbrella highlights the "cross-subsidisation of skills" across schemes as a strategy for managing service delivery in large areas with limited capacity. Skilled staff such as engineers and scheme managers are deliberately assigned clusters of schemes through an organisational design aimed at using limited resources as efficiently and effectively as possible.
- **Preventive maintenance and operational systems are established and resourced.** This breaks the cycle of reactive maintenance that erodes service quality, revenue, and customer trust. When maintenance is largely reactive and driven by breakdowns rather than planned schedules, the utility is always fighting fires instead of building sustainable operations. Hence, establishing preventive systems is foundational work that must happen early. In Ethiopia, widespread reliance on reactive maintenance, combined with inadequate spare-parts logistics and ageing infrastructure, has left assets fragile and services prone to disruption.
- **Water quality is actively managed and monitored as a core measure of whether operation and maintenance are working.** Compliance rises or falls with the systems a utility puts behind testing and treatment. In Uganda, the Mid-Western Umbrella significantly improved water quality by scaling up testing and monitoring, roughly doubling its residual chlorine sampling and lifting compliance from 90% to 97% between 2019 and 2024. In Ghana, only about a fifth of Community Water and Sanitation Agency schemes met the national residual chlorine standard, with the utility facing challenges from heavily contaminated raw water sources and inadequate laboratory and field-testing capacity. Utilities also need to manage water quality preventively across the whole supply chain, from source to tap, instead of relying on reactive end-of-pipe testing. As providers' own monitoring is often a weak link, this works best when paired with independent verification.

Constraining

Enabling

GHANA Expansion was initiated without adequate assessment of the state of infrastructure and operational demands, and the uptake of aged schemes has directly eroded performance.

ETHIOPIA Asset fragility is widespread, with WSPs operating beyond the carrying capacity of their physical systems.

ZAMBIA, KENYA, UGANDA All three are taking a more managed approach, including infrastructure mapping (Zambia), technical backstopping from urban utilities (Kenya), and strategic clustering of schemes (Uganda). However, investment needs at take-over consistently outstrip available funding, and the continuous uptake of aged infrastructure remains a strain.



Good practice: Zambia – Infrastructure mapping and assessment as a precondition for expansion

Several Zambian utilities have prioritised comprehensive infrastructure mapping and assessment as a first step in responding to their expanded rural mandate. Luapula Water Supply and Sanitation Company has established decentralised business units in rural districts informed by initial infrastructure assessments that identified the extent, condition, and investment requirements of schemes within its service area. This assessment-first approach has enabled Luapula Water Supply and Sanitation Company to make informed decisions about which schemes to prioritise for direct takeover and which to manage through delegated arrangements.

3.2.4. Technology and Operational Efficiency

Technology adoption, including solar energy, digital systems, and metering, is emerging as an enabler, but must be matched by the operational capacity to sustain it. Actual gains from adopting new technologies and digital systems are uneven and poorly documented, but depend on maintenance capacity and supply chains that support operations and maintenance. The question is not whether new or innovative technologies have the technical potential to deliver efficiency gains and service delivery improvements, but whether the utility has the internal capability and

- **Appropriate technology choices, particularly around energy, address rural cost burdens.** Solar and hybrid solutions reduce dependence on expensive diesel or unreliable grid supply, and because energy is one of the largest recurrent costs for pump-dependent schemes, the right technology choice can materially improve financial viability. Technology selection should be driven by lifecycle cost and local maintainability rather than by what is available through project funding. Technologies such as solar power should also not be adopted without sufficient redundancies, such as connection to the power grid or temporary use of generators, that allow schemes to remain operational when these technologies malfunction. In Oromia, Ethiopia, service providers are introducing energy-efficiency and digitalisation measures that point towards the next stage of operational modernisation. However, wider experience in Ethiopia illustrates the danger of solar without redundancy, with some solar-dependent systems constrained by seasonality and delivering only temporary gains.
- **Digital tools improve the utility's ability to plan, oversee, and adapt rural operations.** Tools for billing, customer engagement, performance monitoring, and inventory management help utilities manage dispersed service areas, compensating for the impracticality of having skilled staff physically present at every site. However, digital literacy and connectivity constraints in remote areas can limit effectiveness, so systems need to be designed for the limitations and contexts in which they will be used. In Uganda, the National Water and Sewerage Corporation combines integrated billing and mobile payment platforms with supervisory control and data acquisition network monitoring and real-time analytics. This requires sensors and smart meters to track usage, detect leaks, and optimise distribution across a wide area. The Mid-Western Umbrella runs a stores and inventory system that speeds the dispatch and reordering of spare parts. However, the reach of advanced information and communications technology is constrained by low digital literacy and inconsistent rural connectivity, and the Mid-Western Umbrella still logs complaints through paper logbooks and WhatsApp groups. Zambia's Luapula Water Supply and Sanitation Company made a hurried switch to digital billing, which compromised revenue collection, underscoring that fit and sequencing matter as much as the technology itself.

Constraining

Enabling

All five countries show emerging adoption of innovative technologies.

GHANA Integrating solar and hybrid energy as standard in new infrastructure.

ETHIOPIA In limited cases, energy efficiency and digitalisation initiatives demonstrate feasibility in resource-constrained settings.

ZAMBIA Prepaid meters and digital vending platforms show potential but deployment remains limited.

KENYA Information and communication technology systems for billing and performance monitoring are improving rural oversight.

UGANDA The National Water and Sewerage Corporation is investing in sensors and smart meters, but adoption across the Umbrella Authorities is more limited.



Good practice: Ghana and Kenya – Solar energy and digital tools as practical enablers

In Ghana, the Community Water and Sanitation Agency has integrated solar and hybrid energy systems across its schemes; new infrastructure is now designed to include solar as a standard feature. Given the high energy costs associated with groundwater-dependent rural schemes and the unreliability of the national grid, this shift has improved resilience and reduced one of the largest recurrent cost items. In Kenya, emerging information and communications technology systems are enabling utilities to manage dispersed rural operations more effectively. Where utilities have deployed digital tools for billing, customer engagement, and performance monitoring, they are better positioned to oversee rural service areas remotely. Eldoret Water and Sanitation Company Limited's water quality assurance partnership with Aquaya, which uses structured data collection and monthly coordination to monitor water quality compliance across six rural water schemes (with plans to expand to 30 systems over the following year), further demonstrates how digital and data-driven approaches can strengthen both service quality and accountability.

Conclusions and Roadmap



The expansion of utility service provision into rural and small-town contexts represents one of the most significant shifts in rural water service delivery in sub-Saharan Africa. A combination of policy and legal reform, financial provisions, regulatory changes, the rapid growth of many small towns and rural growth centres, and the acknowledged limitations of community-based management drives the trend. It takes two main forms:

Pathway 1 : Established urban utilities extending their mandates into rural and small-town contexts.

Pathway 2 : Dedicated rural-focused utilities being created, whether from existing institutions or by consolidating smaller providers.

This study examined this trend across Ethiopia, Ghana, Kenya, Uganda, and Zambia, spanning 20 utilities that range from established urban operators expanding into many towns to newly created rural-focused utilities building operations from the ground up.

A defining feature of expanding public utility provision is that these utility models are overwhelmingly established within core government systems, providing a stronger institutional basis for further scaling (Spring Impact, 2026). This contrasts with many externally funded, donor-supported professional operators that have proliferated in recent years but often function in parallel to government.

Utility-managed service provision can improve service quality, accountability, and operational discipline in rural and small-town contexts; however, these gains are neither automatic nor guaranteed. Where the enabling environment is supportive, mandates are defined, financing is adequate, and organisational development is given sufficient time and prioritisation, utilities can operate effectively. Uganda's sustained commitment to professionalisation over two decades, Zambia's proactive regulatory leadership, and Kenya's structured approach to utility-to-utility support all illustrate what is achievable. In Uganda, for instance, the National Water and Sewerage Corporation extended piped services to 236 additional towns between 2014 and 2021 and the Mid-Western Umbrella grew connections by roughly 20% a year between 2021 and 2025; in Kenya, utility-to-utility backstopping now sustains rural schemes serving hundreds of thousands of people, with Kisumu Water and Sanitation Company alone supporting two rural companies serving around 292,000. In Zambia, the National Water Supply and Sanitation Council's 2018 rural regulatory framework offers a strong basis for delegated utility provision on paper. However, it remains open whether this will translate into coverage growth, or whether these enabling-environment gains will be outweighed by the viability challenges that established urban utilities face in absorbing rural mandates (Pathway 1). **In summary, the presence of these foundational requirements does not guarantee success, but their absence almost certainly guarantees significant challenges.** Notably, Ghana's experience of advancing a utility transition before the legal and institutional architecture was established illustrates the risk of transitioning too fast and not ensuring core enabling factors are in place.

Expanded utility service delivery in rural and small-town contexts is not a panacea. The operating environment in these settings is fundamentally more challenging than for urban service delivery, and financing models that incorporate appropriate subsidies must be designed

from the outset. This is a long-term process that requires concerted support. Other service delivery models will continue to play an essential role, particularly in more dispersed rural settings where direct utility management is not yet feasible, and the risk of utilities “cherry-picking” more viable schemes is high.

No single expansion pathway is inherently superior; utilities require tailored support based on their pathway and context. Pathway 1, with existing utilities that bring established organisational capacity, commercial systems, and potential for cross-subsidisation, presents different challenges than Pathway 2, which often requires establishing structures and processes from scratch. Pathway 1 utilities risk not tailoring their operations to rural realities and deprioritising rural operations when they compete with urban services for resources and management attention. Conversely, while Pathway 2 utilities bring a dedicated focus on rural realities and often focus on establishing an organisational culture and structure adapted to those conditions, they face challenges of scale, difficulties attracting skilled staff, and financial dependence. In any sector, the critical success factors are less about the choice of pathway and more about whether foundational requirements and adequate resources are in place.

4.1. A Roadmap for Expanding Utility Provision

Strengthening utility service provision in rural areas and small towns requires attention to both the enabling environment and each utility’s internal capacity; the weaker the enabling environment, the stronger the utility must be. Focusing on either dimension in isolation is insufficient. Several elements across the enabling environment and within the utility need to be addressed simultaneously. Drawing on the evidence gathered through this study, a practitioner-focused *Roadmap for Expanding Utility Service Provision in Rural and Small-Town Contexts* is being developed to translate these findings into practical guidance for stakeholders supporting the transition to effective utility-led service delivery (see Figure 3).

The roadmap is aimed at policymakers, legislators, regulators, utility managers, and practitioners. Its central premise mirrors the analysis set out in this report: that expansion succeeds only where the enabling environment and the utility’s own capacity advance together, and where the economics, demographics, and political economy of rural and small-town contexts are treated as structural features of the transition rather than peripheral challenges.

The roadmap is organised around four broadly sequential phases, progressing from initial situation analysis and establishing buy-in, through to institutionalisation and scale. Within each phase, guidance runs along two parallel tracks that address the external enabling environment and the utility’s internal capacity. The roadmap can be applied to established urban utilities extending their operations into rural and small-town contexts and recently-created dedicated rural-focused utilities. It is supported by a range of good-practice examples that illustrate how the recommended actions have been implemented.



Figure 3 Roadmap for Expanding Utility Service Provision in Rural Areas and Small Towns



3

Consolidate

Objective

Utility-led rural service delivery is proven in practice, with progressively improving coverage, service quality, and financial viability attracting investment.

4

Institutionalise & Scale

Objective

Rural and small-town water services are sustainably delivered by a capable utility within a supportive legal, regulatory and financing environment.

Strong Enabling Environment



Adapt Regulatory Framework

Tailor and refine regulatory mechanisms to facilitate improved performance and address constraints distorting expansion

Strengthen the Financial Model

Close resource gaps, activate cross-subsidies, build creditworthiness

Leverage Partners

Ensure utilities receive support, establish feedback loops

Legal mandate

Service areas defined, evidence-based asset transfer

Regulation

Tailored regulatory framework

Financing

Predictable transfers, operational cross-subsidies, regular tariff review, innovative financing

Coordination

Aligned stakeholders share learnings and upscale good practices

Strong Institutional Capacity



Address Strategic Challenges

Address aged infrastructure, build management depth, embed resilience

Leverage Results to Attract Sustained Investment

Build a credible track record, structure bankable projects, peer learning

Systems and Operations

Mature systems and processes

Financial Management

O&M coverage with revenue and subsidies, capital costs covered

Organisational Depth

Human resources with capacity and strong institutional culture

Bibliography³

- CWSA. (2024). Annual Report 2024. Accra: Ministry of Sanitation and Water Resources.
- ESAWAS. (2022). The Water Supply and Sanitation Regulatory Landscape Across Africa: Continent-Wide Synthesis Report.
- ESAWAS. (2024). Multi-country Benchmarking of Water Supply and Sanitation Utilities 2023/24 Report. Lusaka: ESAWAS.
- GSS, IRC Ghana, & CWSA. (2023). Rural Water Utilisation Project: State of Water Services in the Western Region – Ghana Report. Accra.
- GWOPA. (2024a). GWOPA, Resources, Library. Retrieved from <https://gwopa.unhabitat.org/resources/library>
- GWOPA. (2024b). GWOPA and IRC Join Forces to Develop Flagship Report on Water and Sanitation Utilities. Retrieved from <https://gwopa.unhabitat.org/resources/news/gwopa-and-irc-join-forces-develop-flagship-report-water-and-sanitation-utilities>
- Huston, A., Gaskin, S., Moriarty, P., & Watsisi, M. (2021). More Sustainable Systems Through Consolidation? The Changing Landscape of Rural Drinking Water Service Delivery in Uganda. *Water Alternatives*, 14(1), 248–270.
- IRC. (2021). Utility-Managed Rural Water Services: Models, Pathways, Drivers, Performance and Areas for Support.
- MSWR. (2023). Ghana WASH Sector Development Programme (GWASHSDP) 2021–2030. Accra: Ministry of Sanitation and Water Resources.
- MSWR. (2024). National Water Policy. Accra: Government of Ghana.
- MWDSEP. (2019). National Rural Water Supply and Sanitation Programme (NRWSSP) 2019–2030. Lusaka: Ministry of Water Development, Sanitation and Environmental Protection.
- MWE. (2020). National Framework for Operation and Maintenance of Rural Water Infrastructure in Uganda. Kampala: Ministry of Water and Environment.
- NWASCO. (2018). Rural Water Supply and Sanitation: Framework for Provision and Regulation in Zambia. Lusaka: National Water and Sanitation Council.
- NWASCO. (2024). Water Supply and Sanitation Sector Report 2024. Lusaka: National Water and Sanitation Council.
- NWSC. (2024). Corporate Plan 2024–2027. Kampala: National Water and Sewerage Corporation.
- NWSC. (2025). Integrated Annual Report 2023/24. Kampala: National Water and Sewerage Corporation.
- REAL-Water. (2023a). Is Consolidation the Answer to Improving Rural Water Services in Low-Income Countries: Lessons from OECD Country Experience.
- REAL-Water. (2024). What Drives the Performance of Rural Piped Water Supply Facilities in Ghana? A Mixed Methods Observational Study. USAID, Rural Evidence and Learning for Water Project.
- Republic of Kenya. (2010). Constitution of Kenya. Nairobi: National Council for Law Reporting.
- Republic of Kenya. (2016). Water Act, 2016 (Act No. 43 of 2016). Nairobi: Government Printer.

³ A detailed list of all the references for the country level findings and examples can be found in the respective country reports.

Republic of Zambia. (1997). Water Supply and Sanitation Act, No. 28 of 1997. Lusaka: Government of the Republic of Zambia.

Spring Impact. (2026). Scaling with Government: The Government's Perspective on What Nonprofits and Funders Need to Do Differently.

USAID. (2023b). Emerging Trends in Rural Water Management.

WASREB. (2019). Guideline for Provision of Water and Sanitation Services in Rural and Underserved Areas in Kenya. Nairobi: Water Services Regulatory Board.

WASREB. (2025). Impact Report 2023/2024, No. 17. Nairobi: Water Services Regulatory Board.

WASREB, University of Oxford, et al. (2025). Rolling-out Rural Water Regulation in Kenya: A Review of Progress and Key Processes. Retrieved from <https://reachwater.uk/wp-content/uploads/2025/01/Kenya-rural-water-regulations-Jan2025.pdf>

WaterAid. (2024). Professionalising Rural and Small-Town Water Supply Management: The Need to Enhance External Support Arrangements.

World Bank. (2017). Sustainability Assessment of Rural Water Service Delivery Models: Findings of a Multi-Country Review.

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

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

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

World Bank. (2024). Utility of the Future Program. Retrieved from <https://www.worldbank.org/en/topic/water/publication/utility-of-the-future>

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

A photograph of two men standing next to a large blue industrial valve on a metal structure. The man on the left is older, with grey hair and glasses, wearing a light-colored shirt and trousers, and holding a clipboard. The man on the right is younger, wearing a grey t-shirt with a graphic and khaki pants. They are both looking at the valve. The background shows a large metal structure and some green foliage.

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