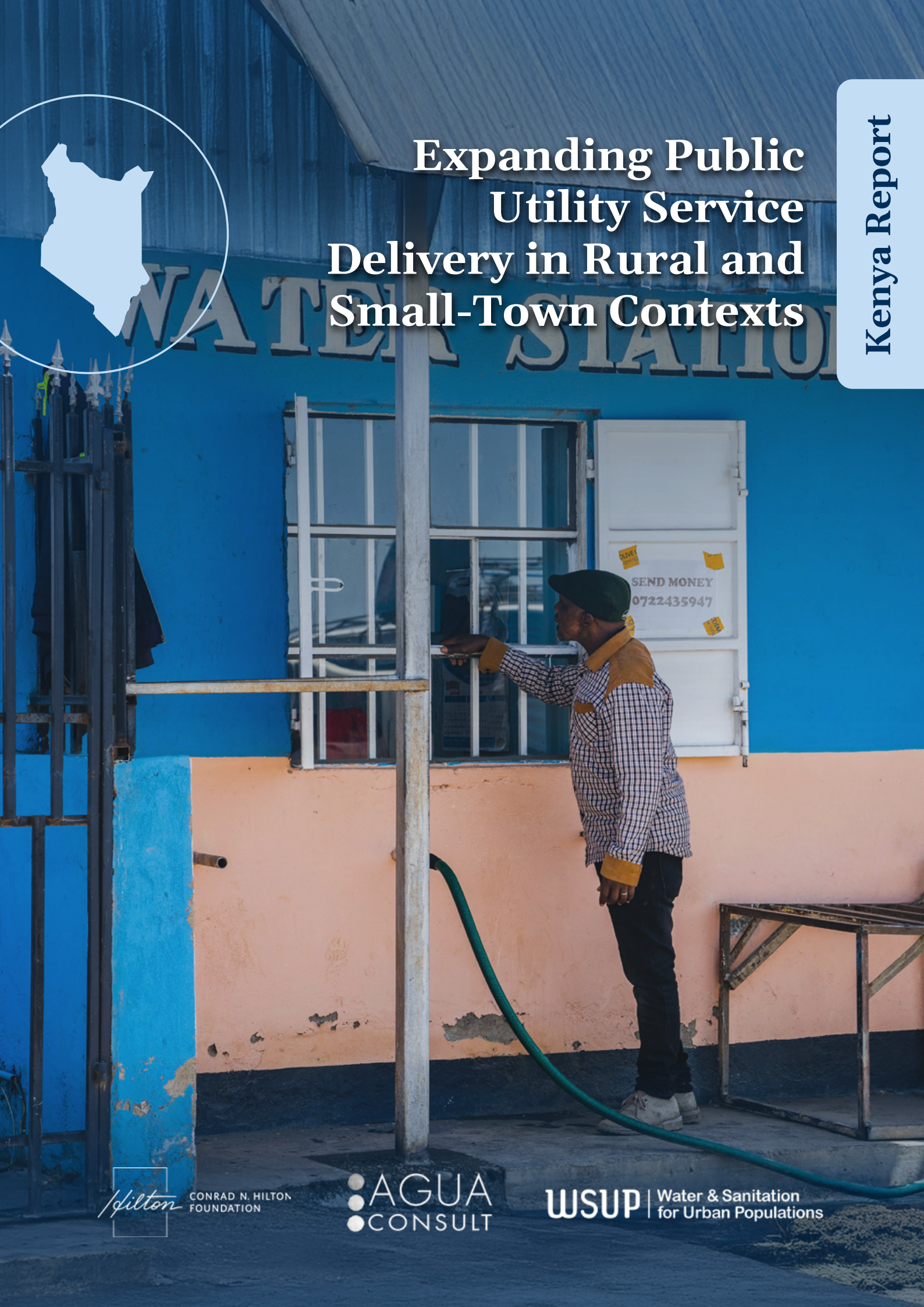




Expanding Public Utility Service Delivery in Rural and Small-Town Contexts

Kenya Report



CONRAD N. HILTON
FOUNDATION

AGUA
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WSUP | Water & Sanitation
for Urban Populations

Headline Enablers and Barriers

Enabling Environment



Enablers

- Political support for rural utility service provision is uneven across counties and strongly shapes institutional outcomes. County leaders who actively champion rural WSP reforms are vital for ensuring consistent national policy implementation.
- In the context of limited utility creditworthiness, blended financing arrangements — including tariffs, cross-subsidies, and external investment — act as key enablers of rural service provision. WSPs use tariff integration, urban cross-subsidies, and targeted tariff design to support rural operations, while county funding and development partner investment play a critical role in financing rural infrastructure.



Barriers

- Weak operationalisation of policy and legal frameworks and overlapping mandates constrain effective implementation. Stalled policy revisions, slow administrative follow-through, and blurred roles between county actors complicate coordination and accountability in rural service delivery.
- Regulatory oversight of SSSPs and informal providers remains inconsistent, undermining consolidation and service planning. Slow and uneven licensing to formalise SSSPs, politically backed parallel schemes, and limited enforcement weaken utilities' ability to harmonise tariffs, service standards, and expansion plans.

Operational Context



Enablers

Systematic mapping and monitoring of SSSPs and informal providers can support effective management of water quality risks in rural and peri-urban areas.

Inflation-linked tariff reviews support financial resilience, helping WSPs adjust to rising operational costs and respond to cost shocks without undermining service continuity.



Barriers

Technical and financial performance in rural systems is constrained by ageing infrastructure, poorly designed legacy assets, and dispersed service areas. Coupled with energy-intensive systems, these factors drive higher operations and maintenance (O&M) costs.

Water resource management challenges are exacerbated by weak inter-agency coordination. Fragmented responsibility between national and county government agencies leads to delays and uncertainty in accessing or developing new water sources.

In areas served through delegated management models, dependence of rural WSPs and SSSPs on external bulk water supply can increase vulnerability to water scarcity and other climate-related risks.

Institutional Capacity



Enablers

- High-level strategic direction within a WSP is critical to effective rural service delivery. This includes a clear strategic plan and strong board guidance that explicitly integrates rural service delivery into utility planning.
- Larger, urban-focused WSPs are well-positioned to provide a critical technical backstopping role for rural water, strengthening capacity and operational performance. Through on-the-job training, mentoring, troubleshooting, and oversight of SSSPs and emerging rural WSPs, larger WSPs can support system functionality and improve treatment and metering practices of rural providers.
- Emerging ICT systems act as key institutional enablers. WSPs with digital tools for billing, customer engagement, and performance monitoring are better positioned to plan, oversee, and adapt rural operations.
- Water quality assurance partnerships safeguard rural water quality, leading to increased compliance, improved revenue collection, and stronger data systems.
- Active engagement and responsiveness to consumer concerns are critical to sustaining demand in rural areas. This involves structured sensitisation and formal channels to the WSP and / or delegated rural providers. Digital systems for customer interaction can further enable responsiveness, including online feedback tools and automated ticketing.



Barriers

- Rural service delivery is constrained by persistent human resource shortages. Reliance on seconded staff and informal arrangements, along with difficulties attracting and retaining skilled rural staff, limit oversight, resilience planning, and sustainability.
- WSPs face significant equipment, transport, and material shortages when operating or supporting services in dispersed rural areas. Rural systems often require long distribution networks, frequent repairs, and access to remote terrain, yet maintenance teams lack essential tools, suitable pipe sizes, and adequate transport.
- Weak financial management systems in rural WSPs constrain performance, with many lacking robust arrears management, accurate billing, and digital accounting tools.
- Uneven adoption of ICT systems and lack of established ICT protocols across rural WSPs limit sector-wide data visibility and undermine efforts to enforce regulatory compliance.
- Though recognised as increasingly important, resilience planning for rural water services remains largely underdeveloped. Many WSPs lack structured resilience frameworks. In the case of rural WSPs, diversified revenue mechanisms and contingency plans are also lacking.



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Acronyms

ELDOWAS	Eldoret Water and Sanitation Company
ESAWAS	ESAWAS Regulators Association
ICT	Information and Communication Technology
JMP	Joint Monitoring Programme (WHO/UNICEF)
KIWASCO	Kisumu Water and Sanitation Company
MAWASCO	Malindi Water and Sewerage Company
NAIVAWASCO	Naivasha Water and Sanitation Company
NRW	Non-Revenue Water
O&M	Operation and Maintenance
SSSPs	Small-Scale Service Providers
URWASCO	Uasin Gishu Rural Water and Sanitation Company
WASREB	Water Services Regulatory Board
WSPs	Water Service Providers

Introduction

1

1.1. Study Background

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



The often-poor state of infrastructure and the wide range of infrastructure types.



The remote and dispersed nature of rural customers, making aggregation challenging.



Seasonal demand variations and low willingness or ability of users to pay cost-reflective tariffs.



Difficulty attracting and retaining skilled staff and ensuring sufficient technical support.



The absence of sustained or sufficient funding to overcome these challenges.

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



Detailing the status of utility provision in rural areas and small towns.



Outlining the enablers and barriers to the expansion of utility service provision.



Presenting existing good practices from the five countries.



Identifying common lessons for supporting utility expansion into small towns and rural areas.

1.2. Report Overview and Structure

This report presents the study findings from Kenya. It focuses on Water Service Providers (WSPs), which are owned by county governments, function as regulated public utilities, and are the primary service providers. The report is principally focused on Eldoret Water and Sanitation Company (ELDOWAS), Kisumu Water and Sanitation Company (KIWASCO), Malindi Water and Sewerage Company (MAWASCO) and Naivasha Water and Sanitation Company (NAIVAWASCO). For ELDOWAS and KIWASCO, the report considers both their own service delivery (principally, but not exclusively, in urban areas) and that of the three rural WSPs they oversee. KIWASCO supports NYANAS Water and Sanitation Company and Gulf Water Services Company in Kisumu County; ELDOWAS supports Uasin Gishu Rural Water and Sanitation Company (URWASCO) in Uasin Gishu County. While this report presents performance data, challenges, constraints, and enablers for these utilities side by side, it is not intended to compare them, but to provide relevant context and identify lessons that can be learned.

The report was developed based on a desk review, utility survey, focus group discussions at the utility and national levels, and a series of targeted key informant interviews. While based on insights from these focus WSPs, it presents findings relevant to the sector more broadly.

The remainder of this report is structured as follows:

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

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

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



Service Provision Context

2

2.1. Country Context

Kenya is a lower-middle-income country with a rapidly growing population. Table 1 provides an overview of the current demographic and socio-economic situation.

Table 1. Kenya Country Context (World Bank, 2024)

Indicator (all 2024)	National	Urban	Rural
Population	56.4 million	17.0 million	39.4 million
Share of total population	100%	~30%	~70%
Annual average population growth rate	~2.0%	2.8%	1.8%
Population living on less than \$3/day (2021 PPP)	46%		
GDP per capita (current US\$)	2,132	5,500	1,500
Human Development Index (UNDP, 2023)	0.628 (Medium)	0.75	0.60

For water supply provision, Kenyan sector planning documents define rural growth centres and rural areas as follows:

- **Small towns:** Areas with a population between 5,001 and 10,000
- **Rural Growth Centres:** Areas with a population of between 2,000 and 5,000
- **Rural Areas:** Settlements with a population of less than 2,000

2.2. Water Supply Status

Kenya has made gradual progress in drinking water access, but service levels remain well below universal coverage targets. Between 2015 and 2024, the share of the population with at least basic drinking water services increased from 58% to 66%, reflecting steady improvement. Over the same period, reliance on unimproved sources decreased from 11% to 7%, and use of surface water fell from 23% to 19%, indicating a shift towards safer sources. While these trends are positive, 34% of the population still depended on limited, unimproved, or surface water sources in 2024, underscoring the ongoing challenge of ensuring equitable, safely managed services nationwide.

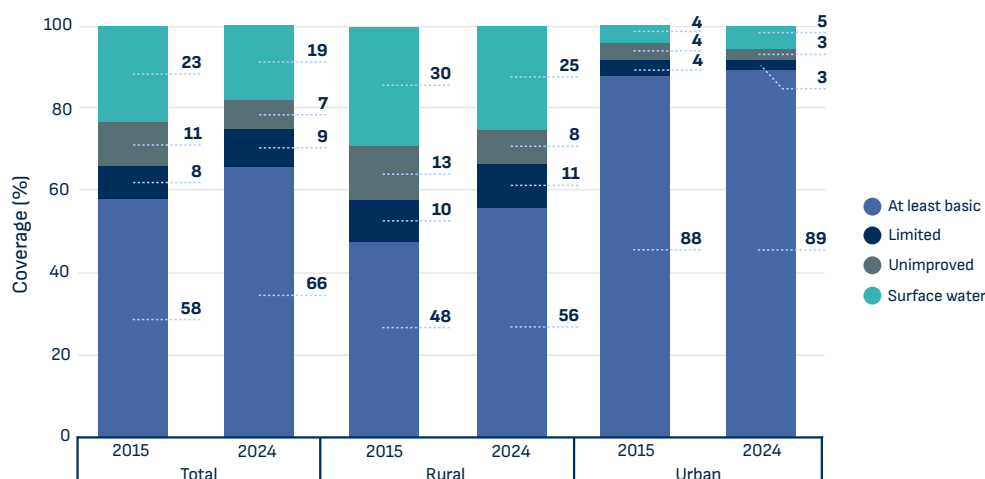


Figure 1. Joint Monitoring Programme Drinking Water Service Ladders, 2015 and 2024

2.3. Utility Service Provision

2.3.1. Expansion Pathways

WSPs are regulated public utilities owned by county governments and function as the primary service providers. Approximately half of the counties in Kenya have a single licensed WSP, while other counties have multiple WSPs, which may operate in urban, peri-urban and / or rural areas. Table 2 shows the Water Services Regulatory Board's (WASREB's) framework for categorising WSPs by scale.

Small-scale service providers (SSSPs) also play an important role. These are decentralised providers, typically serving rural and peri-urban areas, licensed by the county government or WSP rather than WASREB, but formally recognised by WASREB's regulatory framework. In most counties, multiple providers deliver rural water supply services, including very large or large urban WSPs; smaller-scale rural WSPs; licensed SSSPs; and a range of unlicensed or informal community and private providers.

As of 2024, only three purely rural WSPs were meeting the reporting and regulatory criteria for inclusion in IMPACT, WASREB's annual performance benchmarking report (Meru, Nakuru, and Kakamega).¹ The rural WSPs featured in this report (Gulf, NYANAS and URWASCO) currently do not meet WASREB requirements for inclusion in IMPACT.

¹ <https://wasreb.go.ke/wp-content/uploads/2024/12/WSPs-as-per-WWDA-Region-County-Subcounty.pdf>

Table 2. Kenyan Service Providers

Service provider	Characteristics
Very Large WSP	35,000 or more active water connections. Likely to have a major city within its service area.
Large WSP	10,000–34,999 active water connections. May be serving a mix of secondary cities, small towns, peri-urban and / or rural areas.
Medium WSP	5,000–9,999 active water connections. May be serving a mix of small towns, peri-urban and / or rural areas.
Small WSP	Fewer than 5,000 active water connections. Likely to be serving peri-urban and / or rural areas.
Small-Scale Service Provider (SSSP)	Small or decentralised licensed provider, licensed by the County Government or WSP (rather than WASREB) but operating within the formal regulatory framework. Likely to be serving peri-urban and / or rural areas.
Informal service provider	An unlicensed or unauthorised provider delivering water services outside the formal regulatory framework.

The transition of utilities from urban-focused service delivery to directly providing or actively supporting service delivery in rural areas has unfolded through successive reforms.

The Water Act 2002 initiated this shift by separating policy, regulation, asset ownership, and service provision functions. It established the following entities:

- Water Service Boards, which were responsible for managing water resources and providing services across different regions.

- WSPs, which were contracted by the Water Service Boards to provide services in urban settings.
- WASREB, the national regulator for water services.

Although implementation of the 2002 reforms varied across counties, the Water Act provided the first formal basis for extending utility-led service delivery to small towns and rural centres. The 2010 Constitution accelerated this change by devolving responsibility for water and sanitation to counties while retaining national roles in policy, regulation, and water resources management (Republic of Kenya, 2010). Counties became owners of WSPs and the primary actors responsible for expanding access, especially in underserved rural areas, positioning many of these WSPs as county-level entities. The Water Act 2016 (Republic of Kenya, 2016) consolidated this devolved structure — replacing Water Service Boards with Water Works Development Agencies responsible for developing major water-related infrastructure while counties assumed full authority for service provision in their jurisdiction (urban and rural areas). WASREB strengthened regulation, and the Act enabled counties to expand WSP service areas by integrating community-managed schemes and consolidating service delivery across dispersed settlements under WSP responsibility. This further formalised utilities' roles in rural and small-town contexts.

WASREB's 2019 Guideline for Provision of Water and Sanitation Services in Rural and Underserved Areas in Kenya further reinforced the above-mentioned reforms. The guideline outlined how WSPs should regulate, collaborate with, and progressively integrate other providers into formal service delivery arrangements. Anchored in the above reforms, the guideline broadened utilities' mandate to extend service coverage beyond core urban areas to include dispersed rural schemes, small towns, and emerging growth centres (WASREB, 2019). This emphasised the requirement for WSPs to coordinate with providers operating outside WASREB's formal licensing arrangements. The guideline sets out six service delivery options, organised around two scenarios:

Scenario A : Where a provider operates within the service area of an existing regulated WSP

Four options are available:

- 1 The WSP takes over the system entirely, where it has sufficient capacity and community management is weak or absent.
- 2 The WSP delegates some responsibilities to the provider, where the community group is registered as a Water Users Association (conferring SSSP status) and is capable of managing operations and maintenance (O&M).
- 3 The WSP contracts a private operator, where neither the utility nor the community group can manage the system and a willing private party exists, conferring SSSP status on the private operator.
- 4 The provider becomes a separately licensed WSP, where the system is commercially viable and the community group meets WASREB's WSP licensing standards.

Scenario B : Where the system falls outside any WSP's service provision area.

Two options are available:

- 1 The county establishes a dedicated rural WSP, facilitating the rural WSP's application for a WASREB licence.
- 2 The county contracts a private person or public benefit organisation to manage service provision under a formal agreement with the county WSP.

In practice, the focus WSPs in this study do not operate under a single guideline option; they combine elements of several pathways or are transitioning between pathways over time. Practices vary across counties, driven by settlement dynamics, governance choices, and historical mandates. The WASREB guideline presents the options as discrete choices; in practice, counties navigate them as a spectrum. This study conceptualises how WSPs are transitioning into rural water service provision in two broad pathways (Figure 2):

Pathway 1 : Urban-focused WSPs expanding operations into peri-urban, small-town and rural areas.

These WSPs have taken over or are directly taking over rural systems, and / or are engaging SSSPs under delegated management arrangements, broadly reflecting Scenario A above (MAWASCO, NAIVAWASCO).

Pathway 2 : Emerging rural WSPs supported by larger, predominantly urban-focused WSPs.

In these cases, counties are forming or formalising separate rural WSPs with structured support from established urban-focused WSPs, reflecting Scenario B. The aim is to reduce support from the larger WSP over time as the smaller-scale rural WSPs strengthen governance arrangements and capacities (KIWASCO, supporting Gulf and NYANAS; ELDOWAS, supporting URWASCO).

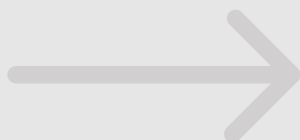
Figure 2: Triggers and Pathways for Utility Expansion

The Challenge



Limited access to safe water supply services in rural Kenya.

Utilities with expanded mandates and growing responsibilities, but poorly managed services and aged infrastructure. They are constrained by weak systems, and unable to sustainably deliver reliable, safe, and affordable water services.



External triggers for utility expansion



Legislative reforms (Water Act 2002, Water Act 2016) separated policy, regulation, asset ownership, and service provision and broadened utility mandates to include rural areas



Devolution under the 2010 Constitution transferred water service responsibility to county governments



WASREB's 2019 guidelines outline how utilities should regulate, collaborate with, and progressively integrate SSSPs



Increased demand for improved services



Urbanisation and small-town growth

Internal triggers for utility expansion



Vision and strategic growth at utility level



Strong internal leadership

PATHWAY 1

Urban-focused utilities integrated with rural utilities

This pathway broadly reflects Scenario A of the WASREB 2019 guideline, combining elements of WSP takeover (Option 1.1) and delegated management with SSPs (Option 1.2)

- MAWASCO and NAIWASCO operate fully integrated urban and rural service delivery models within a single utility structure.
- MAWASCO provides direct services across much of Kilifi County, supplemented by bulk supply to CBO-managed rural schemes and selective takeovers when systems become inefficient. MAWASCO receives bulk water from Coast WWDA but currently receives only enough to meet around two-thirds of demand before NRW losses.
- NAIWASCO's mandate expanded from Naivasha town to the entire sub-county in 2022. Its rural model centres on extending networked services into growth centres and licensing SSSPs, who serve ~40% of the sub-county population. No plan for a separate rural utility given commercial viability constraints.

PATHWAY 2

Emerging rural WSPs, temporarily supported by existing urban utility

This pathway reflects Scenario B of the WASREB 2019 guideline — county-led formation of rural WSPs (Option 2.1) — with the longer-term aim of achieving independent licensing (Option 1.4).

- An interim phase prior to the establishment of dedicated rural focused utilities, in which small scale WSPs in rural areas receive significant support from urban utilities.
- KIWASCO provides structured technical, financial, and managerial support to two small-scale rural WSPs (Nyanas and Gulf), without direct operation. Support includes seconded staff, chemicals, and ICT systems under a clearly defined management framework.
- The two rural WSPs currently lack a Board of Directors, with governance under KIWASCO's purview. A process to consolidate the two into a single rural utility with its own Board has been initiated, pending WASREB and County Government review. KIWASCO plans to gradually withdraw embedded staff while maintaining reduced technical oversight.
- ELDOWAS supplies bulk water and technical oversight to eight CBO-run schemes along its main pipeline, while providing more ad hoc mentoring to an emerging rural utility in finance, treatment, operations, and procurement. ELDOWAS anticipates that bulk schemes will eventually be absorbed into either the rural or urban utility as capacities strengthen, with support reducing over time.

The Desired Situation



Utilities contribute to achieving the **Vision 2030** target of **100% access to clean and safe water.**

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

2.3.2. Scale and Coverage

The scale and coverage of the focus WSPs vary considerably. Table 3 provides an overview. ELDOWAS has the largest overall network size, with almost 115,000 combined connections between ELDOWAS and URWASCO, the rural WSP it oversees. ELDOWAS also has the highest annual water production and number of staff. NAIWASCO is the smallest in all three areas.

Table 3. Utility Scale and Coverage (WASREB, 2025)

WSP	Number of utility staff ²	Population served and total connections	Annual water production ³
 KIWASCO (overseeing Gulf and NYANAS)	300	KIWASCO • People served – Urban: 460,402 • Total connections: 46,326 Gulf and NYANAS (combined rural and peri-urban areas) • People served – Rural and peri-urban: 292,009 • Total connections: 11,949	7.5 million m ³
 MAWASCO	224	• People served – Total: 513,895 Rural: 177,786 Urban: 336,109 • Total connections: 43,938	6.4 million m ³ (bulk water)
 ELDOWAS (overseeing URWASCO)	415	ELDOWAS • People served – Total: 440,320 Rural: 15,649 Urban: 424,671 • Total connections: 78,724 URWASCO (rural and peri-urban areas) • People served – Rural and peri-urban: 175,621 • Total connections: 35,120	16 million m ³
 NAIWAASCO	125	• People served – Total: 243,768 Rural: 25,469 Urban: 218,299 • Total connections: 14,698	2.4 million m ³

² This data does not include the three rural WSPs that are currently being supported. Data on the scale and nature of the rural WSP operations is fragmented and the data available could not be validated.

³ As above.

2.3.3. Technical Performance

Technical performance varies across the utilities, with divergent trends in reliability, water quality, and NRW. Table 4 provides an overview of the technical performance of the focus utilities. KIWASCO and NAIVAWASCO demonstrate the strongest supply reliability, both achieving 24-hour supply in 2024. NRW remains a persistent challenge across all WSPs, with MAWASCO performing best and ELDOWAS recording the highest losses, though all show either stability or modest improvement. Water quality risks differ by context but are present across all WSPs, driven by factors ranging from source pollution and ageing infrastructure to distribution system weaknesses.

Table 4. Technical Performance⁴

WSP	Water quality challenges	Reliability (Hours of Supply)	Non-revenue water
KIWASCO	Frequent power outages, pipe bursts, poor raw water quality, analysis equipment breakdown, delays in servicing of equipment (lack of technicians), delays in procurement processes for spare parts and supplies, seasonal weather extremes	● 2019: 24 hrs/day ● 2024: 24 hrs/day	● 2019: 37% ● 2024: 37%
MAWASCO	Source water pollution, microbial contamination, ageing infrastructure, climate change and variability, operational and technical limitations	● 2019: 23 hrs/day ● 2024: 20 hrs/day	● 2019: 23% ● 2024: 21%
ELDOWAS	Low residual chlorine at consumer points, climate change and extreme weather events, contamination in the distribution system, frequent bursts and illegal connections.	● 2019: 18 hrs/day ● 2024: 21 hrs/day	● 2019: 42% ● 2024: 38%
NAIVAWASCO	Ageing infrastructure, the unavailability of chemicals, insufficient technicians, and vandalism of infrastructure in rural areas.	● 2019: 23 hrs/day ● 2024: 24 hrs/day	● 2019: 32% ● 2024: 24%

⁴ This data only includes the water utilities listed and does not include the rural WSPs that are currently being supported. Data on the scale and nature of the rural WSP operations is fragmented and the data available could not be validated.

2.3.4. Financial Performance

Overall financial performance shows improving revenue generation across the larger WSPs, broadly keeping pace with rising costs between 2019 and 2024. Figure 3 shows the operating costs and revenues of the four larger WSPs in 2019 and 2024. KIWASCO and ELDOWAS demonstrate a relatively stable financial position, with revenues closely tracking costs in both years, suggesting effective cost recovery despite rising operational expenditures. MAWASCO shows a more pronounced increase in both costs and revenues over the period and is the only utility where costs exceed revenue, which reflects ongoing financial pressures associated with bulk water purchasing and system expansion into rural areas. These trends are underpinned by broadly consistent tariff structures across all larger WSPs, with increasing block tariffs for household connections, flat rates applied to kiosks, and institutional tariffs set below household tariffs. While these arrangements provide a foundation for financial planning and revenue mobilisation, the observed differences in cost recovery suggest that local operational conditions remain key determinants of overall financial performance.

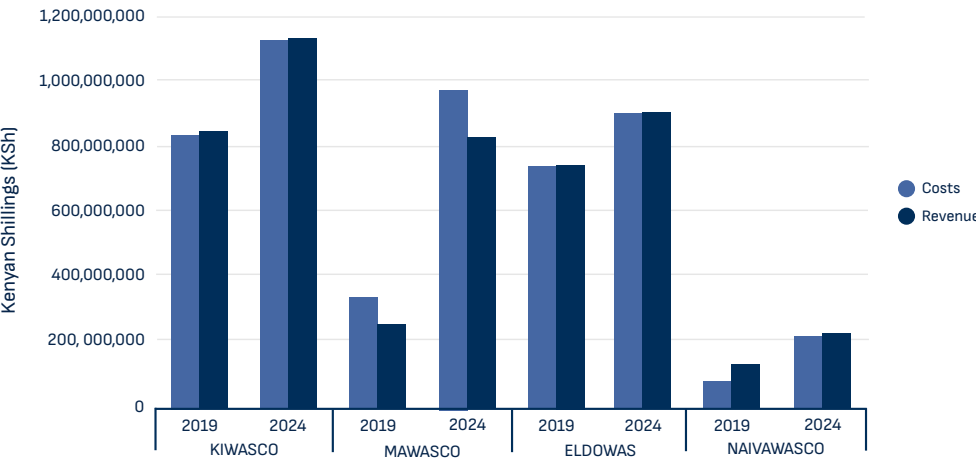


Figure 3: Costs vs Revenue, 2019 and 2024



Enabling and Constraining Factors

3

3.1. Operational Context

3.1.1. Infrastructure and Water Resources

- Ageing infrastructure, including treatment plants and networks, and the poor design of many rural water systems are major technical challenges across counties.
- Limited resource availability, weak inter-agency coordination, and exposure to climate variability shape water resource management challenges.

Ageing infrastructure and the poor design of many rural water systems are major technical challenges across counties. Treatment plants built more than 50 years ago typically rely on outdated technology, inefficient layouts, and high energy demands, making them costly to operate and difficult to maintain. Treatment plant capacity has also been outpaced by population growth. Similarly, boreholes drilled without proper geological assessment – or established under political pressure – frequently underperform or fail, placing a heavy operational burden on rural water managers.

Water resource management challenges are shaped by limited resource availability, weak inter-agency coordination, and exposure to climate variability. The rural WSPs included in this study generally have separate water sources from the larger supporting WSPs. However, the rural WSPs are indirectly affected by these water resources management challenges, which intensify pressure on financial and human resources within the larger-scale WSPs and reduce their capacity to provide the required support. KIWASCO highlighted fragmented responsibility between national and county government agencies responsible for water resources management. Unclear coordination creates delays and uncertainty in accessing or developing new water sources. ELDOWAS emphasised that funding constraints restrict the development of additional water resources, limiting the utility's ability to respond to growing demand or climate-related stress. NAIWASCO relies entirely on groundwater from 34 boreholes, making it highly sensitive to aquifer depletion and long-term climate pressures that could diminish yields.

3.1.2. Business Viability, Affordability, and Accessibility

- Persistent financial constraints limit both stability and scale of rural water service delivery. Rural systems face higher operational costs, low revenue generation, and limited ability to pay among customers.
- In areas served through delegated management models, dependence on external bulk water supply adds vulnerabilities, with some utilities having limited control over production volumes or supply reliability and facing critical challenges in managing NRW past the bulk meter.

Persistent financial constraints limit both stability and scale of rural water service delivery.

Rural systems face higher operational costs, low revenue generation, and limited ability to pay among customers. High operating costs stem from the aforementioned issues of ageing treatment plants, long and sparsely populated distribution networks, and energy-intensive pumping systems. Rural piped systems require more staff time, more energy, and more frequent repairs than urban networks. Non-piped systems are also often in more remote areas. All of these factors result in rural water supply service provision having higher O&M costs than urban or peri-urban service provision.

In areas served through delegated management models, dependence on external bulk water supply adds vulnerabilities.

Although the rural WSPs included in this study generally have separate water sources from the supporting WSPs, in other parts of Kenya peri-urban and rural schemes managed by rural WSPs and SSSPs rely on a larger utility's bulk network. In these cases, providers have limited control over production volumes or supply reliability and face critical challenges managing NRW past the bulk meter. During shortages, they are typically prioritised last, regardless of willingness to pay, while bulk tariffs add financial pressure to operators already grappling with inefficiencies and limited metering. Taken together, these dependencies restrict rural actors' ability to plan operations, maintain stable service levels, or optimise their systems independently.

3.2. Institutional Capacity

3.2.1. Human Resources, Organisational Structure and Supply Chain Management

- Large-scale urban utilities in Kenya play an important role in strengthening rural technical capacity, providing on-the-job training and supervision to smaller rural utilities. However, WSPs face significant equipment, transport, and material shortages when supporting services in dispersed rural areas.
- Human resource availability is one of the most significant institutional constraints across the focus WSPs, with rural functions consistently understaffed and overstretched.
- Clear strategic direction within a utility is a critical enabler of rural service delivery. However, many WSPs have not yet articulated a clear, long-term vision for rural service delivery.
- Organisational structures are evolving to accommodate rural service delivery, but they do not yet formalise the oversight role that larger, urban-focused utilities play.

Large-scale, urban utilities in Kenya play an important role in strengthening rural technical capacity. All very large WSPs provide on-the-job training, mentoring, and supervision to SSSPs, county actors, and, in some cases, small-scale rural WSPs, helping them address operational gaps and keep systems functioning at an optimum level. This technical backstopping is a key enabler of rural service delivery and a strong example of peer-to-peer support that larger, more established utilities can provide to the smaller, rural WSPs that are emerging in Kenya. However, several persistent constraints shape the performance and sustainability of rural systems.

WSPs face significant equipment, transport, and material shortages in dispersed rural areas. Rural systems often require long distribution networks, frequent repairs, and access to remote terrain. Yet maintenance teams lack essential tools, suitable pipe sizes, and adequate transport – sometimes relying on only a handful of motorbikes. To manage competing operational demands, ELDOWAS, for example, lends machinery to the rural WSP on weekends to avoid significantly disrupting urban operations. Low population densities further exacerbate these constraints. Long distances must be serviced for relatively small customer bases, reducing economies of scale and intensifying operational strain. Services typically remain centrally managed without local stores and efficient procurement chains.

Human resource availability is one of the most significant institutional constraints, with rural functions consistently understaffed. KIWASCO described gaps in supervisory and technical staffing for the rural WSPs, requiring continuous backstopping by its own personnel. MAWASCO and ELDOWAS echoed similar challenges, noting shortages of specialised staff – including fitters, treatment operators, and meter technicians – particularly for rural areas where staff retention is difficult. This reflects the relative unattractiveness of rural posts, where remoteness, lower pay, heavier workloads, and limited career progression constrain recruitment and retention. Technical teams within the larger WSPs consequently report being overstretched: NAIWASCO, for example, operates an entire sub-county service area with

only three technicians. For KIWASCO and ELDOWAS, support to rural WSPs is often described as “in addition to” or “in competition with” their core urban responsibilities. Despite these constraints, the larger WSPs provide vital troubleshooting, oversee bulk meter installation, refine treatment processes, and help establish operational and maintenance procedures, playing a pivotal, though resource-intensive, role in sustaining rural systems. Most of the evidence gathered concerned technical support for expanding rural water supply, although ELDOWAS also described an approach to safeguarding water quality (Box 1).

Box 1

Innovative Water Quality Assurance Partnership for Rural Water Quality Safeguarding

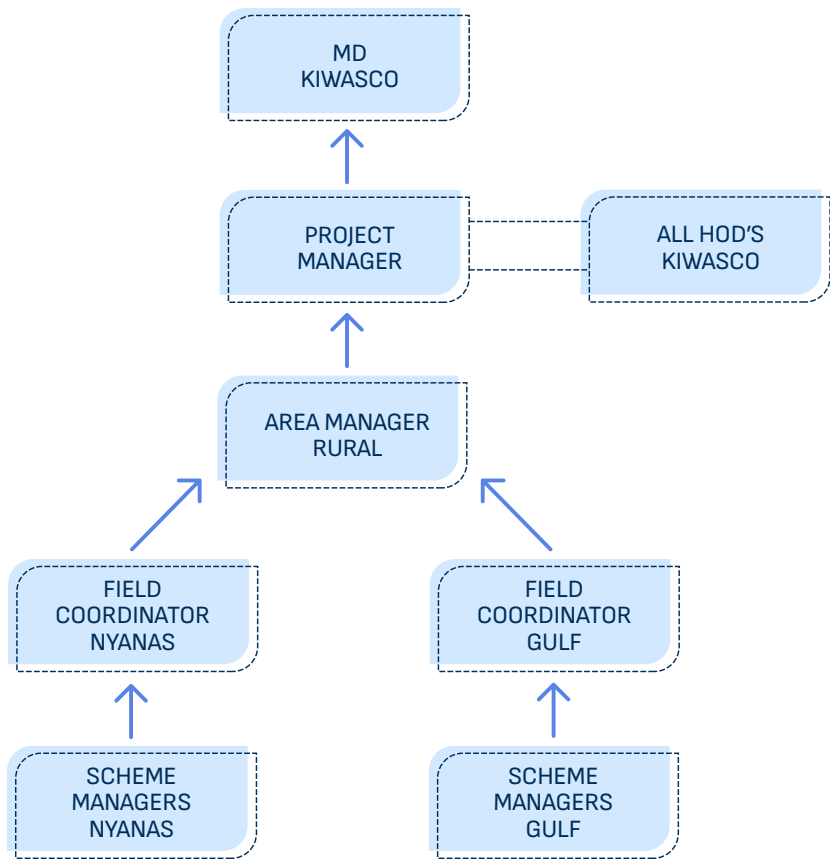
ELDOWAS is piloting an innovative water quality assurance model in collaboration with Aquaya, the County Government, and URWASCO, the rural WSP. Through this arrangement, Aquaya supports and guarantees payment for laboratory testing of rural water systems, while the County is billed for the services. The programme is still in its formative stages, currently covering six rural water systems – five publicly owned and one serving a private school – and is expected to expand to 30 systems over the next year, subject to assessments of affordability and sustainability.

The partnership emphasises capacity building and technical support, including knowledge exchange on water testing, acquisition of field-testing equipment (e.g., residual chlorine meters), and improvements in treatment processes. Monthly coordination meetings facilitate shared learning and structured oversight. The model has benefited all stakeholders through enhanced water quality compliance, stronger revenue collection linked to better service reliability, and strengthened data systems.

Although clear strategic direction within the utility is critical to effective rural service delivery, several larger WSPs have not yet articulated a clear, long-term vision. NAIWASCO has a clear strategic plan and strong board guidance that explicitly integrates rural service delivery into its planning. By contrast, KIWASCO reported that its strategic plan is unclear on its role in future rural expansion and, by extension, its future relationship to rural WSPs. Similarly, MAWASCO noted that its strategy has not yet differentiated rural and urban service models, leaving ambiguity in how its integrated structure should evolve as rural operations expand. ELDOWAS described its rural support approach as largely ad hoc.

Organisational structures are evolving to accommodate rural service delivery, but they do not yet formalise the oversight role that larger, urban-focused utilities play. Figure 4 shows KIWASCO’s model, which is somewhat formalised but relies heavily on seconded staff and informal agreements with the rural WSPs. In the longer term, the rural WSPs will need to develop their own governance structures and strategic plans. ELDOWAS noted that its organisational alignment with the rural WSP is still in transition, with roles and responsibilities evolving as the rural entity matures. The rural WSP is in its early stages and currently depends heavily on ELDOWAS for technical, financial, and commercial support.

Figure 4: KIWASCO Rural Management Structure



3.2.2. Financial Management, ICT and Procurement Systems

- Weak financial management systems in rural WSPs constrain performance.
- ICT and management systems are emerging as important enablers, but adoption remains uneven and often incomplete.
- Customer responsiveness is stronger where WSPs have established dedicated engagement approaches, though practices remain inconsistent across providers.

Weak financial management systems in rural WSPs constrain performance. Many rural WSPs lack robust arrears management, accurate billing, and digital accounting tools. These gaps make it difficult to assess financial position, plan expenditures, or demonstrate accountability to counties and donors. Without strong systems, WSPs struggle to qualify for subsidies, attract investment, or pursue long-term financial sustainability, which constrains rural service enhancements.

ICT and management systems are emerging as important enablers, but adoption remains uneven and often incomplete. Some utilities, such as KIWASCO and NAIWAWASCO, have begun integrating ICT solutions into customer relations and billing, with KIWASCO referencing the introduction of automated systems, and NAIWAWASCO using digital platforms to support its customer approach. Yet many rural systems still rely on manual processes, poorly maintained

records, or incomplete digital tools. The absence of standardised, adequate ICT protocols across rural providers limits sector-wide data visibility and undermines efforts to enforce regulatory compliance.

Customer responsiveness is stronger where WSPs have established dedicated engagement approaches, though practices remain inconsistent across providers. NAIVAWASCO emphasises active engagement and responsiveness to consumer concerns. Similarly, ELDOWAS noted that rural customers require different approaches than urban customers – using structured community sensitisation and establishing formal channels through which customers reach the emerging rural WSP. Some larger WSPs have introduced digital systems for customer interaction, including online feedback tools and automated ticketing, but adoption remains uneven, and rural consumers often continue to rely on informal channels.

3.2.3. Resilience

- Resilience planning is recognised as increasingly important but remains largely underdeveloped across the focus WSPs.

Resilience planning is recognised as increasingly important but remains largely underdeveloped across the focus WSPs. ELDOWAS identified inflation-linked tariff reviews by the regulator as a key enabler supporting financial resilience, helping WSPs adjust to rising operational costs. However, KIWASCO described planning for resilience as a “big challenge”, noting weak integration of resilience considerations into strategic and financial planning processes. Rising fuel and chemical costs, along with inflation, pose critical threats to sustained rural service delivery. Across both larger WSPs and smaller-scale rural WSPs, structured resilience frameworks are still to be developed. Rural WSPs also lack diversified revenue mechanisms and contingency plans.

3.3. Enabling Environment

3.3.1. Policy, Legislation and Institutional Frameworks

- Kenya's political landscape creates highly uneven conditions for expanding WSP delivery of rural and small-town water supply services, with political interests shaping day-to-day operations.
- Sector actors generally view existing policy and legal frameworks as adequate and supportive of utility service provision in rural areas and small towns.
- Overlapping responsibilities among county actors can complicate service organisation, with parallel service providers and projects implemented by county governments often resulting in fragmented service provision.

The broader political landscape creates highly uneven conditions for expanding WSP services in rural and small-town contexts, and political interests influence operations.

Political support varies widely across counties. Some leaders actively champion rural institutional reforms, while others obstruct formalisation to preserve influence. KIWASCO reported strong resistance from local elites to creating a new, consolidated rural WSP, noting that many political actors preferred maintaining the status quo of KIWASCO supporting small-scale rural WSPs. The Kenyan Water and Sanitation Providers Association reported that institutional outcomes can hinge on county leadership preferences rather than consistent national policy execution. NAIVAWASCO also described strained relationships with ward administrators across its eight wards, including political interventions in operational decisions and the promotion of parallel arrangements outside WSP structures. MAWASCO also noted instances where political directives conflicted with technical assessments or resource realities, complicating implementation. At the national level, political dynamics continue to influence the pace and direction of rural WSP reform.

Sector actors generally view existing policy and legal frameworks as adequate. The Water Act 2016 consolidated the legal framework. It provides the legal basis for extending utility-led service delivery to rural areas by devolving responsibility to counties and enabling the integration of community-managed schemes under formal WSP structures. The only substantive gap identified was the stalled revision of the National Water Policy (2021), which is expected to clarify roles and priorities for rural and underserved areas. No major legal or policy barriers prevent rural WSP formation or expanded WSP mandates; instead, slow administrative follow-through and lack of political will at county level are the primary constraints.

Overlapping responsibilities among county actors can complicate service organisation.

In Naivasha sub-county, NAIVAWASCO holds the formal service delivery mandate. However, ward leadership continues to initiate or support parallel community-led water projects — often financed through ward budgets and co-funding from communities. These projects operate alongside NAIVAWASCO systems, producing fragmented service delivery arrangements driven more by political incentives than sector planning. In some cases, NAIVAWASCO provides technical backstopping where direct provision is not financially viable, reinforcing the hybrid and overlapping nature of rural service delivery.

3.3.2. Regulation

- WASREB's 2019 Guideline on Provision of Water and Sanitation Services in Rural and Underserved Areas represents a significant regulatory achievement, establishing a structured framework for expanding WSP service provision into rural and underserved contexts. However, application of this framework remains uneven, and significant implementation challenges persist.
- Regulation of SSSPs and informal providers is fragmented, complex, and inconsistently enforced, resulting in inconsistent service delivery arrangements.
- Although some challenges persist, WASREB has taken important steps to help ensure WSPs' tariffs account for rural operations while balancing affordability.

WASREB's 2019 Guideline on Provision of Water and Sanitation Services in Rural and Underserved Areas established a structured framework for expanding utility service provision into rural and underserved contexts. By setting out a range of service delivery options, from full WSP takeover to delegated management, private operator contracting, and the formation of dedicated rural WSPs, the guideline accommodates the diversity of institutional, financial, and demographic conditions that characterise Kenya's devolved water sector. Critically, it recognises the central role of county governments in selecting and operationalising the most appropriate delivery model. This reflects the realities of a decentralised governance structure in which settlement patterns, existing provider capacity, commercial viability, and the strength of community management all vary considerably across and within counties. The guideline's situational criteria offer counties a practical basis for making context-specific decisions about WSP involvement in rural water service delivery. However, as discussed below, the application of this framework remains uneven, and significant implementation challenges persist.

Regulation of SSSPs and informal providers is fragmented, complex, and inconsistently enforced, resulting in inconsistent service delivery arrangements. Despite the Guidelines, implementation has lagged. KIWASCO reported that unlicensed providers, and in some cases SSSPs, may bypass WSP-led service planning. These smaller-scale service providers develop infrastructure that sits outside regulated oversight, directly undermining consolidation efforts. Politically backed SSSPs compound this challenge by competing directly with emerging rural WSPs, weakening economies of scale and coordinated development. NAIVAWASCO raised similar concerns, noting that politically endorsed SSSPs resist integration and entrench parallel service delivery systems.

Inconsistent regulatory application across rural providers further weakens accountability. While NAIVAWASCO has completed comprehensive mapping of providers in the sub-county, licensing efforts to formalise service providers as SSSPs remain nascent, and the need to 'bridge the gap' with informal providers operating outside WASREB oversight persists. At the national level, the Water and Sanitation Providers Association confirmed that regulatory engagement with rural providers is uneven, leaving WSPs with limited leverage to harmonise tariffs, service standards, or expansion plans.

Despite these constraints, WSP peer learning is emerging as a practical enabler. NAIVAWASCO's decision to begin licensing providers as formal SSSPs was informed by lessons from KIWASCO, whose structured approach – including mapping, bulk metering, training, and

formalisation – offers a technically grounded model for other larger utilities that can provide similar oversight to emerging WSPs. Such collaborative learning could help strengthen rural systems that have historically operated independently of utilities.

Although some challenges persist, WASREB has taken important steps to help ensure WSPs' tariffs account for rural operations while balancing affordability. Tariff adjustments are critical for balancing affordability with cost recovery, particularly where rural per capita O&M costs far exceed those in urban systems. Flexibility is demonstrated by WASREB's recent move to align tariff structures with WSP licence durations to reduce non-compliance. NAIWASCO incorporates rural operating costs into its tariff proposals, using socio-economic surveys to ensure that rural households remain able to pay. At MAWASCO, urban revenues implicitly cross-subsidise rural inefficiencies; however, the utility's 2026 tariff review is expected to move from 80% cost recovery to full cost reflection, including for rural operations. For emerging rural WSPs, the challenge is even more acute, and cost-reflective tariffs must be aligned with much lower rural household incomes, raising complex questions of affordability and equity and the corresponding need for government subsidies for rural WSPs.

3.3.3. Technical and Financial Support

- Financing arrangements are central to enabling rural service delivery, as rural systems are widely viewed as financially fragile and unable to recover costs through tariffs alone.
- External investment remains a major financial enabler, with partners heavily financing recent rural network extensions and other infrastructure improvements.
- Limited financial capacity within larger WSPs constrains support to smaller, rural WSPs, even where governance commitment is strong.

Financing arrangements are central to enabling rural service delivery, as rural systems are widely viewed as financially fragile and unable to recover costs through tariffs alone.

Counties, development partners, and the Water Sector Trust Fund play an essential role in underwriting rural infrastructure expansion, subsidising operations, and funding rehabilitation or network extension. The Water Sector Trust Fund is a government institution with a statutory mandate to finance services for marginalised and underserved communities, providing conditional and unconditional grants to counties under the Water Act 2016. Its mandate explicitly covers developing water services in rural areas that licensees do not consider commercially viable, making it the principal public channel for subsidising schemes that cannot recover costs through tariffs. These external investments offset the higher intrinsic costs of serving low-density rural areas, allowing WSPs to implement projects that would otherwise be infeasible.

External investment remains a major financial enabler. Development partners and charitable organisations have heavily financed recent rural network extensions in Naivasha sub-county, which benefits from economic density linked to agriculture and industry. County Integrated Development Plans also allocate funds for rural and small-town infrastructure, enabling WSPs to expand or rehabilitate systems beyond what their revenues allow. These county contributions act as financial leverage: WSPs that co-invest with counties are more likely to attract donor and

national-level financing, helping spread risk and ensuring that rural water infrastructure development does not fall solely on WSPs with limited financial capacity.

Limited financial capacity within larger WSPs strains urban operations and constrains their ability to support smaller-scale, rural WSPs even where governance commitment is strong. Larger, predominantly urban-focused WSPs already operate under very tight financial and human resource constraints, including rising fuel, chemical, and electricity costs. Additionally, commercial lenders rarely view WSPs as creditworthy, leaving them dependent on grants rather than loans to finance infrastructure development and internal improvements. As a result, despite the commitment of larger WSPs to provide support to rural WSPs, the extent to which this support can be given is limited. In this context, WSPs emphasised the need for flexible tariff structures, blended financing models, and county co-funding arrangements to bridge rural viability gaps. Without such mechanisms, rural systems remain reliant on urban cross-subsidies and intermittent donor financing, limiting long-term sustainability. Technical support for rural providers also further strains WSP financial performance. KIWASCO and ELDOWAS currently backstop rural WSPs by providing technical supervision while all rural-generated revenue remains with the rural entities. For KIWASCO, this implicit subsidy is substantial, estimated by staff at roughly KSh 40 million (US\$ 306,580) per year to support two rural WSPs serving a combined 292,009 people. This represents approximately 3.5% of KIWASCO's annual operating costs.



Conclusions and Lessons Learned



The expansion of utility service provision into rural areas and small towns in Kenya represents a significant and broadly positive development. Successive legislative and regulatory reforms have progressively formalised utility mandates in rural and small-town contexts, devolving service delivery responsibility to counties. Regulatory guidance from WASREB, including the 2019 guidelines, enables engagement with SSSPs and sets the foundation for consolidating existing providers and establishing new rural WSPs. These reforms have expanded utility service provision through two main pathways: integrating rural areas into the service delivery operations of large, predominantly urban-focused WSPs, and establishing emerging rural WSPs that receive structured technical and institutional support from existing urban-focused WSPs.

However, this expansion is not straightforward; it requires significant, sustained effort across multiple dimensions. Progress to date remains uneven, shaped by differences in scale, service models, operating conditions, and the degree of county-level political commitment. Three constraints recur across the focus WSPs: ageing and poorly designed rural infrastructure that drives high operation and maintenance costs, human resource shortages that limit technical oversight across dispersed service areas, and weak financial management systems that constrain performance and accountability in smaller rural WSPs.

The enabling environment is still evolving. While policy and legal frameworks are broadly adequate, slow operationalisation, overlapping mandates between county actors, and fragmented regulation of SSSPs and informal providers complicate coordination and accountability. Rural systems remain heavily reliant on blended financing arrangements, and limited utility creditworthiness constrains access to commercial finance. Supporting rural service delivery also places considerable strain on larger, urban-focused WSPs, whose own resources are already stretched. Despite these challenges, these larger WSPs are playing a pivotal role in sustaining and improving rural water services through technical backstopping, capacity building, and institutional strengthening of emerging rural WSPs.

A cross-cutting limitation of this study is that performance data varies across sources and methodologies, which constrains definitive comparison between WSPs.

4.1. Lessons Learned

The following main barriers and enablers can be identified; these are clustered according to the enabling environment, operational context, and institutional capacity.

4.1.1. Enabling Environment



Enablers

- Political support for rural utility service provision is uneven across counties and strongly shapes institutional outcomes. County leaders who actively champion rural WSP reforms are vital for ensuring consistent national policy implementation.
- In the context of limited utility creditworthiness, blended financing arrangements – including tariffs, cross-subsidies, and external investment – act as key enablers of rural service provision. WSPs use tariff integration, urban cross-subsidies, and targeted tariff design to support rural operations, while county funding and development partner investment play a critical role in financing rural infrastructure.



Barriers

- Weak operationalisation of policy and legal frameworks and overlapping mandates constrain effective implementation. Stalled policy revisions, slow administrative follow-through, and blurred roles between county actors complicate coordination and accountability in rural service delivery.
- Regulatory oversight of SSSPs and informal providers remains inconsistent, undermining consolidation and service planning. Slow and uneven licensing to formalise SSSPs, politically backed parallel schemes, and limited enforcement weaken utilities' ability to harmonise tariffs, service standards, and expansion plans.

4.1.2. Operational Context



Enablers

- Systematic mapping and monitoring of SSSPs and informal providers can support effective management of water quality risks in rural and peri-urban areas.
- Inflation-linked tariff reviews support financial resilience, helping WSPs adjust to rising operational costs and respond to cost shocks without undermining service continuity.



Barriers

- Technical and financial performance in rural systems is constrained by ageing infrastructure, poorly designed legacy assets, and dispersed service areas. Coupled with energy-intensive systems, these factors drive higher operations and maintenance (O&M) costs.
- Water resource management challenges are exacerbated by weak inter-agency coordination. Fragmented responsibility between national and county government agencies leads to delays and uncertainty in accessing or developing new water sources.
- In areas served through delegated management models, dependence of rural WSPs and SSSPs on external bulk water supply can increase vulnerability to water scarcity and other climate-related risks.

4.1.3.

Institutional Capacity



Enablers

- High-level strategic direction within a WSP is critical to effective rural service delivery. This includes a clear strategic plan and strong board guidance that explicitly integrates rural service delivery into utility planning.
- Larger, urban-focused WSPs are well-positioned to provide a critical technical backstopping role for rural water, strengthening capacity and operational performance. Through on-the-job training, mentoring, troubleshooting, and oversight of SSSPs and emerging rural WSPs, larger WSPs can support system functionality and improve treatment and metering practices of rural providers.
- Emerging ICT systems act as key institutional enablers. WSPs with digital tools for billing, customer engagement, and performance monitoring are better positioned to plan, oversee, and adapt rural operations.
- Water quality assurance partnerships safeguard rural water quality, leading to increased compliance, improved revenue collection, and stronger data systems.
- Active engagement and responsiveness to consumer concerns are critical to sustaining demand in rural areas. This involves structured sensitisation and formal channels to the WSP and / or delegated rural providers. Digital systems for customer interaction can further enable responsiveness, including online feedback tools and automated ticketing.



Barriers

- Rural service delivery is constrained by persistent human resource shortages. Reliance on seconded staff and informal arrangements, along with difficulties attracting and retaining skilled rural staff, limit oversight, resilience planning, and sustainability.
- WSPs face significant equipment, transport, and material shortages when operating or supporting services in dispersed rural areas. Rural systems often require long distribution networks, frequent repairs, and access to remote terrain, yet maintenance teams lack essential tools, suitable pipe sizes, and adequate transport.
- Weak financial management systems in rural WSPs constrain performance, with many lacking robust arrears management, accurate billing, and digital accounting tools.
- Uneven adoption of ICT systems and lack of established ICT protocols across rural WSPs limit sector-wide data visibility and undermine efforts to enforce regulatory compliance.
- Though recognised as increasingly important, resilience planning for rural water services remains largely underdeveloped. Many WSPs lack structured resilience frameworks. In the case of rural WSPs, diversified revenue mechanisms and contingency plans are also lacking.



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