



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

Uganda Report



CONRAD N. HILTON
FOUNDATION



WSUP | ADVISORY

Headline Enablers and Barriers

Enabling Environment



✓ Enablers

Broad political and policy support for professionalised service provision and piped water supply services drives the expansion of utility service provision in rural areas and small towns.

Consistent government and partner support has been provided, particularly technical and financial assistance during the early phases of operations, as NWSC and especially the Umbrella Authorities established their operations in rural areas and small towns.

✋ Barriers

Weak regulatory capacity and legal backing impede the use of developed regulatory mechanisms.

The absence of clear, standardised procedures for transferring assets and service area responsibilities creates tensions across service providers and other sector stakeholders.

Operational Context



Enablers

- Economies of scale and opportunities for cross-subsidisation, especially for NWSC as it expands into rural areas, strengthen financial viability.
- Strategically clustering schemes and using shared technical expertise and resources to mitigate poor economies of scale.



Barriers

- Chronic infrastructure challenges persist due to limited financing, high overheads, and low revenues in small towns and rural areas.
- Anthropogenic pressures and climate-related challenges increasingly threaten the sustainability of water resources.
- Significant business viability challenges typical of rural and small-town contexts, particularly low population density, dilute the financial performance of even well-performing utilities.
- Taking over challenging schemes can create a vicious cycle of poor operational efficiency and further dilute financial performance, especially for smaller utilities with limited economies of scale.

Institutional Capacity



Enablers

- Long-term capacity strengthening processes enable utilities to gradually improve institutional, technical, and managerial performance.
- Strong financial management practices and efforts to build creditworthiness through improved operational efficiency.



Barriers

- High staff turnover remains a constraint due to the absence of rural-focused incentives.
- Dependence on centralised ministries for internal processes, including day-to-day operations, creates inefficiencies.
- Weak ICT systems undermine operations, with expansion into rural areas preceding the roll-out of accompanying ICT systems. This is often due to perceptions that rural operations do not require sophisticated technology.

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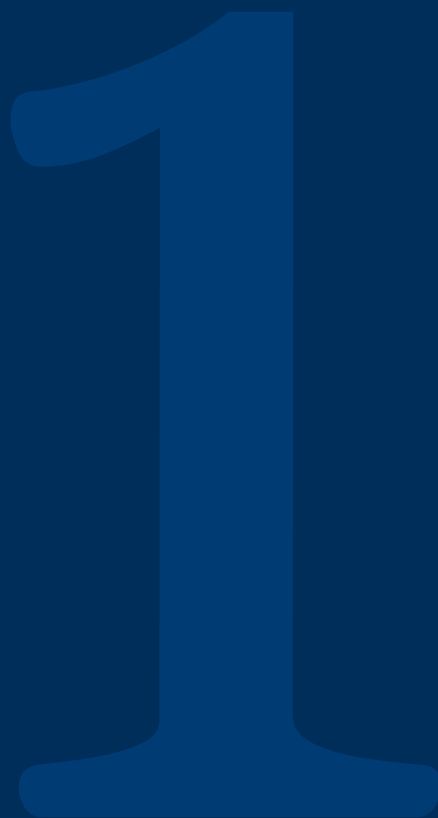
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Acronyms

CBMS	Community-Based Management Systems
MWE	Ministry of Water and Environment
MWUWS	Mid-Western Umbrella of Water and Sanitation
NRW	Non-Revenue Water
NWSC	National Water and Sewerage Corporation
WURD	Water Utilities Regulation Department

Introduction



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 Uganda. It is principally focused on the National Water and Sewerage Corporation (NWSC) and the Mid-Western Umbrella of Water and Sanitation (MWUWS). These are two fundamentally different utilities: one an established urban-focused utility expanding into rural areas and small towns, the other a recently formed rural and small-town focused utility. While this report presents performance data, challenges, constraints, and enablers faced by these two utilities side by side, it is not intended to compare the two utilities, but to provide relevant context and identify lessons that can be learned.

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



2.1. Country Context

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

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

Indicator	National	Urban	Rural
Population	50 million	13.7 million	36.3 million
Share of total population	100%	27%	73%
Annual average population growth rate	2.8%	5%	1.9%
Population density (2023)	243 people/km ²		
Population living on less than \$3/day (2019)	60%		
GNI per capita	1,020 USD		
Human Development Index (UNDP, 2023)	0.582 (Medium)		

For water supply provision, Uganda’s Ministry of Water and Environment (MWE) classifies small towns, 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 between 500 and 5,000
- **Rural Areas:** Settlements where the population is less than 500

This study focuses on rural growth centres and small-town contexts. Reported statistics on rural populations vary across sources because definitions of ‘rural’ differ. For example, the World Bank reports Uganda’s rural population at 73% (Table 1), while other sources cite figures above 80%. Throughout this report, references to ‘rural and small-town’ contexts encompass both rural growth centres and small towns as defined by MWE above, unless otherwise stated.

2.2. Water Supply Status

Uganda has made significant progress in increasing access to water supply services. Figure 1 shows water service levels in Uganda between 2015 and 2024. Access to at least basic water services at the national level increased significantly, with rural areas contributing most to this progress. However, access to safely managed water supply in rural areas and small towns remains low, increasing by only 5% over this period, highlighting persistent service disparities between rural and urban areas.

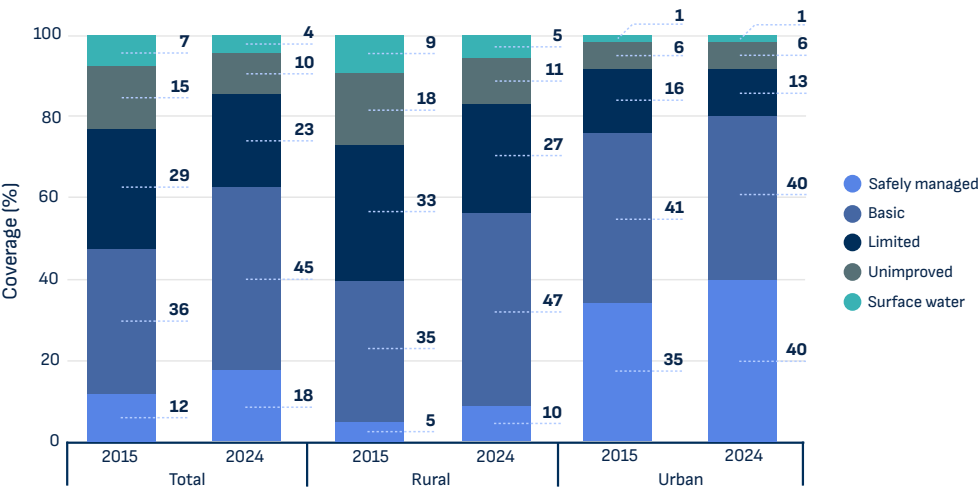


Figure 1: Water service levels between 2015 and 2024 (WHO/UNICEF, 2024).

The Government of Uganda seeks to achieve universal access through piped water supplies by 2040, as set out in "Uganda Vision 2040". Under National Development Plan (NDP) III 2020–2025, mid-term targets were set to increase access to safe water supply services to 85% in rural areas and 100% in urban areas by 2025. National Development Plan IV 2025–2030 reports access at 67% in rural areas and 72.8% in urban areas in 2024 and sets revised targets of 80.4% in rural areas and 87.4% in urban areas by 2030 (NPA, 2025).¹ The slower than desired progress in rural areas is due to ageing infrastructure and inadequate financial investment to match the demand generated by population growth.

¹ This includes both public water points and household connections, hence the difference in criteria for "safe water" and "safely managed water (JMP)".

² Community-based management continues to play a role in serving last-mile communities in rural areas through point water sources and some piped schemes. The Government of Uganda still recognises the need to strengthen and enhance CBMS, and MWE launched the National Operation and Maintenance Framework in 2020, which aims to establish a CBMS+ model (MWE, 2020). While the operationalisation of this framework is in progress, with several sector stakeholders supporting its implementation, it is still in the very early stages and has been delayed.

2.3. Utility Service Provision

2.3.1. Expansion Pathways

NWSC and the six regional Umbrella Authorities are the two main utility service delivery models. NWSC and the Umbrella Authorities increasingly operate in the same small towns and growth centres. Service areas typically follow existing pipe networks rather than fixed boundaries, so the two often overlap and can compete for the same schemes. Other models operate at a more limited scale, including Buikwe District Local Government and Kalangala Infrastructure Services. The Community-Based Management Systems (CBMS)² model remains predominant in rural areas, with most of Uganda's population living in rural areas served by CBMS, mainly through point-source supplies (e.g., handpumps) (IRC, 2025). Since 2017, reforms have promoted expanded utility provision of rural and small-town water supply

services, with an emphasis on increasing piped water supply. Figure 2 shows that several factors have triggered utility service provision, and the process of utility expansion has followed two distinct pathways:

Pathway 1

NWSC, a historically urban-focused utility, has undergone a process of consolidation by absorbing existing schemes in rural and small-town contexts into its management and expanding some urban and peri-urban schemes to include nearby rural areas. This process accelerated from 2014 onwards.

Pathway 2

Six Umbrella Authorities, established in 2017, initially aggregated many smaller rural and small-town water supply schemes under the respective public utilities responsible for providing rural water services in gazetted areas not served by NWSC. The six Umbrella Authorities continue to progressively consolidate service provision by taking over existing schemes previously managed by other service providers, expanding existing schemes, and taking up the management of newly constructed schemes.

The following sub-sections present detailed data on the scale and performance of NWSC and MWUWS (one of the six regional Umbrella Authorities). NWSC and MWUWS are two very different utilities on separate trajectories. NWSC is one of Africa's leading utilities and has been in operation for several decades, while MWUWS was only established in 2017. Accordingly, this data is not presented to directly compare two very different utilities, but to provide the context required to identify lessons on expanded utility provision in rural and small-town contexts.

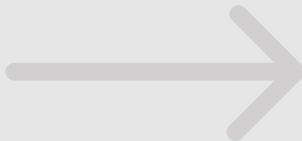
Figure 2: Triggers and Pathways for Utility Expansion in Rural Growth Centres and Small Towns

The Challenge



Limited access to safe water supply services in rural areas

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



External triggers for utility expansion



Political prioritisation of utility provision and piped water supply services at the national and sub-national level



NWSC's historical focus of professionalisation, pioneered utility performance and turnaround reforms from the late 1990s.



Substantial government and development partner support – for example, through the 100% Service Coverage Acceleration Project (SCAP 100)



Increased demand for improved services



Urbanisation and small-town growth

Internal triggers for utility expansion



Vision and strategic growth, especially for NWSC expansion



Investment of internal surplus



Strong internal leadership

PATHWAY 1

NWSC is a historically urban-focused utility expanding its services into rural areas and small towns

- Although NWSC's mandate is to serve gazetted urban areas, it has increasingly expanded into rural areas via a process of **consolidation**. Between 2014 and 2021, NWSC undertook a rapid expansion into **236 additional towns and growth centres**.
- Consolidation occurs by expanding existing urban schemes, taking over existing schemes (primarily small towns and larger rural growth centres) previously managed under community-based management and other service providers, and taking up the management of newly-constructed facilities.
- NWSC has invested its own resources (committed UGX 42 billion – US\$12 million) with support from the government to increase service provision in rural areas through piped water schemes. In addition to this, MWE started the SCAP 100 project, an initiative aimed at improving service access in rural areas and small towns for both Umbrella Authorities and NWSC.

PATHWAY 2

Six Umbrella Authorities are rural-focused utilities established in 2017 to take up rural water supply and sanitation services

- In 2017, six Umbrella Authorities, which had previously provided technical backstopping to rural and small-town schemes as Umbrella Organisations, were mandated to directly provide water services as public utilities.
- Many smaller rural water supply schemes previously mainly managed under the community-based management model were subsequently **aggregated** under the management of six regional utilities known as Umbrella Authorities.
- These utilities further expand their services in rural areas and small towns through **consolidation** by taking over existing schemes previously managed by other service providers, expanding existing schemes, and taking up the management of newly constructed schemes.
- Since 2017, MWUWS has expanded and serves about **90 small towns and growth centres in the mid-western region**.

The Desired Situation



Utilities contributing to achieving the **Vision 2040** target of **100% access to safe water in Uganda**.

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. Mandate and Scale

NWSC and MWUWS are both taking over additional schemes in rural growth centres and small towns. Table 2 provides an overview of the technologies used, service area definitions, and the scale of operations of NWSC and MWUWS. Over the past decade, NWSC has expanded significantly into small-town contexts, adding 236 of its 276 towns between 2014 and 2021 (NWSC, 2022). NWSC operates as a mature utility with demonstrated capacity to take up additional service areas. MWUWS has been expanding rapidly since 2017, currently providing services in 90 towns, serving about 863,000 people, and seeing connections increase by around 20% annually between 2021 and 2025. The rapid expansion of both utilities creates significant operational pressures, including retrofitting and repairing facilities that were often previously poorly managed and introducing new NRW reduction practices.

Table 2. Technology, Scale, Coverage, and Progress of Utility Expansion (WURD, 2025; MWE, 2025)

Dimension	NWSC	MWUWS
 Technology	Primarily piped schemes and household connections supplemented by public standposts and kiosks, mainly in low-income areas.	Primarily household and yard connections via relatively smaller piped water schemes and public standposts, mainly in low-income areas.
 Service Area Definition	Officially serves towns and urban centres, but operations cover most administrative districts. The service area often extends beyond official administrative boundaries for small towns into nearby rural areas. Organised into six large operational blocks (Kampala Water, Northern, Central, Eastern, Western, and Southwestern).	Serves rural areas, growth centres, and small towns, largely based on population density. Operational units/ service areas are limited to the extent of individual piped schemes.
 Scale and Coverage (Approximate)	Serves approximately 19,000,000 people with over 940,000 water connections and nearly 30,000 public standposts .	Serves approximately 464,000 people through household connections and about 399,000 people via public standposts , totalling 863,000. Has about 30,000 total connections.
 Water Production (Annual)	176 million m ³ /year.	33 million m ³ /year.
 Expansion Progress	Massive growth from 3 towns in 1972 to 276 towns across Uganda by mid-2024, with significant growth after 2014, adding 236 towns between 2014 and 2021 . The number of villages under NWSC jurisdiction has increased to over 17,600 ³ .	Serves about 90 small towns. High rate of expansion with connections increasing by an average annual rate of 20% between 2021 and 2025.

³ In Uganda, a “village” is the smallest official local government area (a Local Council 1, or a “cell” in towns). A village “under NWSC jurisdiction” falls within NWSC’s mandated service area. It does not necessarily mean the village yet has piped water. Typical villages would have a population of less than 1,000 people.

2.3.3. Technical Performance

NWSC displays impressive technical performance, and MWUWS has improved significantly, but both utilities struggle with non-revenue water (NRW). Table 3 highlights the technical performance of NWSC and MWUWS. NWSC maintains high compliance with water quality standards but faces stagnation in reliability (hours of supply) and persistent NRW issues. MWUWS has significantly improved water quality testing and reliability, but its NRW remains high.

Table 3. Technical Performance and Challenges Faced by NWSC and MWUWS (NWSC, 2025; WURD, 2025)⁴

Dimension	NWSC	MWUWS
 Water Quality	High overall compliance (98.5%), exceeding the 80% target. Faces challenges with deteriorating raw water quality due to source pollution (domestic, industrial), which increases treatment chemical consumption.	Significant improvement in water quality testing volume (650–1,100 samples are now tested annually). Residual chlorine compliance increased from 90% to 97%. High water-source contamination drives up source-protection and treatment costs.
 Reliability and Functionality	Average hours of supply have stagnated at 18 hours (2022–2024) due to low uptime caused by the poor state of ageing infrastructure, especially in recently taken-over rural areas.	Average hours of supply improved from 14 hours (2019) to 18 hours (2024). Significant challenges from ageing infrastructure are persistent.
 Non-Revenue Water	NRW is high and stable at approximately 34% (34% in 2019, 33.9% in 2024). The highest NRW is in the urban Kampala Water Service area. Low-quality construction workmanship, poor materials, and low-quality meters in smaller/rural areas are key factors causing high NRW.	NRW was around 38% (2019), rising to 39.6% (2024). During this period, MWUWS took over additional ageing schemes and is working to tackle NRW in these contexts. Weak bulk and consumer metering, old infrastructure, poor installation of fixtures, and illegal connections are the main challenges.

⁴ Performance data in this table is drawn from a mix of sources, including NWSC’s Integrated Annual Report (NWSC, 2025), WURD’s Annual Regulator’s Report (WURD, 2025), and MWUWS’s own annual reports (e.g., water quality testing data). All underlying data is self-reported by the utilities. NRW figures for NWSC differ across sources — NWSC reports 33.9% while WURD reports 38.3%. The reasons for this discrepancy are unclear and may relate to differences in methodology.

2.3.4. Financial Performance

NWSC and MWUWS differ significantly in financial maturity and stability; NWSC has demonstrated strong commercial viability while MWUWS has shown impressive growth. Table 4 provides an overview of the financial performance of the two utilities.

Table 4. Financial Performance of NWSC and MWUWS (WURD, 2025; NWSC, 2025; MWE, 2025)*

Dimension	NWSC	MWUWS
 Operational Cost Recovery	- Covers operational costs with revenues and has strong financial performance. - The Water Utilities Regulation Department (WURD) reported an operational ratio (operational costs to revenues) of 70%, and 34% growth in turnover between 2019 and 2024, from \$131 million (UGX 463B) to \$176 million (UGX 622B). - This was driven by expansion into other towns, increased network coverage, and a larger customer base. - Operating surpluses increased by 38% in the same period (UGX 103B to UGX 142B), with surpluses reinvested in refurbishment, rehabilitation, expansion, and infrastructure development to serve more customers.	- Subsidy required from the Government of Uganda to sustain operations. - Precise data on operational cost recovery could not be shared.
 Water Sales, Billing, and Collection	3% growth in water sales volumes between 2022/23 and 2023/24. - A collection efficiency of 91% and 95% in 2023 and 2024, respectively. - The main challenge is the build-up of arrears related to government agencies due to budget shortfalls in those agencies.	17% growth in water sales volumes between 2022/23 and 2023/24. - Has high outstanding receivables due to historical arrears (approx. \$0.5M). Revenue collection is heavily affected by non-payment by institutions (especially government-affiliated). - Low willingness to pay among customers who believe water is free.
 Functional Ability to Carry out O&M	- Covers O&M costs and operates on a sound, commercial, and financially viable basis. - Diversified income sources include consultancy services, facility hire, and laboratory services to strengthen the balance sheet.	Currently able to meet its O&M costs with sources of income ranging from revenue collected from water users and significant support from government subventions and development partners.

Dimension	NWSC	MWUWS
 Seasonality of Sales	Experiences higher sales in dry seasons and lower sales during rainy seasons.	Experiences a noticeable dip in billing around April and November (rainy seasons) as customers prefer to use freely available rainwater.
 Ability to Attract Investment	- NWSC has a strong capacity to attract both concessional and commercial financing and is considered a creditworthy utility, with the high-revenue generating Kampala urban centre providing significant financial leverage. - By 2021, NWSC accessed two commercial loans totalling UGX 145 billion (~ USD 41 million) (includes UGX 50 billion from Equity Bank) to finance infrastructure development.	- MWUWS has not had access to commercial financing and relies on government grants and concessional financing through Government of Uganda borrowing. - MWUWS received training conducted in 2025 on how to improve its creditworthiness and is looking to access commercial finance.

Enabling and Constraining Factors

3

3.1. Operational Context

3.1.1. Infrastructure and Water Resources

- Chronic infrastructure challenges persist in both utilities due to limited financing, high overheads, and low revenues in small towns, while the uptake of historically poorly managed schemes compromises operational efficiency.
- Unlike MWUWS, NWSC has economies of scale, strong overall financial performance, and cross-subsidisation, enabling extensive retrofitting and rehabilitation.
- NWSC and MWUWS face major anthropogenic and climate-related challenges that threaten water resources.
- Government and development partners have provided extensive support to NWSC and MWUWS to address these challenges, supporting internal capacity building and infrastructure expansion and rehabilitation.

Chronic infrastructure challenges persist due to limited financing, high overheads, and low revenues in small towns, while the uptake of poorly managed schemes compromises operational efficiency. Immense investment needs, especially at takeover, far outstrip the limited available funding for infrastructure expansion and rehabilitation. Rural and small-town schemes are typically old and poorly maintained, leading to high technical losses and NRW, creating a vicious cycle that further strains utilities' financial capacity. While NWSC mitigates this strain by reinvesting its operational surpluses, MWUWS still relies heavily on external funding for major infrastructure works. NWSC specifically faces maintenance issues because some schemes do not align with standard designs (e.g., very small pipe sizes, poor-quality water meters). To address this issue proactively, NWSC agreed with MWE that NWSC-approved meters should be used in all newly constructed facilities intended for eventual handover.

NWSC's economies of scale and cross-subsidisation enable extensive retrofitting and rehabilitation. NWSC and MWUWS are investing in digital technologies to address infrastructure inefficiencies. NWSC is currently investing in digital technologies, including real-time data analytics, sensors, and smart meters, to monitor water usage, detect leaks, and optimise distribution. This proactive adoption of innovative technology is essential to manage ageing infrastructure effectively, reduce high NRW, and build resilience against infrastructure failures. MWUWS is also adopting digital technologies, such as mWater, for asset recording and management, but to a more limited extent. NWSC is better positioned to address these challenges because it serves more profitable urban areas, charges higher tariffs, and uses cross-subsidisation. This allows NWSC to invest in retrofitting and upgrading infrastructure without waiting for external funding to cover all related costs.

NWSC and MWUWS face significant challenges related to infrastructure climate resilience, which NWSC is better equipped to mitigate. NWSC relies heavily on groundwater, especially in small towns and rural growth centres, and is highly vulnerable to droughts. Climate-related events routinely compromise assets, with several hanging intakes damaged by droughts and floods. While NWSC possesses significantly greater technical and financial capacity to address

these challenges, MWUWS lacks the resources to respond effectively and struggles to balance essential repairs with climate retrofitting. For instance, while MWUWS attempted to adapt infrastructure designs to heavier rainfall, schemes were still overwhelmed and swept away by rains that exceeded their design capacity. Inadequate national projection data for extreme events such as flooding compounds this, preventing utilities from anticipating and preparing for them.

Climatic and anthropogenic factors significantly affect water resources, but NWSC has taken some proactive measures to strengthen water resources management. Climate impacts (prolonged drought, flooding) and anthropogenic activities (pollution, encroachment, and deforestation) severely undermine water source sustainability. Strong internal policies, particularly NWSC's Catchment Management and Climate Action strategies, drive proactive environmental stewardship, including restoration, buffer zone creation, and the construction of water retention structures. NWSC has also increasingly prioritised area-wide water resource management over managing individual schemes, with limited water resources distributed across multiple administrative boundaries. NWSC is actively investing in alternative water sources (groundwater/reservoirs) and wastewater reuse technologies to build resilience against scarcity and support economic development.

The Government of Uganda and development partners have provided targeted support to address these gaps. The Government of Uganda has supported service extension through projects such as the Service Coverage Acceleration Project (SCAP), a key mechanism for financing and scaling interventions in rural areas and small towns, providing government grants and technical support to expand and improve schemes managed by NWSC and Umbrella Authorities. Additionally, NWSC and MWUWS have received funding from development partners such as EU-WOPS, VEI, the World Bank, and WSUP Advisory, which have conducted specialised training and capacity building initiatives. These have helped utilities operate more efficiently and strengthened their ability to mitigate, adapt, and transform their schemes to be more resilient to climate-related events.

3.1.2. Business Viability, Affordability, and Accessibility

- NWSC and especially MWUWS face viability challenges typical of rural and small-town contexts, particularly low population density and dispersed settlements.
- Some coverage indicators show consistent growth in both utilities' operations in rural areas and small towns, with MWUWS growing its coverage at a high rate.
- NWSC benefits from substantial urban revenues that enable cross-subsidisation of small towns and rural growth centres, where revenues are lower, retrofitting costs and NRW are high, and negative perceptions constrain willingness to pay.
- MWE has developed initiatives to promote affordable service provision in rural areas and small towns, but implementation challenges persist.

NWSC and especially MWUWS face viability challenges typical of rural and small-town contexts, particularly low population density and dispersed settlements. Sparse populations mean fewer connections per unit of infrastructure. Furthermore, scattered water points

across large areas increase staffing, monitoring, and maintenance costs. This is exacerbated by the presence of inactive connections (MWUWS: 18%; NWSC: 16%), potentially indicating issues with affordability or customer satisfaction. It also highlights challenges due to physical distances and poor road networks that make it costly and time-consuming to restore services after breakdowns, delaying response times and worsening reliability.

NWSC benefits from substantial urban revenues that enable cross-subsidisation of small towns and rural growth centres, where revenues are lower, retrofitting costs and NRW are high, and negative perceptions constrain willingness to pay. Table 5 presents key commercial viability indicators. On average, NWSC applies tariffs at nearly twice the price of those set by Umbrella Authorities but uses block tariffs across customer groups to charge lower tariffs to low-income customers. By contrast, MWUWS has very limited ability to cross-subsidise and remains heavily dependent on government grants and subventions. NWSC can therefore absorb costs associated with rural service provision in ways MWUWS cannot. As a result, MWUWS faces far greater operational and financial pressure. This is worsened by widespread negative perceptions and political narratives that view water as a "gift from God" that does not require payment, which are more prevalent in rural areas.

Some coverage indicators show consistent growth in rural areas and small towns, with MWUWS growing its coverage at a high rate. As shown in Table 5, MWUWS grew its water sales at a rate of 17% compared to an average of 12% across the six Umbrella Authorities in 2022 – 2023. NWSC had steady but slow growth of 3%.

Table 5. Tariffs, Connections, and Sales Overview (WURD, 2024)

Dimension	NWSC	MWUWS
Average tariffs UGX (~ US\$)	5,476 (1.5)	3,311 (0.92)
% of connections active	84%	82%
New connections (No.) (2023/24)	49,717	4,346
Water sales growth (2022 – 2023)	3%	17%

MWE has developed initiatives to promote affordable service provision in rural areas and small towns. Government and development partners subsidise MWUWS to meet the cost of providing affordable services by providing working space and key staff. These subsidies cover senior managerial staff salaries and provide conditional grants to address operational costs, with the overall objective of enabling affordable service provision. The 2006 Pro-Poor Strategy (MWLE, 2006) established strategies to increase affordability, including developing public standpipes, increasing block tariffs, subsidising connection fees, and providing funding for network expansions in rural areas, such as through the SCAP 100. However, challenges remain in their implementation. For example, tariffs for public standpipes have been deliberately kept low (e.g., less than \$0.01 – UGX 21 per 20-litre jerrycan) for over six years, but some standpipe attendants charge fees up to UGX 400 (~ \$0.10).

3.2. Institutional Capacity

3.2.1. Human Resources, Organisational Structure, and Supply Chain Management

- MWUWS and NWSC have clustered nearby towns and shared resources internally across service areas to improve efficiency in rural settings and reduce staff costs.
- MWUWS’s capacity has been strengthened through MWE deploying seconded staff and long-term partner support focused on staff training and skills development.
- NWSC and MWUWS use staff incentives to promote productivity and retention, but NWSC lacks incentives tailored to rural contexts.

MWUWS and NWSC have clustered nearby towns and shared resources internally across service areas to improve efficiency in rural settings and reduce staff costs. By clustering nearby small towns to optimise staff usage, NWSC reduces overheads and achieves some scale efficiency. NWSC and MWUWS have reported staff costs as a percentage of operational expenditure at 44% and 35%, respectively, versus a national WURD benchmark of 30–35% (WURD, 2025). However, MWUWS’s staff costs may reflect the indirect subsidy due to seconded staff from MWE, and NWSC’s slightly higher costs reflect a much larger utility⁵. As part of its Area Performance Management Framework, MWUWS groups schemes into areas for administrative purposes and areas into clusters for management purposes. Because of this approach’s success, MWE is currently considering scaling up MWUWS’s Area Performance Management Framework for adoption by all Umbrella Authorities.

MWUWS’s capacity has been strengthened through MWE deploying seconded staff and long-term partner support focused on staff training and skills development. Upon its establishment in 2017, MWUWS lacked sufficient human resources and technical capacity to fulfil its new service-provision role. MWUWS has received significant support from MWE and development partners such as WSUP Advisory to address this challenge. MWE has seconded technical staff to each Umbrella Authority to address capacity gaps, and development partners have posted resident project staff to provide mentorship and strengthen each Umbrella Authority’s implementation capacity. This has contributed to increased staffing from 56 in 2017 to 224 in 2025, in line with the expansion of the Umbrella Authority. MWUWS staff have also received continuous capacity building focused on technical areas such as training plumbers, electro-mechanical technicians, lab technicians, and area managers, as well as overall operational management and utility governance. This long-term support has been immensely beneficial to MWUWS. Nevertheless, further capacity development is required, especially at middle-management levels, to ensure continuity despite periodic leadership staff movements at MWE’s discretion and rural challenges.

NWSC and MWUWS use staff incentives to promote productivity and staff retention, but NWSC lacks rural-specific incentives. NWSC is a highly preferred employer with high staff retention. It can easily absorb staff from other operators during takeovers and attract talent through competitive incentives. The corporation offers job stability, pension schemes, and long-term career development opportunities that encourage employees to stay. MWUWS, along with other Umbrella Authorities, has also introduced an incentive-and-penalty mecha-

⁵ 5 staff/1000 connections in recent regional benchmarking (WURD, 2025) (<4 excellent; 5 – 7 = good; > 8 = poor).

nism that has motivated staff, improved performance, and enhanced productivity. NWSC uses competency-based staff rotations and performance management systems with incentives to strengthen accountability and efficiency and reduce staff turnover. However, staff working in rural areas are under the same conditions as urban staff, despite harsher living and working environments. This leads to a relatively higher turnover in rural areas. Consequently, rural schemes remain highly dependent on central or regional support because many technical and specialised tasks cannot be handled locally and must be escalated.

3.2.2. Financial Management, ICT, and Procurement Systems

- NWSC is a creditworthy utility with advanced financial management systems and strong financial management capacity and credibility, while MWUWS remains heavily reliant on centralised government systems.
- MWUWS faces critical challenges in customer information management and still lacks robust systems for collecting and analysing customer information.
- Highly centralised procurement systems hinder efficient operations and maintenance, but NWSC and MWUWS have made efforts to address these gaps.

NWSC is a creditworthy utility with advanced financial management systems and strong financial management capacity and credibility, while MWUWS remains heavily reliant on centralised government systems. NWSC’s internal systems include advanced billing platforms, mobile payment solutions, and integrated financial and performance reporting. Its creditworthiness has been built progressively through structured financial reviews, including early bond market exploration in 2008 and a comprehensive financial and regulatory assessment in 2018 that examined revenue streams, capital expenditure plans, and market appetite for debt. In 2019, NWSC obtained a strong domestic credit rating (AA), which strengthened its access to market finance. Following this, the utility secured its first medium-term commercial loan of UGX 50 billion (~ USD 14 million) from Equity Bank in 2019, and subsequently accessed an additional commercial loan of UGX 95 billion (~ USD 27 million) in 2020/21 to finance infrastructure development (NWSC, 2022; NWSC, 2022). In contrast, the Umbrella Authorities’ financial management systems are centrally coordinated at the ministry level, resulting in limited flexibility and high levels of bureaucracy. Financial systems are often not sufficiently tailored to the specific operational needs of individual Umbrella Authorities, and requests for system adjustments typically require scaling across all Umbrella Authorities. Capacity constraints persist at the local level, with staff requiring additional training to fully utilise available systems. These challenges are compounded by limited funding for IT equipment, weak internal capacity to manage new systems, and unreliable power supply and internet connectivity, all of which undermine efficient financial operations and information management.

MWUWS faces critical challenges in customer information management and still lacks robust systems to collect and analyse customer information. MWUWS typically relies on physical logbooks and WhatsApp groups to record complaints without systematic analysis. In contrast, NWSC has achieved substantial digital maturity, with integrated billing platforms, mobile payment solutions, SCADA for network monitoring, and real-time data analytics, although minor challenges persist in rural areas. Expansion of advanced ICT systems is some-

times constrained by lower digital literacy, weak infrastructure, and inconsistent connectivity in remote regions, which can limit the effectiveness of otherwise well-designed financial and customer management tools.

Highly centralised procurement systems hinder efficient operations and maintenance, but NWSC and MWUWS have made efforts to address these gaps. Umbrella Authorities must procure basic materials and parts, such as meters and pipes, through MWE. The utility is constrained by the Ministry's procurement cycles and has limited autonomy in allocating these resources, limiting MWUWS's ability to efficiently operate and maintain infrastructure. Nonetheless, the Umbrella Authority has procured and developed its stores and inventory management system, enabling the efficient dispatch of spare parts and materials and early ordering of additional spares. NWSC schemes in rural areas and small towns are also affected by slow, centralised procurement, especially for specialised spares and materials, with large or specialised items having to go through NWSC's central procurement system, often leading to delays. NWSC has also decentralised procurement flexibility for some smaller items, which system staff buy directly, avoiding unnecessary delays from central approvals.

3.2.3. Resilience

- NWSC has made substantial investments to strengthen resilience, while MWUWS remains comparatively vulnerable, with ongoing operational pressures constraining its ability to plan proactively for the long term.

NWSC has made substantial investments to strengthen resilience, while MWUWS remains comparatively vulnerable, with ongoing operational pressures constraining its ability to plan proactively for the long term. NWSC has mainstreamed climate risk into its operations, investing in catchment protection, biodiversity restoration, source protection, and tree planting. All new NWSC projects now incorporate catchment restoration, and the organisation has also carried out flood protection measures. Additionally, the utility has taken proactive steps to ensure business continuity, such as establishing redundancies by setting up a data recovery centre in Entebbe, which enables operations to resume after cyber-attacks or data loss, and by increasing its use of solar energy. NWSC also upholds a formal risk management policy alongside an enterprise risk management framework, managed centrally at the head office. Although the Umbrella Authority is also beginning to focus on resilience (e.g., establishing organisation-wide risk assessments), limited funding to retrofit old schemes, operational pressures, and lack of long-term planning prevent investment in early warning and recovery systems. Day-to-day operational priorities and short-term funding uncertainties impede the Umbrella Authority from developing and committing to long-term plans. Heavy reliance on MWE, which undertakes some water resource management activities in the Albert Water Management Zone (e.g., catchment management planning and source protection), combined with outdated and poorly maintained national warning systems, further contributes to the low prioritisation of resilience measures.

3.3. Enabling Environment

NWSC and MWUWS operate within the same broad environment but are affected very differently, with NWSC largely benefiting from a weakly regulated sector. Although foundational legislation and policy frameworks exist, ambiguities in key institutions' mandates remain, and regulation is relatively weak and inconsistent. For NWSC, operating as a mature utility with limited regulatory constraints can create incentives for strategic expansion and the proactive uptake of promising service areas. In contrast, MWUWS continues to face significant challenges, including unclear service area definitions and politically driven directives, further straining an already stretched utility.

Broad political support exists for extending services into rural areas. This is in part because such efforts provide political visibility. This support can translate into lobbying for funds that reach utilities and is anchored in the broad support for more professionalised services. However, within a context of weak regulation, politicians can further undermine critical processes such as service area transfer and tariff-setting.

3.3.1. Service Area Definition and Transfer

- Gazetting and degazetting of service areas remain ambiguous, resulting in unclear and overlapping administrative and water service boundaries, particularly between rural and urban areas.
- There is no standardised process guiding the takeover and transfer of schemes across service providers.
- While this flexible environment enables NWSC to expand into areas aligned with its comparative advantages, it risks NWSC taking over the most viable small towns, with adverse implications for the Umbrella Authorities.
- The tendency to transfer donor-funded systems and more financially viable schemes to NWSC rather than the Umbrella Authorities risks undermining the financial sustainability of smaller utilities and reinforcing an asymmetric expansion dynamic.

Service area gazetting and degazetting remain ambiguous, creating unclear and overlapping service areas and tensions across utilities. Table 6 illustrates the factors influencing the transfer of assets and service-area responsibilities among service providers. Although the Water Act assigns the Minister of Water and Environment authority to gazette water supply and sewerage areas and appoint water or sewerage authorities, the process in practice relies heavily on discretion. As a result, gazetting guidelines are applied inconsistently, with decisions shaped by population size, institutional capacity, and wider administrative or political considerations.

Degazetting also occurs, with earlier decisions reversed in response to pressure from service providers, users, or political actors, sometimes triggering disputes between providers. NWSC and MWUWS frequently operate in the same locations, with service areas defined largely by the extent of existing piped networks rather than clear geographic or service area boundaries.

A study of Kabarole, one of MWUWS’s districts, found NWSC, the Mid-Western Umbrella, and community-managed supplies all operating in the same area, with responsibility at the edge of each utility’s scheme left unclear (Huston, Gaskin, Moriarty, & Watsisi, 2021). Although Umbrella Authorities are allocated regions, their actual service areas expand incrementally as they assume responsibility for additional schemes or water points. NWSC, originally mandated to serve large towns and cities, has extended operations into smaller towns, often within the same areas served by Umbrella Authorities. Its drive to expand coverage, combined with ambiguities in gazetting and political influence, has led to overlapping service areas and recurrent dissatisfaction among service providers and local stakeholders. This dynamic is further reinforced by the tendency for donor-funded small systems in rural areas to be transferred to NWSC rather than the Umbrella Authorities, as NWSC is often perceived as a more capable operator.

Table 6. Factors Affecting Service Delivery Mandate and Asset Transfer

Dimension	NWSC	Umbrellas
Uptake from other providers	Takes up schemes from Umbrellas and communities. Leverages stronger operational capacity to manage more complex systems, and some donor-funded small systems in rural areas often transferred to NWSC; takes up schemes to align service areas with shared water sources; has a stronger position to determine which schemes to take up.	Takes up schemes from NWSC and Water User Groups/Committees. Has stronger capacity to manage systems than community-based providers; preferred by some communities due to lower tariffs than NWSC.
	Transfers schemes to Umbrellas where higher NWSC tariffs lead to community resistance, where schemes are not financially viable for NWSC, or due to political pressure.	Transfers schemes to NWSC where government determines communities can afford NWSC tariffs, where subsidies can be reallocated to other communities, or due to political influence.

No standardised process guides the takeover and transfer of schemes across service providers. Conflicts have emerged during asset transfer at multiple levels, including from communities operating under CBMS to Umbrella Authorities, Umbrella Authorities to NWSC, and vice versa. More recently, MWUWS has strengthened its internal process for taking over schemes from communities, having integrated approximately 70 additional schemes over the past eight years. However, the process for transferring schemes from Umbrella Authorities to NWSC remains unclear and lacks a fully standardised procedure, with decisions largely triggered by user resistance or external political factors. While guidelines exist, the overall process remains only partially documented, discretionary, and influenced by political and administrative considerations.

While this flexible environment enables NWSC to expand into areas aligned with its comparative advantages, it risks NWSC taking over the most viable small towns, with adverse implications for the Umbrella Authorities. NWSC’s expansion into new service areas is guided by internal strategic targets that prioritise extending coverage to underserved populations, reinforcing its position as the utility best equipped to manage more complex systems. Current strategic frameworks, including the NWSC Five-Year Strategy (NWSC, 2024), emphasise universal access as a core objective, providing a clear rationale for NWSC to expand beyond major urban centres. While the fragmented enabling environment supports this expansion, it does not adequately consider the potential negative impacts of NWSC’s uptake of more viable schemes on the Umbrella Authorities.

3.3.2. Regulation

- WURD regulates NWSC and Umbrella Authorities through contracts and has developed several regulatory mechanisms.
- A weak legal basis, political interference, and capacity constraints undermine WURD’s ability to enforce regulations and perform its mandate.

WURD regulates NWSC and Umbrella Authorities through contracts and has developed several regulatory mechanisms. WURD is located within MWE and is responsible for regulating NWSC and the six Umbrella Authorities through performance contracts. WURD has developed a comprehensive set of standards and guidelines for key aspects of service provision, including service levels and water quality, tariff setting and adjustment, financial management, and customer satisfaction. NWSC and Umbrella Authorities must also submit financial and operational performance data to WURD covering a range of indicators.

A weak legal basis, political interference, and capacity constraints undermine WURD’s ability to enforce regulations and perform its mandate. The Water Act assigns primary regulatory powers over water and sanitation service providers to the Minister responsible for Water and Natural Resources, rather than WURD. Although performance contracts are in place between MWE and both types of utilities, enforcement is limited because WURD currently has limited legal recourse and mechanisms to respond when utilities fail to meet expected standards. Furthermore, WURD is not an independent entity, and its budget forms part of the broader MWE allocation, meaning government budgeting processes influence regulatory activities and may be affected by funding shortfalls or reprioritisation. Budget lines are earmarked and require departmental approval for reallocation, and no levies or fees are collected from regulated service providers to strengthen financial independence. Political considerations can influence how regulatory tools are applied, with NWSC and other key stakeholders playing an important role in decision-making.

3.3.3. Technical and Financial Support

- NWSC and the Umbrella Authorities depend on a mix of internal revenues and external funding, though financial constraints persist, especially for Umbrella Authorities.
- Sustained government and development partner support has been critical for MWUWS, with targeted technical assistance and peer learning contributing to improved efficiency.

NWSC and MWUWS depend on a mix of internal revenues and external funding, though financial constraints persist, especially for MWUWS. MWUWS's financing comes from water and sanitation revenue (64%), followed by government contributions (29%) and development partners (7%)⁶. These streams sustain basic operations. NWSC's primary revenue is from tariffs on water and sanitation services (~86%), with some support from government grants primarily under SCAP 100 (~13%), and revenue from other sources including development partners and other business activities such as laboratory services. The support NWSC has received from government and development partners has enabled the utility to strengthen its creditworthiness. For instance, VEI supported NWSC in establishing proof-of-concept for potential operational investments such as energy reduction, borehole regeneration, and smart metering, and in reaching out to potential financiers and developing a series of investment proposals. NWSC's ability to use internally generated funds and access commercial finance also allows it to complement donor support and scale the impact of investments. In contrast, MWUWS's low creditworthiness and high dependence on government funds limit its ability to scale.

Sustained government and development partner support has been critical to MWUWS, with targeted technical assistance and peer learning improving efficiency. To enable the Umbrella Authorities to transition into full water service providers, the Austrian Development Agency played a foundational role by providing seed funding, long-term assistance, and support in identifying alternative financing streams. MWUWS, along with other Umbrella Authorities, has also recently received creditworthiness training and professionalisation support from the World Bank to increase its bankability. MWUWS has also received significant support from WSUP Advisory, with funding from the Conrad N. Hilton Foundation, to strengthen technical and governance capacity. Several other initiatives have been implemented to support MWUWS by partners including VEI, Water for People, and GIZ. MWE also provides training and second technical staff. Peer-to-peer learning across Umbrella Authorities has also strengthened capacity, supported by long-term development partner engagement that has proven more effective than short-term interventions.

⁶ This is based on data from the Utility Performance Monitoring & Information System, which is self-reported by the utility and is more positive than the WURD data.



Conclusions and Lessons Learned



The expansion of utilities into rural growth centres and small towns in Uganda represents a critical development. Reforms since 2017 have increased the role of public utilities in rural water service provision, with NWSC progressively taking up rural and small-town services and newly established Umbrella Authorities growing rapidly since their formation. This has improved service quality (reliability, water quality) and coverage, though progress has been uneven and the sustainability of expansion, particularly for the Umbrella Authorities, remains uncertain. This expansion focuses on piped water supply in rural growth centres and small towns; true rural areas (<500 people), where most of Uganda's rural population lives, remain predominantly served through Community-Based Management Systems.

Expanding utility services in rural and small-town contexts is not straightforward, and this transition requires sustained effort. NWSC and MWUWS face challenges in adopting new service areas, including aged and non-standard infrastructure, integrating staff and systems, and high NRW. The enabling environment is still evolving, with a regulator that lacks strong legal backing and enforcement capacity, ambiguous service area definitions, and no standardised process for transferring schemes between providers. This environment tends to advantage NWSC, which has the scale and capacity to select the most viable schemes, including donor-funded systems in rural areas that are often transferred to NWSC rather than to the Umbrella Authorities. For newly formed utilities like MWUWS, these dynamics create significant financial and operational pressures.

A cross-cutting limitation of this study is that performance data varies significantly across sources and methodologies, making it difficult to draw definitive conclusions about utility performance.

4.1. Lessons Learned

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

4.1.1. Enabling Environment



Enablers

- Broad political and policy support for professionalised service provision and piped water supply services drives the expansion of utility service provision in rural areas and small towns.
- Consistent government and partner support has been provided, particularly technical and financial assistance during the early phases of operations, as NWSC and especially the Umbrella Authorities established their operations in rural areas and small towns.



Barriers

- Weak regulatory capacity and legal backing impede the use of developed regulatory mechanisms.
- The absence of clear, standardised procedures for transferring assets and service area responsibilities creates tensions across service providers and other sector stakeholders.

4.1.2. Operational Context



Enablers

- Economies of scale and opportunities for cross-subsidisation, especially for NWSC as it expands into rural areas, strengthen financial viability.
- Strategically clustering schemes and using shared technical expertise and resources to mitigate poor economies of scale.



Barriers

- Chronic infrastructure challenges persist due to limited financing, high overheads, and low revenues in small towns and rural areas.
- Anthropogenic pressures and climate-related challenges increasingly threaten the sustainability of water resources.
- Significant business viability challenges typical of rural and small-town contexts, particularly low population density, dilute the financial performance of even well-performing utilities.
- Taking over challenging schemes can create a vicious cycle of poor operational efficiency and further dilute financial performance, especially for smaller utilities with limited economies of scale.

4.1.3. Institutional Capacity



Enablers

- Long-term capacity strengthening processes enable utilities to gradually improve institutional, technical, and managerial performance.
- Strong financial management practices and efforts to build creditworthiness through improved operational efficiency.



Barriers

- High staff turnover remains a constraint due to the absence of rural-focused incentives.
- Dependence on centralised ministries for internal processes, including day-to-day operations, creates inefficiencies.
- Weak ICT systems undermine operations, with expansion into rural areas preceding the roll-out of accompanying ICT systems. This is often due to perceptions that rural operations do not require sophisticated technology.



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A person in a green shirt is walking away from a concrete water structure towards a dense forest. The structure is a small, square, light-colored building with a dark roof and a small opening at the base. The background is a lush, green forest covering a hillside. The overall scene is rural and natural.

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