

# SUSTAINING HIGH PERFORMING PUBLIC ENTERPRISES

CASE STUDY OF NATIONAL WATER  
AND SEWERAGE CORPORATION, UGANDA



## Running a Successful Water and Sanitation Utility: The Case of NWSC, Uganda

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# Why This Conversation Matters

## The Global South Reality

- ❖ Climate variability increasing water insecurity
- ❖ Explosive urban growth and informal settlements
- ❖ Ageing infrastructure and financing gaps
- ❖ Rising expectations for accountability and service quality

Utilities are no longer just engineering organisations, they are at the intersection of climate resilience, public finance, governance, and social equity.

***How utilities are run today determines whether “Water and Sanitation for All” becomes reality.***



# About NWSC

**Mandate:** Provide water and sewerage services in Urban Areas on commercial and financially viable basis.

**287 Urban Centers**

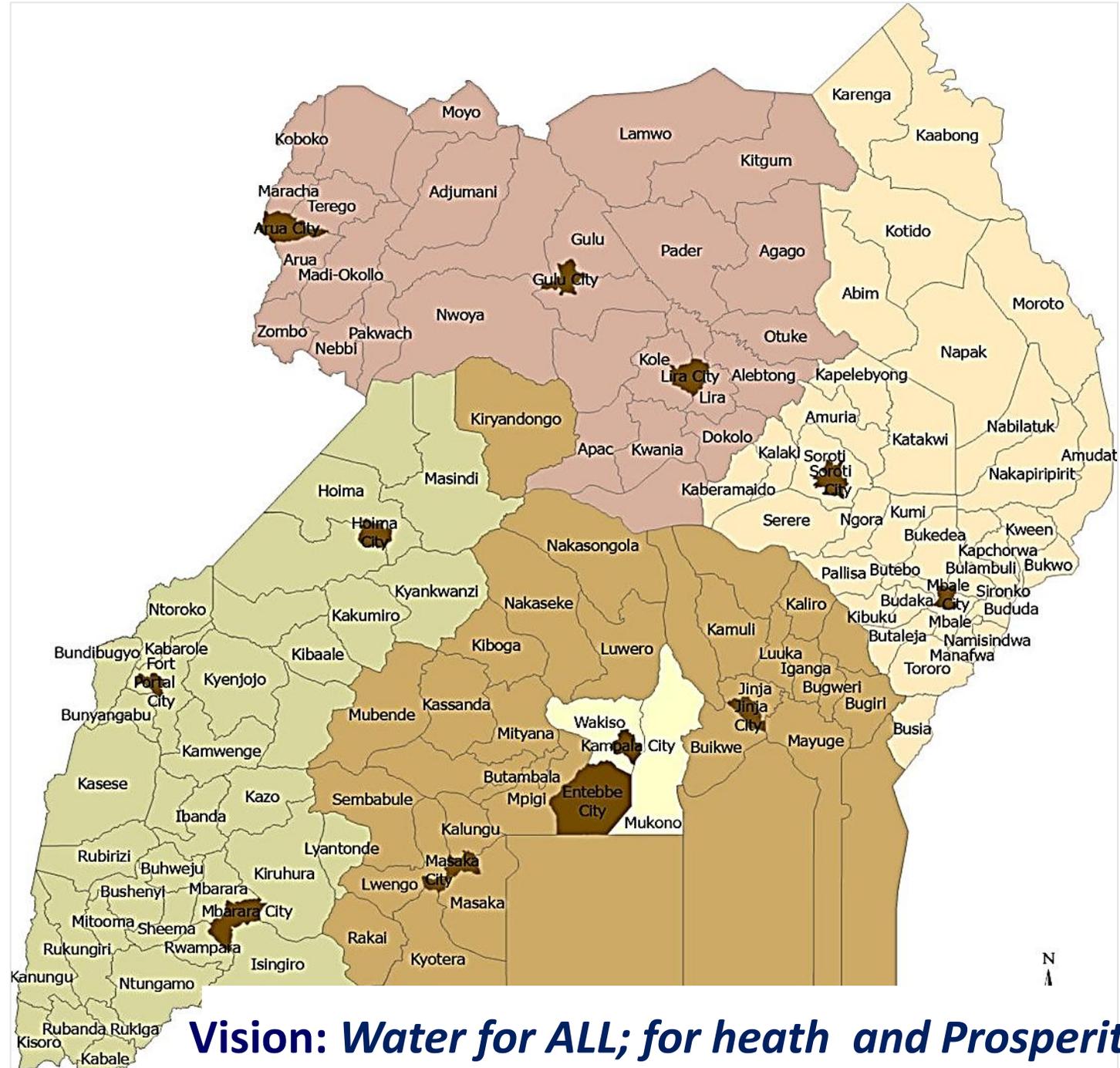
**Total Pipe Network of 23,784 Km**

**Over 1,000,000 Water Connections**

**Serving over 22 million people**

**Annual Turnover - UGX.622 billion**

**Asset Base - UGX.4.6 Trillion**



**Vision: Water for ALL; for health and Prosperity**

# NWSC Performance Journey 2013 - 2030

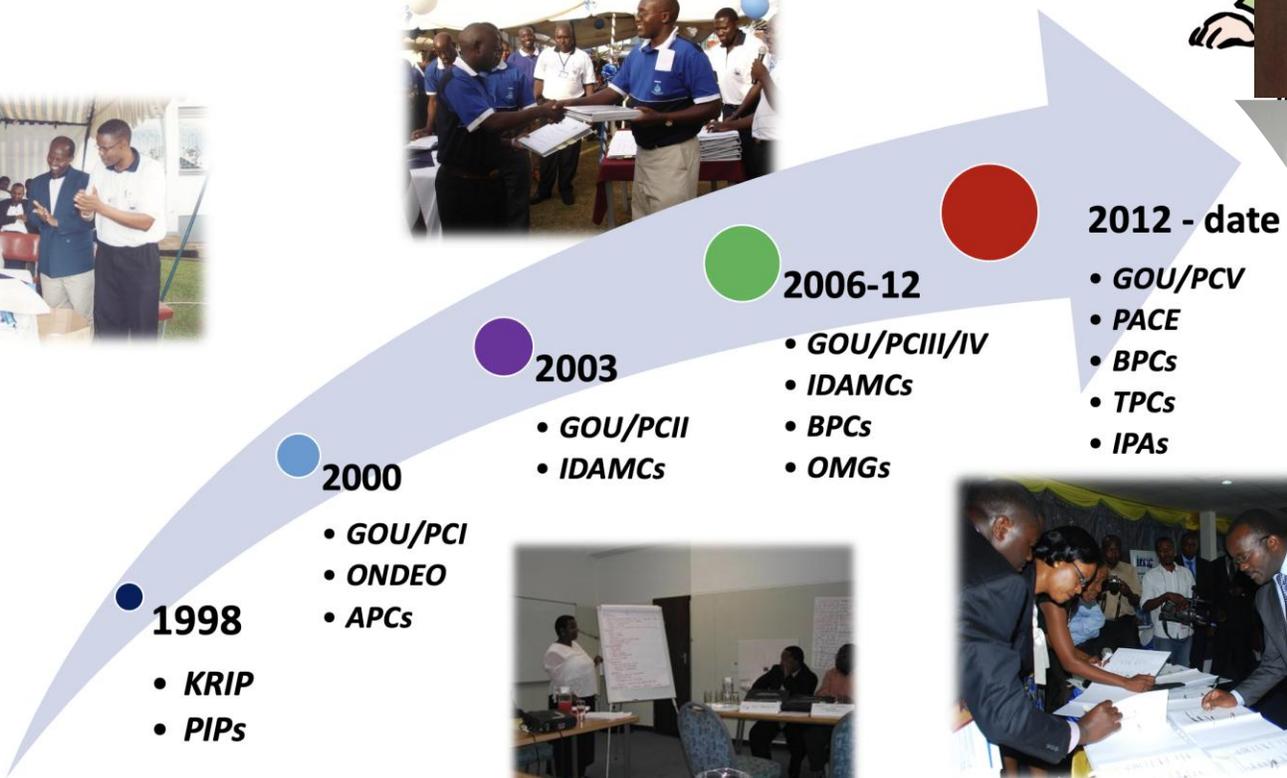
Indicator	2013	2025	2030
Geographical Coverage (Towns)	23	282	350
Production Capacity (m <sup>3</sup> /day)	294,681	791,077	850,000
Pipe Network (Km)	5,670	23,784	32,000
Water Connections (No.)	296,000	1,004,197	1,294,197
PSPs (No.)	2,482	31,204	50,000
Sewer Connections (No.)	17,516	30,539	40,000
Population Served (No.)	4,500,000	22,700,000	26,000,000
Annual Turnover (UGX Billion)	121	649	829
Total Asset Base (UGX Trillion)	0.580	5.040	6.200

- **Before 2013:** low service coverage, limited financial sustainability, weak infrastructure, low automation, minimal customer centricity
- **2025:** deliberate transformation driven by efficiency, innovation, expansion, and commercial viability
- Service coverage growth supported by internal financing and operational efficiency
- Reduction in **non-revenue water** through data-driven management
- Strong shift toward “**utility as a business**” mindset

# Success Factors 1: Use of incentive-based contracts with incentive plans

- Clear KPIs at corporate, area, and individual level
- Rewards for excellence, consequences for non-performance
- Data-driven monitoring and decision-making

*What gets measured gets managed. Performance contracts changed behaviour across the organisation*



## Success Factors 2: Continuous staff capacity building

- Invention not always from formal degrees.
- Disruptive solutions emerge from hands-on experience and creativity.
- Formal education must be complemented by practical skills and local knowledge.

*Infrastructure does not run itself—people do.*





Success Factors 3: Resilience in performance re-engineering



**Success Factors 4:** Government support and donor support to finance infrastructure development



**Success Factors 5: Focus on environmental protection**

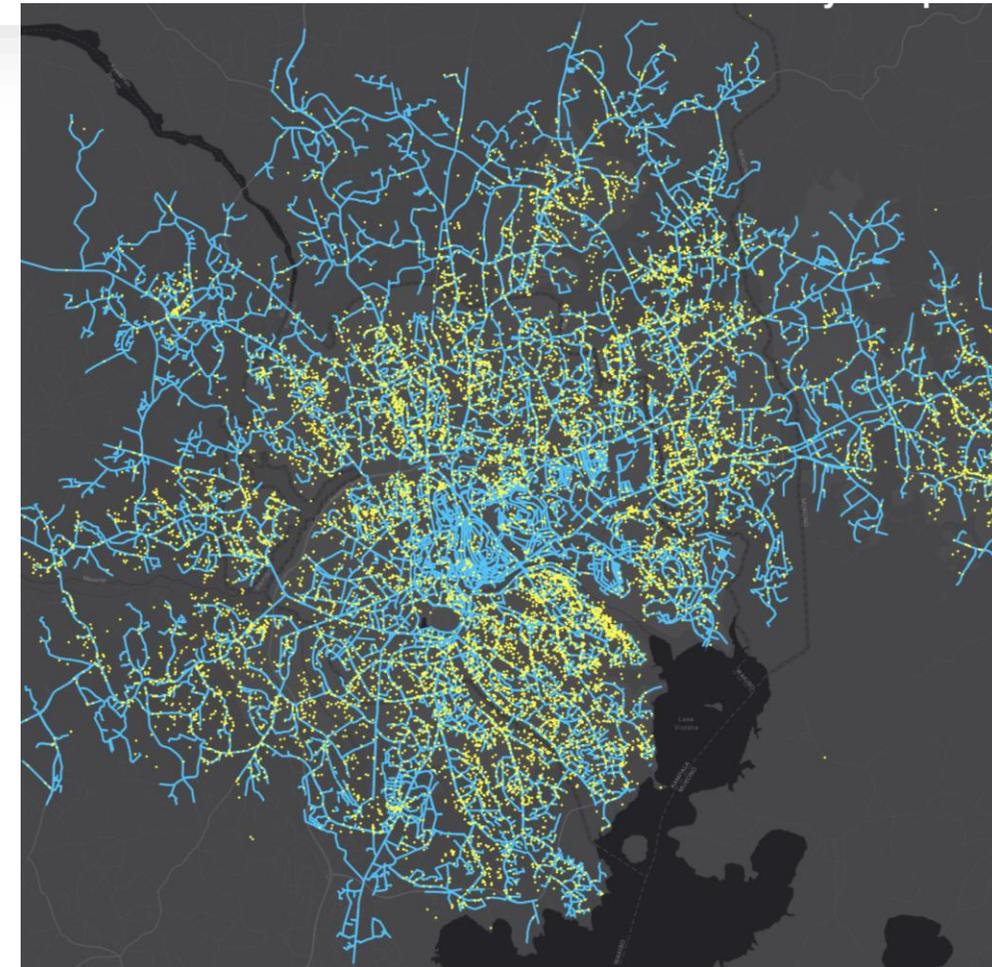
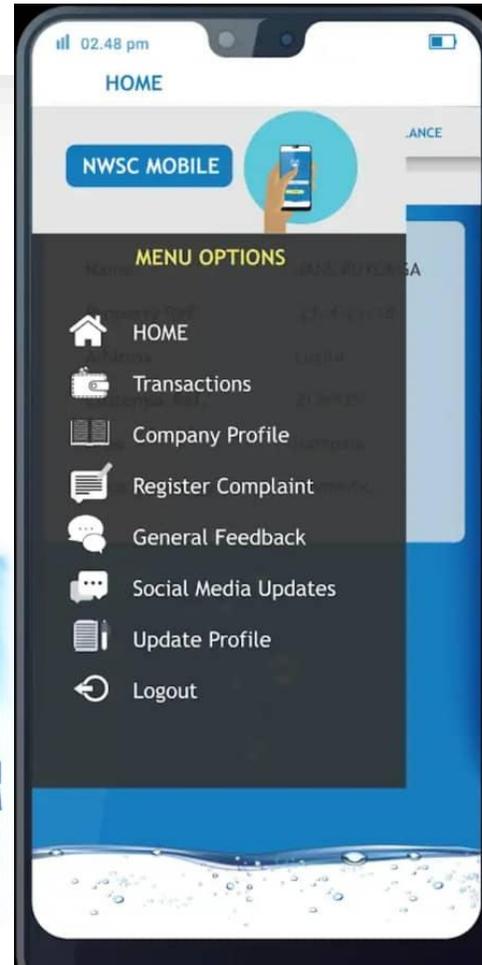
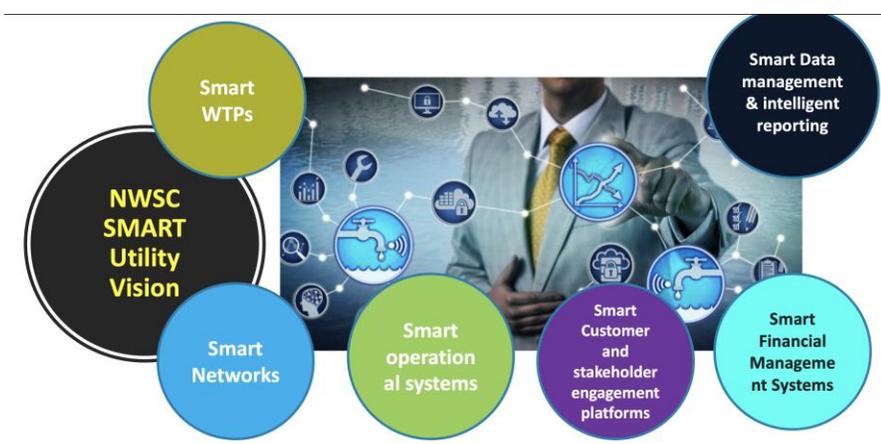


# Success Factors 6: External benchmarking through external services



# Success Factors 7: Efficiency improvement through digital solutions -

*Homegrown systems have given NWSC agility and independence.*



We continue to provide as many payment options as possible to make it convenient and comfortable for our customers to pay for the services they receive from us. Such cur

E-payments and partnering Banks

Electronics Funds Transfer

Mobile Banking

Direct Debit

## e-water payment

The fast, convenient way to manage water bills

We continue to innovate in this area with the objective of coming up with ultra convenient bill payment options for our customers.

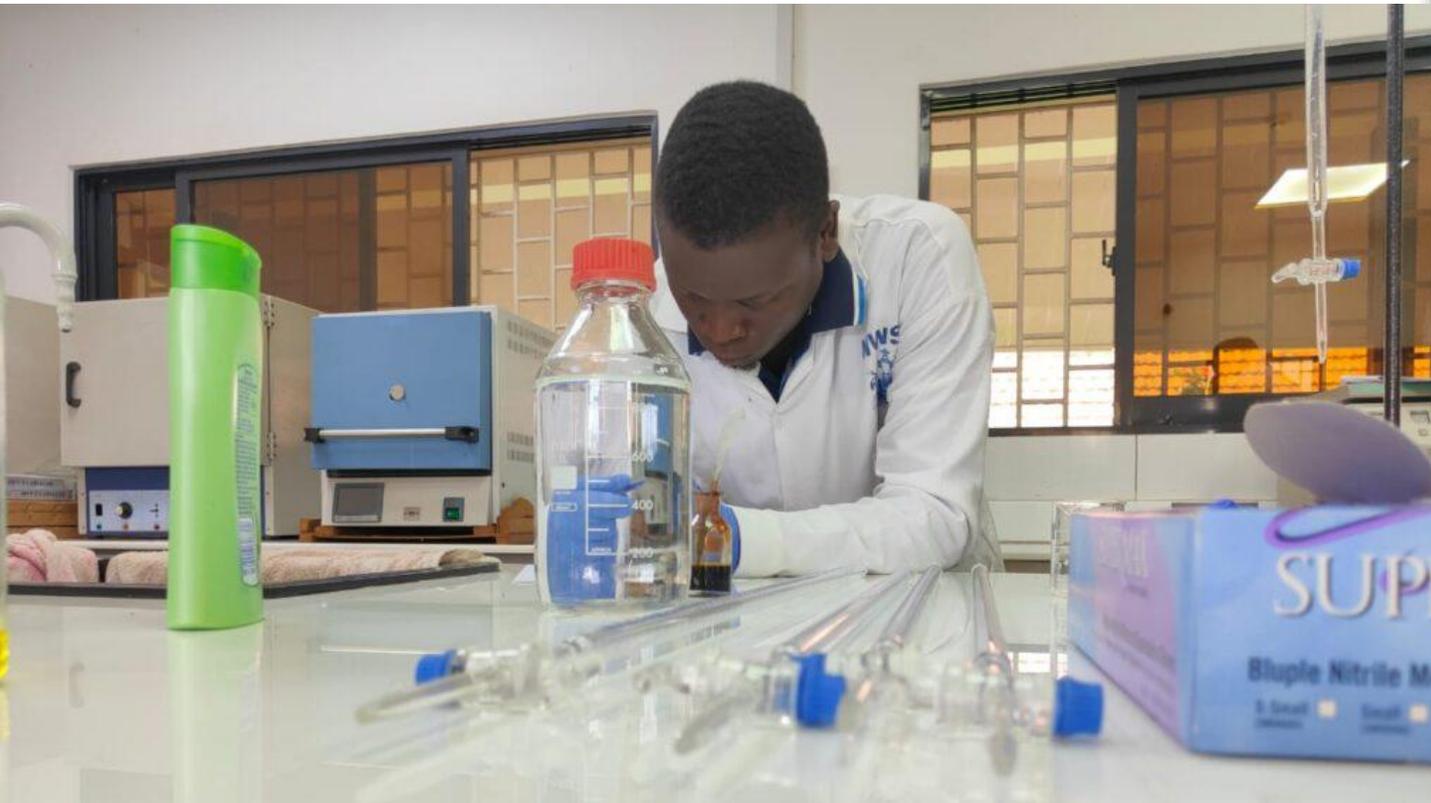
# Success Factors 8:

Shift to service delivery rather than over emphasis on profit maximization



# Success Factors 9: Research and Development as the Backbone of Utility Innovation

- R&D is the engine room of improved service delivery and ensures evidence-based decisions and adaptation.
- Established Strategic Research Committee under the MD



# Success Factors 9: Research and Development as the Backbone of Utility Innovation\_ Ongoing Meter Accuracy Study (1)

## Investigate the impact of systemic meter inaccuracies/under-registration and derive Meter Accuracy Indices for NRW

- Supply mode: Overhead tank supply Vs. direct supply
- Connection configuration: Sub-metering Vs single household
- Flow conditions: Low flow & intermittent supply
- Meter characteristics: Age, Throughput volume & metrology

- ❖ **Sampling method:** Stratified random sampling
- ❖ **Sample size:** 1200 meters
- ❖ **Tests conducted:**
  - Insitu field tests- Ultrasonic Flow Meters
  - Laboratory tests: ISO 4064
  - Controlled low flow tests: 15-20 litres/hour

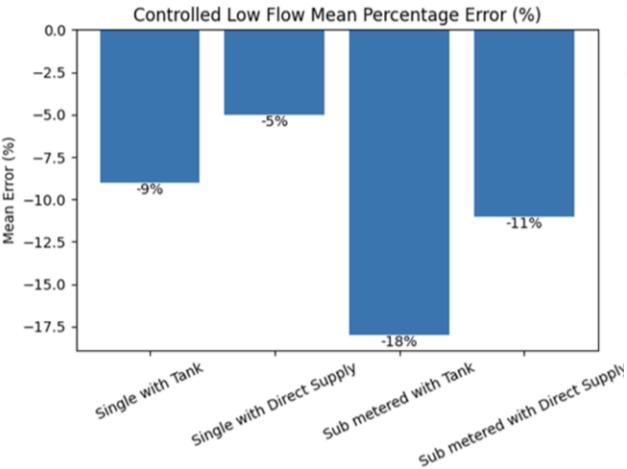
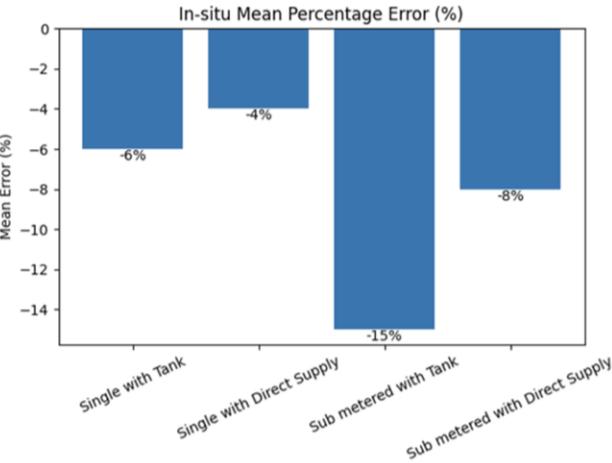


# Success Factors 9: Research and Development as the Backbone of Utility Innovation\_ Ongoing Meter Accuracy Study (2)

## Field & Controlled Low-Flow Evidence



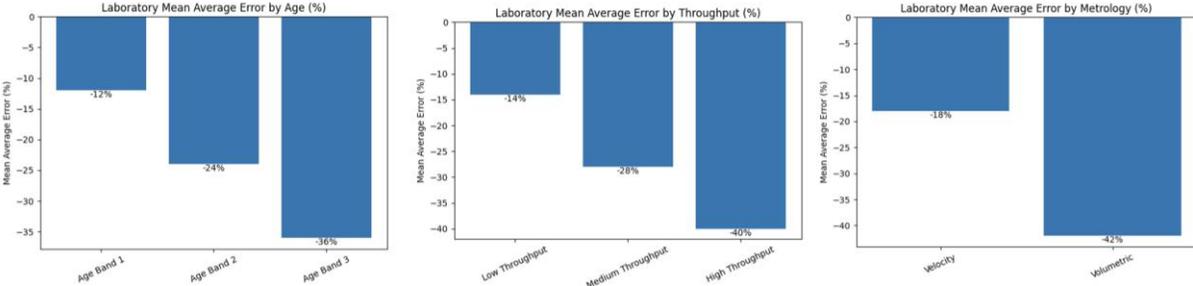
- 455 meters tested for insitu measurements
- 250 meters tested for controlled low flow tests
- **Sub-metering and tank supply significantly increase under-registration by -12%**



## Laboratory Drivers of Under-Registration



- 750 meters tested
- Under-registration increases with age, throughput exposure, and is significantly worse for volumetric meters.



Meter age band	Age (years)
1	0-5
2	6-10
3	>10

Throughput band	Volume (m3)
1	0-2000
2	2000-5000
3	>5000

# Success Factors 9: Research and Development as the Backbone of Utility Innovation\_ Ongoing Meter Accuracy Study (3)

## Strategic Implications for Utilities



### Key Findings:

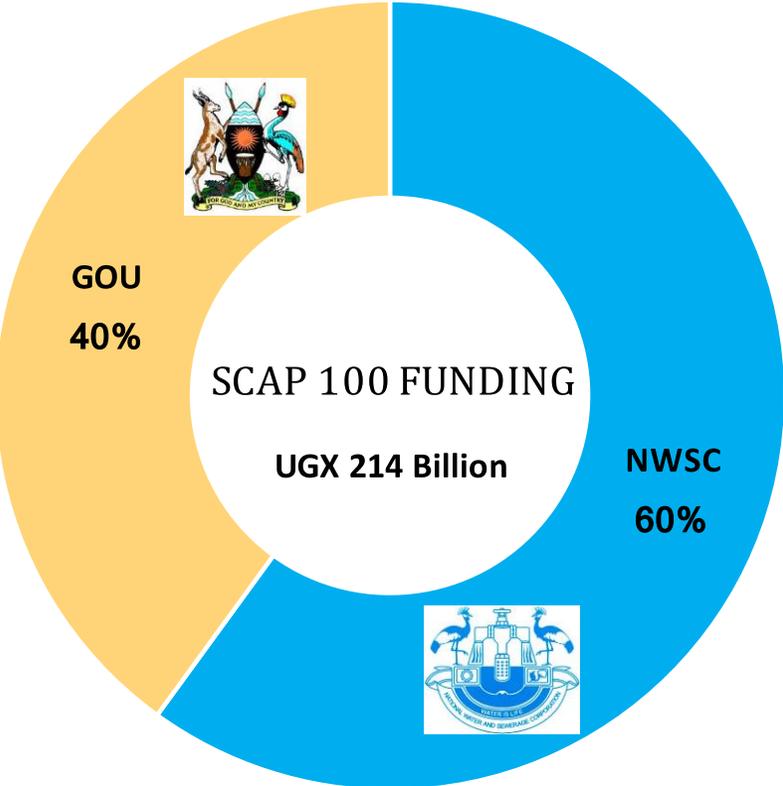
- Low flows are the primary driver of meter inaccuracy and this is further compounded by meter age, throughput volume and metrology.
- Sub-metering and overhead tanks amplify metering inaccuracy and hence commercial losses by **12%**.

### Recommendation:

- Adopt differentiated Loss Adjustment Factors



# Success Factors 10: Focus on Financial Autonomy - Enhancing Revenues, Consistent Tariff Indexation and Cost optimization & market financing options



# Business Model in Use: New Performance Management

- From Engineering to Service Delivery
- People and Customer-centric service models
- Digital systems as enablers
- Operational efficiency over asset expansion alone
- Service equity for informal settlements
- Financial autonomy & self reliance
- Climate stewardship
- Trusted

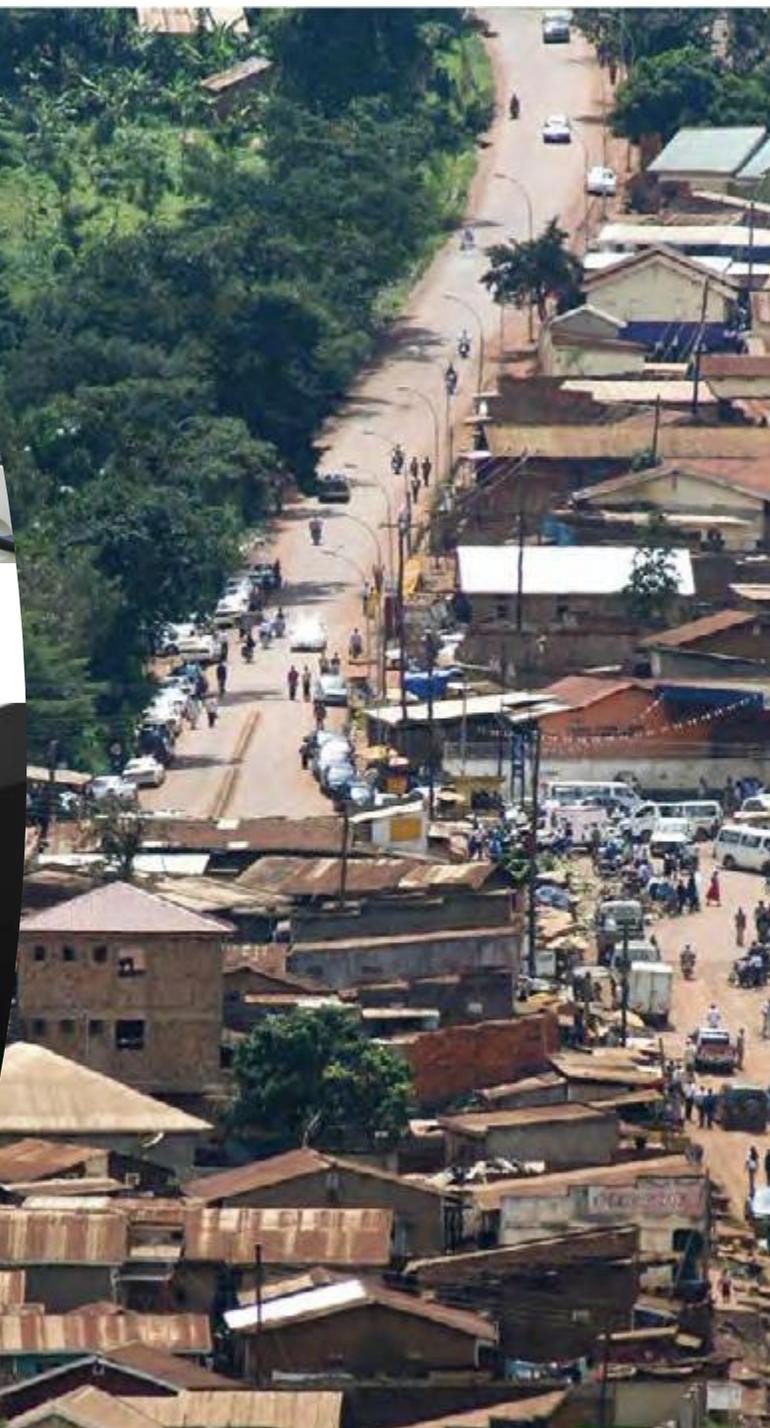
*Engineering builds systems. Service delivery builds trust.*



# What Still Keeps Us Awake: Challenges

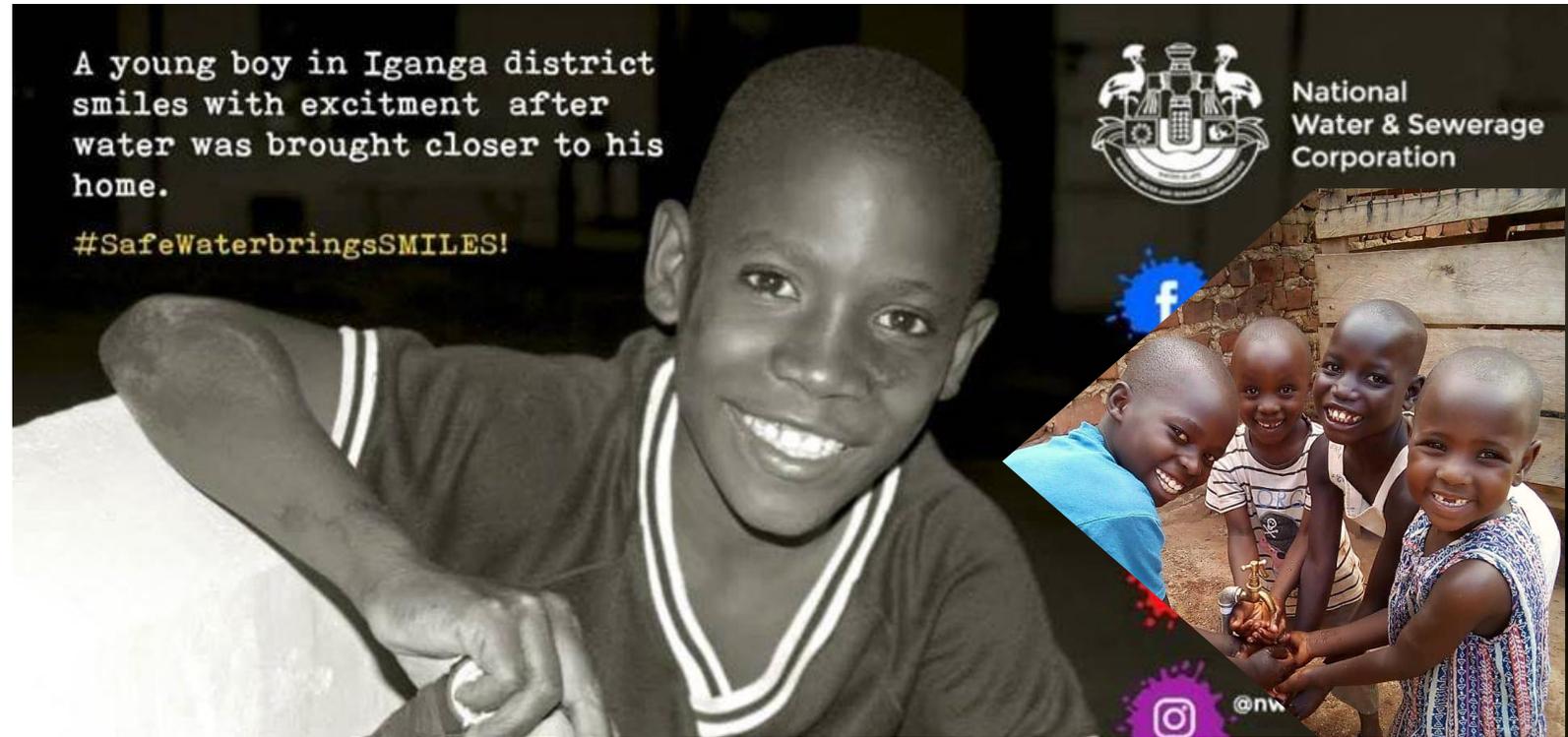
- Climate shocks outpacing infrastructure
- Rapid urban growth
- Financing sewerage vs water
- Affordability vs cost recovery
- Talent retention
- NRW/ water theft
- Technology advancement

***Success does not mean absence of problems. It means better tools to confront them***



# Academia–Utility Partnership: *We need research that solves real operational problems*

- Support formal R&D and grassroots innovators.
- Invest in ecosystems bridging classroom and field.
- Scale up proven technologies
- Engineering innovation must drive WSS transformation agenda.



The future of water and sanitation in the Global South will not be decided by scarcity—but by leadership, governance, and courage to reform.

**Thank you.**

