TECHNICAL NOTE 2

Managing Trust as an Operational Variable in Water Systems

Real-Time Evaluation of the Water Supply Improvement Project (WSIP) in Guyana – Caribbean Development Bank

Trust as an Operational Variable

The Real-Time Evaluation (RTE) of WSIP confirms that **infrastructure performance and customer behaviour are closely linked.** Commissioning treatment plants, expanding networks, and introducing metering systems are necessary conditions for improved service, but they do not automatically generate sustained uptake, consistent consumption, or stable revenue streams. RTE findings suggest that trust operates as a mediating operational variable between technical compliance and behavioural adoption.

For Guyana Water Incorporated (GWI), this implies that trust should be managed through operational performance indicators and structured feedback integration rather than treated solely as a communication issue.[1]

The MEAL architecture already includes key domains—water quality compliance, service continuity, affordability, response time to customer complaints, and user satisfaction. The interaction among these indicators during early operational phases will largely determine whether communities consolidate or resist behavioural change. Managing trust, therefore, becomes a matter of **operational sequencing, responsiveness, and consistency.**

RTE and theory-based MEAL expand the traditional role of evaluation by generating evidence during implementation to support adaptive management. These approaches are most relevant in complex interventions where outcomes depend on behavioural or institutional dynamics. They require additional analytical capacity and management engagement, and involve trade-offs with conventional evaluations, including lower standardisation and limited comparability across projects.

Early Operational Risk Patterns

The RTE identified early operational signals before full commissioning. Communities in Bath, Maria's Delight, Wakenaam, and Leguan express strong demand for improved water services but retain residual scepticism based on past experiences with high iron content, water discolouration, intermittent supply, and a previous unsuccessful metering initiative. These experiences shape behavioural expectations.

Three operational risk patterns emerge from the evaluation evidence. First, perception lag: even when water meets national and WHO standards, households may continue relying on bottled water until improvements are consistently experienced. Second, early-stage fragility: minor service interruptions during commissioning may reinforce existing distrust. Third, billing sensitivity: uncertainty about metering systems or cost structures may generate resistance regardless of actual tariff levels.

1 Real-time evaluation and theory-based MEAL expand traditional evaluation functions and may test institutional capacity to absorb and act on findings. They are best suited to complex interventions involving behavioural or institutional dynamics. These approaches require additional skills, sustained management engagement, and trade-offs with conventional evaluations, including lower standardisation and limited ex post comparability.

These dynamics interact directly with the WSIP Results Monitoring Framework. Outcome indicators—such as increased access to treated water, reduced non-revenue water, improved reliability, and higher customer satisfaction—depend on behavioural adoption. Without sustained uptake, improvements in production and distribution will not translate into development impact.

Aligning KPIs with Trust Consolidation

The MEAL architecture defines several causal layers relevant to operational management: infrastructure readiness, service delivery reliability, perceived and measured water quality, and behavioural acceptance. These layers should be interpreted as a sequence rather than independent outputs.

Water quality compliance remains a central technical indicator. However, operational success also depends on whether quality improvements are visible and credible to users. Translating laboratory data into simplified messages—such as confirming water safety for drinking or cooking—can help bridge the gap between technical results and public perception.

Reliability indicators, including supply continuity and reduced outage frequency, should receive particular attention during the first months of commissioning. Service stability during this phase strongly influences behavioural consolidation.

Customer response time functions as an additional stabiliser of trust. Complaints resolved within defined service-level timelines demonstrate institutional responsiveness. Integrating complaint-tracking data with operational dashboards allows managers to identify links between technical events and customer perception. Affordability and billing transparency must also be carefully sequenced during metering rollout. In areas such as Leguan, where flat-rate systems have historically prevailed, communication regarding meter functionality, billing calculations, and failure contingencies should precede the first invoices. User satisfaction surveys, implemented through the MEAL pilots, should be interpreted as indicators of behavioural consolidation rather than general sentiment measures. Changes in satisfaction following minor disruptions may signal fragile adoption patterns requiring operational attention.

Integrating Community Feedback into Operational Management

The **MEAL system introduces structured listening mechanisms,** including community sessions, key informant interviews, and rapid perception check-ins. For GWI operations, **these tools complement technical monitoring systems.**

Community-reported issues—such as colour variations, pressure instability, or uncertainty about meter readings—may reveal operational patterns not immediately visible in aggregated technical data. Integrating these signals into operational management allows utilities to identify emerging issues early.

Operational managers should receive synthesised perception briefs linked to specific service zones. When multiple households report similar issues, preventive actions—such as system checks or flushing protocols—can be prioritised. Similarly, geographic clustering of billing concerns can trigger targeted information sessions before disputes escalate.

Coordination between plant managers, customer service units, Community Liaison Officers, and the WSIP M&E coordinator is therefore critical during early operational phases. Planned maintenance, commissioning updates, and known risks should be communicated in advance, while community feedback should be systematically consolidated and analysed.

This approach aligns with the contribution analysis component of the MEAL architecture, allowing the project to assess whether **improvements in reliability, communication, and service responsiveness correspond with increased trust and usage.**

Protecting Investment Through Trust Management: Operational Recommendations for GWI Technical Leadership

WSIP represents a significant public investment. Protecting this investment requires ensuring that technical improvements translate into sustained service adoption and stable revenue streams.

Trust management does not necessarily require additional resources but rather the disciplined use of existing indicators and coordination mechanisms. Dashboards proposed within the MEAL system should **integrate operational and perception indicators to support management decisions.**

In practice, this means analysing water quality compliance alongside user satisfaction, outage logs alongside complaint patterns, and metering rollout progress alongside billing inquiries. These combined indicators allow management to identify patterns that may affect behavioural adoption.

Trust considerations should be incorporated into plant start-up planning. Commissioning protocols should include communication sequencing, rapid response procedures for early operational instability, and clear escalation pathways for billing concerns.

Service reliability during the initial months of operation should be treated as a strategic priority. Early operational experiences significantly shape long-term perceptions and behavioural adoption.

By integrating MEAL indicators into operational dashboards, coordinating closely with Community Liaison Officers, and sequencing communication around metering and billing, GWI can manage trust as an operational variable rather than responding to it reactively.

The central lesson emerging from the RTE is that **infrastructure performance and behavioural adoption must be managed as a single system.** When technical operations, communication, and community engagement are aligned, **improvements in service delivery, customer adoption, and financial sustainability reinforce one another.** When misaligned, infrastructure improvements may fail to reach their full development potential.

> Trust, in the context of WSIP, can therefore be understood as the outcome of consistent service quality, transparent communication, and measurable institutional responsiveness embedded in routine operational practice.

This Technical Note is part of the deliverables of the Real-Time Evaluation (RTE) of the Water Supply Improvement Project (WSIP), that was conducted by the Office of Independent Evaluation (OIE) of the Caribbean Development Bank (CDB), through the collaboration with two consultancy firms: Technopolis Group, and Integrated Sanitation Solutions for Urban Development (I-San).