



## Context:

# JJM Financing: Need of a State-Level Strategy

## Scope of Jal Jeevan Mission

- JJM assures Functional Household Tap Connections (FHTCs) to every household in India, a major step in achieving universal piped water supply.
- The central government has picked up a large proportion of the initial budget, and states contributed a relatively small proportion. However, the central funding covers only the initial requirements for the large infrastructure and some direct and indirect support costs.
- JJM 2.0 has recognised the importance of a sustained water supply and put forward conditions for the same, but most of the financial responsibilities for the same are left with the states

## Funding Gaps

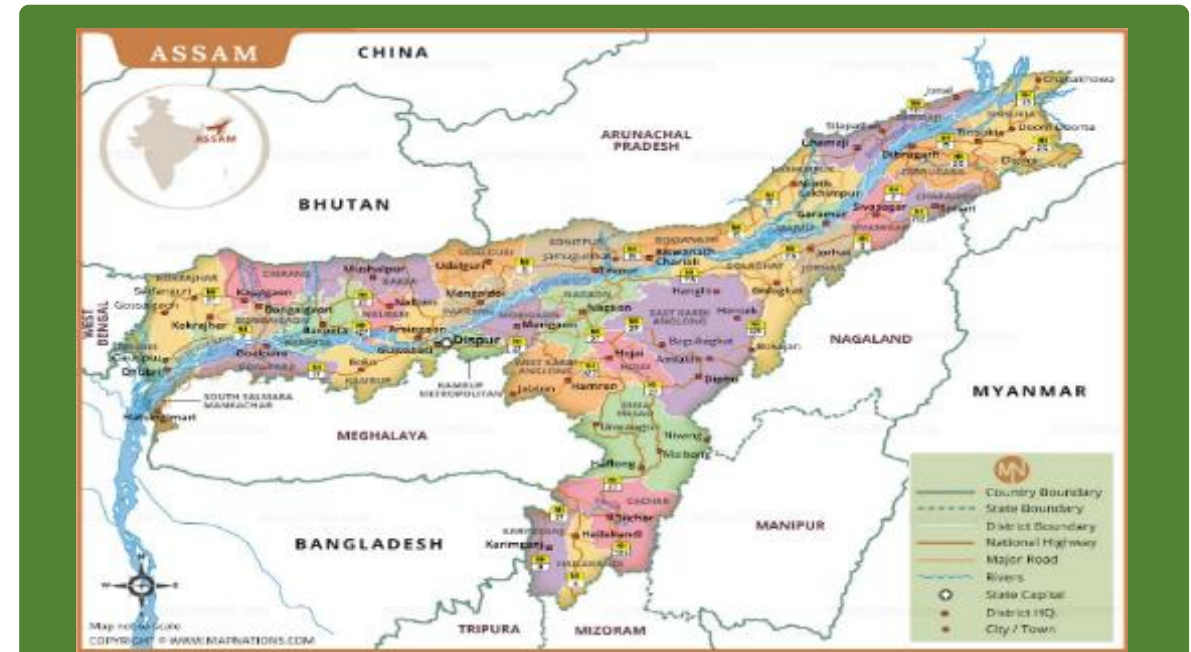
- For Post-Operationalisation of Schemes, the states rely mainly on the tied components of the Central Finance Commission Grants to Local Bodies.
- Although currently underutilised, these funds are insufficient even for the regular operations and maintenance (O&M) under JJM, such as paying the pump operators, electricity and minor repairs.
- In addition to these, the scheme has to deal with major repairs, unexpected capital renewal/ management costs, issues related to diverse topography, demographics, source failures and disaster vulnerability.
- Without having a financing strategy at the state level that finds the actual needs and ways to meet them, it is challenging to sustain these schemes.

## Context:

# Assam's JJM Financing Strategy: Uniqueness

## Assam: Gateway to the North-Eastern India

- Close to 36 million people and 6.3 million households
- Large forest, hilly and hard-to-reach terrains; Flood-prone areas; tea gardens; 8 districts fall under the scheduled area autonomous councils
- Close to 34k community-level and around 62K institution-level rural piped water supply schemes
- Central allocations were limited for completion of the schemes; only 74% of the completed schemes were functional and operational, while the remaining schemes were facing some or other issues
- The state was already developing an O&M strategy and guidelines and was very keen to work further concretely to sustain the benefits of JJM
- What to do was clear, but how much money it would entail, and how to generate and use it was unclear



## 'FLOW' Strategy

- First comprehensive state-level financing strategy of its kind in India, for JJM
- Used Life-Cycle Costing Approach for ensuring sustainable services
- Inclusiveness of the water supply Programme and its Climate and Disaster Resilience were prominently focused
- Several Innovative strategic pathways addressed the state's unique challenges

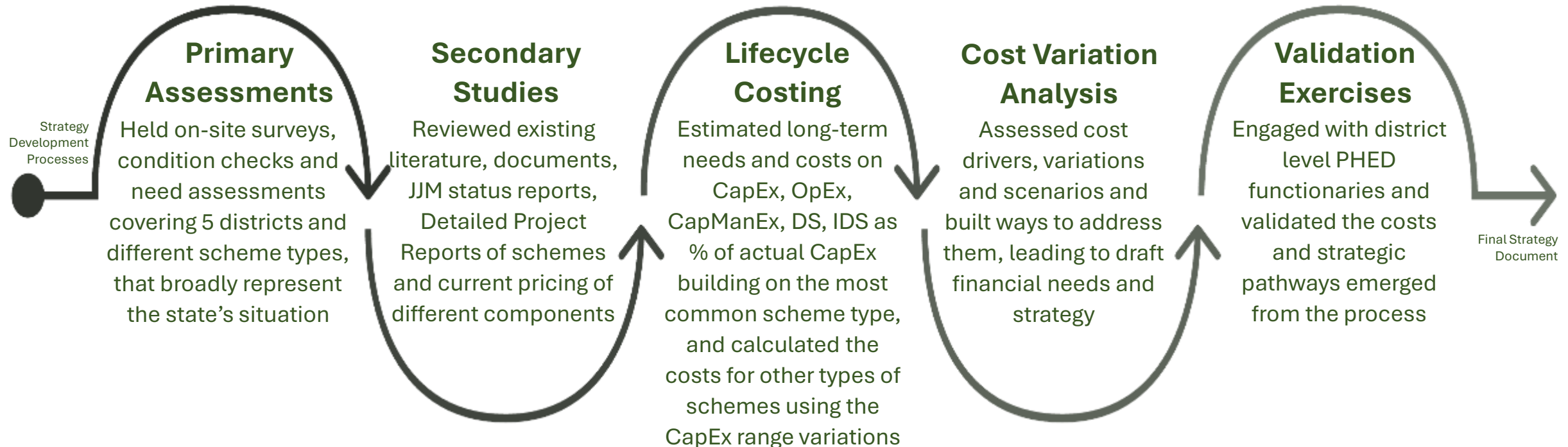
# 'FLOW' Strategy: Methods and Processes at a Glance

Water for People reached out to the state, suggesting the need for a strategy, and offering support to make one.

The State PHED accepted the proposal, enhancing and facilitating field-level processes.

WfP brought in a team of expert consultants to develop the strategy, and IRC WASH provided technical guidance on the Life Cycle Costing Approach.

State-level Water Sector Partner collective and UNICEF also stepped in.



**LCC Approach ensured sustainability, broadly.**

Over and above this, costs for disaster and climate resilience were added using a District Localisation Factor, categorising districts and their specific needs

# The FLOW Strategy Development: Key Outcomes

## Comprehensive LCC Projections Made

Every possible Life-cycle cost components identified, and costs estimated for all scheme types; overall financial requirements projected to sustain JJM across rural Assam.

## Included Village Level Institutions

In addition to community level schemes, the FLOW covered water supply schemes in schools, Anganwadis, health facilities and marketplaces in the financing framework.

## Gender Equity and Social Inclusion Attended

The strategy focused on and addressed gender issues and various social vulnerability factors; Institutional strengthening measures for vulnerable locations were prioritised

## Projected Need-Based Differential Financing

Districts classified by geography, disaster proneness, livelihoods, vulnerable populations, border areas and administrative characteristics for differential and targeted allocations.

## Strategised Community Contributions

Assessed the current levels of community contributions in terms of costs for operations and maintenance of the costs, and suggested ways to enhance this incrementally.

## Potential Funding Sources and Ways Mapped

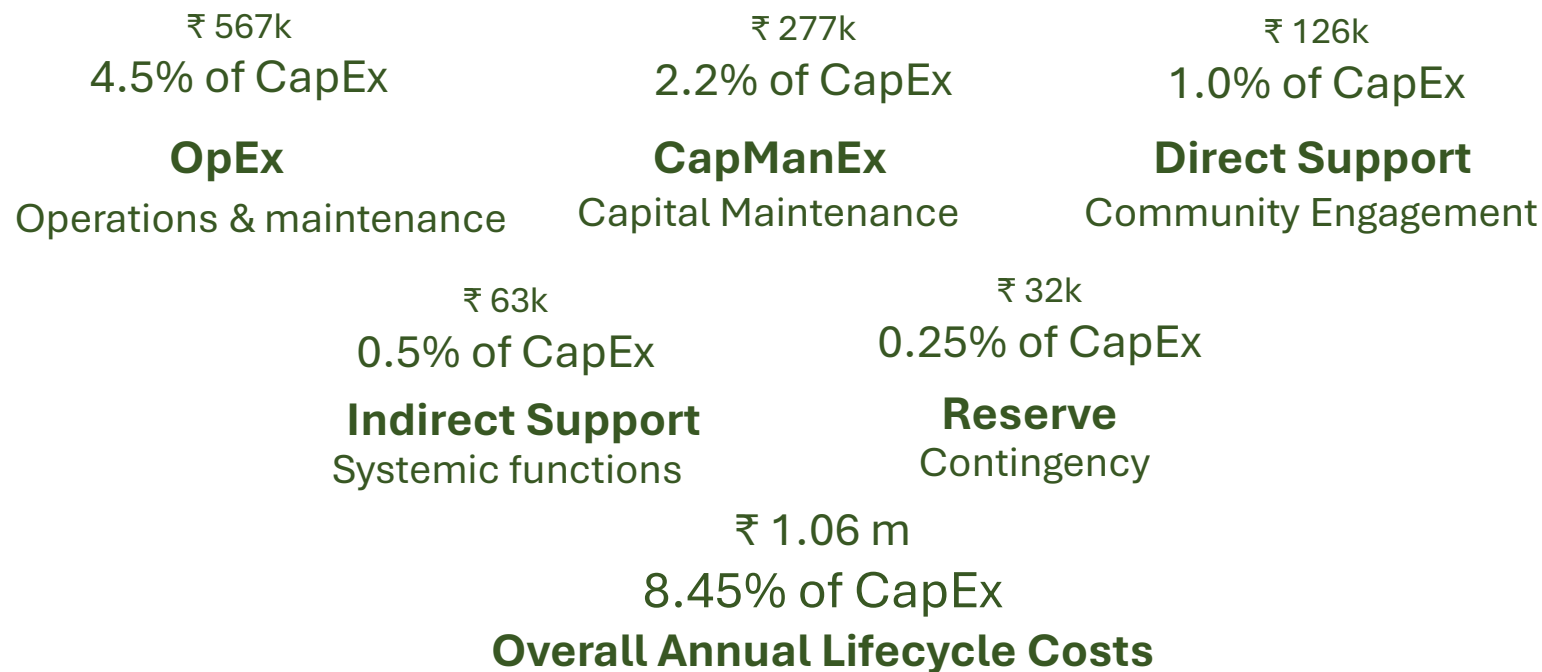
Potential financing sources were identified, and strategies for pooling funds from these sources were suggested. They include state budget provisions combined with several other sources

# Costing Results: Life-Cycle Costs for the Benchmark Scheme of 214 HH



**Total CapEx: ₹12.6 million**  
(₹57,976 per Functional Household Tap Connection[FHTC])

## Annual Lifecycle Costs



**Key Finding after comparing with other types of schemes:**  
*Total lifecycle cost requires approximately 8-8.5% of CapEx annually to maintain full functionality and sustainability of the Piped Water Supply Schemes.*

# Normative LCA Costing for different types of schemes

Understanding how Life cycle costs are dependent on the type of schemes

Cost Head	SVS Groundwater	SVS Surface Water	MVS Groundwater	MVS Surface Water
OpEx	3.5–4.0%	4.5–5.0%	2.0–2.5%	3.0–3.5%
CapManEx	2.0%	2.5%	1.0–1.3%	1.5–2.0%
Direct Support	1.0%	1.0–1.2%	0.6–0.7%	0.8–1.0%
Indirect/Systemic	0.5%	0.6%	0.3%	0.5%
Reserve (optional)	0.25%	0.25%	0.25%	0.25%

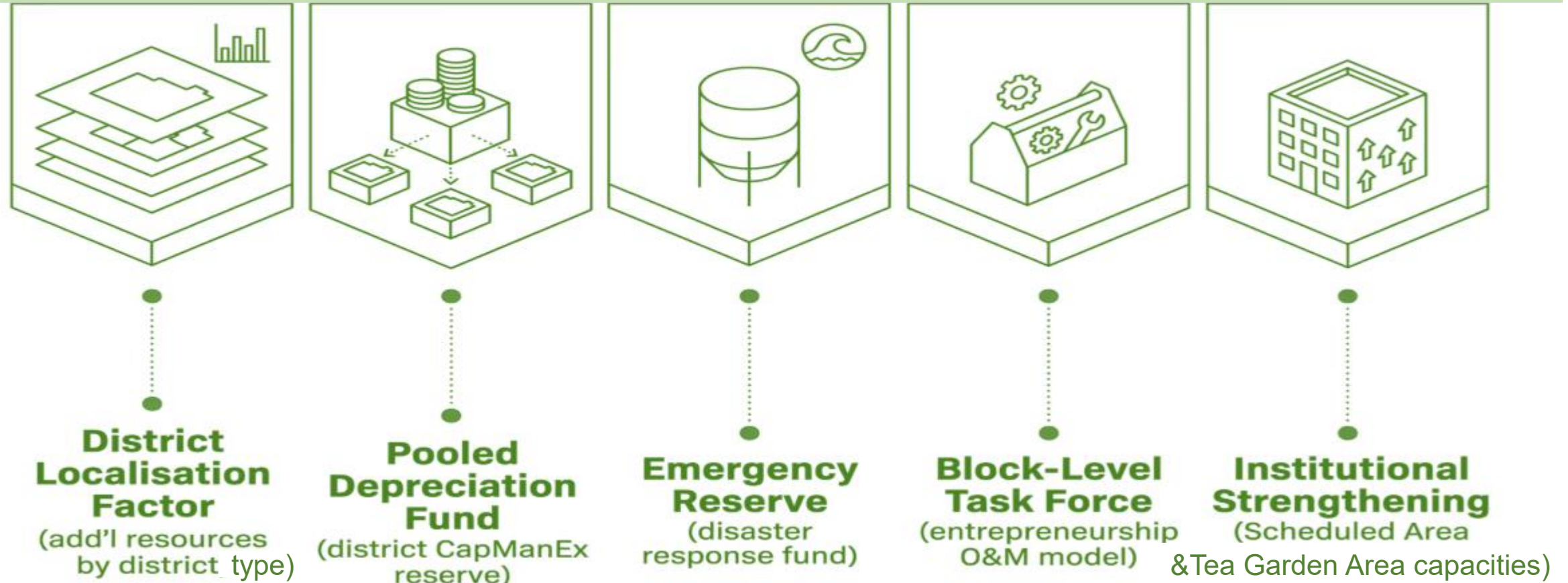
Surface water schemes generally incur higher OpEx and CapManEx due to increased treatment and maintenance requirements. MVS schemes demonstrate lower lifecycle cost ratios, reinforcing their long-term economic advantages over SVS, particularly in larger service areas.

# Comparison of Life Cycle Costing with Current Norms

Current Cost Norms	Proposed Life-Cycle Costing
2% Fixed O&M (Broadly OpEx) allowance of annual allocation earlier, no support mentioned in new guidance	OpEx is 3-5% of CapEx- covering all operational expenses
No specific provision for CapManEx	CapManEx: 1-2.5% of CapEx- Provisions for capital replacements and other critical needs as and when they emerge
Systemic support expected under program grants, no specific allocations made	Included as Direct + Indirect Support: 1.5 % of CapEx
Remaining costs covered within the token miscellaneous costs	Estimated as a reserve of 0.25% of CapEx to cover unanticipated emergencies and non-budgeted needs
Mentions cost centres in a scattered manner To the tune of overall 3-5 % of annual allocation	Estimated as ~8-9% of overall CapEx annually, with all costs are comprehensively planned and visible

**LifeCycle framework revealed the true costs currently hidden or underfunded, providing a realistic picture of requirements to make the schemes sustainable.**

# FLOW Strategy: Innovative Financing Mechanisms at a Glance



Together, these mechanisms form a multi-layered financial architecture that addresses both predictable lifecycle costs and unpredictable shocks: a model replicable across other Indian states

# District-Localization Factors: Addressing Water Supply Cost Variations through Inclusive and Differential Costing

Water utilities across Assam face significant cost variations driven by geographic and environmental challenges. Our analysis establishes District-Localization Factors (DLF) values ranging from 1.00 to 1.15, reflecting the reality that infrastructure costs are not uniform across the state's diverse terrain and climate conditions.



## 1.15 - Hill/Remote Logistics

**Districts: 3**

- Challenging hilly terrain with limited road access
- Extended lead times for construction materials
- Elevated haulage costs and specialised infrastructure needs
- Higher contractor premiums for remote location work



## 1.10 - High Flood/Riverine Risk

**Districts: 7**

- Chronic flooding and severe riverine erosion
- Char areas requiring specialised construction methods
- Frequent emergency repairs and system replacements
- Higher chlorination requirements and waste disposal costs



## 1.05 - Moderate Flood/Urban Complex

**Districts: 21**

- Intermittent flooding with seasonal erosion patterns
- Moderate logistical challenges and contractor costs
- Urban tariff complexity requiring specialised systems
- Slightly elevated energy and operational costs



## 1.00 - Baseline Conditions

**Districts: 3**

- Stable access and reliable supply chains
- Lower flood exposure and minimal seasonal disruption
- Standard contractor availability and pricing
- Fewer logistical complications for project delivery

**These DLF values should be applied systematically to all water infrastructure cost estimates as per the district category, to ensure realistic budgeting that accounts for Assam's diverse geographic and environmental challenges.**

# DLF- Case Examples



## A Flood Prone and Riverine District

- DLF = 1.10
- High flood exposure, island logistics
- +10% cost vs baseline
- **Priority:** Elevated platforms, flood-proof reservoirs, quick-disconnect systems



## A Hill Area and Hard to reach District

- DLF = 1.15
- Remote terrain, high transport costs
- +15% cost vs baseline
- **Priority:** Durable infrastructure, resilient supply lines, gravity-based systems where possible

# Risks Vs Benefits of Conventional & Lifecycle Maintenance

## Key Challenges of Maintaining Status Quo

### Premature Failures

Schemes will face breakdowns within 3–5 years due to under-funded maintenance

### Geographic Inequity

Hill and flood districts will disproportionately see higher slippage rates

### Community Disengagement

Jal Mitras and FTK groups will lose motivation due to lack of incentives

### Funding Gap of 50% not foreseen and Wasted Investment

Finance Commission investments in infrastructure will underperform

### Slippage potential

Without policy adjustments, Assam risks high scheme slippage post-2027 when central funding reduces.

## Strategic Benefits of Lifecycle

### Realistic Budgeting

Provides evidence-based planning based on actual scheme costs

### Inclusion Mainstreaming

Explicitly funds community and gender-based incentives

### Built-in Resilience

Incorporates climate adaptation through DLFs and reserve funds

### International Alignment

Aligns Assam with best practices (IRC WASHCost, CPHEEO)

### Fiscal Clarity and Long-term Fiscal Prudence

Reduces costs by preventing repeated scheme failures

# Challenges, Road Ahead and Key Takeaways

- Currently, the Flow Strategy is under review by the Government of Assam, towards final approval.
- Once approved, financed and implemented, it will address most of the current financing challenges, also setting a precedent for other states
- Converging between multiple sources of funds will be a key challenge, once approved
- Institutional strengthening PRIs, scheduled area local governance structures and VWSCs will be another key challenge
- From a WASH practice lens, the FLOW offers replicable insights for similar settings across globe.



## LCC Integration

Adopting the Life-Cycle Costing Approach in line with local realities provides a rigorous basis for realistic financial planning.



## Geographic Differentiation

Cost variations across geographies must be explicitly modelled — a state or district average is insufficient.



## Need-based Financing Approaches are Essential

Mechanisms like the District Localisation Factor and Pooled Depreciation Fund offer scalable models



## Inclusion to be Integrated by Design

Sustainability, resilience, and equity must be embedded in financing strategy — not treated as add-ons.

**Financing should also focus on strengthening institutional arrangements.**

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# Thank You

**WASH Economics Conference 2026**

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