

# Re-thinking O&M Financing for Urban Water Supply



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# Service delivery in urban water supply has improved led by institutional funding

## Households with piped water supply in cities under AMRUT

2015

49%

2021

70%

## Per capita water supply in cities under AMRUT

Recommended

Average in 2021

135 lpcd

122 lpcd

Source: Parliamentary Standing Committee on Housing and Urban Affairs

### 1. Water supply coverage has improved supported by institutional funding:

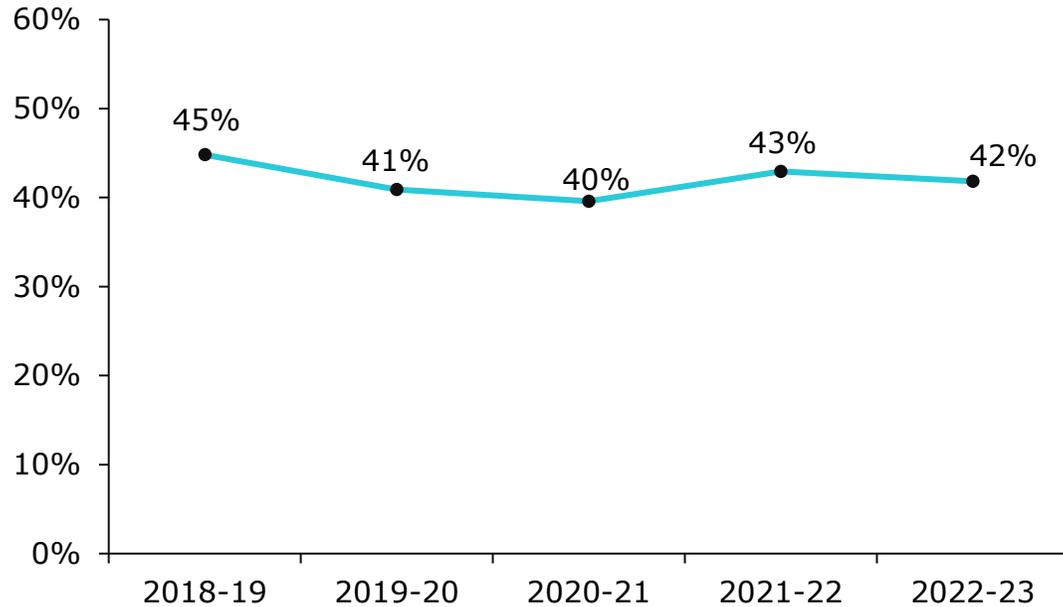
- Central schemes: **AMRUT, AMRUT 2.0, Smart Cities Mission**
- State schemes: **Mission Bhagiratha (Telangana), Swarnim Jayanti Mukhya Mantri Shaheri Vikas Yojana (Gujarat)**
- Funding support from **multilateral organizations**

### 2. Funding through central and state schemes:

- Funds are provided mostly for capital expenditure
- ULGs/parastatals are expected to mobilize own revenues to meet O&M costs

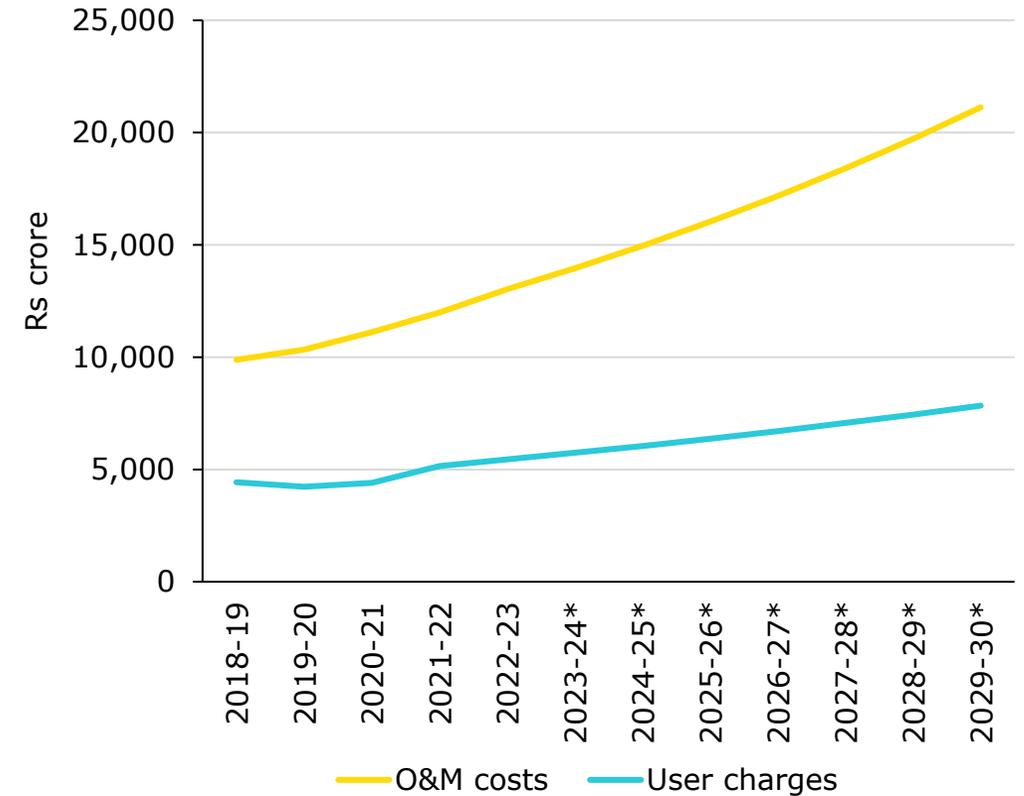
# User charges are inadequate to meet O&M expenses

**ULGs could recover only 42% of O&M costs through water charges**



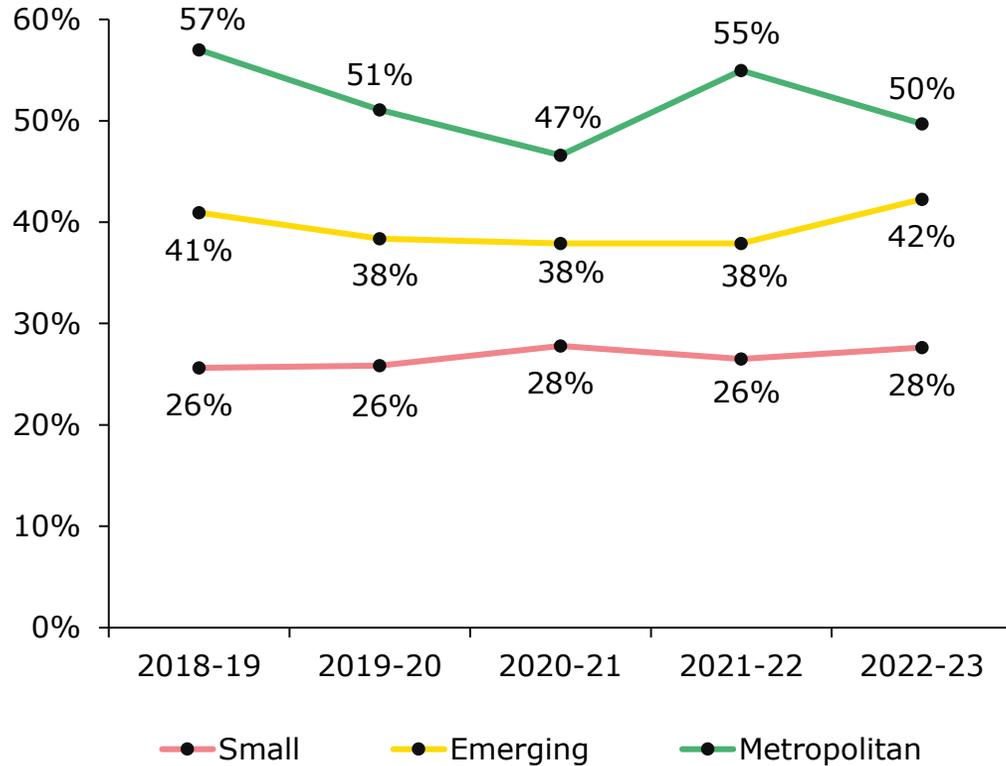
- **O&M costs will increase as new infrastructure gets created**
- **Persistent gap between O&M costs and water charges will adversely impact asset maintenance**

**Business as usual will increase the gap between O&M costs and user charges**



# ULGs differ significantly in terms of O&M recovery through user charges

## Water charges as a percentage of O&M costs

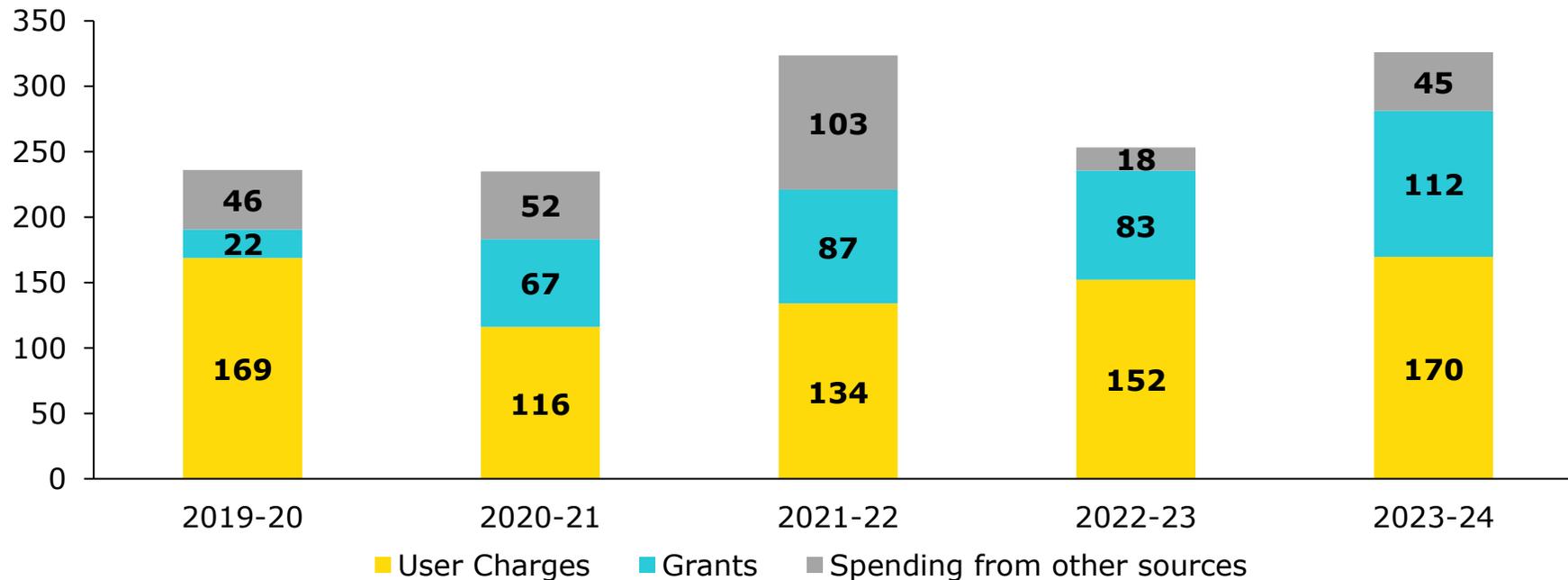


- **Metropolitan ULGs** accounted for **over 60% of total water charges collected** between 2018-19 and 2022-23
- **Small and emerging ULGs trail metropolitan ULGs** in mobilizing user charges
- **Wider gap between expenditure needs** on O&M and **available resources** for small, emerging ULGs
- **Increasing user charges to recover 100% O&M costs may not be feasible in short-term** due to lack of political will and reluctance to pay by consumers
- **Sustainable financing of O&M** needs **improving collections from user charges and grants**

## Case Study: Funding water supply in 36 ULGs in Karnataka

- **Revenue from user charges** was **insufficient** in meeting O&M costs
- **ULGs** in Karnataka **receive grants** from the state government **to meet operational expenses on electricity**
- **Remaining O&M costs** were met through **other sources**

O&M costs recovered through user charges and grants (Rs crore)



# Leveraging grants to fund O&M costs

Several state finance commissions have recommended grants to fund O&M costs of various services provided by ULGs

## Tamil Nadu

- Grants to fund the deficit in operations of Tamil Nadu Water Supply and Drainage Board
- Grants to fund the deficit in O&M across services provided by ULGs

## Kerala

- Maintenance grants provided to ULGs to meet increasing O&M costs

## Karnataka

- Earmarked funds for maintenance of assets managed by ULGs

# Funding O&M for urban water supply needs an integrated approach

## Funding Water Supply O&M

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graph TD; A[Funding Water Supply O&M] -.- B[User Charges]; A -.- C[Grants]; B -.- C;
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### User Charges

- All ULGs must continue to improve collections through user charges supported by state-level reforms
- Metropolitan ULGs should gradually move towards 100% O&M cost recovery through user charges

### Grants

- State finance commissions should routinely recommend grants for ULGs to meet O&M costs
- ULGs should be allowed to utilize some grants recommended by Union finance commission for O&M

- **Integrating grants and user charges** would aid **sustainable recovery of O&M costs**
- **Grants** would help **ULGs in meeting O&M costs** unfunded through user charges

# Reforming User Charges to improve O&M cost recovery

Recovering O&M costs requires fixing both the demand base and collections

## Cost Reflective Tariffs

- Accurate O&M cost estimation
- Fix tariffs with formulaic linkage to O&M costs
- Provisions for periodic revision of tariffs

## Robust Billing & Collection

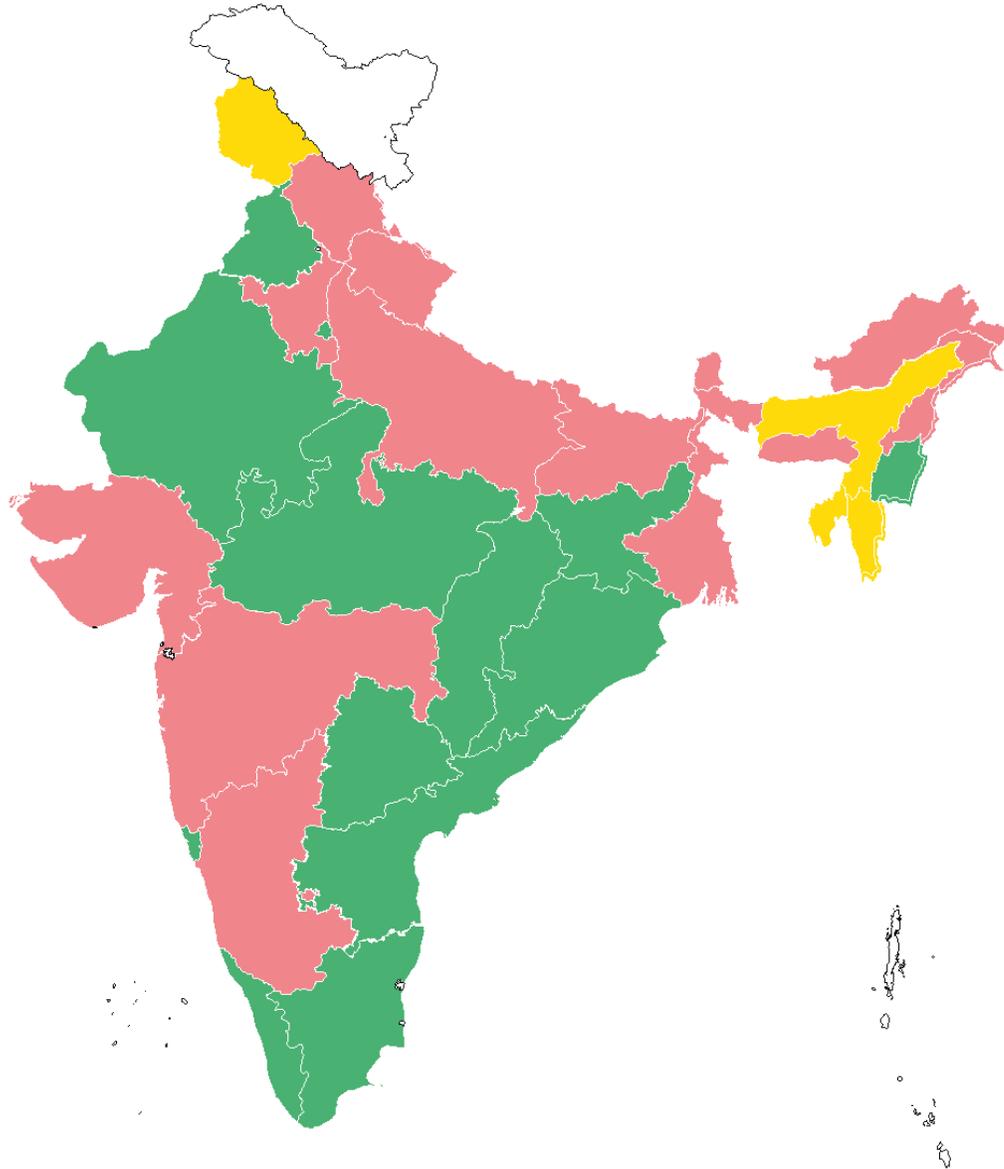
- Ensure complete and timely billing
- Provide multiple, convenient payment options
- Regular follow up and enforcement

Enabling legal framework

Institutional Capacities

Accurate O&M costs + Cost reflective tariffs + Effective collections → O&M recovery

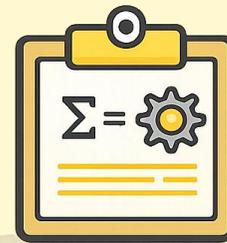
# Weak legal mandates keep water tariffs stagnant



**13** states did not have provision for periodic tariff revision

**13** states/UTs mention periodicity and basis of revision

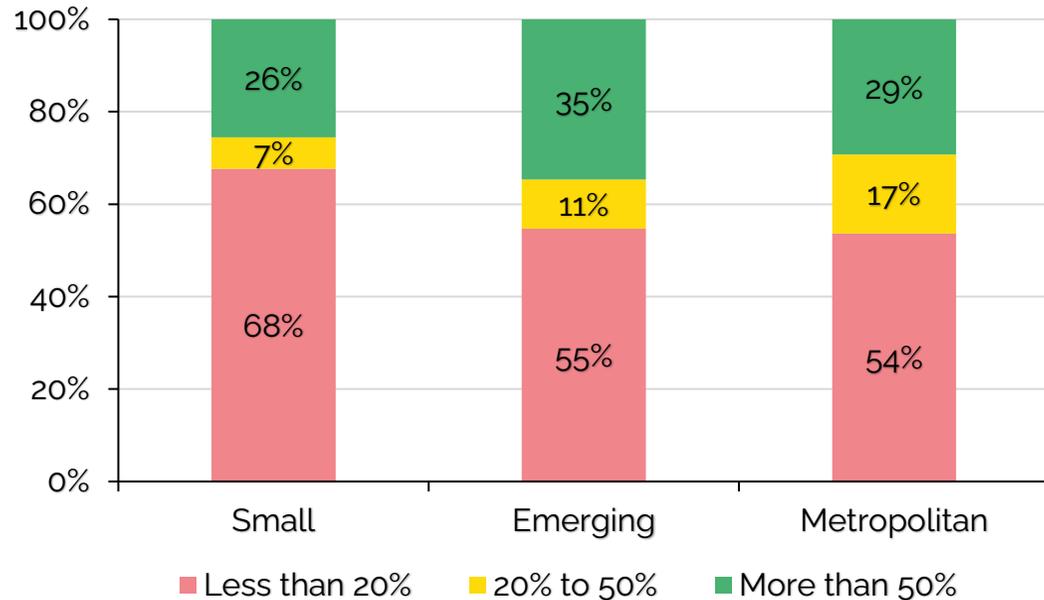
**4** states/UTs only mention periodicity of revision



**Only 6 states\*** have a tariff-setting formula that is explicitly **linked to O&M costs**

# Metering as the Missing Link to Rational Water Tariffs

## Extent of metering across city typologies



Source: Based on self-reported Service Level Benchmark data of 3,562 ULGs on cityfinance.in for FY 2023-24

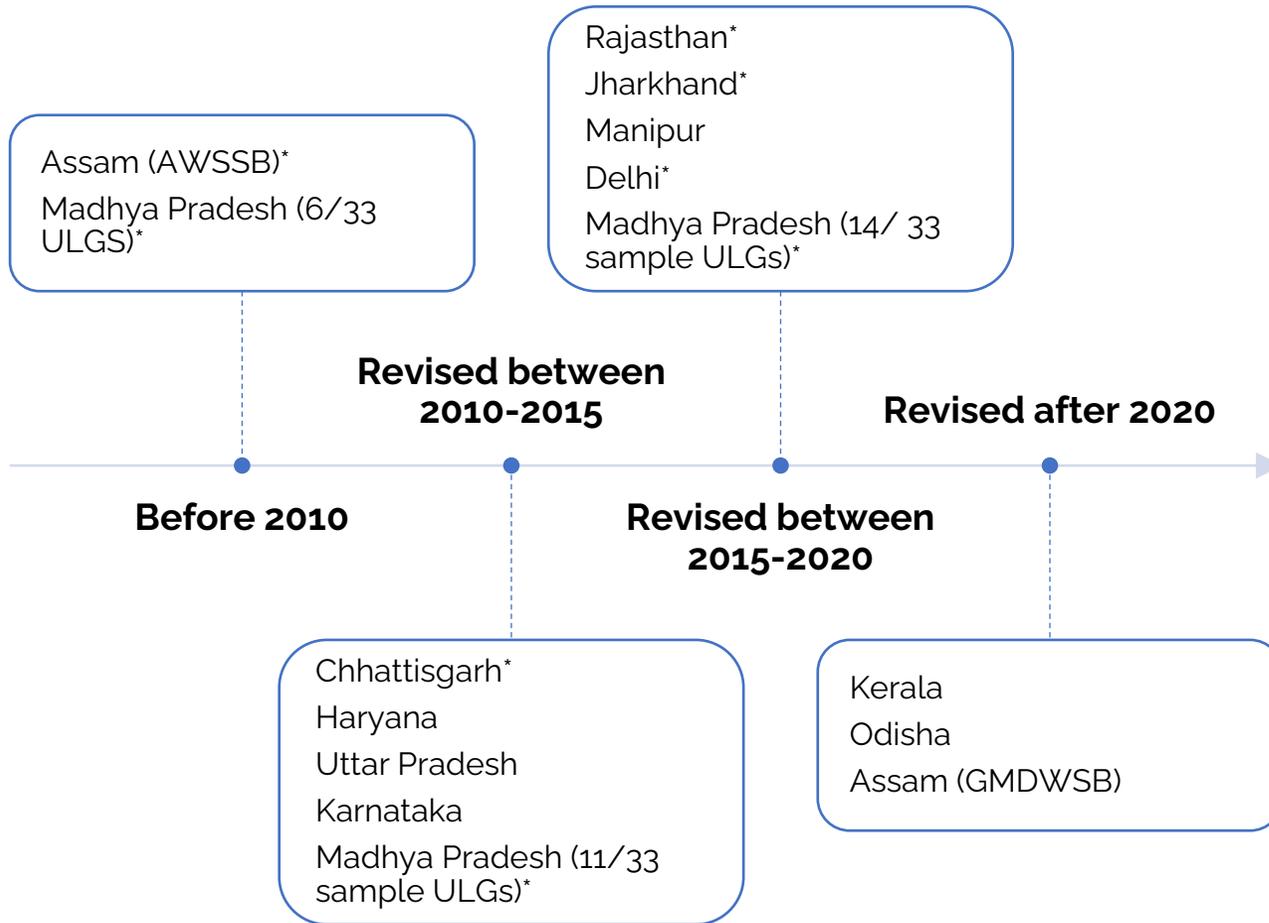
## Metering remains limited across all ULG categories

- More than half of ULGs- including metropolitan cities- have **less than 20% metering**
- Even capital cities like **Guwahati, Bhubaneswar, and Ranchi** continue to levy flat tariffs.
- In the **absence of metering, non-volumetric charges are determined on proxies:**
  - Property size
  - Number of taps.
  - Pipe/ferrule size
  - Flat lump sum charges

**Non-volumetric tariffs are ad hoc, inequitable and weak on cost recovery, as charges are not linked to actual water consumption and provide no incentive for conservation**

# Outdated tariffs due to infrequent revisions

## On-ground practices in periodic revision of water tariffs



In **6\* out of 11 states/ UTs**, tariffs had not been revised till 2023, despite provisions for periodic revision

## Why Tariff Revisions Are Difficult on Ground



### Political Sensitivity

Tariff hikes seen as unpopular; avoided during election cycles



### Low Citizen Awareness of Costs

Limited understanding of energy, treatment, staffing & O&M costs



### Perception of Arbitrary Charges

Water charges viewed as levies, not as payments for services

# State-level rules are critical to fix gaps in water tariff design



State Governments should mandate rules to:



### Establish Formula-based Tariff Setting

- Link water tariffs with O&M costs
- Enable substantial O&M recovery (70-80%)



### Mandate Periodic Tariff Revision

- Specify periodicity (annual/biennial/triennial)
- Specify basis of revision (linkage to O&M costs)

**Foundational Enabler : IEC and Citizen Awareness**



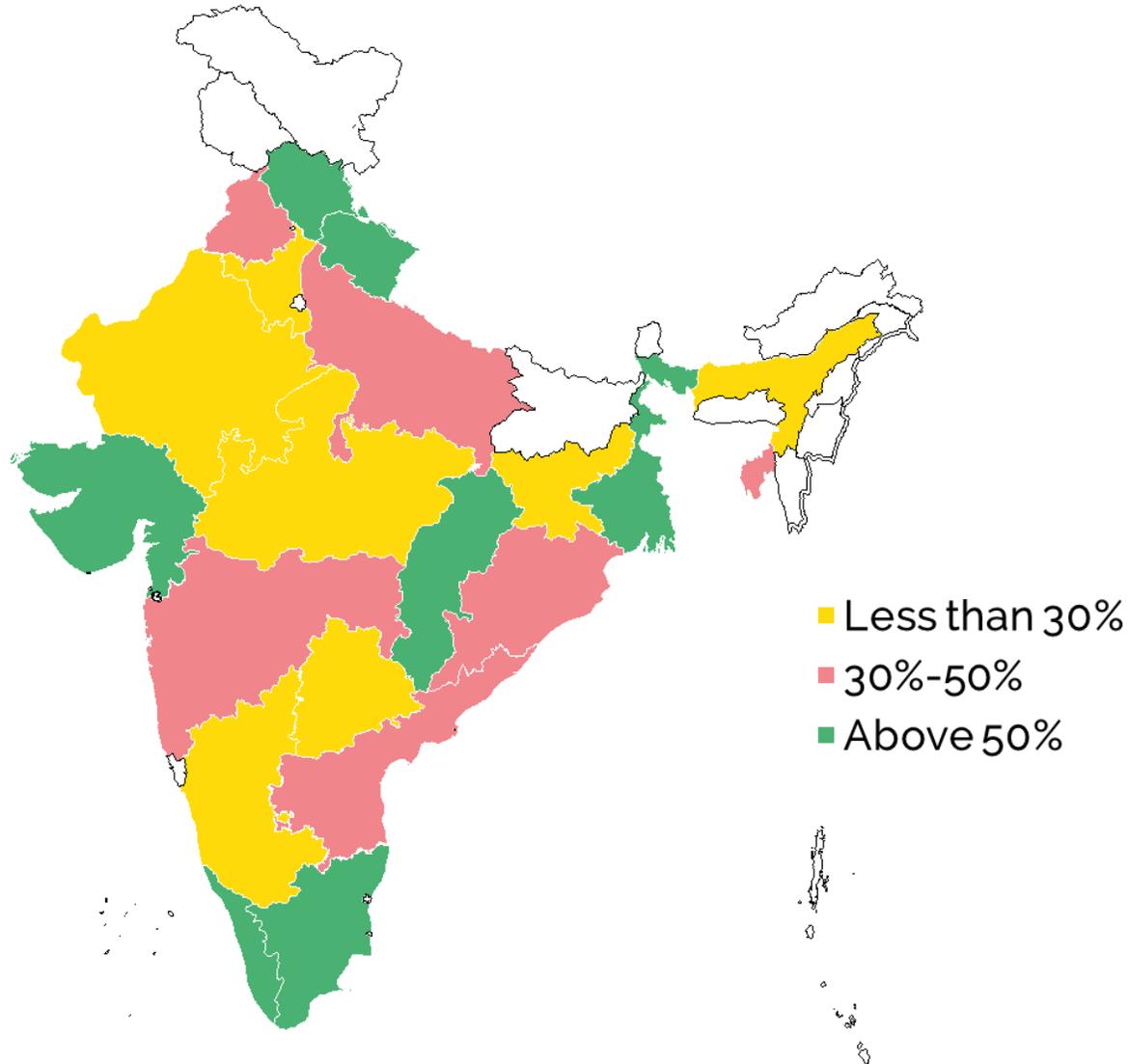
### Sustained IEC & Public Communication

- Explain cost of supplying water
- Show how user charges improve service quality

### Cost Transparency to Reduce Resistance

- Unit cost of water supply
- Current tariff level
- Gap between costs & revenues

# Collection efficiency of water charges has been persistently low



**42% average national collection efficiency** (for FY 18-19 to FY 22-23)



- **13 out of 20 states collect less than 50%** of water charges billed
- **Critically low performance in :**
  - **Madhya Pradesh (18.4%)**
  - **Jharkhand (9.0%)**
  - **Haryana (8.2%)**

**Low collection efficiency compounds the problem of inadequate tariffs, making O&M cost recovery difficult for most ULGs.**

# Improving Water Charges Collection Efficiency

## Key challenges

### 1. Weak billing and collection systems



- Underutilization of IT platforms
  - Centralized IT systems exist , but key functionalities such as digital billing via SMS and MIS features are underdeveloped or underutilized
- Staff Shortage
  - **Nationally - 37% staffing gap against sanctioned posts** across ULGs (CAG)- leading to delayed and incomplete billing & collections

### 2. Limited enforcement of penalties



- 25 out of 28 states have penal provisions .
- On ground implementation remains weak
  - While penalties are automatically computed in ULGs with online billing systems, service disconnection are rarely implemented

## Recommendations

### Implement shared or unified collection models



- Adopt **shared services / unified revenue collection systems**
- **Example: Odisha (URC model)**
  - *One household – one bill – one collector*
  - Jal Saathis collect water charges along with property tax under a common incentive structure
- **Automated digital billing** via SMS and email

### Enforce existing penal provisions



- Apply **graduated penalties**: interest → notice → disconnection
- Automate penalty and interest calculation through billing systems
- Publicly disclose **defaulters lists** to strengthen compliance
- Identify **commercial and high arrear connections** – **create dedicated teams for recovery**

# Key Takeaways

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## 1. Service Delivery has improved, but O&M financing remains structurally weak

- Improved service levels are driven by public funding, while user charges remain inadequate to maintain assets

## 2. User Charges alone cannot bridge the O&M gap

## 3. Weak tariff design, low metering and poor collections undermine cost recovery

- Flat, non-volumetric tariffs and low collection efficiency undermine cost-reflective pricing

## 4. Sustainable O&M financing requires an integrated approach

- A viable pathway combines **gradual tariff reforms and improved collections**, targeted **state and SFC grants for O&M**, and flexibility to use **Finance Commission grants**, with metropolitan ULGs progressively moving toward full O&M recovery

# Thank You

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# Shared Municipal Services - Scale and nature of sharing

## Scale of sharing

## Nature of sharing

## Types of municipal services



**Within a city**

Personnel can be shared across departments or parastatals

Bill distribution, property tax and user charges collection



**ULGs in a cluster**

Multiple ULGs can jointly access a shared pool of legal professionals to manage all types of legal disputes (spanning revenue and expenditure functions)

Legal services



**Across the state**

Back-end services that require no physical presence can be shared.

IT, MIS, and data analytics.

# Case Study : Unified Revenue Collection in Odisha

38% *vacancy & engagement in ad-hoc activities* by staff reduced coverage & collection efficiency

**Streamlined collection** of property tax & water user charges **by leveraging existing workforce** of Jal Sathis to **improve coverage** & collection efficiency

## One Household One Collector



Increase in *collections by 50%* in FY22-23 over FY21-22

& *efficiency by 23 pp*

Planned to be *scale up for 23 additional cities*