

Assessing cost recovery and collection efficiency for WASH services in Indian cities

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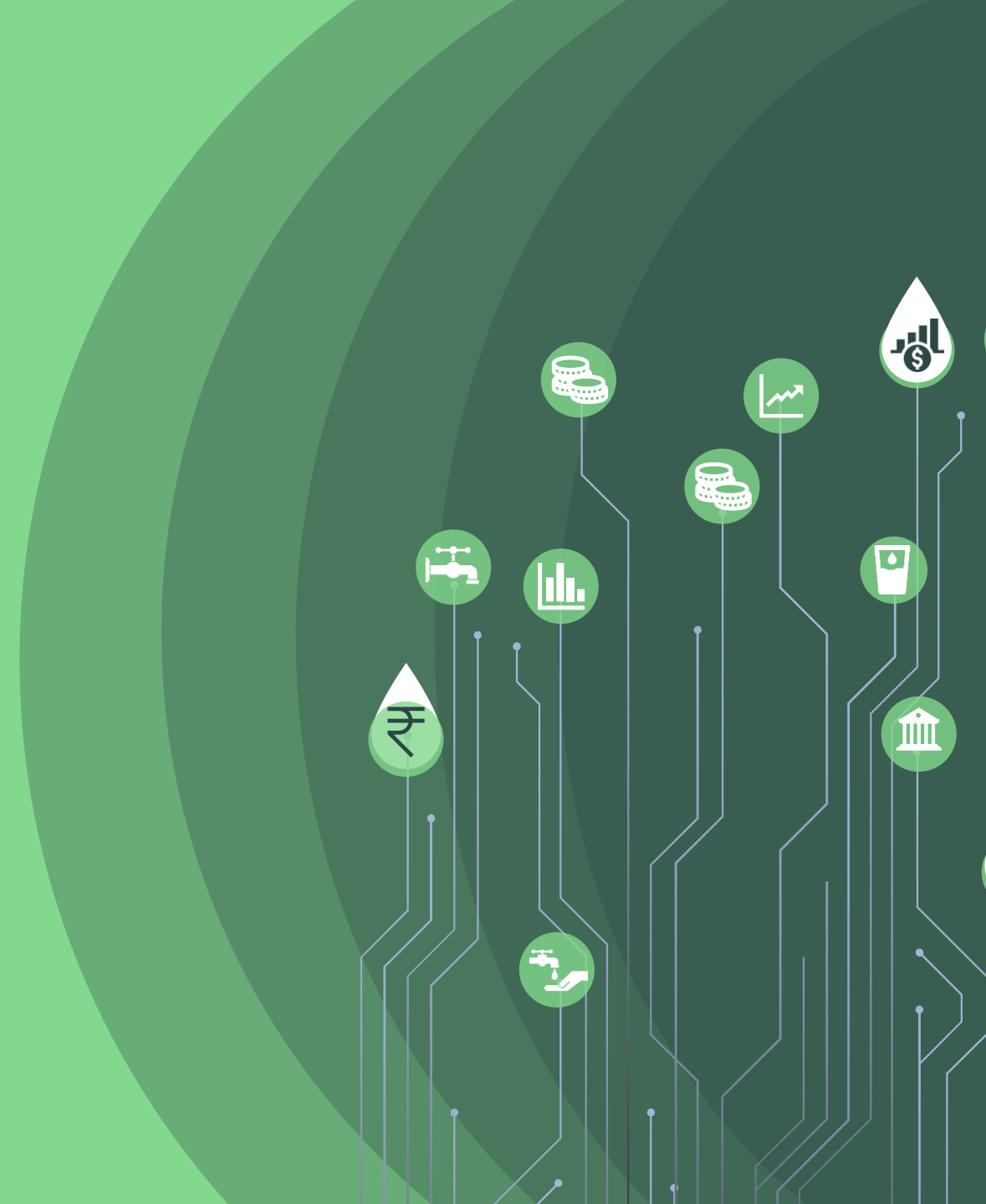
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Indian cities are growing but there is a huge infrastructure financing gap...

By 2036, India will need to invest **\$840 billion in infrastructure** - an average of **\$55 billion** or **1.2 percent of GDP per annum**.

Urban infrastructure has been generally financed through **public funds**.

Own Tax

- Property Tax
- Water Tax
- Sanitation Tax
- SWM Tax
- Tree Tax
- Advertisement Tax

Non- Tax

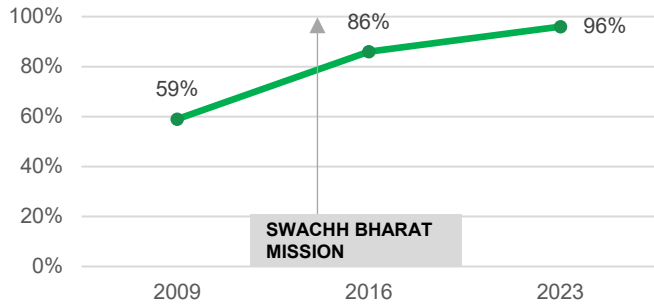
- Development fees and user charges
- Sales and interest
- Rental income

National and State Grants and Programs

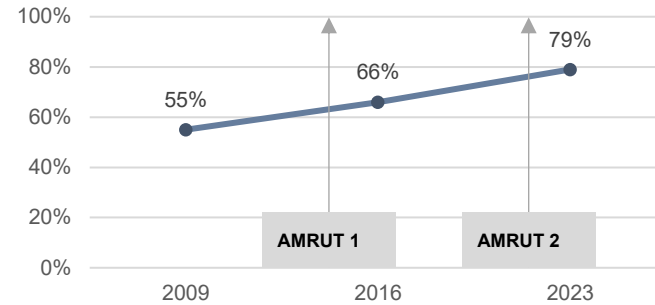
- Untied grants: Stamp duty transfers, GST compensations etc.
- Tied grants like AMRUT, SBM grant, FC grants etc.

Ongoing mission led investment helped cities to improve the access and quality of service delivery

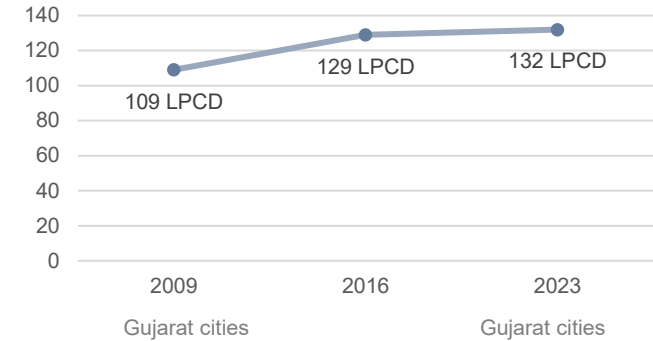
SBM and improvement in coverage of individual household toilets



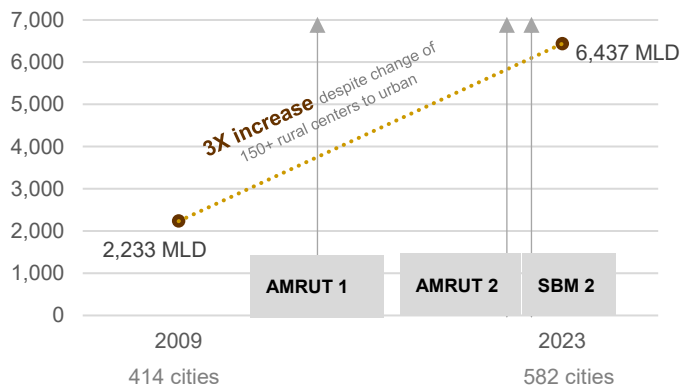
AMRUT and impact of “Har Ghar Jal” on coverage of water supply



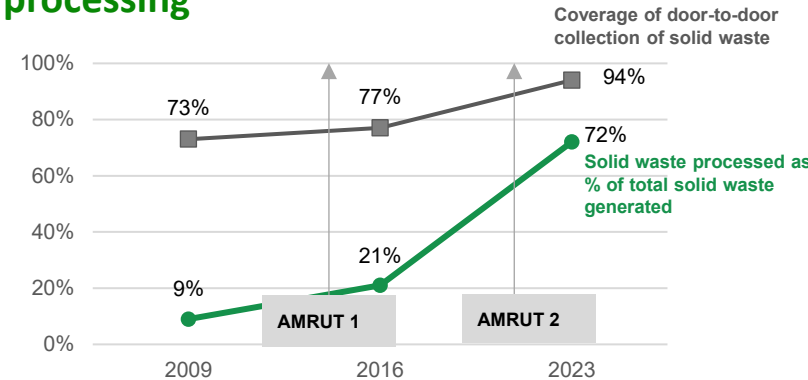
Impact of Sardar Sarovar Dam and Narmada network on water supply quantity in Gujarat cities (litres per capita per day)



Impact of AMRUT and SBM on treatment infrastructure - MLD wastewater treated at secondary STP in Gujarat and Maharashtra

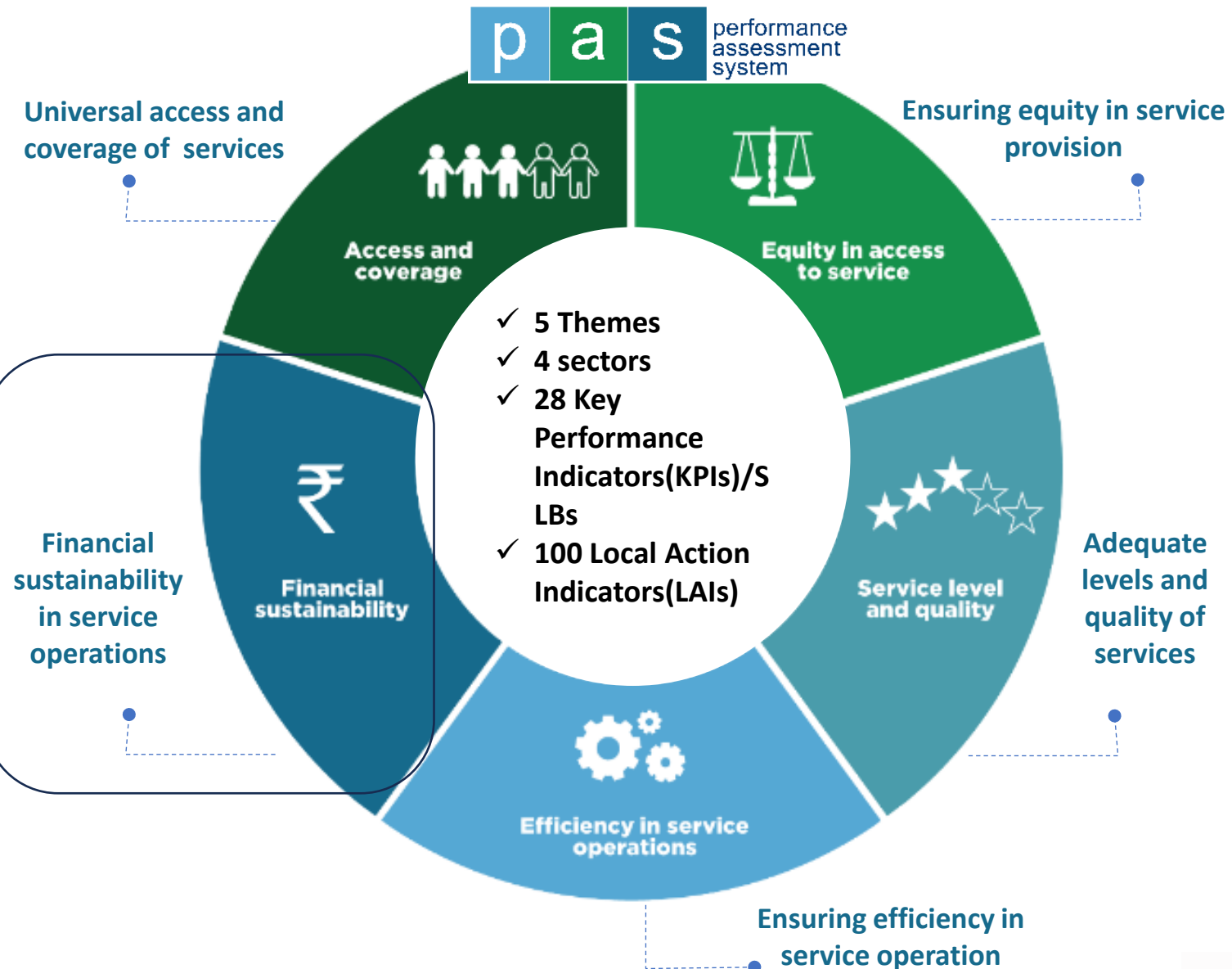


SBM and AMRUT – Impact of “Garbage Free Cities” on solid waste collection and processing



Data from PAS states Gujarat, Maharashtra, Chhattisgarh and Jharkhand between 2009 – 2023
 Number of cities - 414 (2009) to 802 (2023) | Population coverage - 67.0 million (2009) to 115.8 million (2023)

PAS framework for Service Level Benchmarking (SLB)



Nationally aligned

With national SLB initiative

Technically sound

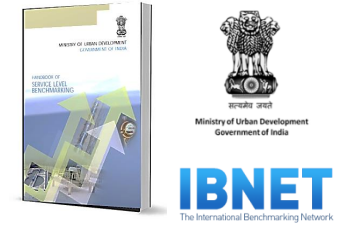
Review of International and Indian efforts, Stakeholder consultations, Pilot studies

Framework suited to local context

Added lens of equity, slums and on-site sanitation

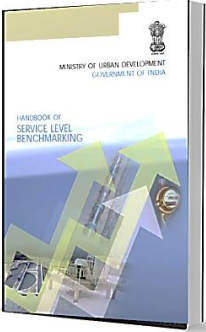
Annual city level monitoring

Online module – self reporting by city governments



	Water supply	Waste water	Solid waste	Storm water
Sectors				
SLBs/KPIs	9	9	8	2
LAIs	35	32	12	
SAN Benchmarks		6		
Key Indicators on Slum services	1	2	1	4

Understanding Cost recovery and Collection efficiency as per SLB with Benchmarks



Cost Recovery

Total annual operating revenues (**Billed**)

*100

Total annual operating expense

Benchmark

100%

Efficiency in collection

Total operating revenues billed during the given year

*100

Current revenues **collected** in the given year

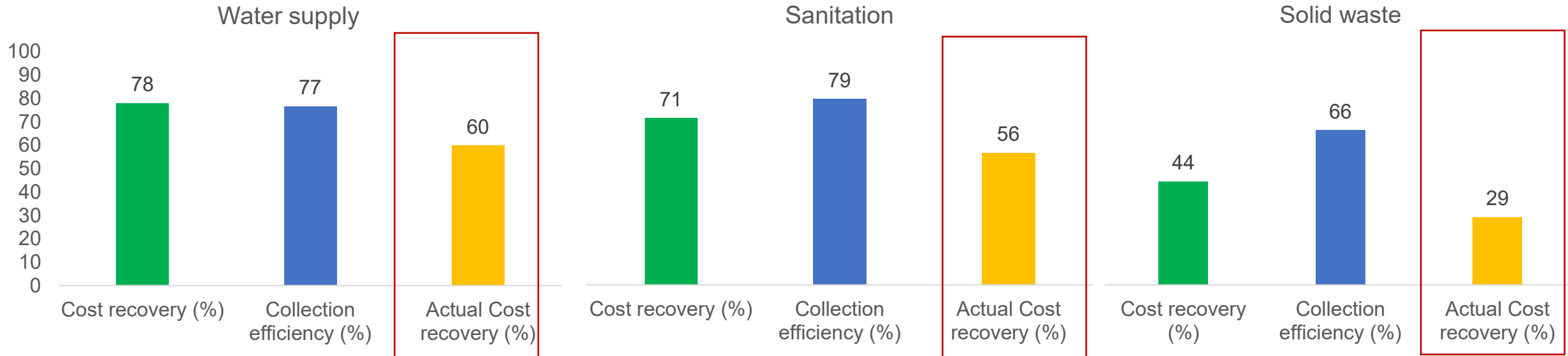
Benchmark

90%

Source: Handbook of Service Level Benchmarking, Government of India, 2009

Key results from Gujarat

Total 165 cities



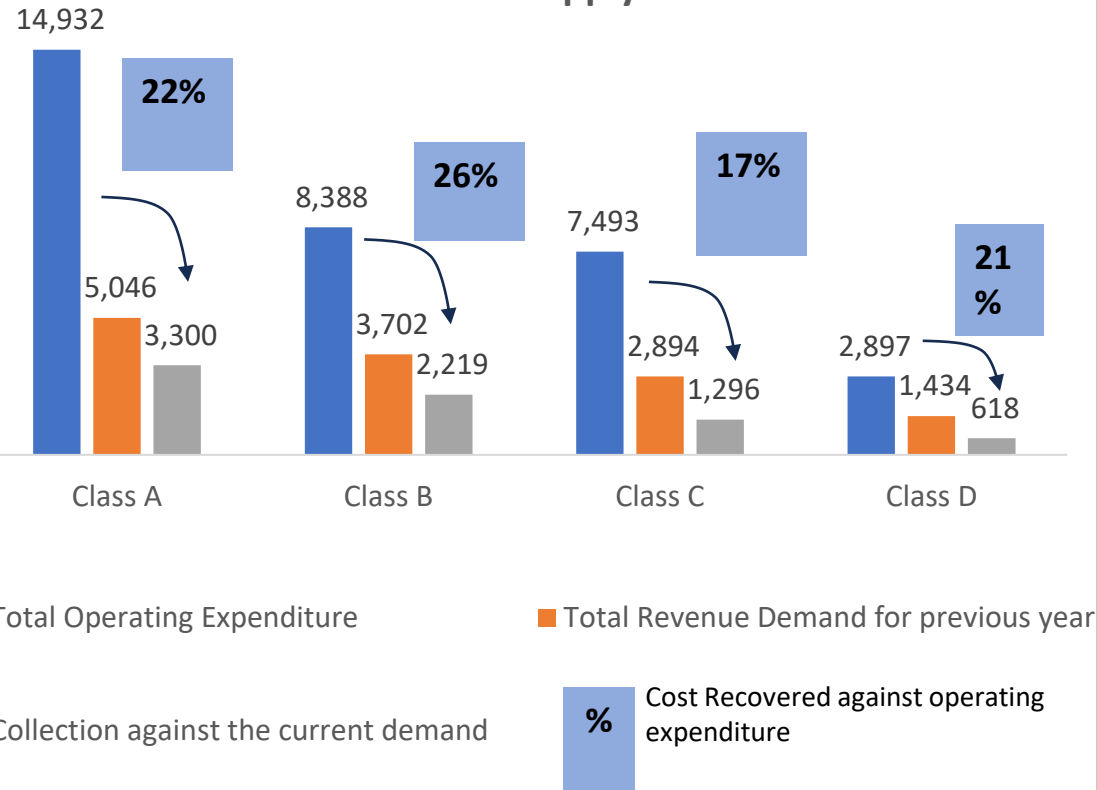
Source: PAS-SLB, Gujarat 2024

Only 25% of the operating cost is recovered through existing collection of water charges in Municipalities of Gujarat

Need to improve the collection efficiency of cities

Need to revise water charges

Operating expenditure vs Revenue collected for water supply



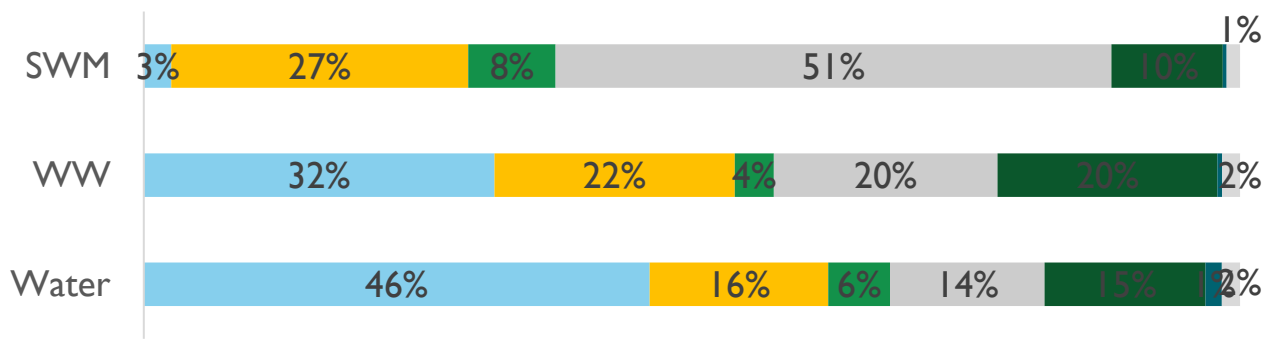
Average water charges (Rs/Annum)

Class	Water charges Residential - General
Class A	600
Class B	1000
Class C	600
Class D	600

Source: PAS-SLB, Gujarat 2024

Electricity bills and bulk water charges are many times left unpaid in the cities...

Breakup of operating cost(%) -Gujarat



- Electricity Charges /Fuel Costs
- Contractor Costs for O&M
- Outsourced /Contract Staff Costs
- Regular Staff and Administration
- Repairs/Maintenance Costs
- Chemicals Costs
- Others (Specify)

Use of renewable energy sources in municipal WASH services can help reduce the operational expenditure

- Out of total operating expenditure, ~40%-60% are incurred from electricity/ fuel costs and bulk water charges- Only 25% of the operating cost is recovered through water charges in MCLs of Gujarat
- **Electricity bills and bulk water charges are many times left unpaid in the cities and recovered through state grants.**
- **Salaries of employees and contractors often paid from other municipal revenue stream such as property tax and other income**

Source: PAS-SLB, Gujarat 2024

Four types of tariff structures are currently being used for water supply services in Gujarat

Flat/ Fixed Tariff (based on ferrule size)

- All municipalities (Class A, B, C, and D) have flat tariff
- 93 out of 157 municipalities have fixed tariff of Rs. 600 (for 1/2 inch connection as per Government Resolution No. NPL/4510/CF-1/M. dated 21.4.2010)
- Rajkot, Junagadh, Jamnagar and Bhavnagar Municipal Corporations also follow fixed tariff system

Tariff linked to general tax

- Ahmedabad Municipal Corporation follows this practice
- Water tax is 30% of the general tax

Tariff linked to property size

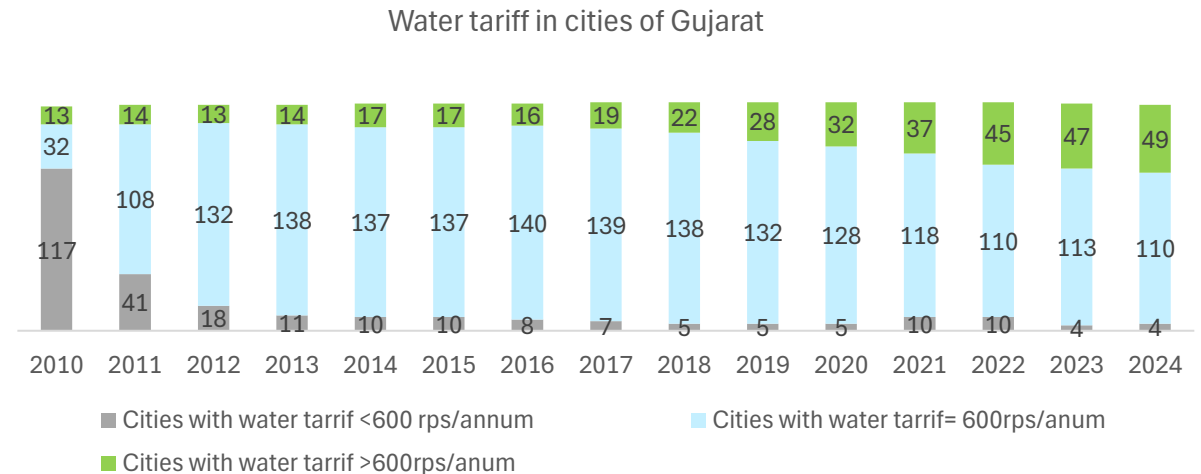
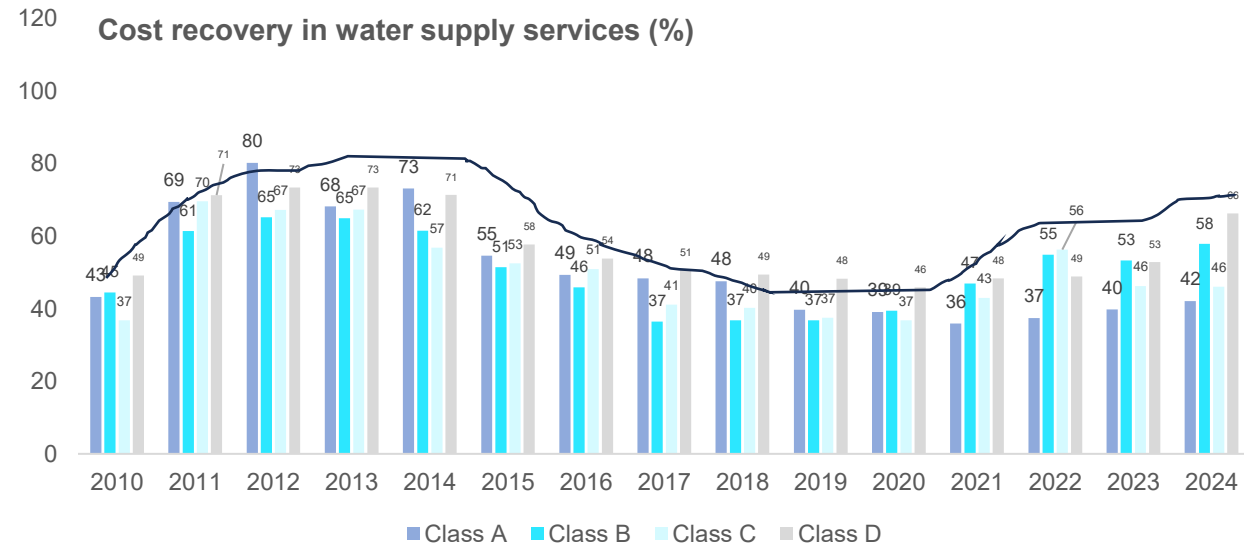
- Surat and Vadodara follow this practice
- Surat charges a combined water and sewerage charge

Volumetric tariff

- These are being used only for metered connections
- In Surat MC 12% of connections metered.
- Ankleshwar Municipality has metered system for 3/4 inch and 1-inch residential connections
- In other Municipal Corporations less than 3% of connections are metered

Tariff revision: The political economy challenge

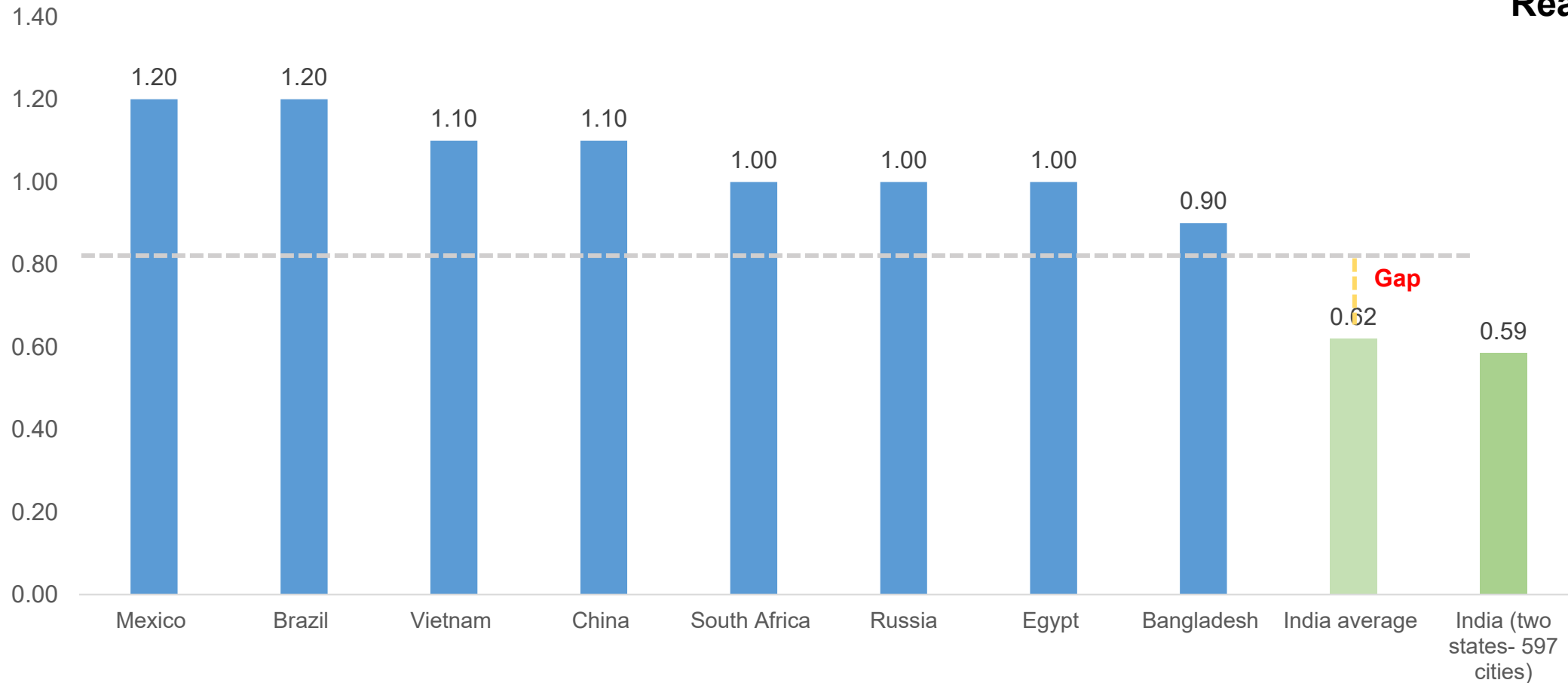
- Back in 2010* when water charges were revised resulted in improved cost recovery but with increase in expense the charges were not revised over time led to drastic reduction in cost recovery of Municipalities.
- Only 34 cities have changed the water charges in last 5 years- Out of which only **7 cities have increased the water charges by two folds**
- **Due to inadequate cost recovery, electricity bills and bulk water charges are many times left unpaid in the cities.**
- **Low-cost recovery also result in delay in salaries and contractors' payment**



*Government Resolution No. NPL/4510/CF-1/M. dated 21.4.2010, was issued for fixing of minimum rates of special water tax for the supply of water in municipal areas

Cost recovery of WASH services is low as compared to other countries

Operating Cost recovery O&M in WASH services



Reasons for low cost recovery

- Low billing coverage
- Low Collection efficiency
- Tariff Revision

Source: International Benchmarking Network for Water and Sanitation Utilities (IBNET) (varied years of comparison per data availability). Note: BRICs = Brazil, Russia, India, China, South Africa; O&M = operation and maintenance, Water and Sanitation in Indian cities, Asian Development Bank, 2025; PAS SLB Data for Gujarat and Maharashtra, 2024

What works: Evidence from practice

Improvement measures to enhance collection efficiency of property tax and WSS taxes

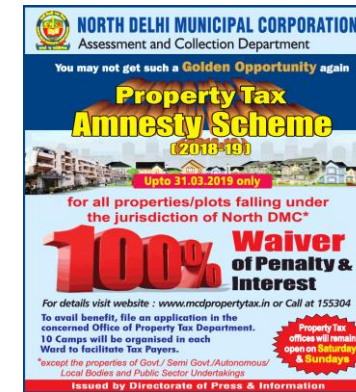
Improve online payment mechanisms for property tax payments

Introduce and enhance property tax payments through digital payment modes like BHIM, Google Pay, NetBanking applications etc.



Link existing applications like E-Nagar, city websites through API integration of these apps

One time settlement (OTS) amnesty scheme to settle arrears



- ✓ Posters
- ✓ Campaigns during tax collection
- ✓ Advertisement on city websites
- ✓ Social media campaigns

Offer rebates and incentives

Cities can offer 2-10% rebates and incentives on early payments (Between April-July) and also for utilizing digital payment modes



GIS Mapping of properties to ensure enumeration of all properties



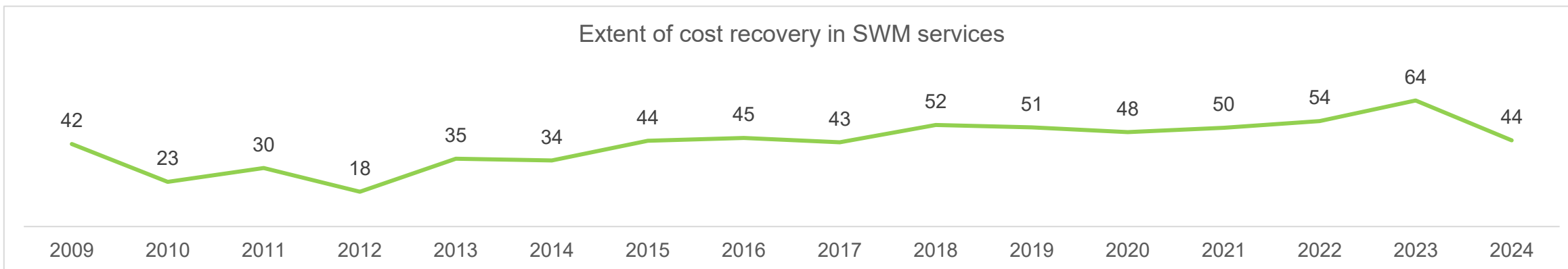
- ✓ Door to door survey through Mobile Apps through geo-tagging
- ✓ Data verification
- ✓ Ensure enumeration of all properties

Property Tax Amnesty Scheme on 100% relaxing penalties and interest in NDMC



Source: <https://www.magicbricks.com/blog/ahmedabad-municipal-corporation-pay-property-tax/114595.html>

Incentivizing municipalities to increase collection efficiency by providing matching grant of tax collection - Gujarat



- Nirmal Gujarat 2.0 launched in 2024.
- Municipalities receive incentive grants based on their annual sanitation tax collection efficiency, with higher incentives (up to 300%) for 91-100% collection.
- Incentives for municipalities if tax collection efficiency is more than 50%.
- Many cities in Gujarat received upto 200% of incentives for tax collection.

Provision in Nirmal Gujarat 2.0

ક્રમ	નગરપાલિકાઓ	નગરપાલિકાઓમાં સઘાઈ વેરા વસુલાતની ટકાવારી			
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Metering at consumer level shows relatively higher service levels and increase in cost recovery

Case of Maharashtra

- Analysis of metered vs. non-metered cities shows that metered cities has improved cost recovery and other key parameters of water supply services such as continuity compared to non-metered cities.

KPIs	Coverage of water supply connections	Per capita available of water at consumer end	Extent of metering of water connections	Continuity of water supply	Days of supply in a month	Cost recovery in water supply services	Efficiency in collection of water supply related charges
Performance of metered city	91	140	61	5	27	73	51
Performance of non-metered city	65	92	0	1	19	63	46

Source: PAS-SLB, Maharashtra 2024

Policy recommendations to enhance the cost recovery for water and sanitation services

Strengthen revenue systems through full coverage + digital integration

Shift focus from just collection efficiency to **expanding the billing base and plugging leakages**.

- Ensure **100% property and connection mapping** using digital systems
- Integrate databases: **property tax, water connections, electricity, trade licenses**
- Enable **end-to-end digital billing and payments** with incentives for compliance

Institutionalize periodic tariff rationalization

Move from ad-hoc tariff revisions to a **rule-based, periodic tariff framework**.

- Mandate **annual or biennial tariff reviews** linked to O&M costs, inflation, and service benchmarks
- Introduce **state-level tariff benchmarking guidelines** to ensure consistency across cities
- Protect vulnerable groups through **targeted subsidies or lifeline tariffs**, instead of underpricing for all

Link fiscal incentives to financial and service level performance

Align state and national funding with **measurable improvements in cost recovery and efficiency**.

- Expand models like **performance-based grants** (e.g., linked to collection efficiency, metering, NRW reduction)
- Reward cities achieving **higher cost recovery and service improvements simultaneously**
- Introduce **disincentives for persistent under-recovery without reform efforts**

Thank You

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