21st African Water Association
International Congress & Exhibition
and The 7th International Faecal Sludge
Management Conference

Performance Assessment System for potentially scaling up CWIS

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CEPT University

Our Journey from
Paper based system → IT enabled monitoring system

Urban water and sanitation in India:
Scenario in the beginning of the program

Major urban projects focused mainly on infrastructure creation … and not on service delivery !!!

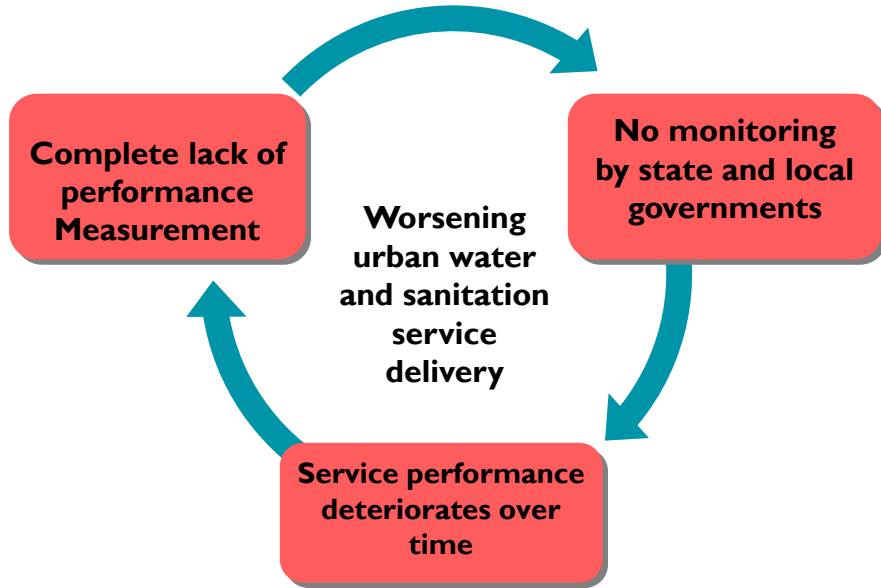Little was known about impact on improvements in service levels, quality, financial sustainability

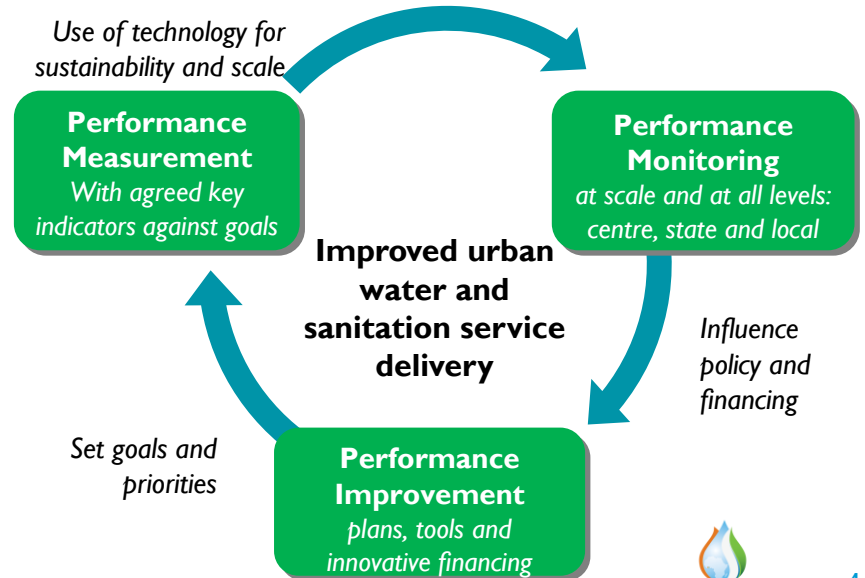Data available with ULBs …but it is paper based and fragmented, not collated, analyzed or reported…

You cannot improve what you cannot measure!

PAS Approach – moving to a virtuous cycle

Complete lack of performance Measurement

No monitoring by state and local governments

Worsening urban water and sanitation service delivery

Service performance deteriorates over time

Measure and monitor performance to reward and learn from success and demonstrate results

Use of technology for sustainability and scale

Performance Measurement
With agreed key indicators against goals

Performance Monitoring
at scale and at all levels: centre, state and local

Improved urban water and sanitation service delivery

Influence policy and financing

Set goals and priorities

Performance Improvement
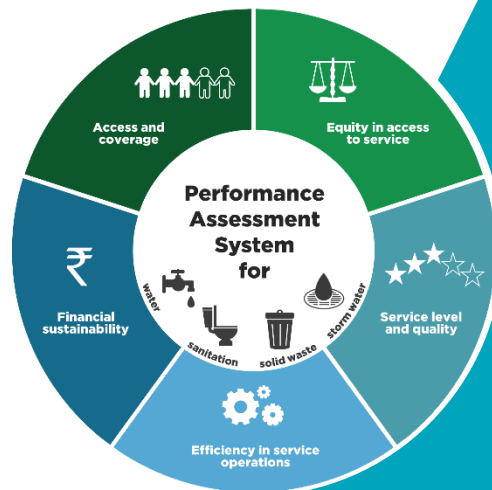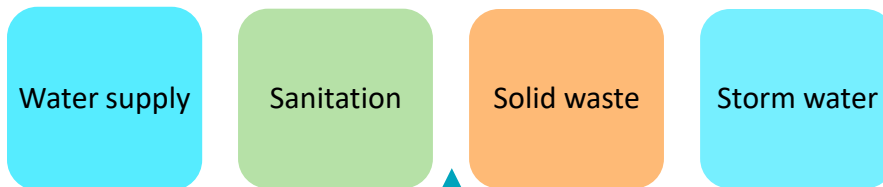*plans, tools and innovative financing*

PAS - SLB+ Framework

NATIONALLY OWNED

National Technical Partner for SLB
Rolled out with State Governments

E-PLATFORM

Online module
Inbuilt validation checks
Scientific system for calculating indicators
Comparative dashboards

| Water supply | Sanitation | Solid waste | Storm water |

Performance Assessment System for

- Access and coverage
- Equity in access to service
- Service level and quality
- Efficiency in service operations
- Financial sustainability

(water, sanitation, solid waste, storm water)

5 Themes — ...to match with goals /targets of delivery of water supply and sanitation services

32 Key Performance Indicators — ... for performance assessment

100 Local Action Indicators — ...drilled down indicators for actions for performance improvement

PAS Indicators – 32 Key Indicators, 100 Drill down Indicators

WATER SUPPLY	WASTE WATER	SOLID WASTE	EQUITY	STORM WATER
9 SLB Indicators	**9** SLB Indicators	**8** SLB Indicators	**4** Key Indicators	**2** SLB Indicators
35 Drill down Indicators	**6** SAN Benchmarks **32** Drill down Indicators	**12** Drill down Indicators	**15** Drill down Indicators	

UWSS services

32 Key Indicators

100 Drill down Indicators

What set PAS apart?

Inclusive	Data reliability	Financial sustainability

Inclusive

- Indicators include onsite systems
- Indicators on equity in service
- Available in local languages

Data reliability

- Standardized system to report on quality and reliability of indicators based on source of data
- Inbuilt validation checks

Financial sustainability

- Indicators on Financial sustainability for cost recovery, collection efficiency etc.

Government ownership and responsibility

- Work at scale annually – not a one off pilot!
- Self assessment portal – information reported by officers from city governments
- Indicators on human resources, complaint redressal and resource planning and management

**Assessing safe and sustainable services across the full service chain**

- Monitor service provision rather than just infrastructure - Efficiency in service operations , service level and quality

SAN Benchmarks: Citywide assessment of sanitation service delivery Capturing on-site sanitation along with conventional sewerage

Mixed (sewerage + onsite) sanitation system

User interface	Collection	Conveyance	Treatment	Recycle & Reuse
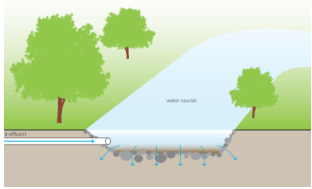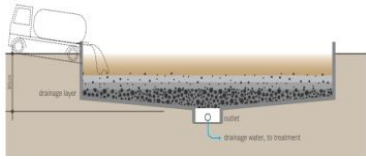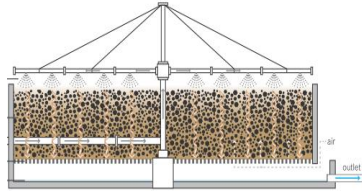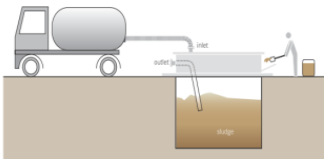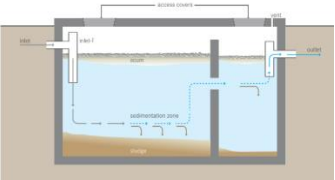
1. Coverage of toilets

2. Coverage of adequate sanitation systems

3. Collection efficiency of sanitation system (weighted average)

4. Adequacy of treatment capacity of sanitation system (weighted average)

5. Quality of treatment of sanitation system (weighted average)

6. Extent of reuse and recycling in sanitation system (weighted average)

Systematic Approach for Data Reliability Assessment

Reliability Band for Key Performance Indicators

Reliability A
Data records are updated regularly based on best available procedure

Reliability B
Data records maintained as appropriate with at least periodic updating

Reliability C
Data is extrapolated from a limited sample

Reliability D
Data is estimated without measurement or documented evidence

- Automatically calculates the reliability for an indicator with a set of questions that address the conditions in each reliability band as listed in the SLB Handbook.
- Ensures a transparent and consistent comparison across all cities.
- It also informs cities about the quality of their existing data systems, and encourages cities/state to focus on data system strengthening.
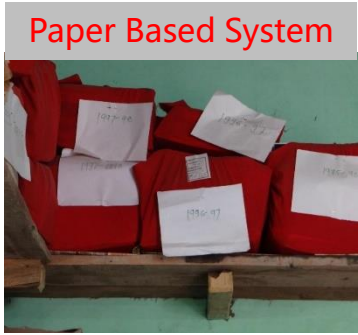
Reliability A

Question	Options	Y/N
What is the basis of estimation of HHs served with individual water supply connections?	1. Through household surveys (1-5 yrs)	Y
	2. Number of residential connections	
	3. Area covered by distribution network	
	4. Road covered by network length	
How are records of HHs served by water supply maintained?	1. Computerized	Y
	2. Only Manual	

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Self assessment portal – information reported by officers from city governments
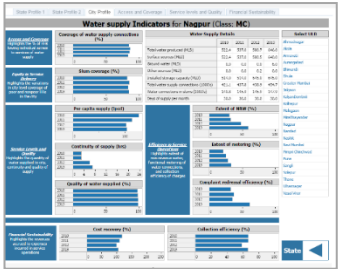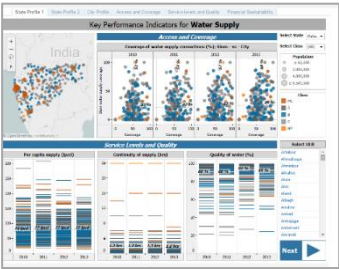
System integration - Water and Sanitation Data System Analysis across service chain

Water supply service chain

Source → Treatment → WDS

Extent of NRW
Quality of water supply

Distribution Network

Consumer
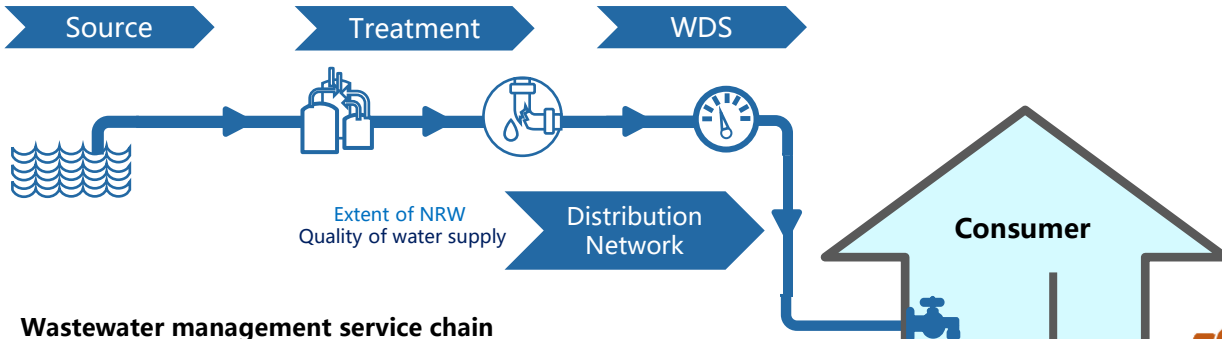
Solid waste management service chain

Reuse/Disposal

Extent of MSW recovered
Extent of scientific disposal

Transportation → Treatment

Efficiency in collection of MSW
Extent of segregation of MSW
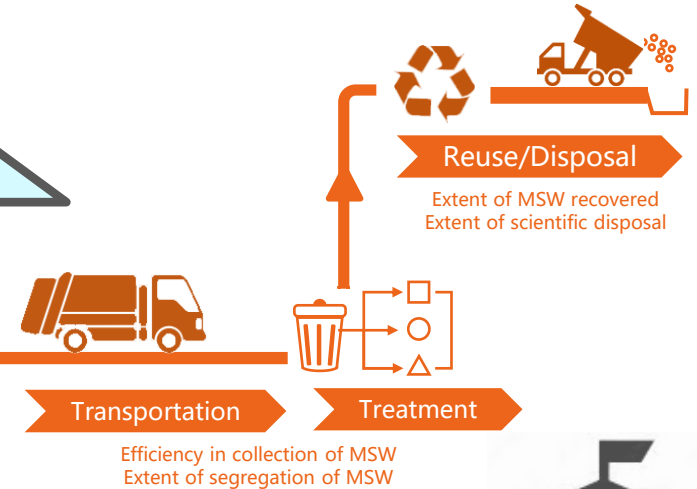
Wastewater management service chain

Reuse/Disposal ← Treatment ← Transport ← Emptying

Reuse/Disposal ← Treatment ← Conveyance

Extent of reuse and recycling

Adequacy of wastewater treatment capacity
Quality of wastewater treatment

Collection efficiency of sewage
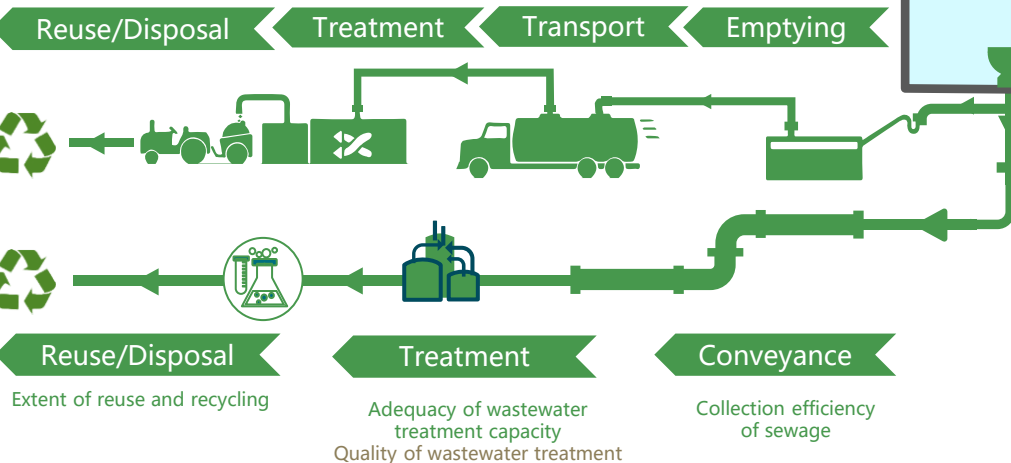
Urban Local Government

Cost recovery of water supply, wastewater and SWM services

Our journey from two states to National level....

From paper based disaggregated data....
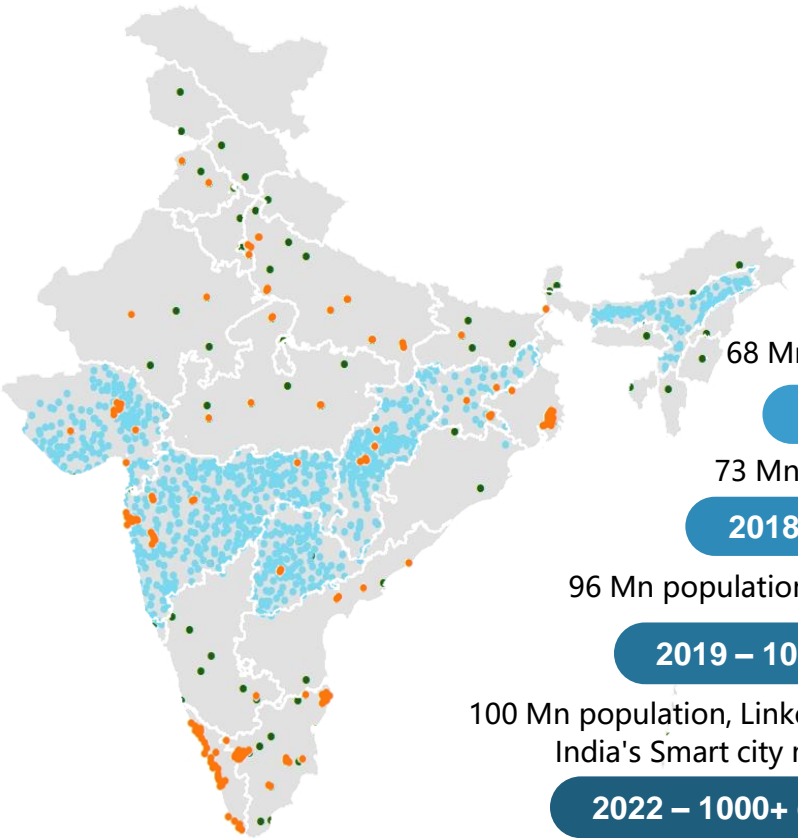
2009 – 416 cities

68 Mn population, 2 states

2015 – 463 cities

73 Mn population

2018 – 900+ cities

96 Mn population, 6 states

2019 – 1000+ cities

100 Mn population, Linked with India's Smart city mission

2022 – 1000+ cities

Linked with City Finance Portal of Government of India

....to IT enabled information system

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CWIS framework has been adapted by leading organizations

CWIS framework by **BMGF**

4 pillar of CWIS support by **World Bank**
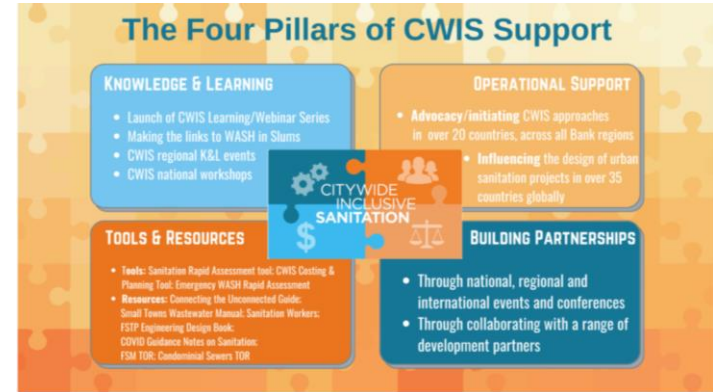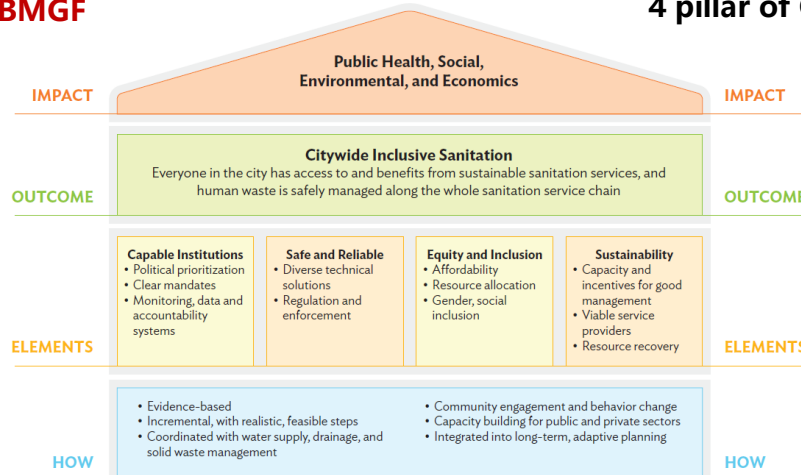

Citywide Inclusive Sanitation House by **ADB**

Convergence of PAS and BMGF-CWIS framework

CORE CWIS OUTCOMES

EQUITY

Coverage in Access

3 Indicators

SAFETY

Safely conveyed & transported — 3 Indicators

Safely reused & recycled — 1 Indicator

SUSTAINABILITY

Cost recovery & affordability

1 Indicator

CORE CWIS FUNCTIONS

RESPONSIBILITY

Inclusivity in mandate

7 Indicators

ACCOUNTABILITY

Efficiency in service operations

5 Indicators

RESOURCE PLANNING & MANAGEMENT

Service level and quality

6 Indicators

26 PAS Indicators used to calculate the PAS-CWIS Index

Framework for PAS-CWIS Index

PAS-CWIS Index

PAS-CWIS Index

Dimension Indices

| Coverage of access | Cost recovery and Affordability | Safely conveyed, treated and reused | Inclusivity mandate | Accountability | Resources planning and management |

Indicator Indices

| 3 Indicators on- Coverage of access | 1 Indicators on- Cost recovery and Affordability | 4 Indicators on- Safely conveyed, treated and reused | 7 Indicators on- Inclusivity mandate | 6 Indicators on- Accountability | 7 Indicators on- Resources planning and management |

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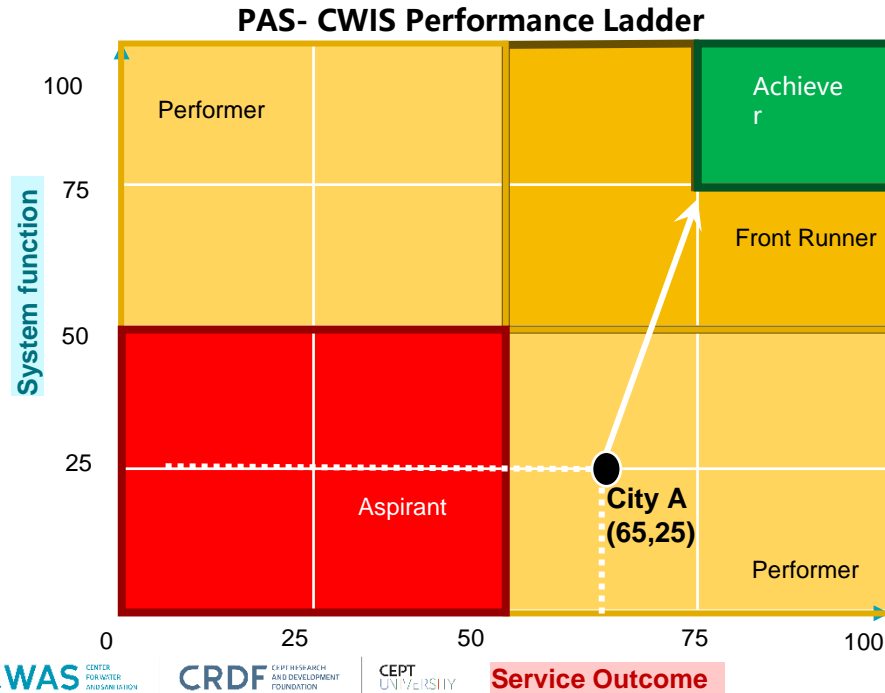
■ Themes of service outcomes   ■ Themes of system functions

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PAS-CWIS Performance Ladder designed to assess city performance

- Plotting cities performance in comparison to other cities - identify areas of improvement.

PAS- CWIS Performance Ladder

Performance		System Function	Service Outcome
Q1	Achiever	>75%	>75%
Q2	Front Runner	< or =75% and >50%	<or =75% and >50%
Q3	Performer	<Or = 50%	<Or = 50%
Q4	Aspirant	<50%	<50%

City A has better performance in Service outcome than in System function

To become high performer city, City A need to improve Service outcome by 10% and System function by 50%

PAS information has led to data systems strengthening and performance improvement ...

Process Mapping of Water Supply and Sanitation at Local Level
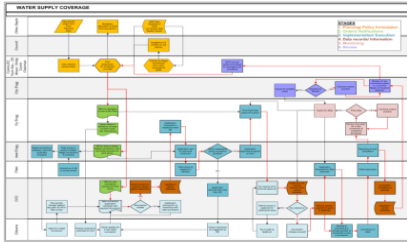
E-governance Systems and SLB Integration

Water audits and drinking water quality surveillance

Standard Operating Procedure (SOP) for Routine Water Quality Surveillance in ULBs in Gujarat

Information System Improvement Plans

With CWIS focus, PAS has the potential to become a tool towards scaling-up CWIS

- ODF plans
- Moving towards ODF++, WATER+
- Scheduled desludging plans

Aligning with government programs and priorities

Infrastructure programs

San Worker Safety

Sanitation monitoring

Convergence with Women and livelihoods

National Urban Livelihoods Mission
Ministry of Housing & Urban Poverty Alleviation

A wide range of users – Towards Data Driven Governance and achieving CWIS goals

GOVERNMENT AGENCIES

City/State governments, SFCs for policy making, assessments for improvement plans, reporting

FINANCIAL INSTITUTIONS

ADB, World Bank - information for project identification, selection and formulation

REGULATORS

CAG, State Technical Boards - To assess regulatory compliance

RESEARCHERS

Academicians, students of planning or technology colleges

CONSULTANTS

For consulting assignments in preparation of Vision documents, City Development Plans, City Sanitation Plans

What works...

1. **Not a 'project' but a 'programme'** to mainstream it in governments

2. **Work with all three tiers of Governments** to influence policies and implementation

3. **Linking reporting with intergovernmental grants** - Finance Commission recommendations of reporting SLBs, City Finance portal

4. **Framework suited to local context** - Focus on efficiency, equity and on-site sanitation

5. **Digital platform for self assessment** with inbuilt validation checks to measure the service delivery

6. **No Pilots.....operate at Scale** to make an impact - Started with 400+ cities in 2008-09 , now scaled up to 1200+ cities across India

7. One of the **largest open access time series database** for urban water and sanitation

THANK YOU

About us
The Center for Water and Sanitation (CWAS) at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.