

Digital Monitoring and ICT Tools Learning Session

Online Performance Assessment System (PAS): Monitoring Water and Sanitation Services at Scale



CWAS CENTER FOR WATER AND SANITATION

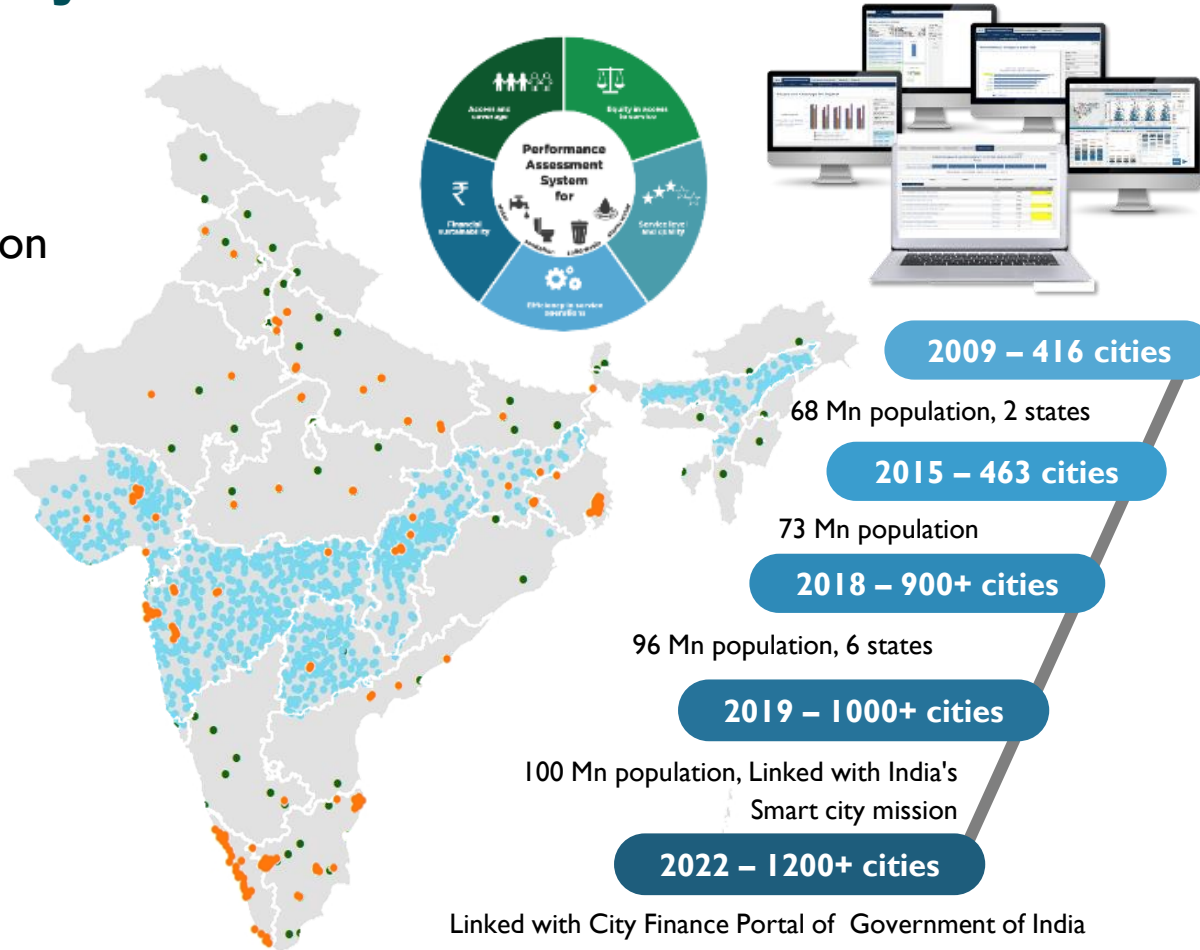
CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION

CEPT UNIVERSITY

NFSSM
Alliance

Performance Assessment System for Water and Sanitation in India

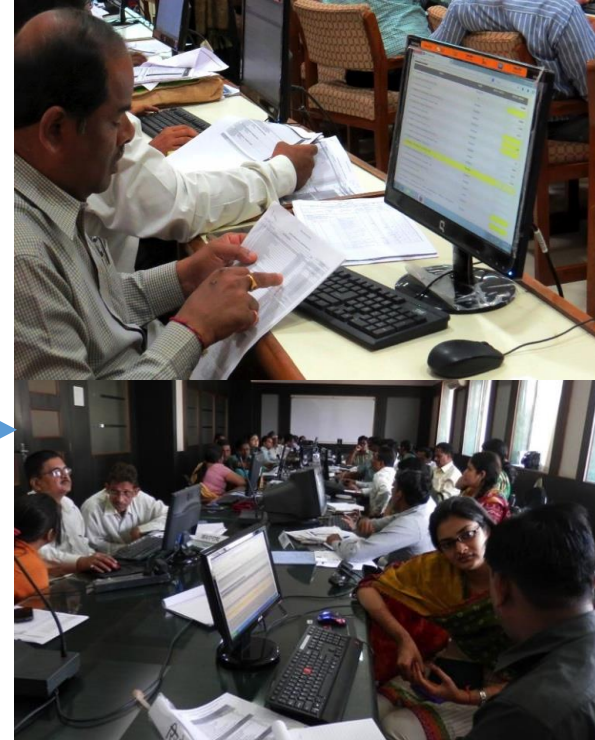
- **Digital platform for self assessment** with inbuilt validation checks to measure the service delivery
- **Framework suited to local context** - Focus on efficiency, equity and on-site sanitation



**Made PAS an e-platform - www.pas.org.in
with inbuilt validation checks
in partnership with Tata Consultancy Services (TCS)**



Journey from a paper based to online system



Online data entry for SLB



Unique access for each city

You are signed in as Arang ULB.

| Sign Out |

Home Performance Assessment Performance Improvement Urban Sanitation Resources About Us

Data Entry

Checklist

The SLB-PAS checklist has been developed to assess Service Level Benchmarks for the indicators as recommended by the **14th Finance Commission**.

This checklist is composed of 6 worksheets, with an additional sheet on list of documents/formats to be compiled. The 6 worksheets ask for information about the water supply, wastewater (sanitation and sewerage), solid waste management, and slum unit's performance data and operating environment. These are:

1. General Information
2. Water Supply
3. Sewerage and Drainage
4. Solid Waste Management
5. Additional Information
6. Reliability

Cells highlighted WHITE is for data entry inputs. Cells highlighted YELLOW is disabled as data is already filled. Please save (click 'Save') after entering data for each sub section. Upon completion of data entry for a particular sheet (e.g. General Information), click SUBMIT button given at the top of the page to ensure the data is stored in the database. Please note that once the data is submitted, the data can be edited only upon approval by Administrator.

Please note that the data for the previous year is displayed along with the current year to facilitate data entry.

Once the data is submitted, the approval of the checklist will be done by the Commissioner/Chief Officer, and state department. Once the Commissioner/ Chief Officer and state department approves the data, the various reports for the city would be generated.

Select Financial Year

FY 2017-2018

View FY 2017-2018 Checklist

View FY 2017-2018 Indicator Report

Approval Status

Select Language to Download Checklist

---Select---

Download FY 2017-2018 Checklist

Download FY 2017-2018 Target Setting Model

Designation	Role
State SLB Cell	Reviews Cities Pending the Checklist Submission
District Collector	Approval Required After Approval by City

Key features of online SLB-PAS module

- **300 inbuilt data validation checks** for correctness, logic and inter-relation of input data into the online system. Two types of checks are inbuilt :
 - Pop up message to recheck entered values; for example, decrease in water supply connections
 - User can not submit data if entered unacceptable values; for example, HHs with toilet value is more than total HHs in the ULBs
- Online system is also available in the **local languages**: Hindi, Gujarati and Marathi
- Used by **6 state governments** + SMART cities and **1000+ cities** in India with diverse geography and varied levels of development.



Data validation – Inbuilt in Online module

The page at www.pas.org.in says:

The Number of Properties with access to toilets is lower than previous year.

OK

You are signed in as Nandura ULB. | Sign Out |

Home Performance Assessment Resources About Us

Data Entry

PERFORMANCE ASSESSMENT SYSTEM (PAS) PROJECT
Nandura

General Information Water Supply Sewerage and Drainage Solid Waste Management Equity Related Info. Reliability Progressive SLB

Progressive SLB : FY 2014-2015

Reset Submit Go Back to Data Entry Save All

1. COVERAGE OF TOILETS

Sanitation Coverage				
Item	Unit	2013-2014	2014-2015	
1.1 Total Number of Properties in the City	Number	10600	10000.0	
1.2 Properties with toilets	Number	7794	7600	
1.3 Households dependent on functional community toilets	Number	545		
1.4 Total Number of Properties with access to toilets	Number	8339	7600	

Save

PAS-SLB+ Framework

NATIONALLY OWNED

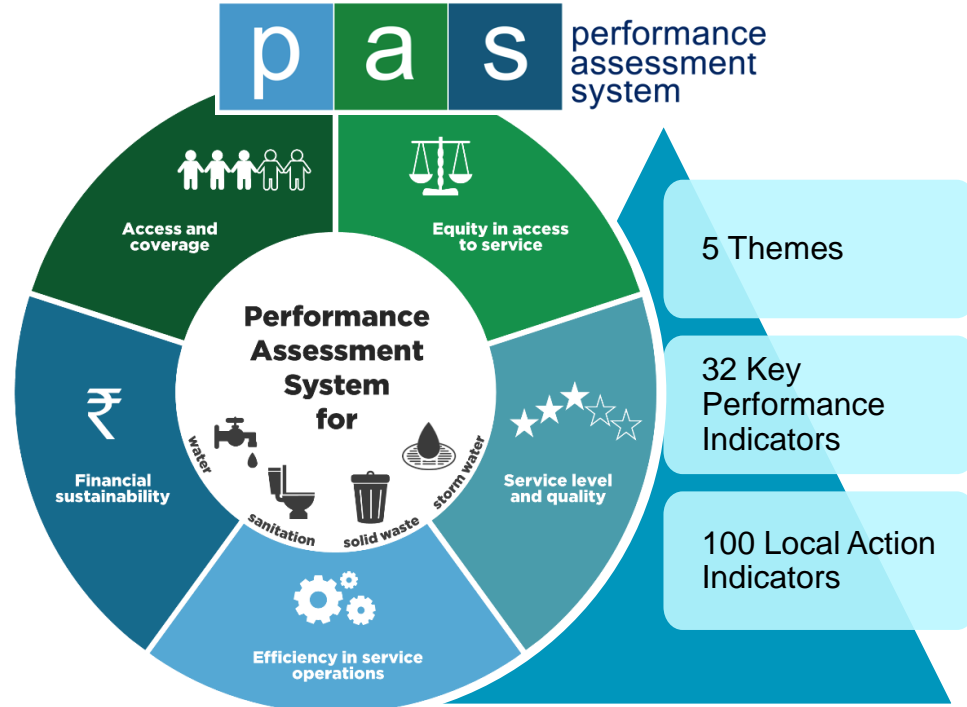
National Technical Partner for SLB
Roll out with State Governments

TECHNICALLY SOUND

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

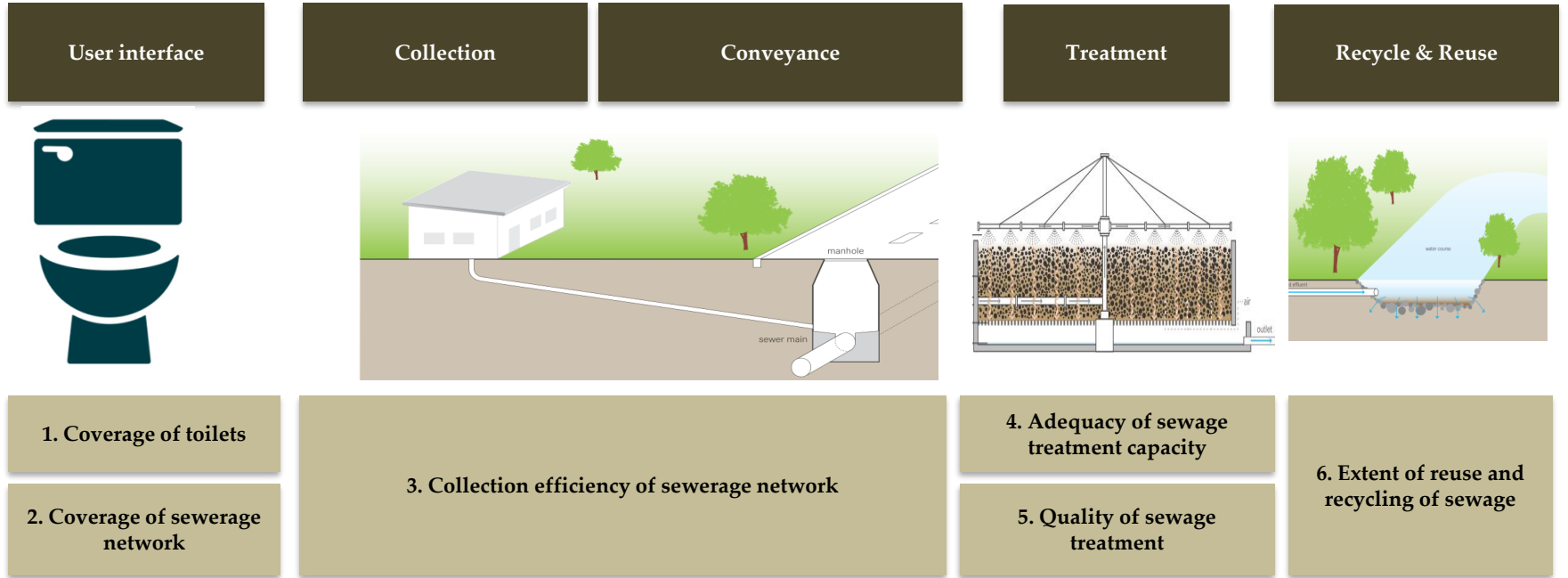
FRAMEWORK SUITED TO OUR CONTEXT

Focus on efficiency and service quality like
international frameworks but also added the lens
of equity, slums and later OSS



National level indicators - Sewerage system

Conventional Underground Sewerage system



SAN Benchmarks: Citywide assessment of sanitation service delivery

Including on-site sanitation

SAN Benchmarks provides a framework for performance assessment of city wide sanitation by capturing onsite sanitation systems along with the conventional sewerage systems.

Mixed (sewerage + onsite) sanitation system

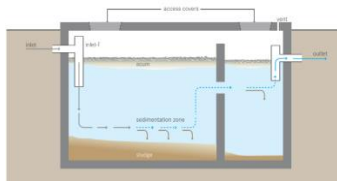
User interface



1. Coverage of toilets

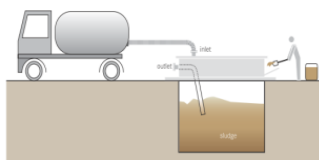
2. Coverage of adequate sanitation systems

Collection



3. Collection efficiency of sanitation system (weighted average)

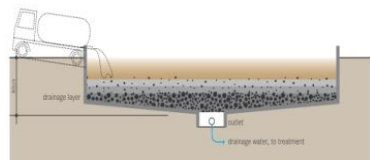
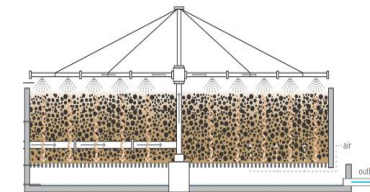
Conveyance



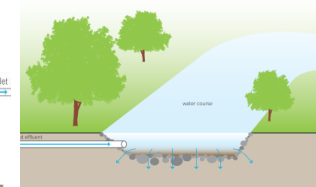
4. Adequacy of treatment capacity of sanitation system (weighted average)

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

Treatment



Recycle & Reuse



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

SAN Benchmarks: Citywide assessment of sanitation service delivery

Including on-site sanitation

Revised Sanitation Indicators (Sewerage system + Onsite systems)	
1. Coverage of toilets	Percentage of properties with access to toilet facility in the city
2. Coverage of adequate sanitation system	Percentage of households with individual toilets connected with adequate sanitation systems (sewer network/ septic tank / double pit system) to total households in the city.
3. Collection efficiency of sanitation system	Weighted average of collection efficiency of each sanitation system, weighted by share of households dependent on each sanitation system.
4. Adequacy of treatment capacity of Sanitation System	Weighted average of adequacy of treatment plant capacity available for each sanitation system, weighted by share of households dependent on each sanitation system.
5. Quality of treatment of sanitation system	Weighted average of quality of treatment of each sanitation system, weighted by share of households dependent on each sanitation system.
6. Extent of reuse and recycling in sanitation system	Weighted average of extent of reuse of treated wastewater and sludge after adequate treatment as a percentage of wastewater and sludge received at the treatment plant, weighted by share of household dependent on each sanitation system.

PAS – Sector wise indicators

**UWSS
Services**



Water Supply

Sanitation

Solid waste

Equity

Storm water

32

Key Indicators

9

Key Indicators

9

Key Indicators

8

Key Indicators

4

Key Indicators

2

Key Indicators

100

+

Local action
Indicators

35

Local action
Indicators

6

SanBenchmarks

12

Local action
Indicators

13

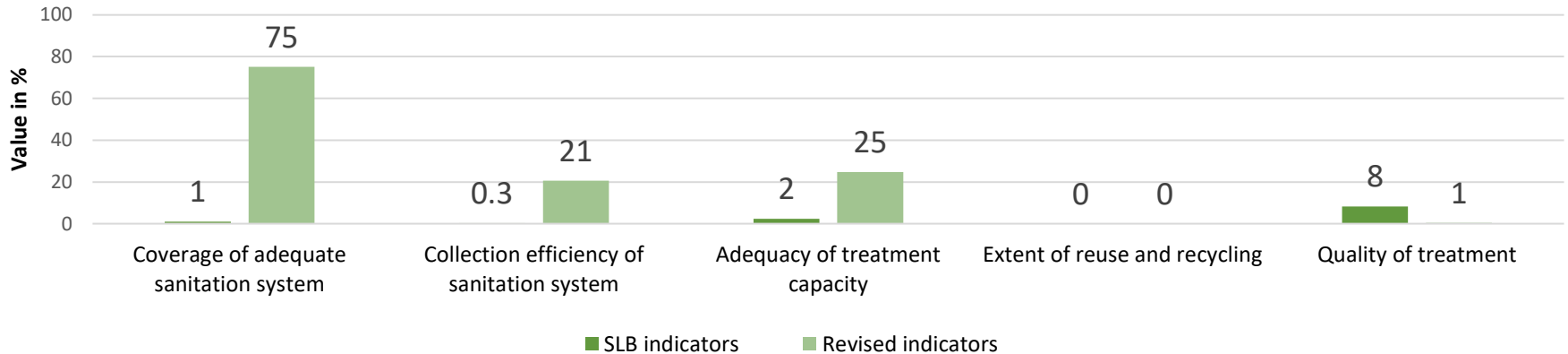
Local action
Indicators

37

Local action
Indicators

SAN Benchmarks: *State Level Sanitation Assessment*

Sanitation assessment using existing and revised indicators - urban Chhattisgarh (2014-15)



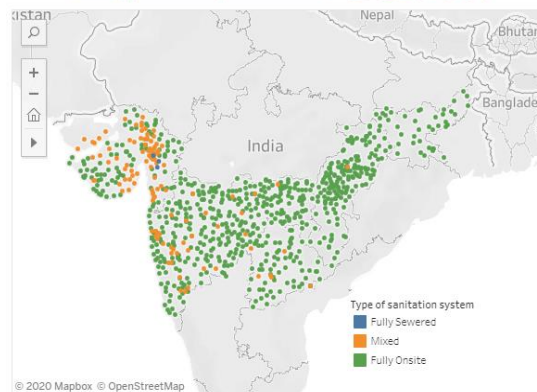
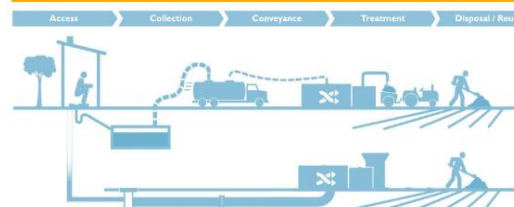
- ❑ Only 2 ULBs has partial underground sewer network and only 1 ULBs (Bilaspur) has sewerage treatment plant
- ❑ Revised indicators show **better performance for coverage of adequate sanitation system and collection efficiency.**
- ❑ Adequacy increases because it captures treatment of **grey water through septic tank connected to soak pit**

SAN Benchmarks: State and City Dashboards

SanBenchmarks

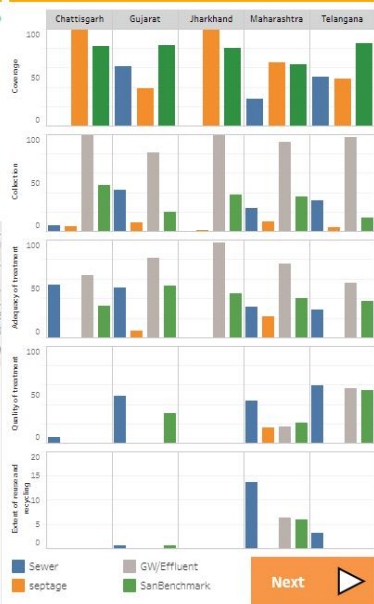
An analysis of available information suggests that only a few cities in India have sewerage networks. On the other hand, many cities depend fully on onsite sanitation systems. In most cities with sewer network, the coverage is partial for the network and connections. Despite this wide prevalence of onsite sanitation systems, the SLB indicators of the Government of India focus only on conventional underground sewerage systems. A new set of indicators have been developed to reflect the prevailing situation in urban India, where both sewerage and onsite sanitation systems are prevalent. The basic premise is also that a well-managed onsite sanitation system can also result in a fully sanitized city as per the NUSP.

Sewered cities vs onsite sanitation



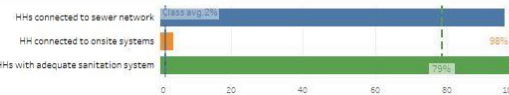
© 2020 Mapbox © OpenStreetMap

SanBenchmarks

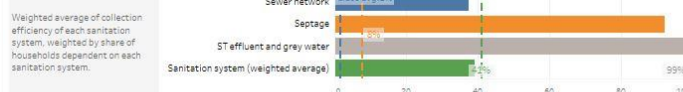


SanBenchmarks Profile for Pachgani (Class C)

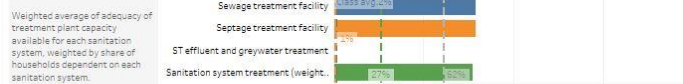
Coverage of adequate sanitation system



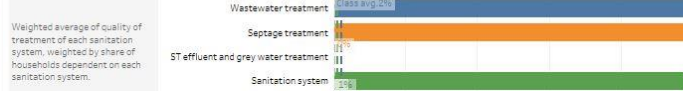
Efficiency of collection of sanitation system



Adequacy of treatment of sanitation system



Quality of treatment of sanitation system



Extent of reuse and recycling in sanitation system



© OpenStreetMap contributors

Select state

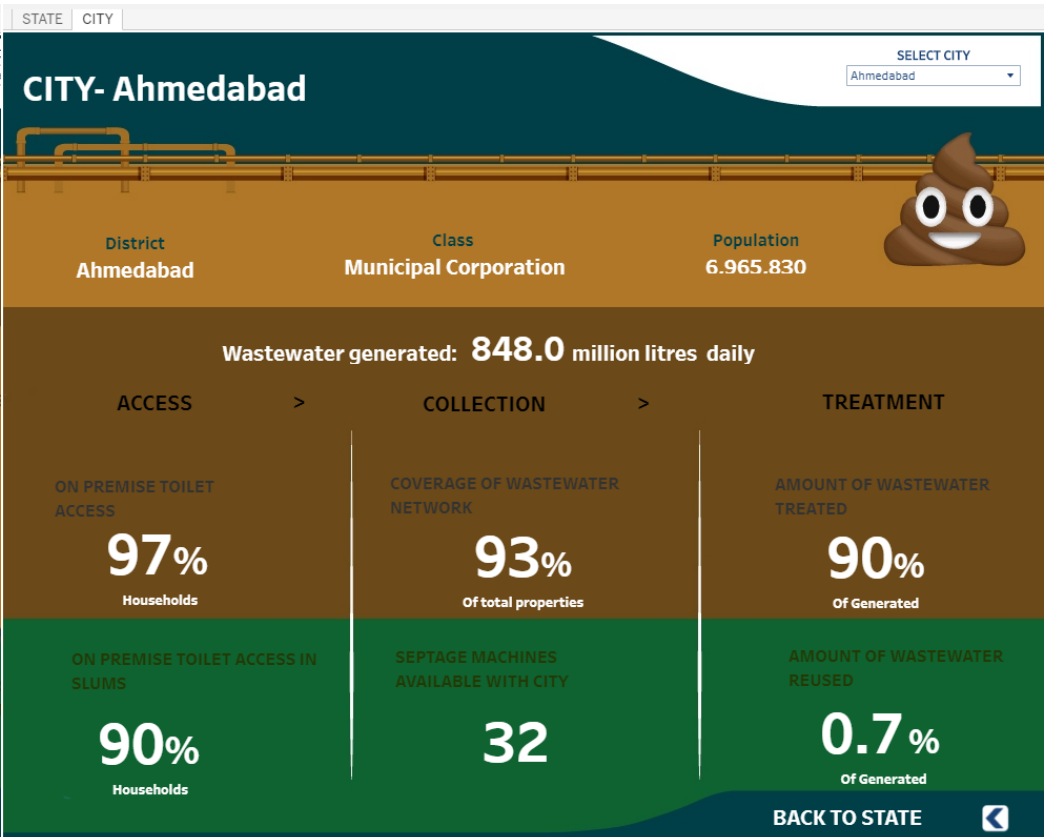
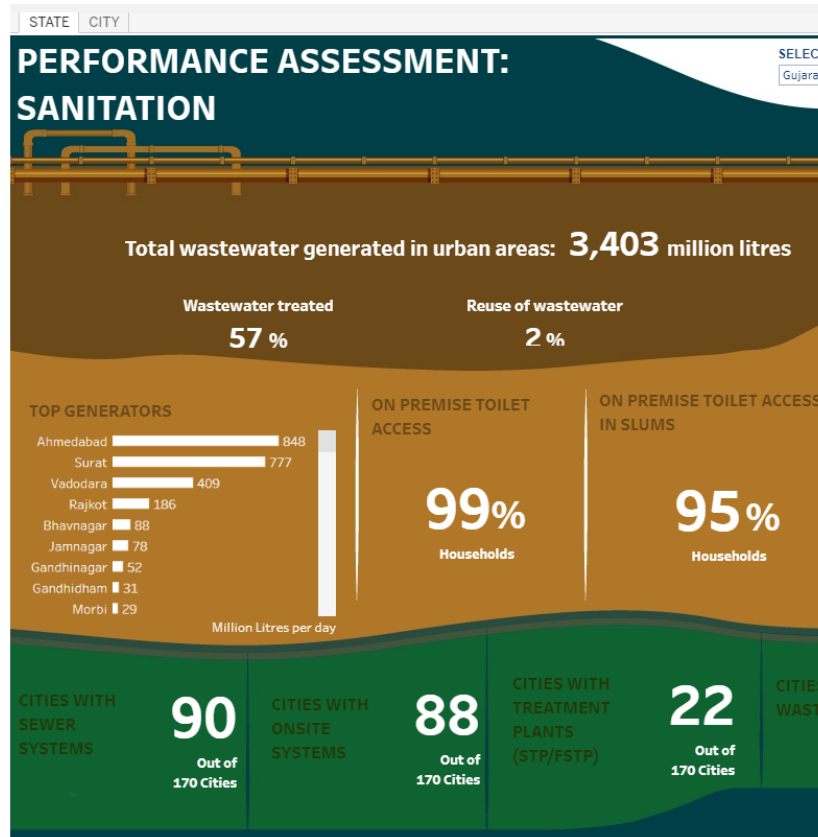
- Assam
- Chattisgarh
- Gujarat
- Jharkhand
- Maharashtra
- Telangana

Select city

- NLakhimpur
- Oad
- Oksa
- Osmanabad
- Pachgani**
- Pachora
- Padra
- Paithan
- Pakhanjur
- Pakur
- Palam
- Palanpur
- Palari
- Palasbari
- Palghar
- Pali
- Palitana
- Palus

a) Interactive dashboard page of PAS website <https://pas.org.in/web/ceptpas/interactivedashboards>
 Select the second last dashboard on this page "Sanitation assessment through SanBenchmarks (2017)"
 b) Direct link to Dashboard on Tableau public
<https://public.tableau.com/profile/pas.india#!/vizhome/SanBenchmarksv2/CompareStates>

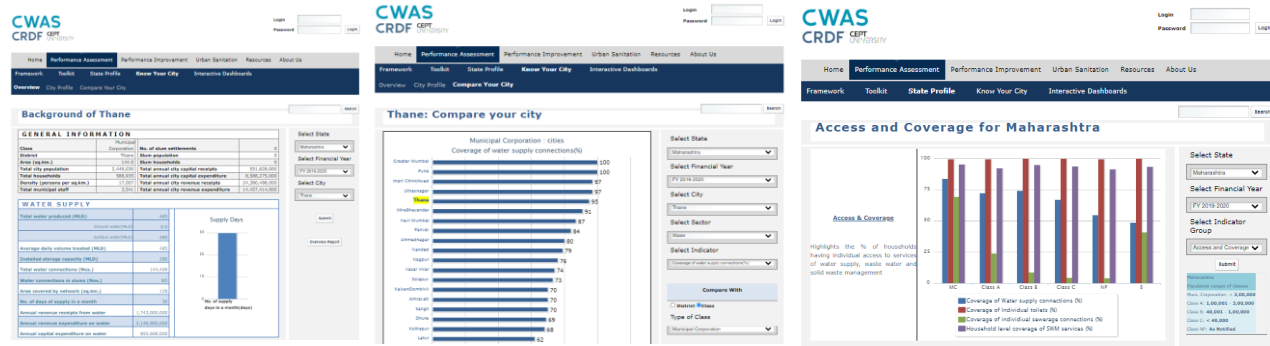
Interactive Dashboard – Sanitation



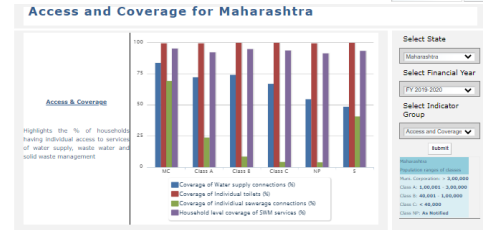
Key results and dashboards available on PAS-SLB portal

SLB dashboard:

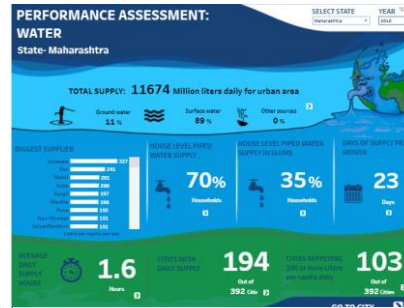
- Track performance over time and Compare performance with peers
- Review the year wise improvement of the ULB using [know your city](#) tab – that gives an **Overview** of the city, **City Profile**, and **Comparison** of the city.
- State can assess thematic performance on [state profile](#) tab.
- Identify areas for improvement- using [interactive dashboards](#)



Know your ULB and Compare Your ULB helps each ULB to understand the basic details and SLB indicators and allows to compare itself with another ULB based on its respective class or state.



State can assess thematic performance of Access, Financial sustainability, equity, efficiency and quality of service delivery at state level

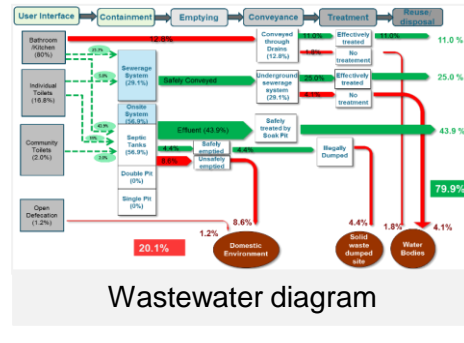
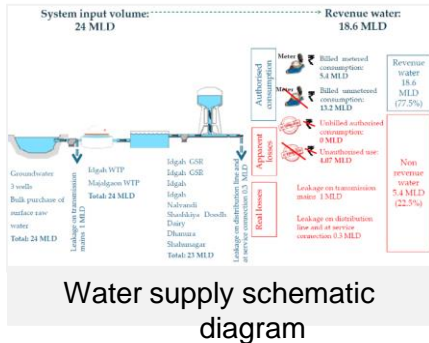
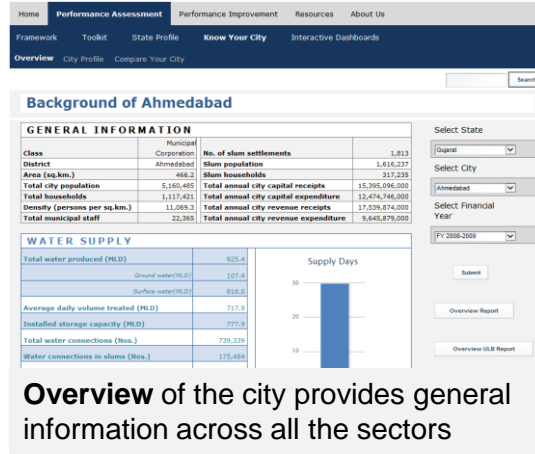
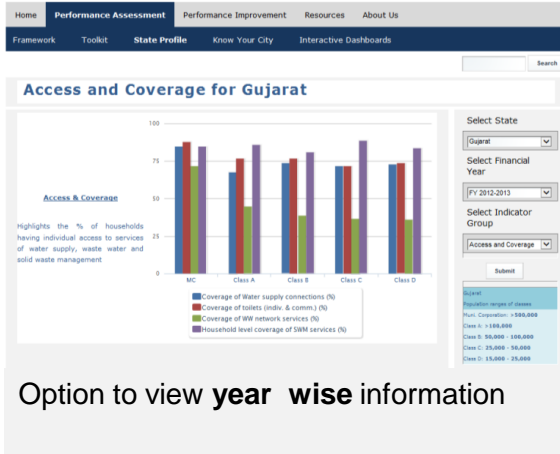


Customized dashboard to view state and ULB level analysis

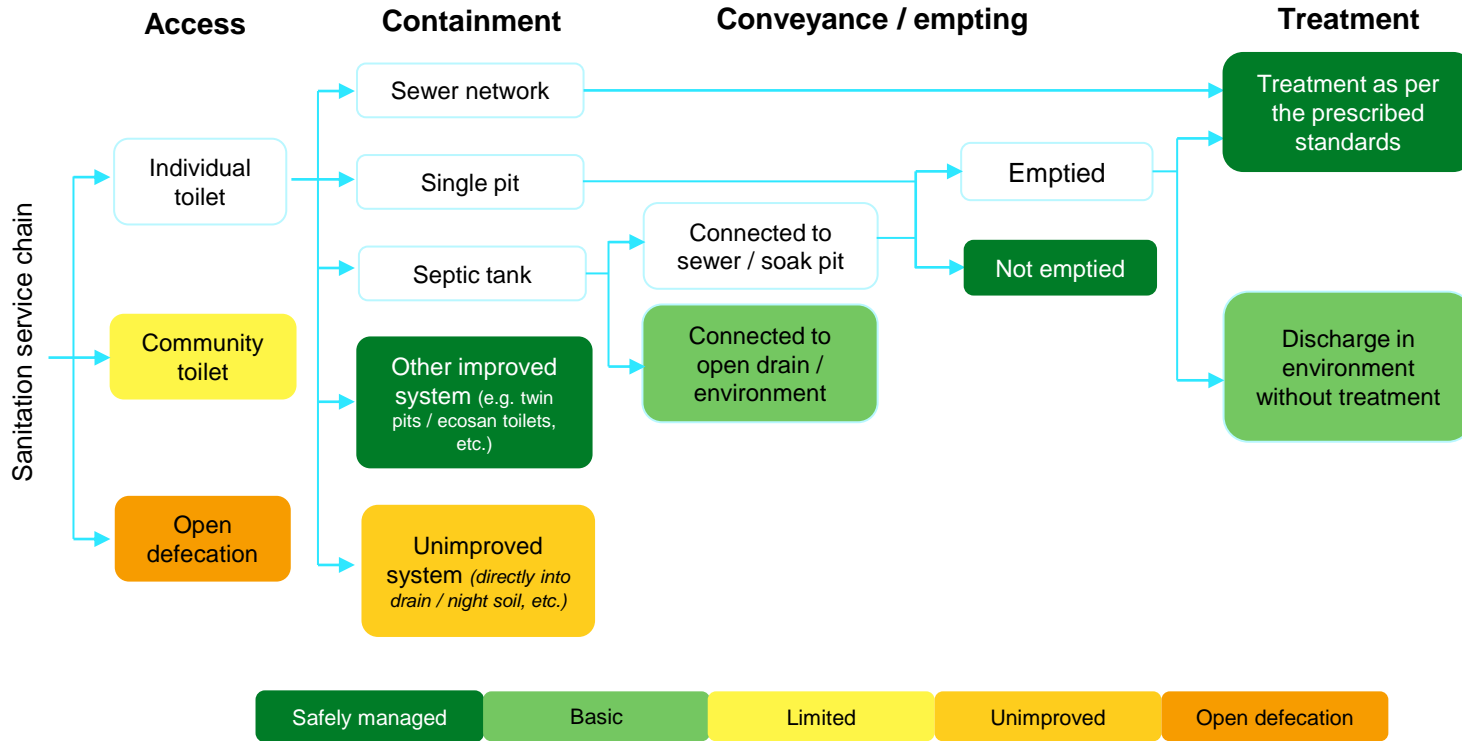


Interactive dashboard

Performance monitoring through various dashboards



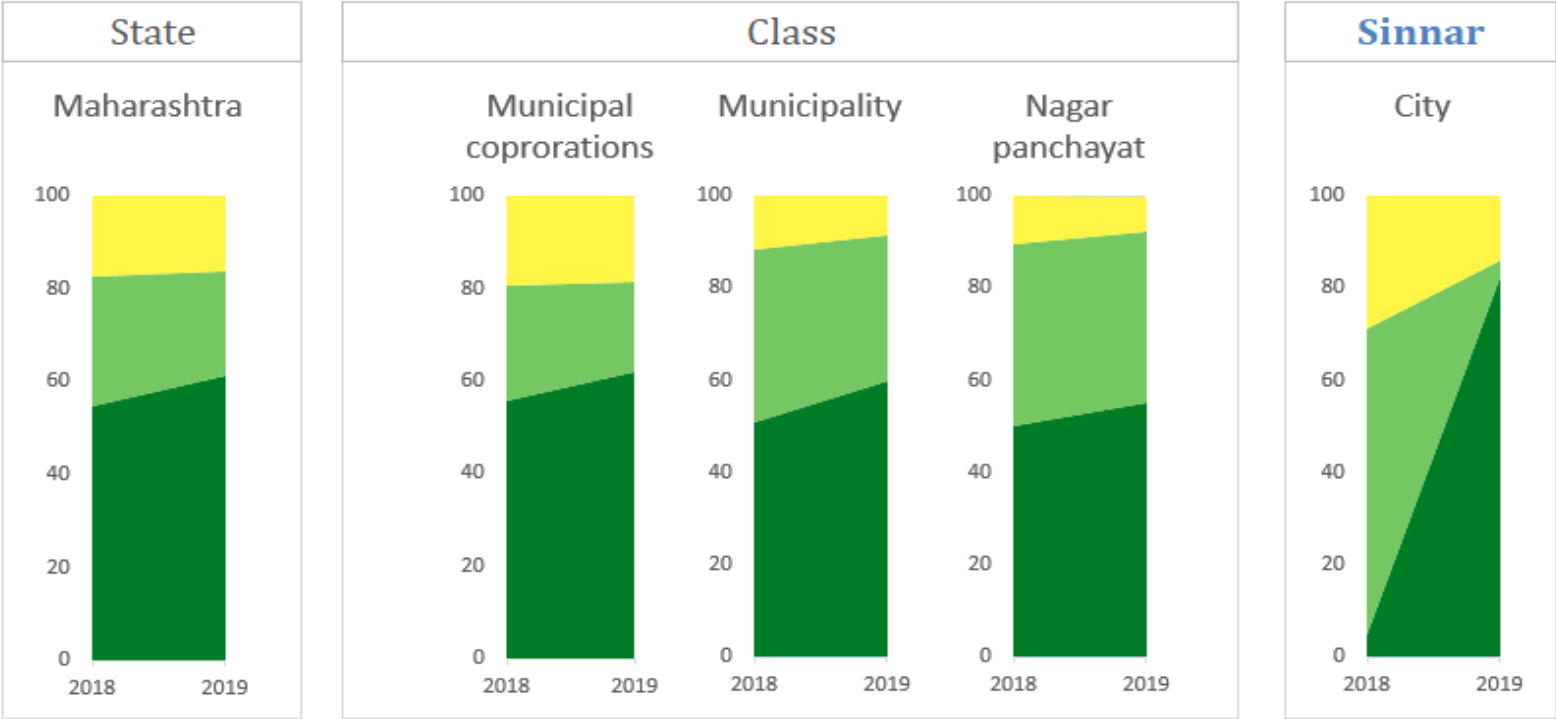
Estimation methodology for sanitation service levels using PAS data



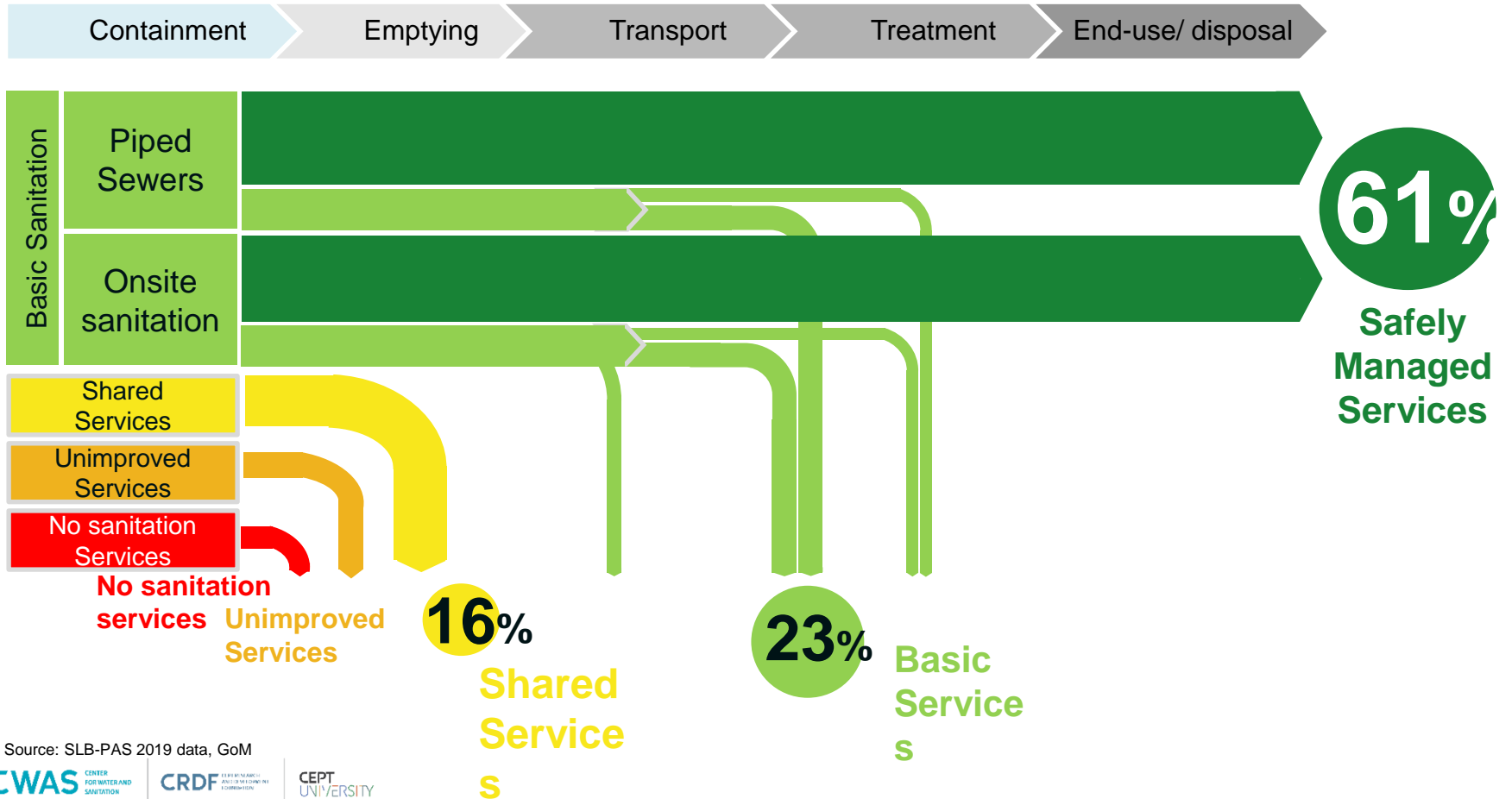
Estimation of safely managed sanitation:

- Sewerage safely conveyed and treated
- Fecal sludge in single pit or septic tank connected to sewer / soak pit safely emptied and treated
- Fecal sludge in single pit or septic tank connected to sewer / soak pit safely contained (not emptied)
- Other improved systems e.g. twin pits / ecosan toilets

Safely managed sanitation services in Urban Maharashtra (2018-19)



Sanitation excreta flow diagram – Urban Maharashtra



Various tools for planning and monitoring



PIP / SaniPlan

IFSM Toolkit

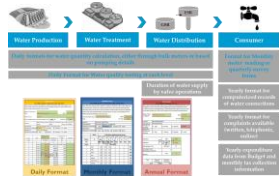


Target Setting model

Tariff Setting model



Tariff



Standard data formats



Used for preparation of PIP reports and City Sanitation Plans



Field tests: Various cities of Gujarat and Maharashtra. Use by other organizations



Capacity Building and Training



Teaching tool: Capacity building of students



A part of FSM toolbox developed by Asian Institute of Technology

Trainings and usage of tools

Tool Users

Government Agencies



Financial Institutions

Researchers



Students/Academic



Consultants



A wide range of users – Towards Data Driven Governance



Government agencies

National, state and local governments for various policy interventions and improvement actions

Gujarat: Guidelines for ODF; Assess impact of capital investment on service level improvement in sewerage system; State of environment report, 2012.

Maharashtra: State level strategy for making cities ODF; Septage management guidelines; Policy guidelines SWM.

Chhattisgarh: Impact assessment of SWM.

5 states shared UWSS information to NITI aayog for Water index

City Level: To prepare service level improvement plans in more than 30 ULBs



Financial Institutions

For project identification and selection

Various financial institutions such as ADB have used this information for project identification, selection and formulation.

World Bank – WSP have worked with us on SLB

Connect



Regulators

To assess regulatory compliance

CAG -Performance audit of delivery of three basic civic services for selected ULBs in Gujarat and Maharashtra.

Maharashtra water regulatory authority



Researchers

Data use by academicians and students

Many academicians and students of planning or technology colleges have used this information for research purpose. More than 20 research reports have been prepared using PAS information in CEPT University itself.



Consultants

Various consulting assignments related to preparation of Vision documents, City Development Plans, City Sanitation Plans. Indian Institute of Technology (IIT) Mumbai has used for city assessments

Summary

- **No Pilots.....operate at Scale** to make an impact
- **Not a 'project' but a 'programme'** to mainstream it in governments... adequate time required to mainstream in government system – 5 to 7 years
- **Work with all three tiers of Governments** to influence policies and implementation
- **Demonstrate use of digital system** helps to **mainstreamed and sustained** in the government with its own resources. **Started with 400+ cities** in 2008-09 , **now scaled up to 1000+ cities** across India
- **Data driven decision and governance:** Maharashtra TSU, ODF framework, Water audit
- **Open data** – available for use by all; Help in **compliance by cities** to higher level of govt.
- One of the **largest open access time series database** for urban water and sanitation

Our Partners



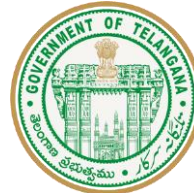
Ministry of Housing and Urban Affairs
Government of India



Government of Maharashtra



सत्यमेव जयते
ગુજરાત સરકાર



झारखण्ड सरकार



অসম চৰকাৰ

GOVERNMENT OF ASSAM



TATA CONSULTANCY SERVICES



JANAAGRAHA CENTRE FOR CITIZENSHIP & DEMOCRACY



Visit website- www.pas.org.in

Contact

meeramehta@cept.ac.in

dineshmehta@cept.ac.in

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.



pas.org.in
cwas.org.in



pas@cept.ac.in



[CEPT_CWAS](https://twitter.com/CEPT_CWAS)



[pas.cept](https://www.facebook.com/pas.cept)



pas.org.in/web/ceptpas/pas-news
Sign up: tiny.cc/pasenews