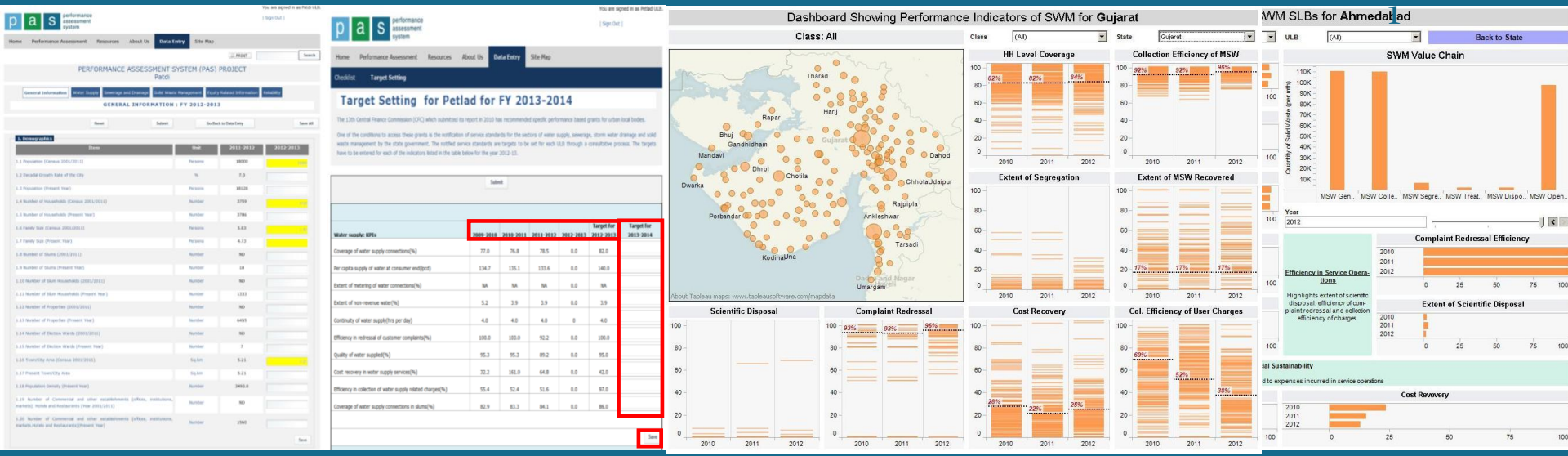


Performance Assessment Systems
PAS Project
Urban Water Supply and Sanitation

performance assessment system

IWA Development Congress, Kenya– October 17, 2013

Meera Mehta, Dinesh Mehta and PAS team, CEPT University

Need for performance information

- Aggregate statistics suggest good coverage of water and sanitation in urban areas in India
- BUT little is known about the **quality, level and financial sustainability of service** and only limited information on **access of urban poor** households to water and sanitation
- Lack of WSS information leads to:
  - ✓ misallocation of resources and
  - ✓ it is difficult to assess **impact of past investments**

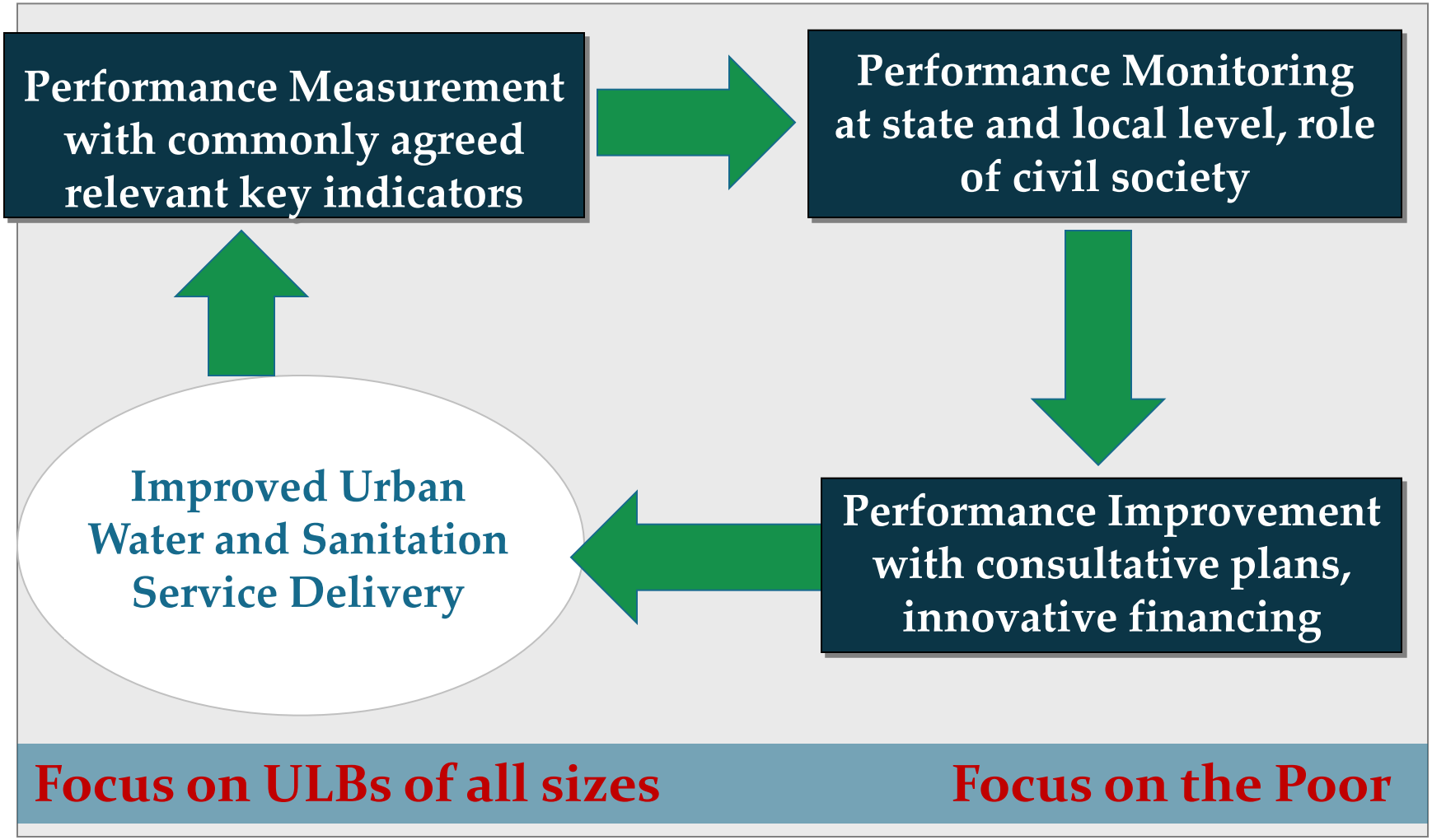
Need to move from
Infrastructure funding
to
Improved service delivery
using
outcome liked funding

Performance Assessment System (PAS) Project

- A major **7-year research grant** from Bill and Melinda Gates Foundation to CEPT University for developing a **statewide PAS in Maharashtra and Gujarat,** and **sanitation assessment and improvement**
- Implementation in **partnership with Government of Maharashtra** (UD and WSSD) **and Government of Gujarat** (UDD)
- **Partner institutions** in each state
  - ✓ AIILSG for activities related to data collection and other field work in Maharashtra
  - ✓ UMC for activities related to data collection and other field work in Gujarat

PAS components

A sustainable statewide Performance Assessment System to improve delivery of urban water supply and sanitation services



PAS Project – Timeline

Baseline Assessments

Post Project Assessments

FRAMEWORK DEVELOPMENT

MAINSTREAMING Performance Assessment

Performance Measurement

Performance Monitoring

Performance Improvement

- Performance framework
- Continuing web-based online assessments
- Round I
- Information Improvement Plans
- Scaling up to all states - State SLB Cells
- Develop regular annual reports, standard web-based ULB profiles
- PAS web portal, Exchange visits, Good practice documentation
- Use of performance information for setting priorities and monitoring
- Sanitation framework across the value chain
- Support local governments in preparing Performance Improvement Plans
- Innovative sanitation financing options
- Support plans for ODF, wastewater management

YEAR I	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8
2009	2010	2011	2012	2013	2014	2015	2016

PAS

Performance Assessment System

Annual Service delivery profile for **419** Cities in **2** States

covering **32** Key indicators and

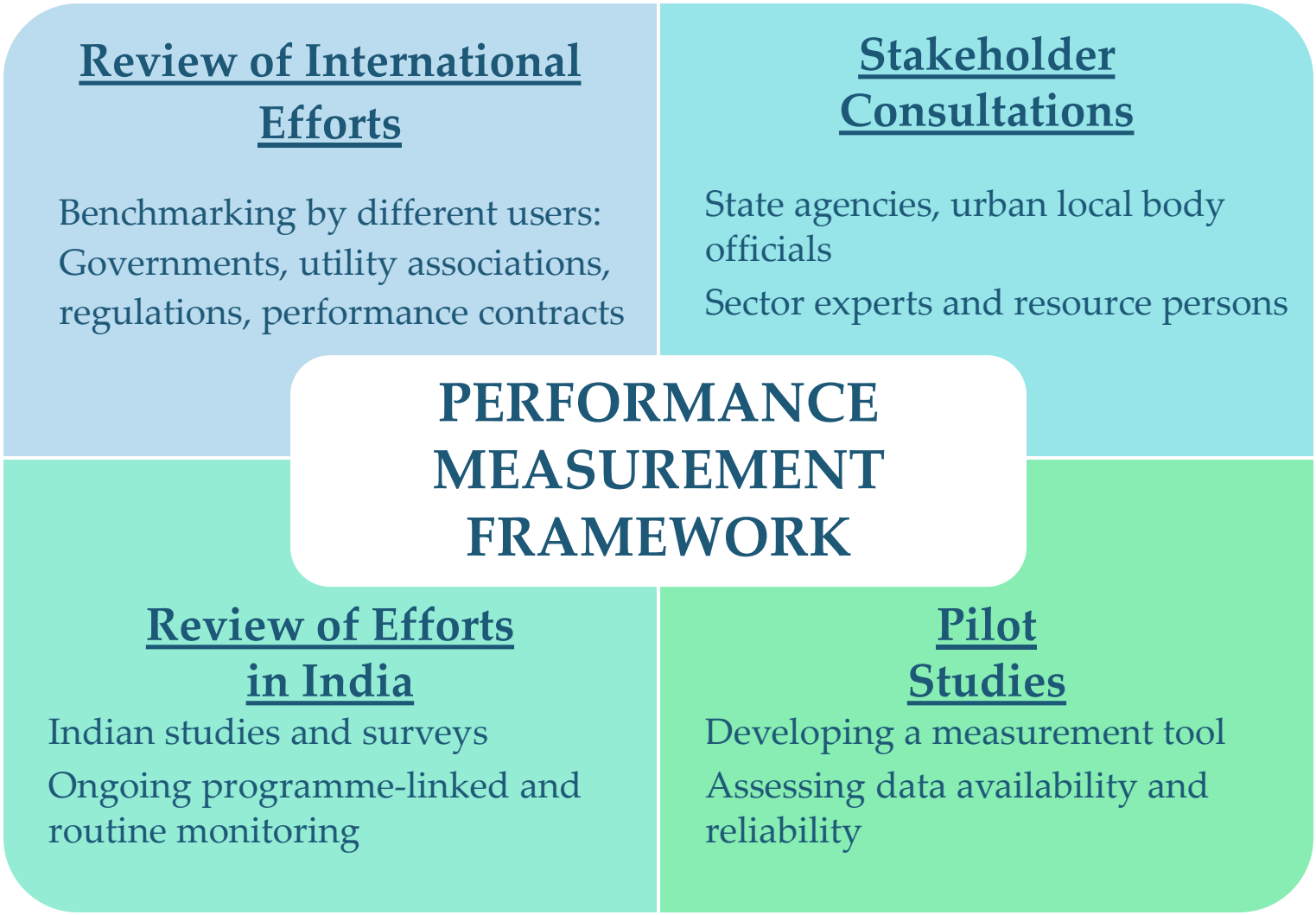
90 local action indicators

Sectors : Water supply, Waste Water, Solid waste Management & Storm Water

Focus on **Measurement, Monitoring & Improvement**

Performance Measurement Framework

Developing a Performance Measurement Framework



Key lessons: Global efforts

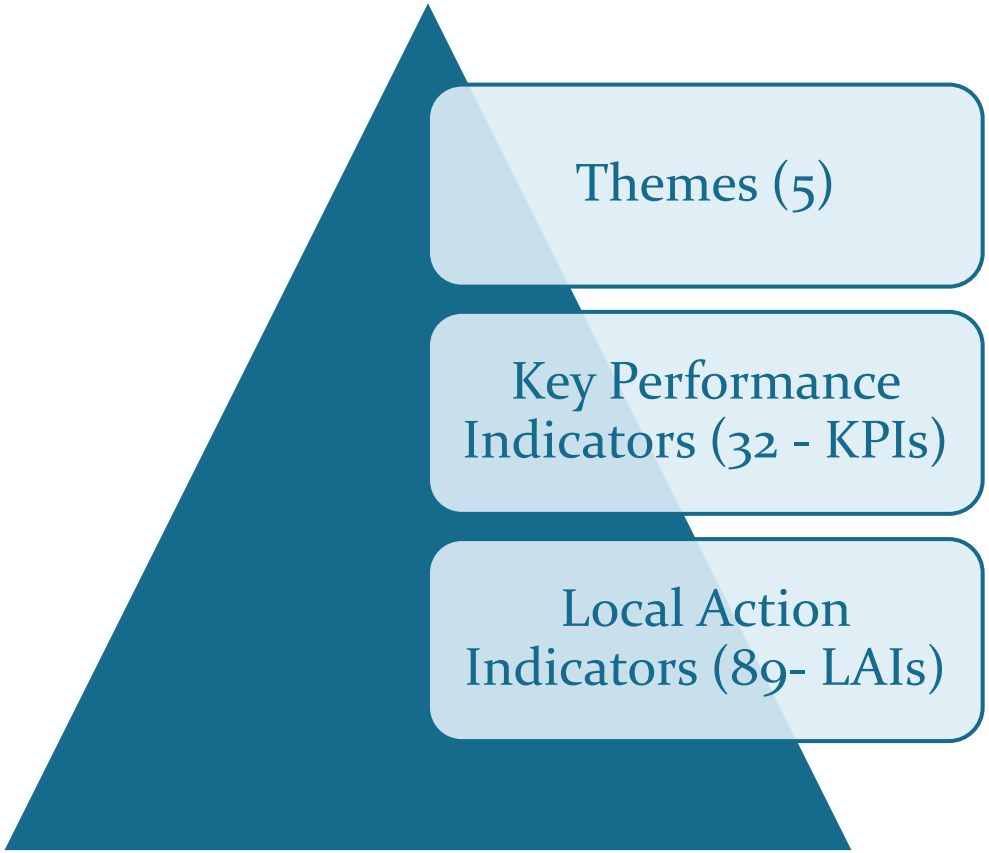
- Adequate time required to set up robust systems – may range from **5 to 10 years**
- Once fully set up can be used for both **outcome monitoring and making rational investment decisions**
- In the initial period **support and funding are required** to agree on and set up systems
- A **consultative process** is needed for broad agreement on approach and implementation at national and state levels
- **Government ownership and regular reviews** are essential

Aligning with the Government of India Initiative

- **Service Level Benchmarks (SLB)** put the focus on measurement of service delivery performance. Benchmarks for four sectors: water supply, waste water, SWM and storm water
- SLB Initiative focuses on
  - ✓ Collation of **standardized indicators**
  - ✓ Implementation of **Management Information Systems (MIS)** at city and state level
  - ✓ Development of **Performance Improvement Plans (PIPs)**
- Addresses both internal monitoring for decision making and reporting to higher levels of government

WATER SUPPLY		
S. No.	**Indicator**	**Benchmark**
1.	Coverage of Water Supply connections	100%
2.	Per Capita Supply of Water	135 lpcd
3.	Extent of Non-revenue Water	15%
4.	Extent of Metering	100%
5.	Continuity of Water supplied	24 Hours
6.	Efficiency in redressal of customer complaints	80%
7.	Quality of Water Supplied	100%
8.	Cost Recovery	100%
9.	Efficiency in Collection of Water Charges	90%
SEWERAGE		
1.	Coverage of Toilets	100%
2.	Coverage of Sewerage Network	100%
3.	Collection efficiency of Sewerage Network	100%
4.	Adequacy of Sewage Treatment Capacity	100%
5.	Quality of Sewage Treatment	100%
6.	Extent of Reuse and Recycling of Sewage	20%
7.	Extent of cost recovery in waste water management	100%
8.	Efficiency in redressal of customer complaints	80%
9.	Efficiency in Collection of Sewage Water Charges	90%
SOLID WASTE MANAGEMENT		
1.	Household Level Coverage	100%
2.	Efficiency in Collection of Solid Waste	100%
3.	Extent of Segregation of MSW	100%
4.	Extent of MSW Recovered	80%
5.	Extent of Scientific Disposal of MSW	100%
6.	Extent of Cost Recovery	100%
7.	Efficiency in Collection of SWM Charges	90%
8.	Efficiency in Redressal of Customer Complaints	80%
STORM WATER DRAINAGE		
1.	Coverage	100%
2.	Incidence of water logging	0 numbers

Indicator Framework of PAS Project –SLB+



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

KPIs for performance assessment

Drilled down indicators (LAIs) for actions for performance improvement

Themes under Performance Assessment Framework

Universal access and coverage	Service levels and quality	Financial sustainability	Efficiency in service operations	Equity in service delivery

PAS - Sector wise Indicators and LAIs

WATER SUPPLY

9
Key Indicators

36
Local action Indicators

WASTE WATER

9
Key Indicators

29
Local action Indicators

STORM WATER

2
Key Indicators

SOLID WASTE

8
Key Indicators

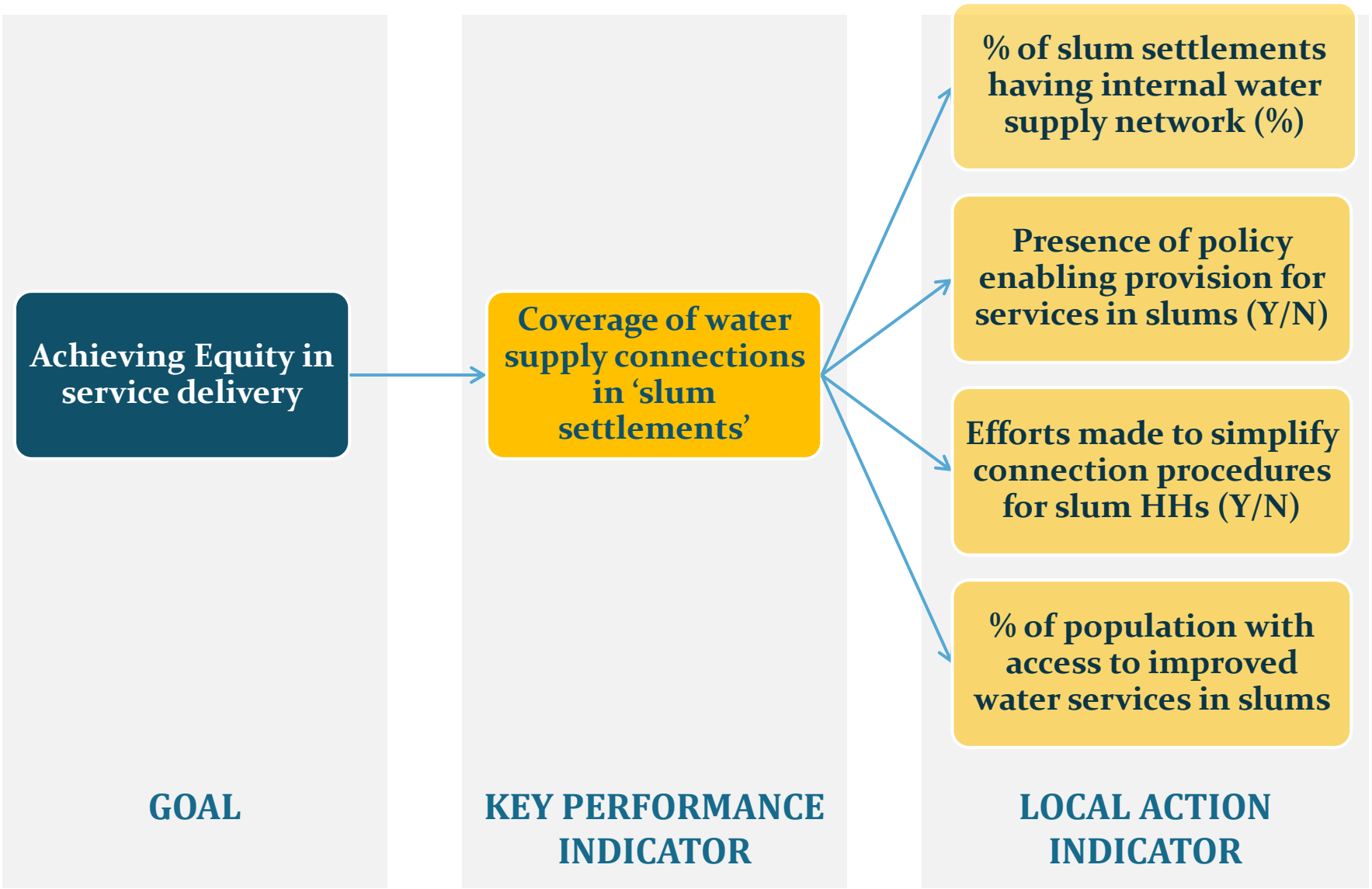
12
Local action Indicators

EQUITY

4
Key Indicators

13
Local action Indicators

Illustration of Goal-KPI-LAI links



Water Supply: Themes and local actions

WATER SUPPLY

9
Key Indicators

36
Local action Indicators

Access & Coverage

Coverage of distribution network, illegal connections, regularization

Service levels & Quality

Estimated demand and available supply, per capita supply, pressure at WDS and consumer end, quality tests, days of supply

Financial Sustainability

Unit electricity cost, Staff, per capital revenue income and expenditure, average revenue per connection

Efficiency in Service Operations

Water audit, losses, pipe breaks, network refurbished, unbilled consumption, monitoring and analysis of complaints, functionality of meters, annual cost of losses, automated billing systems, collection systems

Equity

Internal network in slums, uncovered HHs, policy provisions, connection procedures , budget for pro poor activities, connection charges, expenditure in slums

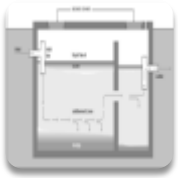
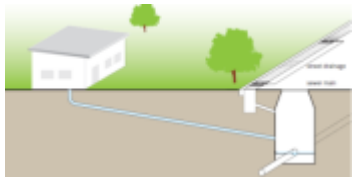
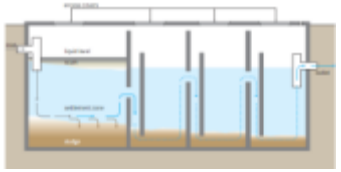
Set of **Local Action Indicators** help to better understand the results of the KPIs and also contextualise the city's service requirements to a great extent

Also help arrive at local IMPROVEMENT priorities

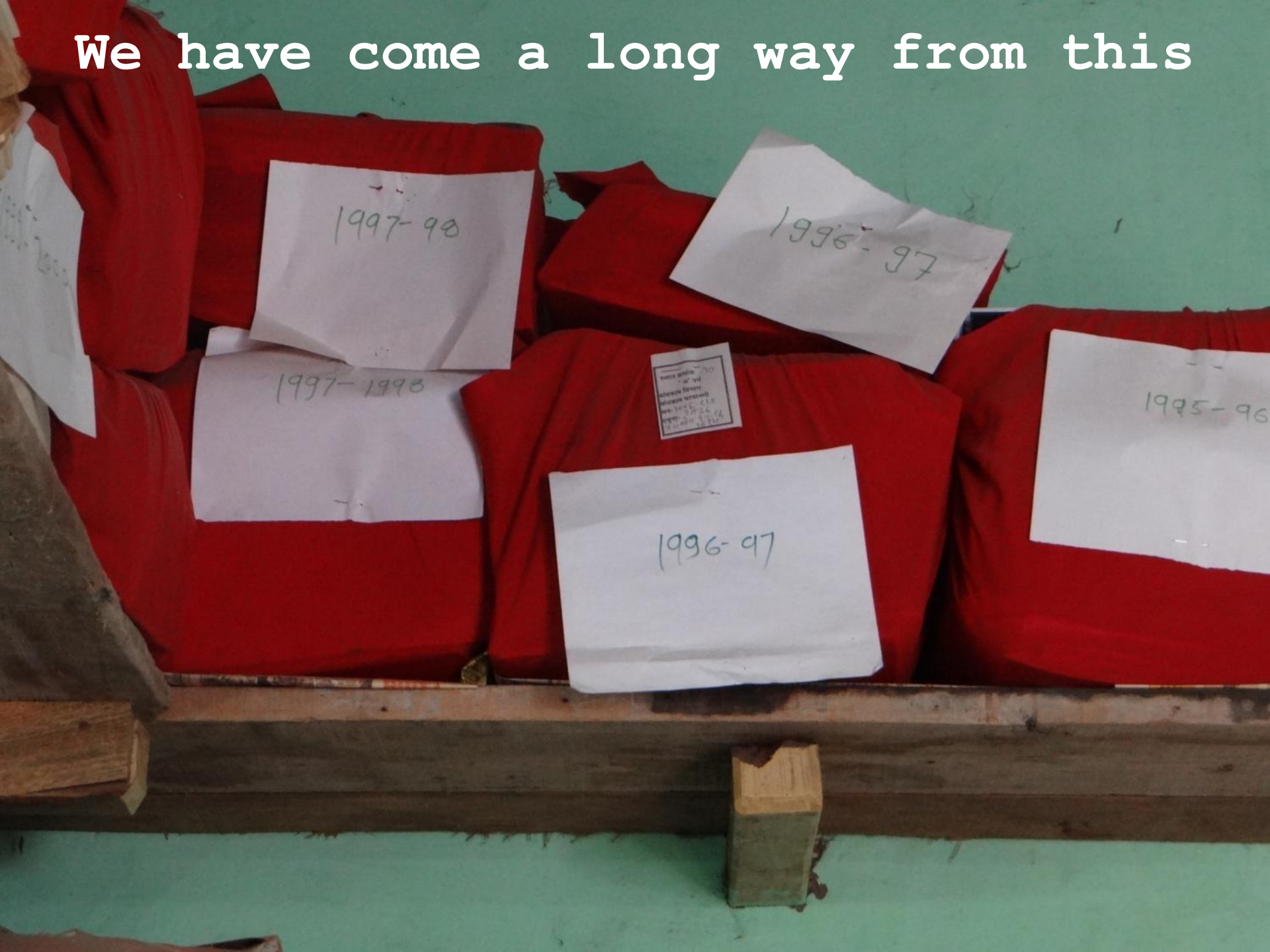
Framework for Equity Assessment

Theme	Key Parameters
Enabling Environment	Presence of a positive policy to provide services to the poor
	Affordable Tariffs for access to services, options to pay in installments
	Efforts to include 'non-notified' slums
	Inclusion of slums houses under property tax
	Special national/ state schemes for services in slums
Local Preparedness	Extent of funding (%) in local budgets for the poor and in slum areas
	Efforts made to improve/ simplify connections in slum settlements
	Presence of internal network (water supply, drainage) in slum settlements to facilitate ease and affordability in access
Service Delivery	Access to basic services for water and sanitation in slum areas (JMP definition), extent of open defecation
	Access to on-premise facilities for water (municipal connection) and sanitation (toilet, sewerage connection, door-to-door SWM)
	Quality of service delivery (quantity of water, pressure, timing, etc.)
	Complaint redressal for the poor

Revised sanitation indicators across the value chain

Capture	Collection	Conveyance	Treatment	Recycle n Reuse
Cities having onsite sanitation systems				
				
• Coverage of toilets	• Coverage of properties with septic tank disposal system	• % of septic tanks cleaned annually	• Adequacy of septage treatment capacity • Quality of septage treatment	• Extent of reuse and recycling of treated septage
Cities having underground sewerage systems				
				
• Coverage of toilets	• Coverage of wastewater network services	• Collection efficiency of wastewater network	• Adequacy of wastewater treatment capacity • Quality of wastewater treatment	• Extent of reuse and recycling of treated wastewater
Cities having mixed sanitation systems				
• Coverage of toilets	• Coverage of adequate household sanitation in city (including sewerage connection and/or septic tanks)	• Efficiency of wastewater collection (through sewerage /septic tank emptiers)	• Adequacy of sewage and septage treatment capacity • Quality of wastewater and septage treatment	• Extent of reuse and recycling of treated wastewater and septage

Performance Measurement on-the-ground


We have come a long way from this
1997-98
1996-97
1997-1998
1996-97
1995-96

Online data entry camps in state capitals

Online Data Entry Modules

pas performance assessment system

You are signed in as Achalpur ULB.

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Select Year to View Data Entry Check List.

Select Financial Year : ---Select---

PERFORMANCE ASSESSMENT SYSTEM (PAS) PROJECT
Achalpur

General Information | Water Supply | Sewerage and Drainage | Solid Waste Management | Equity Related Information | Reliability

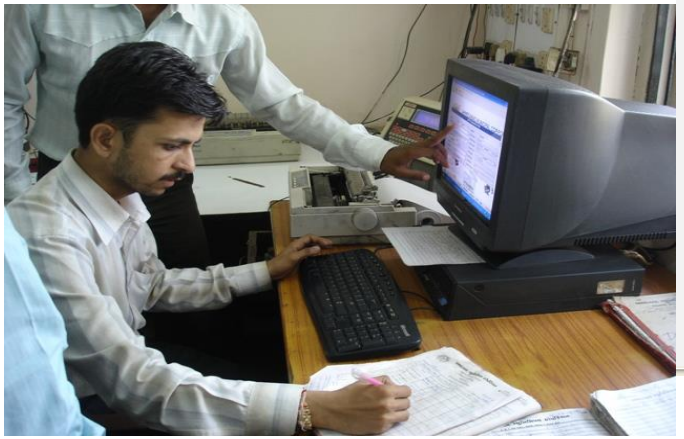
GENERAL INFORMATION : FY 2009-2010

Reset | Submit | Go Back to Data Entry | Save All

1. Demographics

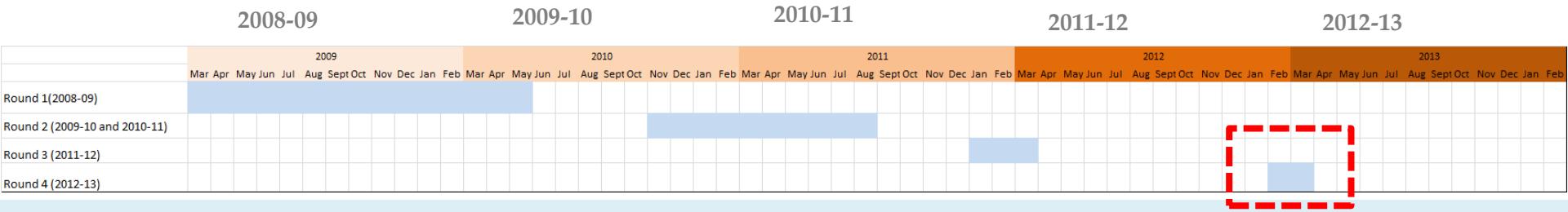
Item	Unit	2008-2009	2009-2010
1.1 Population (Census 2001)/2011	Persons	102316	102316
1.2 Decadal Growth Rate of the City	%		
1.3 Population (Present Year)	Persons	127316	
1.4 Number of Households (Census 2001)/2011	Number	21463	21463
1.5 Number of Households (Present Year)	Number	26751	
1.6 Family Size (Census 2001)/2011	Persons	4.77	4.77
1.7 Family Size (Present Year)	Persons	4.76	
1.8 Number of Slums (2001)/2011	Number		
1.9 Number of Slums (Present Year)	Number	11837	
1.10 Number of Slum Households (2001)/2011	Number		
1.11 Number of Slum Households (Present Year)	Number	11837	
1.12 Number of Properties (2001)/2011	Number		
1.13 Number of Properties (Present Year)	Number	29972	
1.14 Number of Election Wards (2001)/2011	Number		
1.15 Number of Election Wards (Present Year)	Number		
1.16 Town/City Area (Census 2001)/2011	Sq.km	16.00	16.00
1.17 Present Town/City Area	Sq.km	16.00	
1.18 Population Density (Present Year)	Number		
1.19 Number of Commercial and other establishments (offices, institutions,	Number		

Layers of Approval of data submitted by City staff
City Chief Officer
State government officials

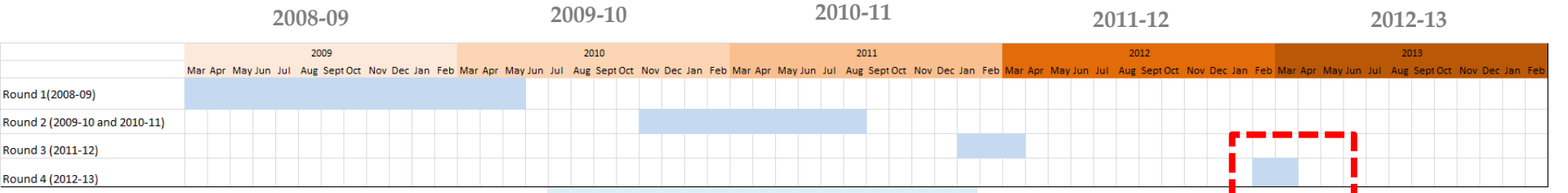


Time taken for annual assessment

Annual Assessment in GUJARAT over five year assessment period



Annual Assessment in MAHARASHTRA over five year assessment period



Support by State Government for Annual Assessment

Training in use of tools

capacity building

Tools translated in local language

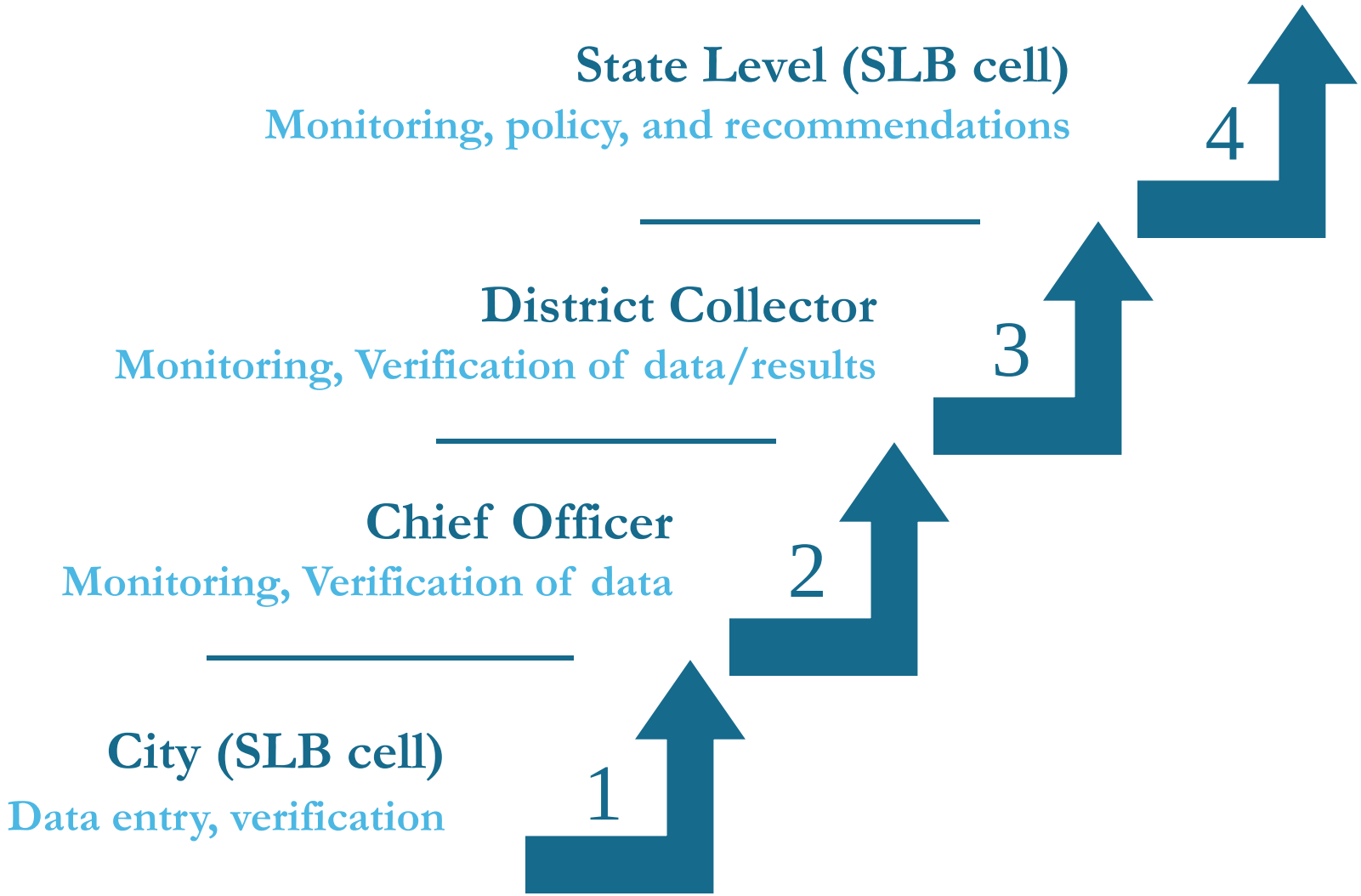
Support for resolving data issues

Constant hand holding by PAS team

Data collection through city visits in Year I (2008-09), supported by Partners

Data collection through online modules in Year V (2012-13). Self assessment by select ULBs

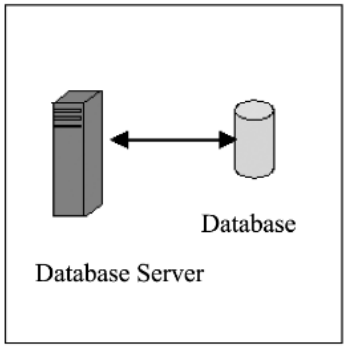
Planned online system for review



Web based measurement and monitoring

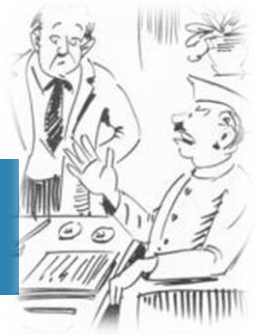
Data entry: at city level

Data storage: at state level



Shared data available at various levels

State agencies, data and analysis



Cities – data, results, analysis

Citizens
Access to analysis, results

Addressing constraints in data systems

Manually maintained records

Regular updating of data and ground truth required

Some data is based on estimates – e.g. for water quantity

Need for better reports to facilitate decision making

Need to convert raw data to information

Need for transparency

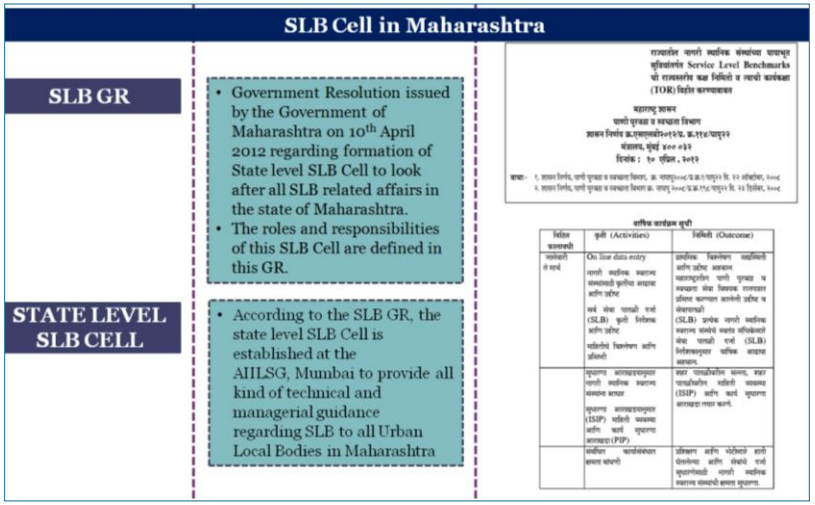
Information System Improvement Plans

- Reliability of data needs to be improved
- **Two approaches:**
- In large/ metro cities strengthening internal systems for good performance information and linked to customized internal e-governance systems and monitoring
- In smaller cities, state level support to link and integrate PAS online systems with common software

Performance Monitoring

Performance Monitoring – through SLB Cells

- PAS is **mainstreamed through a State Cell** for SLB assessment in both states
- State Cells set up through **Government Resolutions (GR)** which also provide for state **budgetary support** for the SLB cell
- Both GRs also provide terms of reference and **time table for the State cell's regular activities**



SLB CELL - GUJARAT

- Government of Gujarat constituted the SLB Cell in Urban Development Department on 23rd November 2011
- 17 members in the committee, headed by Principal Secretary, UD & UHD
- Committee to meet once in 3 months to review and monitor the progress of Benchmarking process in ULBs.

S.No	Name, title	Position
1.	Principal Secretary, UD&UHD	Chairperson
2	Addl.Secretary (Project) UD&UHD	Member
3.	Managing Director, GUDC	Member
4.	Municipal Commissioner, AMC, Ahmedabad	Member
5.	Municipal Commissioner, RMC, Rajkot	Member
6.	Director of Municipalities	Member
7.	Chief Officer, Anand Municipality	Member
8.	Chief Officer, Himmatnagar Municipality	Member
9.	Chief Officer, Morbi Municiplaity	Member
10.	Prof. Dinesh Mehta, CEPT University	Member
11.	Prof. Meera Mehta, CEPT University	Member
12.	Ms. Manvita Baradi, UMC, Ahmedabad	Member
13.	Sewerage Expert Engineer	Member
14.	Solid Waste Management Expert (2)	Member
16	MIS Expert	Member
17.	Addl. Chief Executive Officer, GUDM	Member Secretary

Online Monitoring

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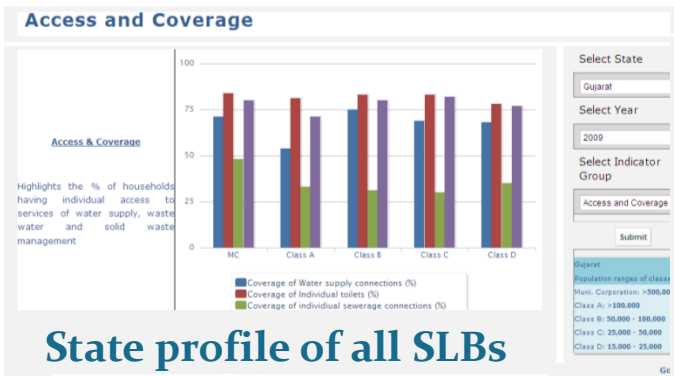
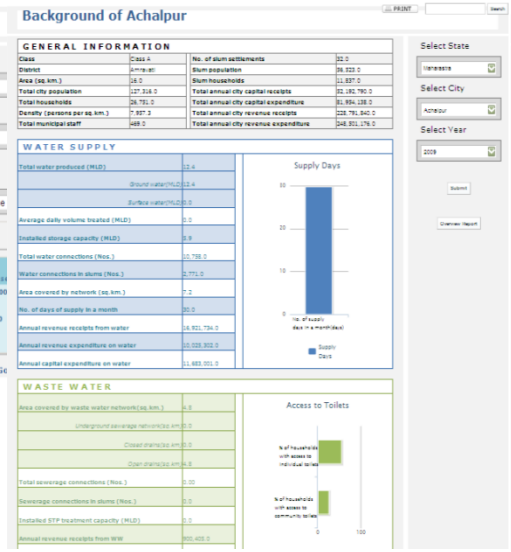
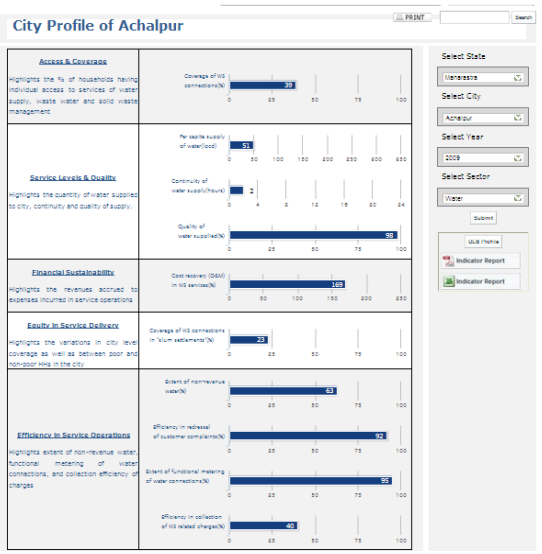


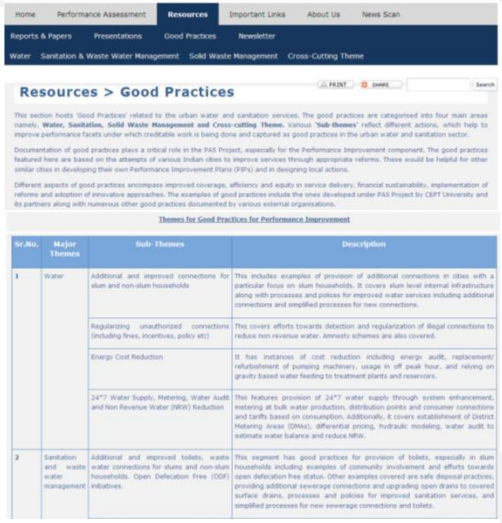
State profile of all SLBs



Overview of all cities



City profile of all SLBs



Documentation of good practices

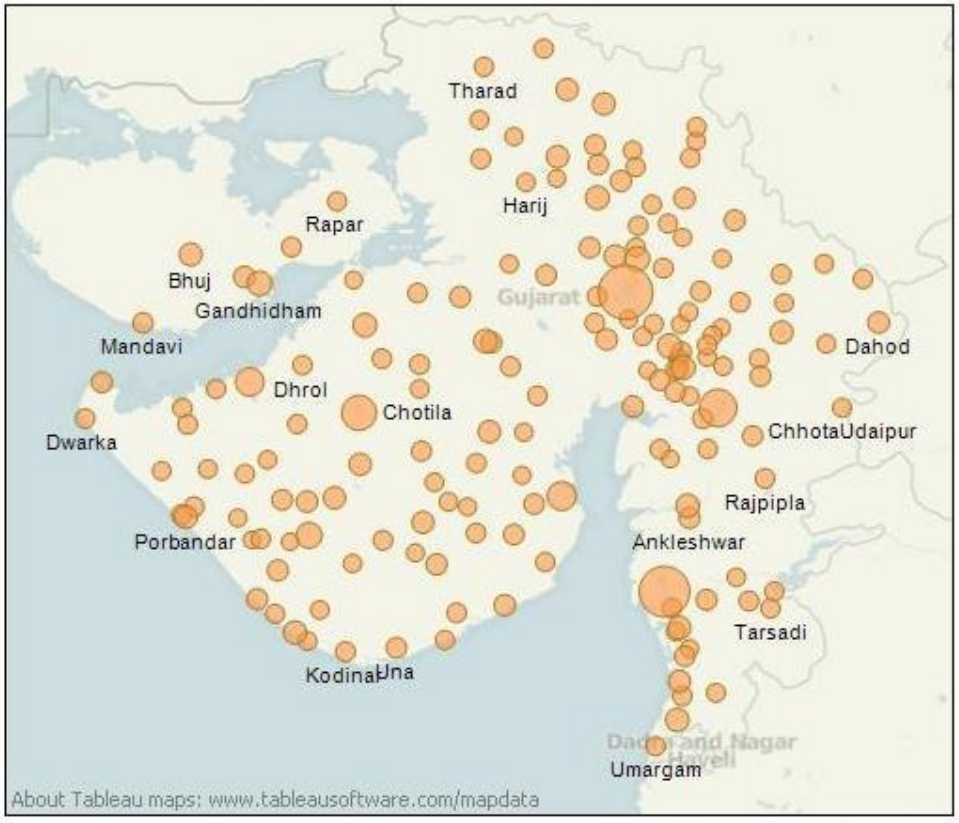
STATE

Dashboard Showing Performance Indicators of SWM for **Gujarat**

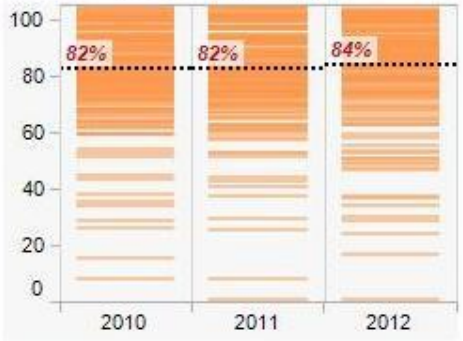
Class: All

Class: (All)

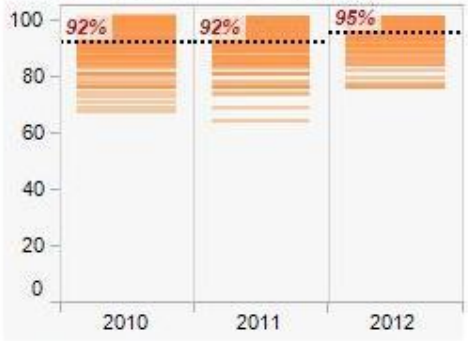
State: Gujarat



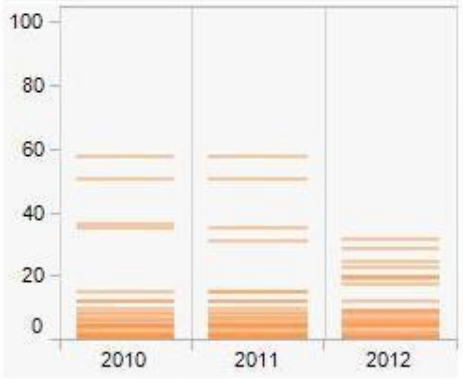
HH Level Coverage



Collection Efficiency of MSW

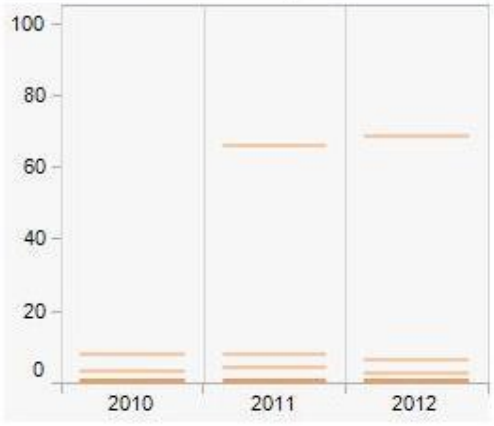


Extent of Segregation

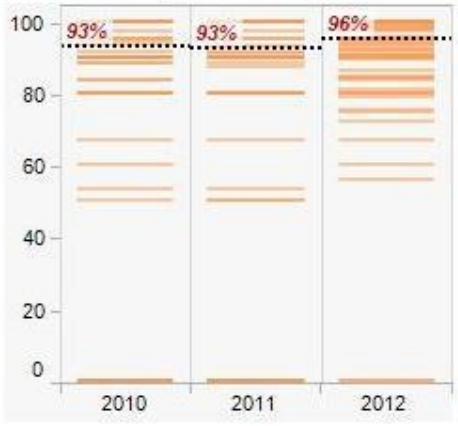


Extent of MSW Recovered

Scientific Disposal

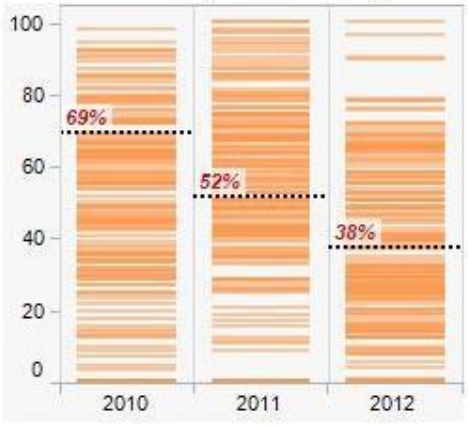


Complaint Redressal



Cost Recovery

Col. Efficiency of User Charges



CITY

Dashboard Showing SWM SLBs for **Ahmedabad**

Class: MC

State (All)

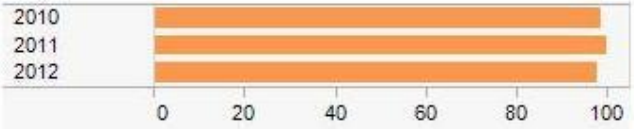
ULB (All)

Back to State

Access & Coverage

Captures the door to door collection of MSW.

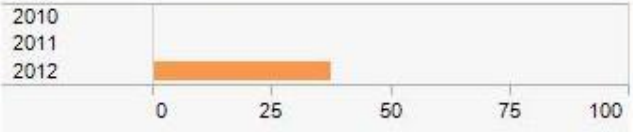
Coverage



Equity in Service Delivery

Highlights the variations in city level coverage as well as between poor and non-poor HHs in the city

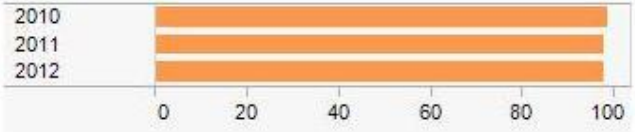
Slum Coverage (%)



Service Levels & Quality

Highlights the collection efficiency, extent of segregation and extent of recycling of MSW.

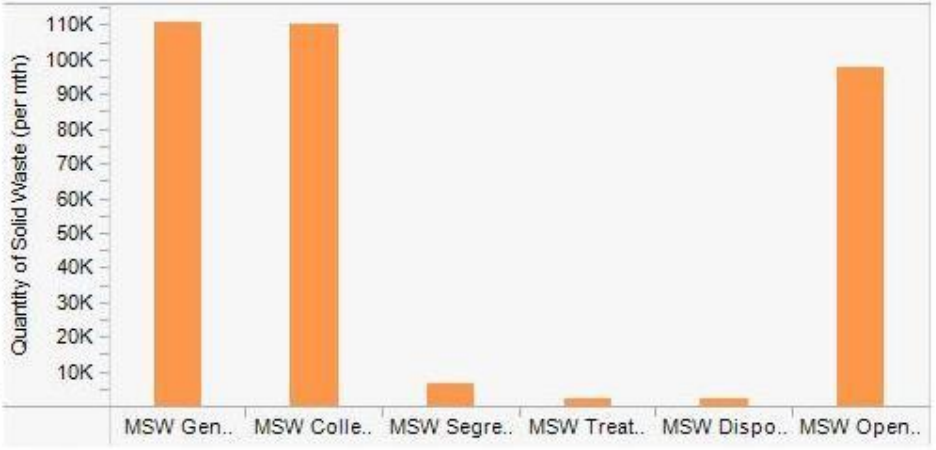
Collection Efficiency of MSW



Extent of Segregation

Extent of MSW Recovered

SWM Value Chain

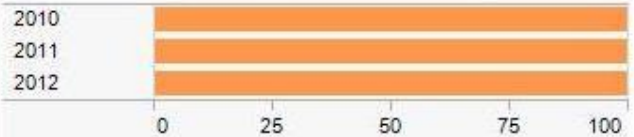


Year 2012

Efficiency in Service Operations

Highlights extent of scientific disposal, efficiency of complaint redressal and collection efficiency of charges.

Complaint Redressal Efficiency



Extent of Scientific Disposal

Financial Sustainability

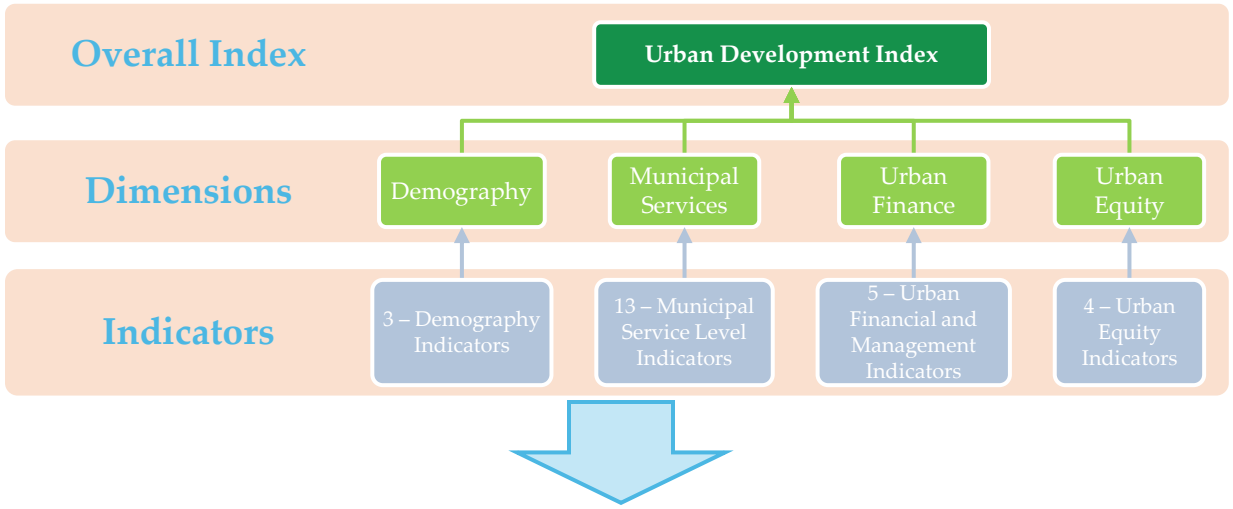
Highlights the revenues accrued to expenses incurred in service operations

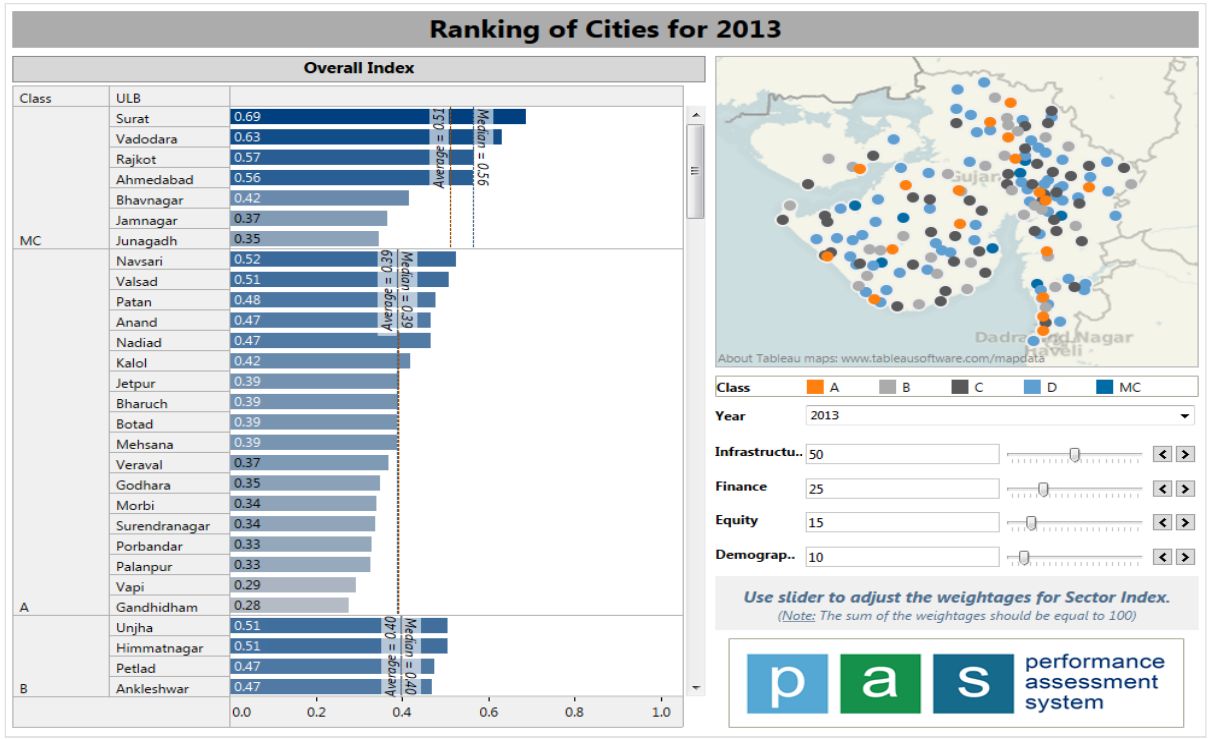
Collection Efficiency of Taxes/ Charges

Cost Revovery

Performance Monitoring

Dashboards showing Ranking of cities for Gujarat

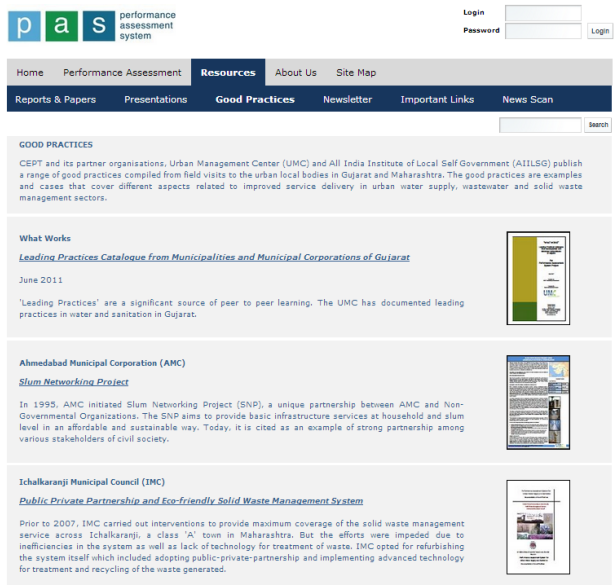




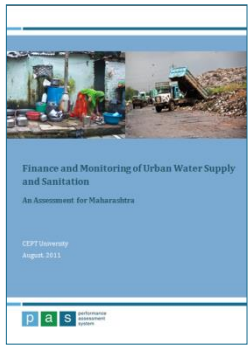
- Similar to human development index (HDI), urban development index (UDI) was calculated using 25 indicators identified under 4 dimensions:
  - Demography
  - Municipal services
  - Urban finance
  - Urban equity
- The dashboard shows class-wise ranking as per the UDI value scored by a city.
- The weightage for each dimension can be changed as and when required.
- It also allows the user to locate the cities on the map to identify regions that are performing good or vice-versa.

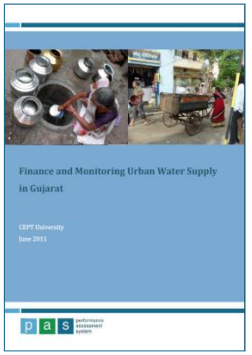
Performance Monitoring – Other activities

- Studies of state financing and monitoring systems for UWSS
- Documentation of good practices
- Exchange visits across cities
- State workshops to share experiences



Access to good practices via PAS web portal





Reports describe finance and monitoring of urban water supply and sanitation in Maharashtra. It assesses the flow of funds in UWSS sector and the associated monitoring framework within the larger context of the urban sector in both States

Performance Improvement Models and tools

Approach to performance improvement planning

Conventional Approach

'PROJECT'
based approach

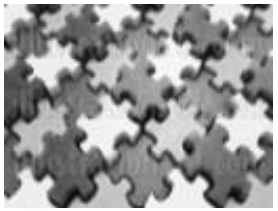
Oriented towards **OUTPUTS**

SUPPLY DRIVEN

Focus on **INDIVIDUAL PROJECTS**

PAS Approach

'SERVICE'
based approach



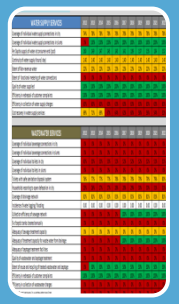
Oriented towards **OUTCOMES**

Starting point is current performance – **NEED DRIVEN**

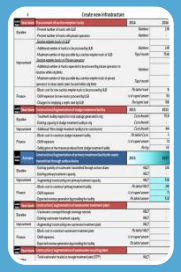
Focus on **SECTORAL SOLUTIONS**

Performance Improvement Planning Tool

IMPROVEMENT PLAN OPTIONS



I. PERFORMANCE PRIORITIES



II. ACTION PLANNING

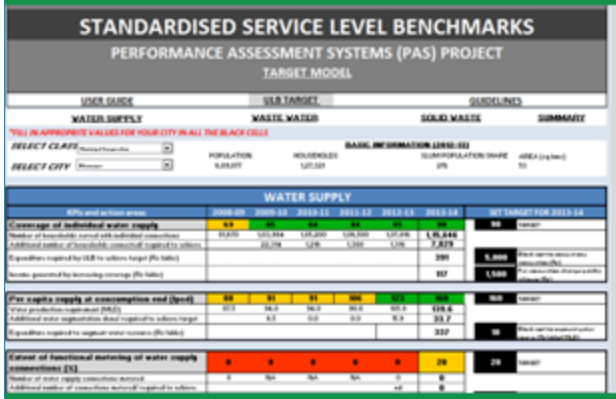
III. FINANCIAL PLANNING

Excel based software for city level WSS planning

Tool for planners, decision-makers

Other Tools for Improvement Planning

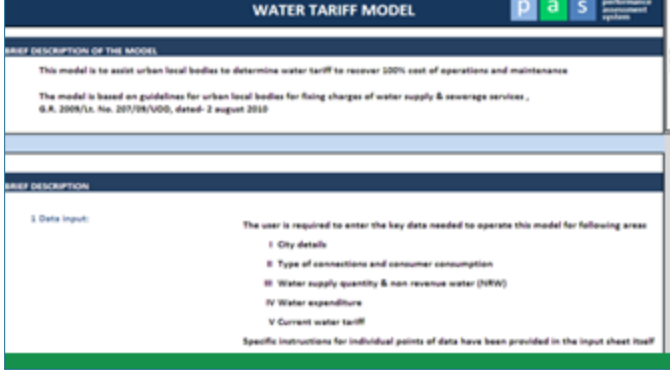
Target Model



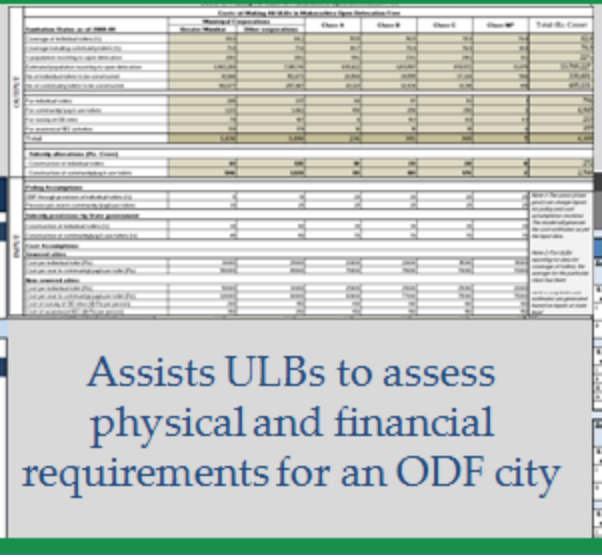
This model provides guidance to cities in setting annual improvement targets for service level benchmarks. It helps to assess feasible targets based on a trend analysis of key indicators, as well as outputs required, as well as capital expenditure and future O&M expenditure requirements.

Tariff Setting

Assists ULBs to determine water tariffs to recover O&M costs



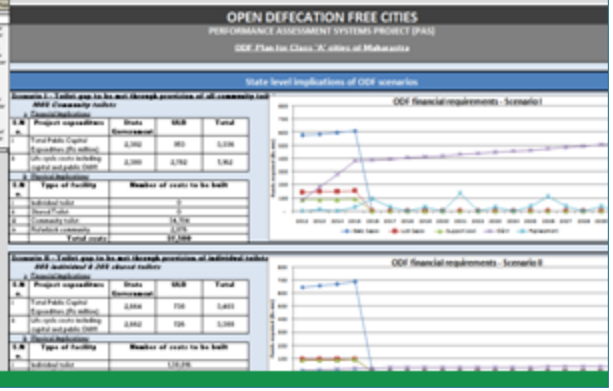
OD Free City



Assists ULBs to assess physical and financial requirements for an ODF city

Life Cycle Costing

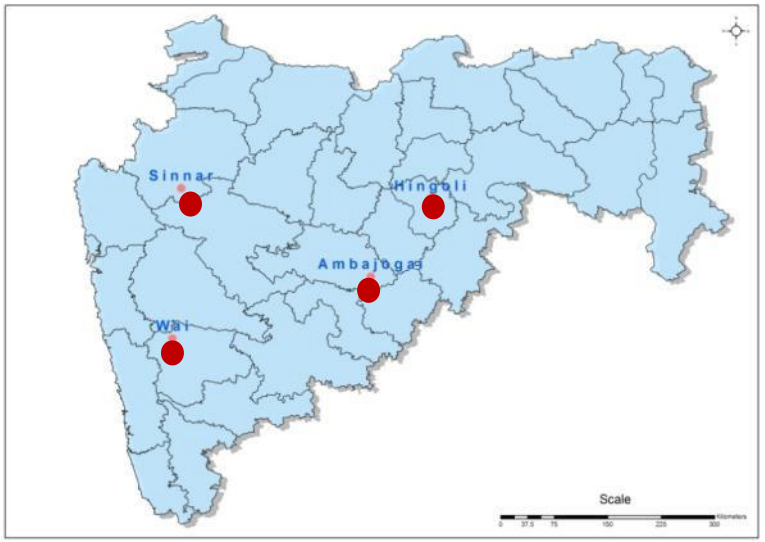
Assists ULBs to analyze lifecycle costs of sanitation



Performance Improvement Support to selected cities

City Sanitation Plans in Small Towns

	Wai	Sinnar	Hingoli	Ambajogai
Population	36,053	65,251	85,401	80,000
Area (sqkm)	3.6	51.4	16.7	10.2
No. of prabhags / zones	5	6	7	7
No. of electoral wards	19	-	28	28
Households	7,580	13,112	15,573	14,517
Slum Population	2,140	5,445	30,974	20,258
% of slum population	5.9%	8.3%	36.3%	25.3%
No. of slum settlements	2	8	9	12



- In partnership with State Government of Maharashtra (Water Supply and Sanitation Department, State utility (MJP) and local Municipalities
- Plans cover elimination of open defecation, safe excreta disposal, black and grey management and solid waste management

Diagnostics of wastewater system – Sinnar

BLACK WATER

428 ML/Yr

Periodic cleaning needs to be monitored

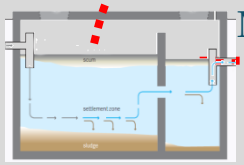
1.3 ML/Yr

Avoid indiscriminate dumping

Provide treatment sites

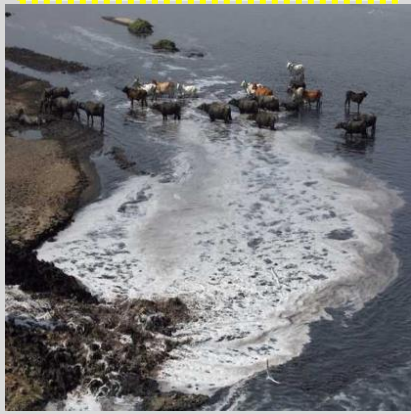
426 ML/Yr

Avoid choking of drains through regular cleaning



Need to be designed as per prescribed standards

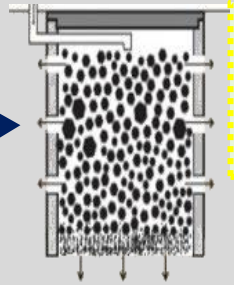
1228 ML/Yr



Avoid pollution of land and water bodies

GREY WATER

803 ML/Yr



Avoid soak pits where ground water tables are high

User interface | **Collection/Storage** | **Conveyance** | **Treatment** | **Reuse/disposal**

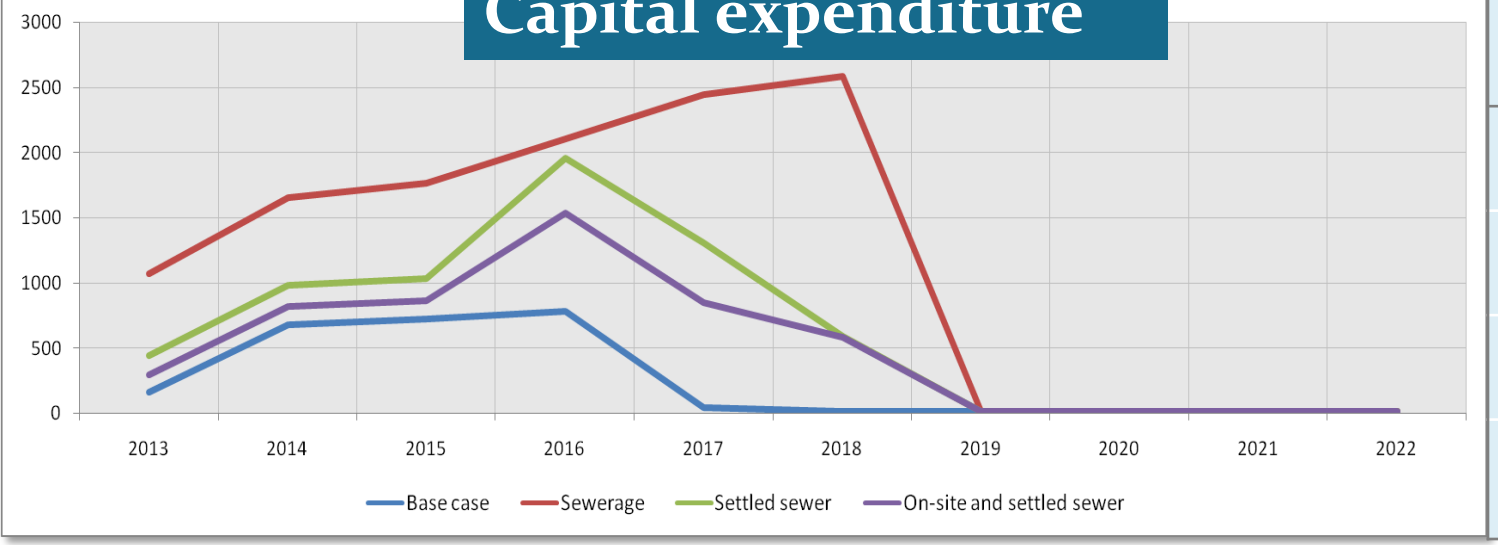
Existing Links In the value chain

Missing Links In the value chain

Areas for Intervention in the value chain

Costs of sanitation options differ greatly!

Capital expenditure

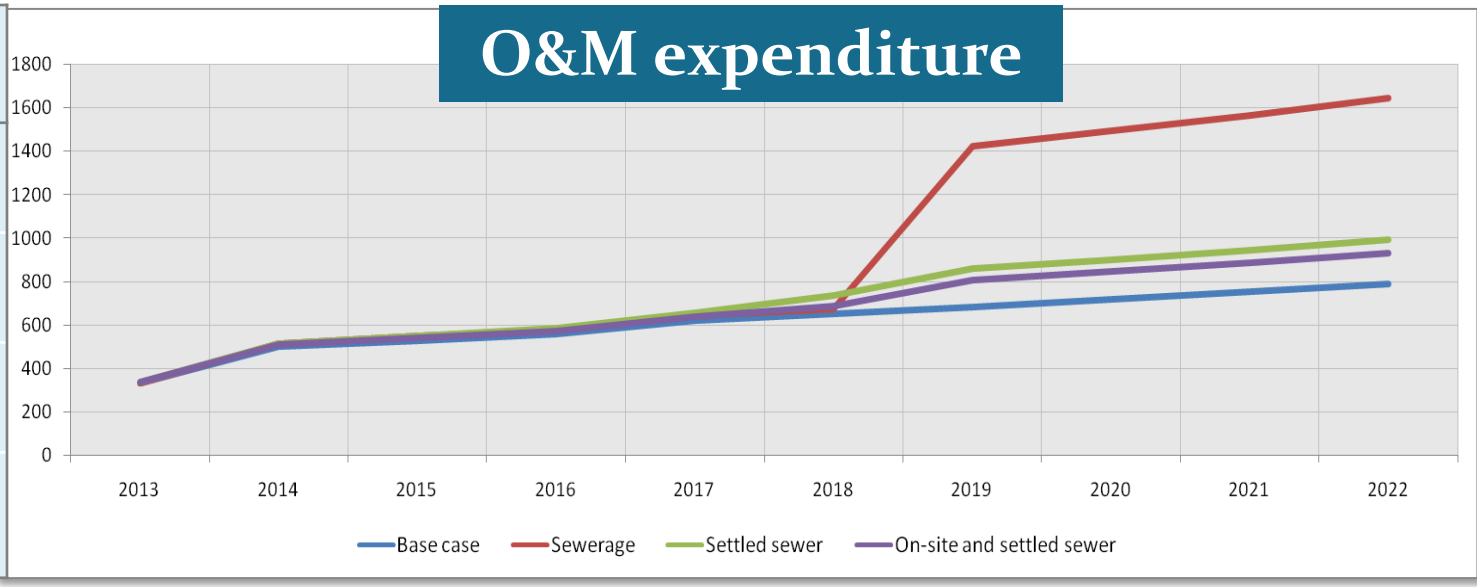


Sanitation option	Total CapEx (Rs. mn)
Base case	230
Sewerage	1150
Settled sewer	620
On-site and settled sewer	480

Capital expenditure on regular sewerage network is almost double the other options!

Sanitation option	Total OpEx (Rs. mn/ annum)
Base case	80
Sewerage	150
Settled sewer	100
On-site and settled sewer	90

O&M expenditure



Business models for desludging services

Urban Local Body (ULB)

Monitoring

Tax payment

Household/ Non residential properties

Monitoring

Rent payment for truck

Management fee

Rs. 12.3 lakhs/annum

Collection of septage

Private Sector

Business Model

Management Contract

- Capital investment done by ULB
- O & M services provided by Private
- ULB pays a management Fee to Private sector
- Monitoring of activities is done by ULB

Urban Local Body (ULB)

Monitoring

Tax payment

Household/ Non residential properties

Monitoring

Contract Amount

Rs. 15.2 lakhs/annum

Collection of septage

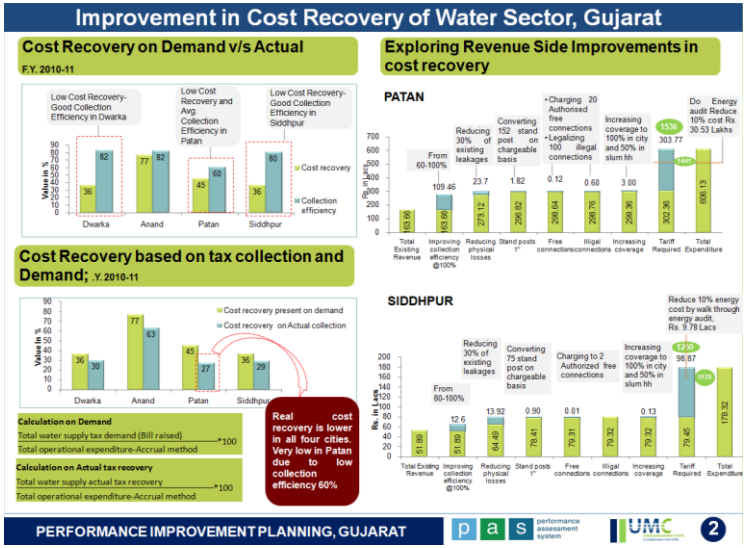
Private Sector

PPP - Scenarios

50% Equity	100 % Equity
Pay back – 2.2 Years ROE – 109%	Pay back – 1.9 Years ROE – 73%

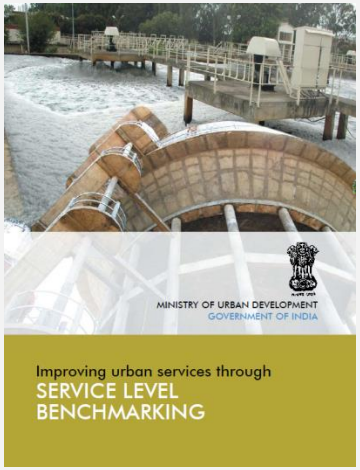
Other areas of city support

- Water audits and NRW reduction (10 cities)
- Strategy for 24x7 water supply and ODF plan (15 cities)
- Improvements in Cost Recovery and collection efficiency of tax for Water supply (4 cities)
- Drinking water quality monitoring/ surveillance systems (3 cities)
- Improvements in public grievances redressal system (5 cities)
- Slum improvement access to WSS services (2 cities)

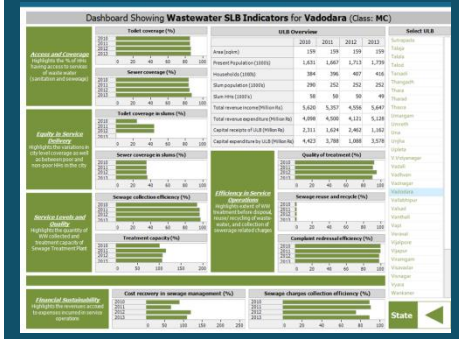


Scaling up in India and global links

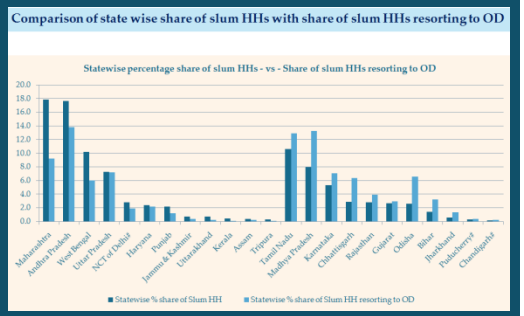
Activities as National Technical Support Partner



SUPPORT TO SLB NATIONAL STEERING COMMITTEE MEETINGS



NATIONAL DATABASE FOR SLB BASELINE AND TARGETS



ORGANISE CAPACITY BUILDING WORKSHOPS

PAS in over 400+ cities in two states

- In 2009, the Thirteenth Finance Commission's recommendation provided incentives for State governments to assess and publish service levels and targets in the state gazette to avail performance-based grants for urban local bodies (ULBs).
- The National Technical Support Partner will help mainstream SLB exercise through trainings for regular State and City level monitoring systems and its institutionalization.

MoU with Ministry of Urban Development on

Roll out in ALL States

Training programme for officials from Government of Nepal

Training Program for Nepal DWSS Team – September 2013

About the Training Programme

This training programme for officials from Department of Water Supply and Sewerage in Nepal aims to contribute towards improving the functionality of Water Supply and Sanitation facilities. The programme provides exposure to components and methodology for performance benchmarking for water and sanitation in developing countries. Introduction to several tools developed will help review technical, financial and equity related aspects of service delivery in urban water supply and sanitation.

The first part of training (five days) was hosted in UNESCO-IHE Institute for Water Education which introduced the participants to water and wastewater in Netherlands, basic concepts of benchmarking and performance improvement and water utility strategy. It also detailed out aspects for service levels, monitoring and O&M for water and sanitation.

The second part of training (four days) is being hosted by team of 'Performance Assessment System' Project of CEPT University (http://www.pas.org.in). It will demonstrate appropriate methods and tools to measure, monitor and improve delivery of water and sanitation. The training programme will introduce Performance Assessment Framework and relevant indicators to capture context of developing world including on-site sanitation systems, non-metered water connections, equity and financial aspects. Tools for online assessment and monitoring that can be of use to service providers will be demonstrated to participants.

The participants will also be introduced to a number of local level decision support tools that help facilitate development of a financially viable plan of action for improvements in delivery of local services. It will help devising plans that move away from mere 'infrastructure investment plans' to evolving 'service improvement plans' which include a wide set of actions including policy and process reengineering. Specific cases of Indian cities will be used to demonstrate frameworks and methodology used for improvement planning.

The knowledge and skills gained during this training can be transferred to performance assessment and monitoring processes in urban water and sanitation sector in Nepal.

The Performance Assessment System (PAS) Project at CEPT University is an Action Research Project that supports development of appropriate tools and methods to measure, monitor and improve delivery of water and sanitation services in urban India. Funded by Bill and Melinda Gates Foundation, the PAS Project covers all 419 urban local governments in the two Indian states of Gujarat and Maharashtra. CEPT is implementing the Project with Urban Management Centre (UMC) in Gujarat and All India Institute of Local Self-Government (AIILSG) in Maharashtra.

pas performance assessment system

To know more, write to pas@cept.ac.in

pas performance assessment system

Performance Assessment System Project

UNESCO-IHE, DELFT, NETHERLANDS
AND CEPT UNIVERSITY, AHMEDABAD, INDIA

Training Programme on
Performance Assessment System (PAS)
for Urban Water Supply and Sanitation
for Officials from Department of Water Supply and Sewerage, Government of Nepal

17-21 September, 2013, Ahmedabad, India

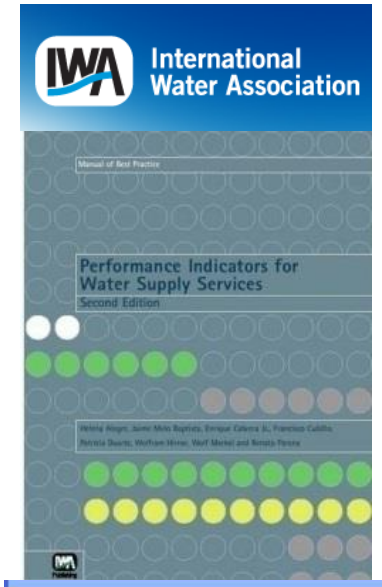
UNESCO-IHE Institute for Water Education

CEPT University,
Ahmedabad, India
www.cept.ac.in, www.pas.org.in

- Training on methods and tools to measure, monitor and improve service delivery
- Introduction to Performance Assessment Framework and relevant indicators to capture context of developing world.
- Tools for online assessment and monitoring were also demonstrated to participants.

PAS Project global links

- IWA specialist group for Performance Indicators and Benchmarking to influence global benchmarking efforts in looking at developing country contexts.
- Formal partnership with The UNESCO-IHE (Netherland) in their Pro-poor Benchmarking (PROBE) programme
- Membership and contributions to the Post-2015 deliberations for WASH, and waste water and groups



Thank You

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