

# Performance Assessment Systems PAS Project Urban Water Supply and Sanitation

# 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

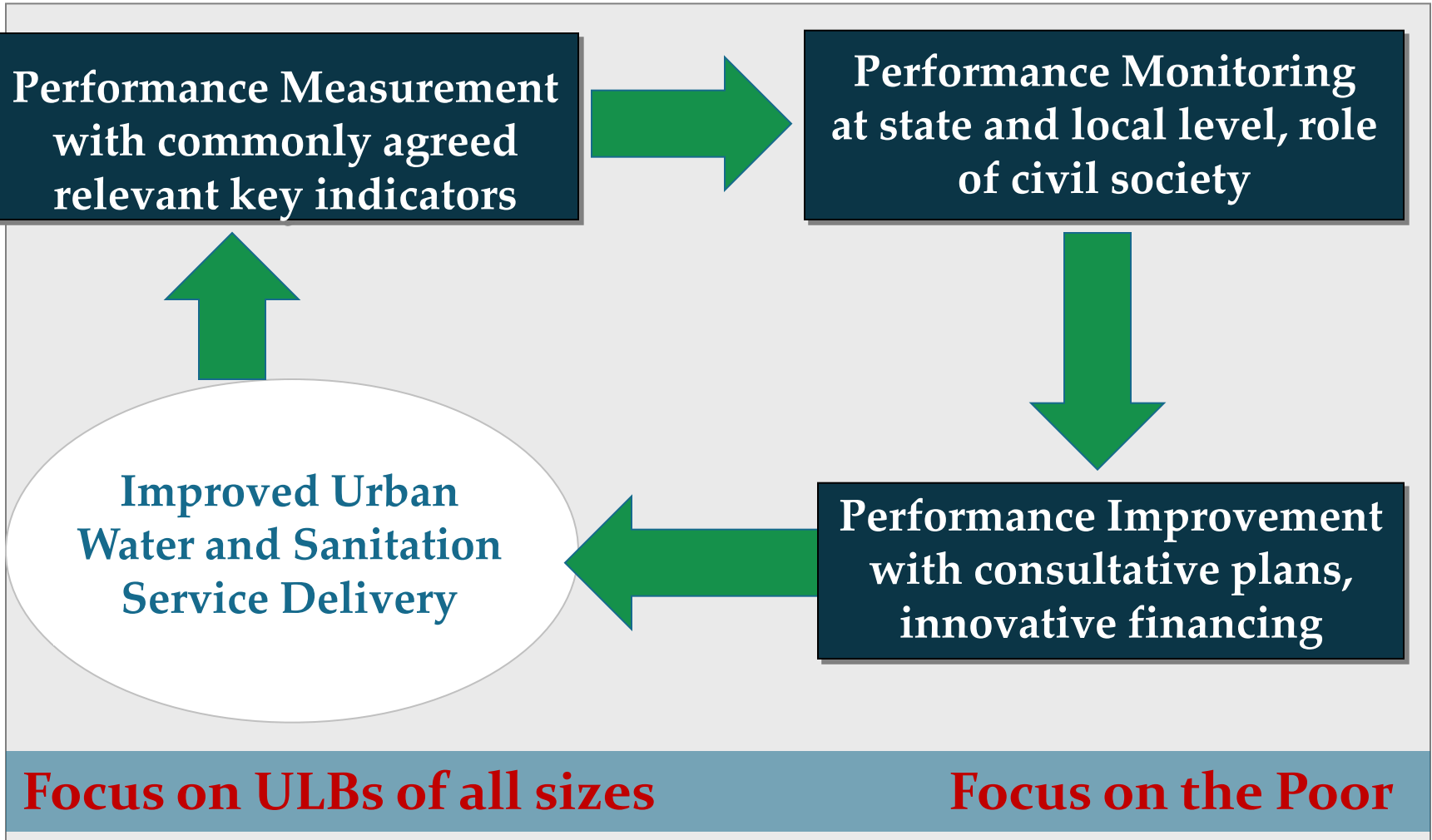


# Performance Assessment System (PAS) Project

- 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

Performance Measurement



Performance Monitoring



Performance Improvement



FRAMEWORK DEVELOPMENT

MAINSTREAMING  
Performance Assessment

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

Post Project Assessments

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

## Review of International Efforts

Benchmarking by different users:  
Governments, utility associations,  
regulations, performance contracts

## Stakeholder Consultations

State agencies, urban local body  
officials  
Sector experts and resource persons

## PERFORMANCE MEASUREMENT FRAMEWORK

## Review of Efforts in India

Indian studies and surveys  
Ongoing programme-linked and  
routine monitoring

## Pilot Studies

Developing a measurement tool  
Assessing data availability and  
reliability



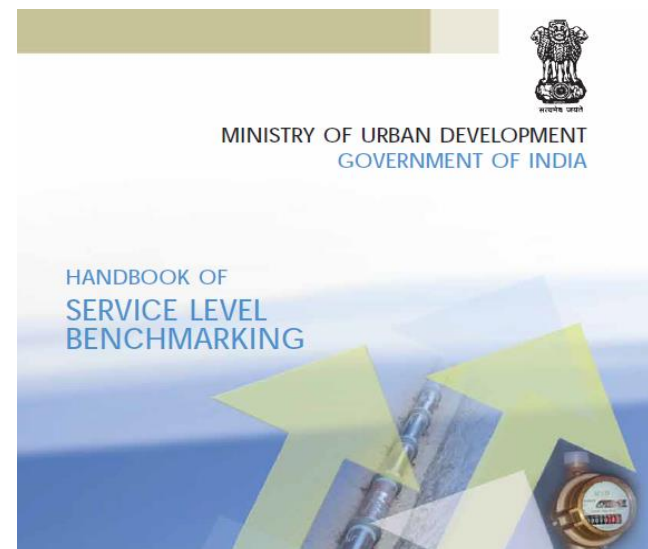
# Key lessons: Global efforts

---

- ❑ 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

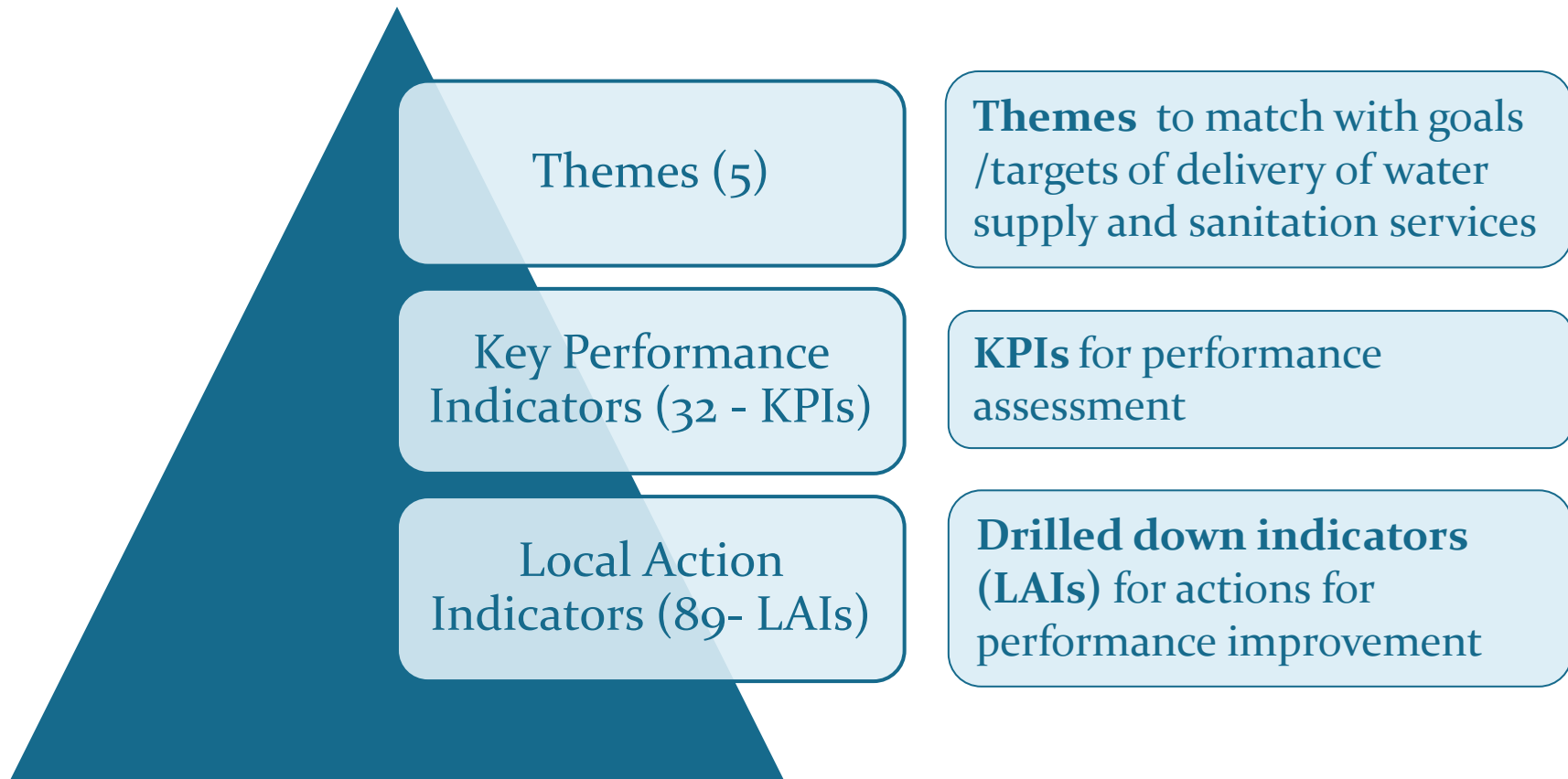
# Aligning with the Government of India Initiative

- **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 Sewerage 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 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

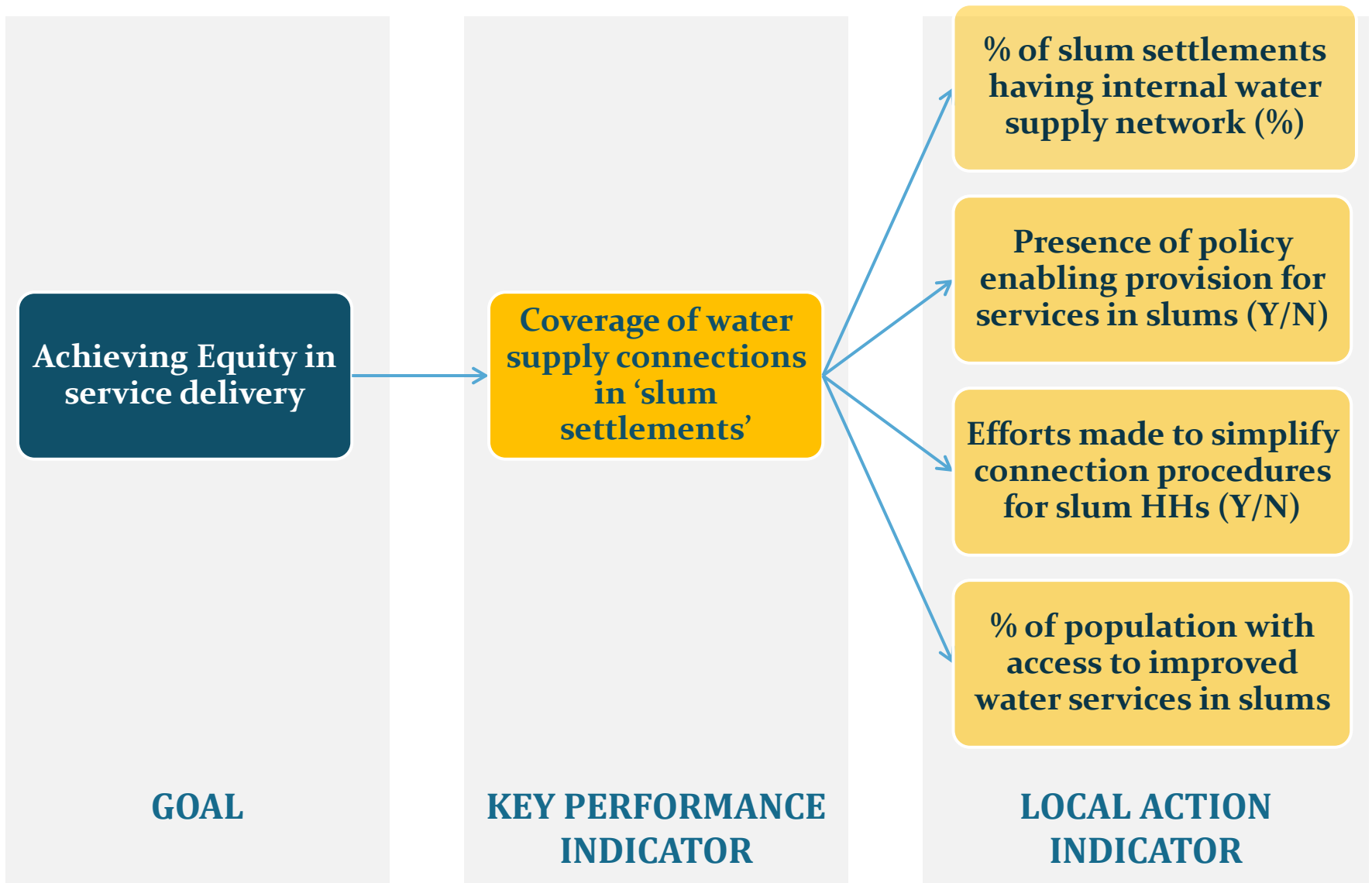
Key Indicators

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






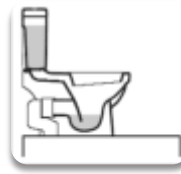
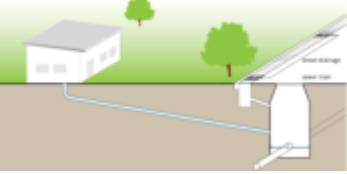
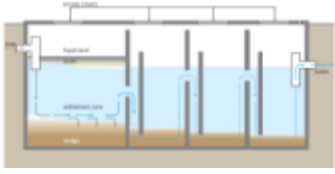

Also help arrive at local **IMPROVEMENT** priorities

# Framework for Equity Assessment

15

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

# Revised sanitation indicators across the value chain

| Capture   | Collection  | Conveyance   | Treatment  | Recycle n Reuse   |
|---|---|--|--|---|
| <b>Cities having onsite sanitation systems</b>                                    |   |  |  |   |
|  |    |   |   |                                |
| <ul style="list-style-type: none"> <li>Coverage of toilets</li> </ul>             | <ul style="list-style-type: none"> <li>Coverage of properties with septic tank disposal system</li> </ul>   | <ul style="list-style-type: none"> <li>% of septic tanks cleaned annually</li> </ul>   | <ul style="list-style-type: none"> <li>Adequacy of septage treatment capacity</li> <li>Quality of septage treatment</li> </ul>                           | <ul style="list-style-type: none"> <li>Extent of reuse and recycling of treated septage</li> </ul>                |
| <b>Cities having underground sewerage systems</b>                                 |   |  |  |   |
|  |    |  |   |                                |
| <ul style="list-style-type: none"> <li>Coverage of toilets</li> </ul>             | <ul style="list-style-type: none"> <li>Coverage of wastewater network services</li> </ul>   | <ul style="list-style-type: none"> <li>Collection efficiency of wastewater network</li> </ul>                                  | <ul style="list-style-type: none"> <li>Adequacy of wastewater treatment capacity</li> <li>Quality of wastewater treatment</li> </ul>                     | <ul style="list-style-type: none"> <li>Extent of reuse and recycling of treated wastewater</li> </ul>             |
| <b>Cities having mixed sanitation systems</b>                                     |   |  |  |   |
| <ul style="list-style-type: none"> <li>Coverage of toilets</li> </ul>             | <ul style="list-style-type: none"> <li>Coverage of adequate household sanitation in city (including sewerage connection and/or septic tanks)</li> </ul> | <ul style="list-style-type: none"> <li>Efficiency of wastewater collection (through sewerage /septic tank emptiers)</li> </ul> | <ul style="list-style-type: none"> <li>Adequacy of sewage and septage treatment capacity</li> <li>Quality of wastewater and septage treatment</li> </ul> | <ul style="list-style-type: none"> <li>Extent of reuse and recycling of treated wastewater and septage</li> </ul> |



# Performance Measurement on-the-ground

We have come a long way from this

1997-98

1996-97

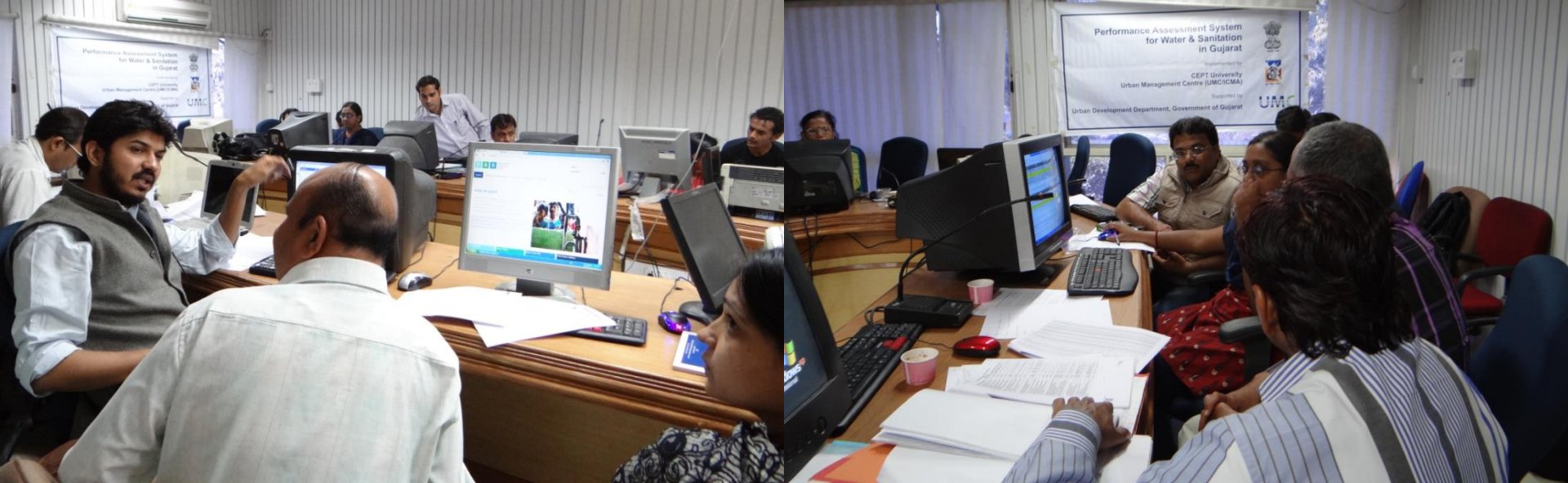
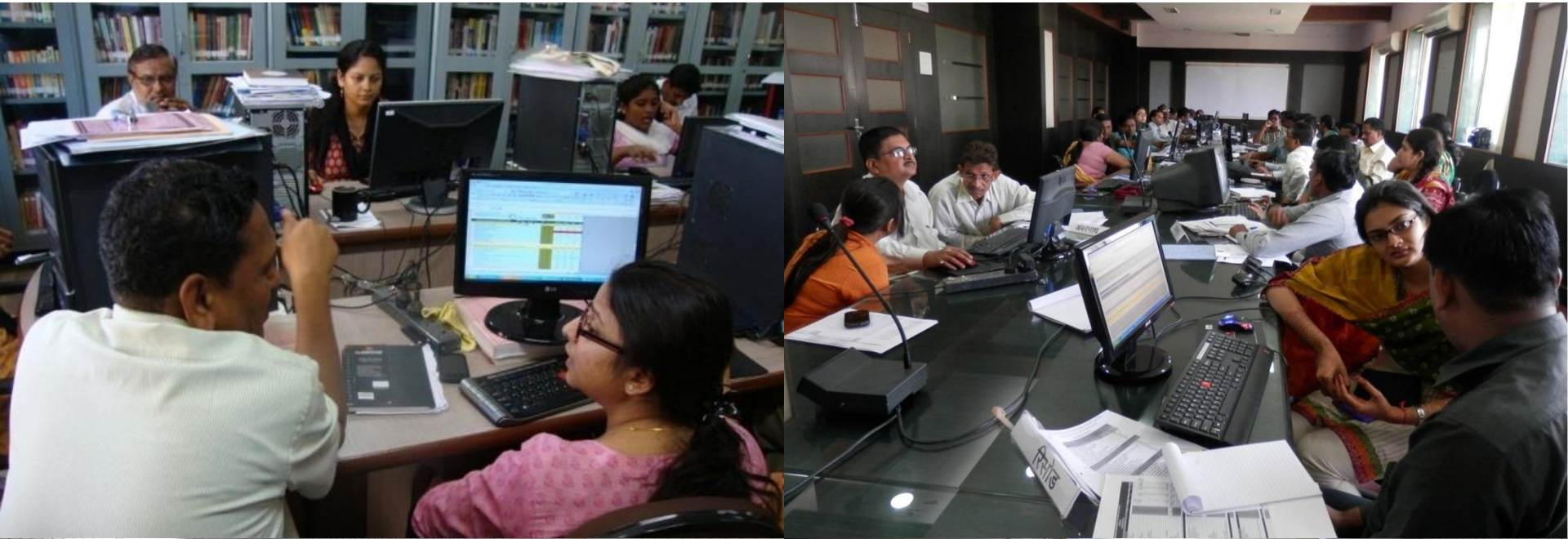
1997-1998

10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30

1996-97

1995-96

# Online data entry camps in state capitals



# Online Data Entry Modules



You are signed in as Achalpur ULB.

| Sign Out |

Home

Performance Assessment

Resources

Important Links

About Us

News Scan

**Data Entry**

Select Year to View Data Entry Check List.

Select Financial Year :

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

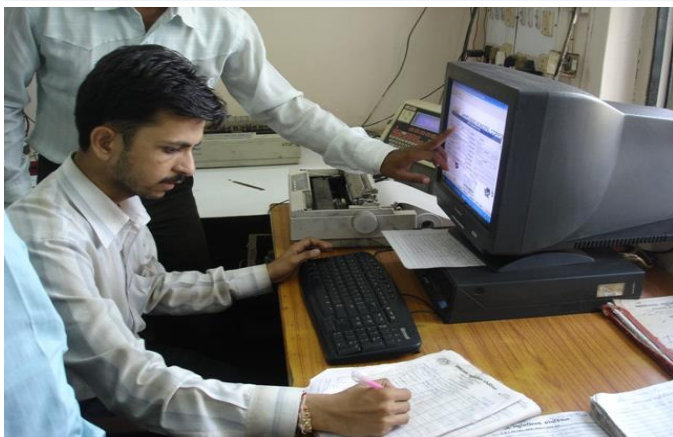
Go Back to Data Entry

Save All

## 1. Demographics

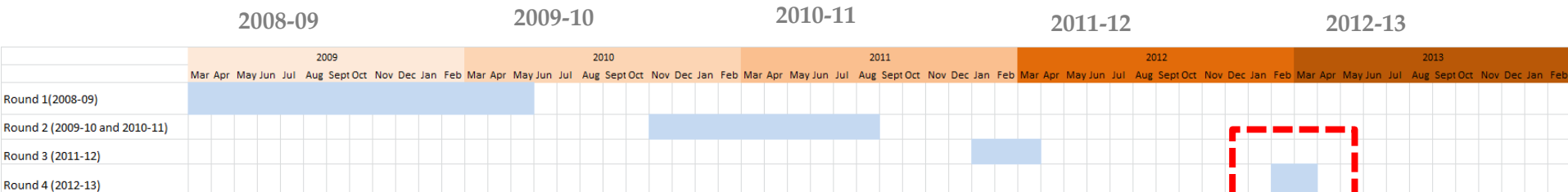
| Item  | Unit    | 2008-2009 | 2009-2010 |
|---|---------|-----------|-----------|
| 1.1 Population (Census 2001)/2011   | Persons | 102316    | 102316    |
| 1.2 Decadal Growth Rate of the City   | %       |           |           |
| 1.3 Population (Present Year)   | Persons | 127316    |           |
| 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

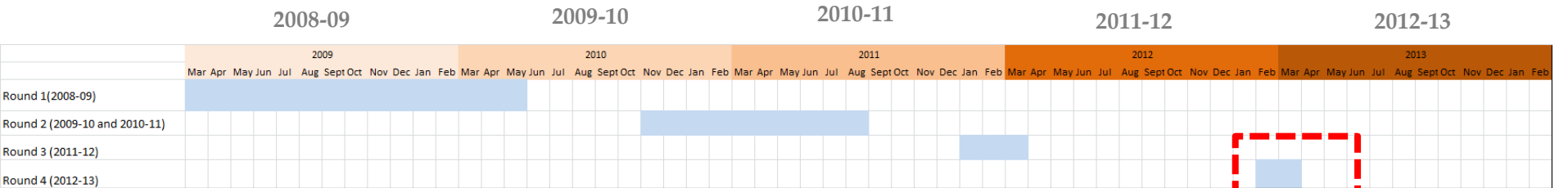


# Time taken for annual assessment

## 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**

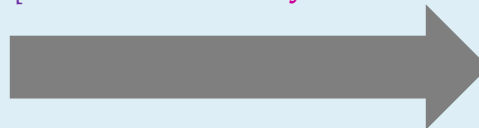
**Tools translated in local language**

**Support for resolving data issues**

**Constant hand holding by PAS team**

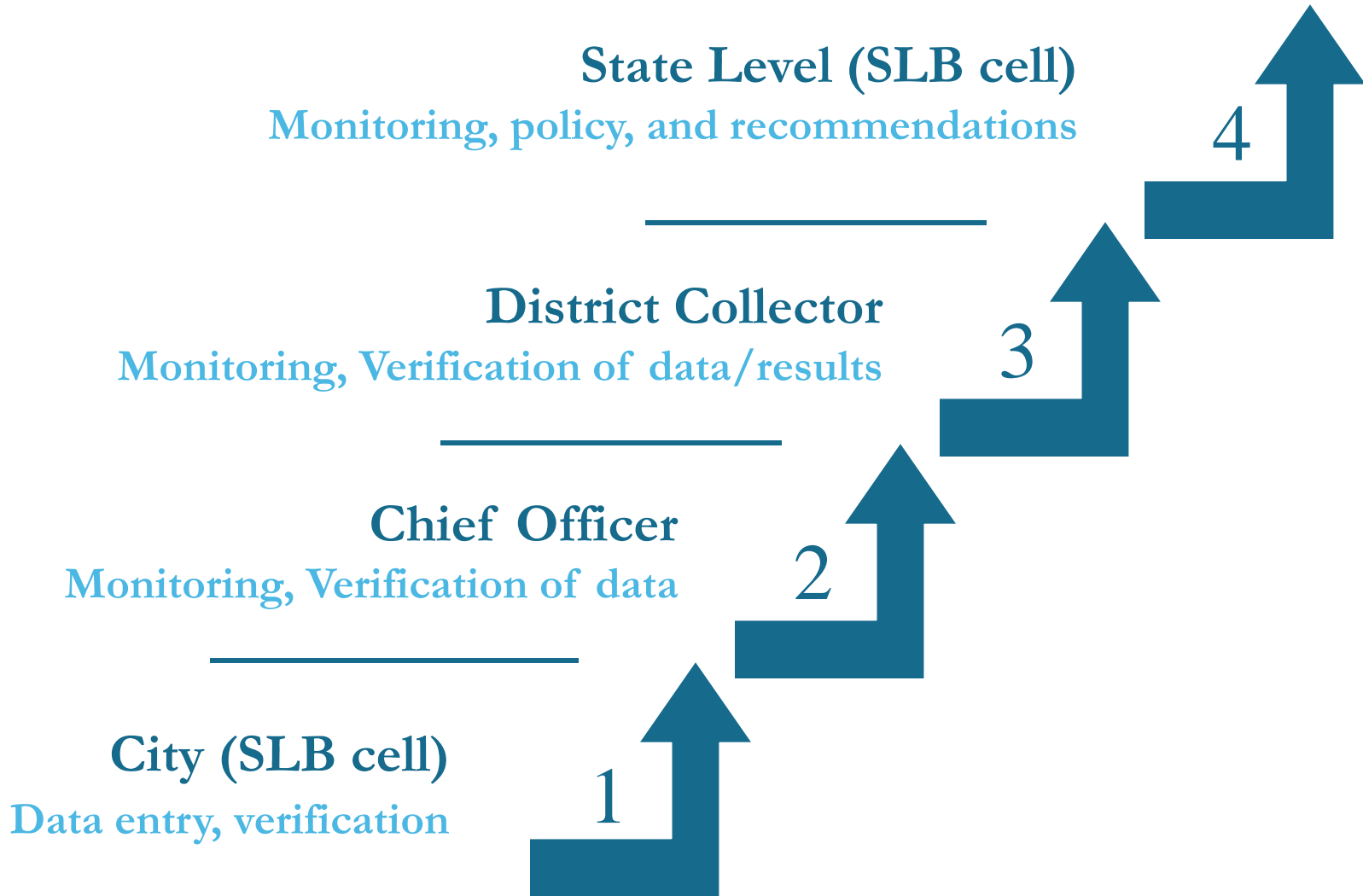


**Data collection through city visits in Year I (2008-09), supported by Partners**



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

# Planned online system for review

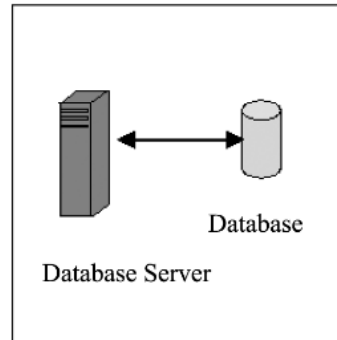


# Web based measurement and monitoring

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



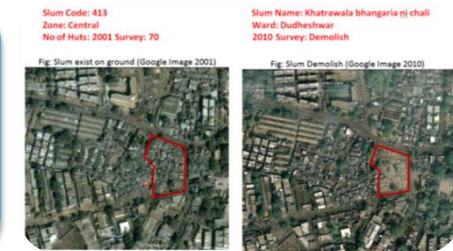
Regular updating of data and ground truth required



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 in Maharashtra

**SLB GR**

- Government Resolution issued by the Government of Maharashtra on 10<sup>th</sup> April 2012 regarding formation of State level SLB Cell to look after all SLB related affairs in the state of Maharashtra.
- The roles and responsibilities of this SLB Cell are defined in this GR.

**STATE LEVEL SLB CELL**

- According to the SLB GR, the state level SLB Cell is established at the AHILSG, Mumbai to provide all kind of technical and managerial guidance regarding SLB to all Urban Local Bodies in Maharashtra

महाराष्ट्र शासकीय स्तरावरील शहरी नगरीय विकास कार्यसमितीचे (TOR) निदेश संकलन

महाराष्ट्र शासकीय स्तरावरील शहरी नगरीय विकास कार्यसमितीचे (TOR) निदेश संकलन

महाराष्ट्र शासकीय स्तरावरील शहरी नगरीय विकास कार्यसमितीचे (TOR) निदेश संकलन

| निदेश संकलन  | कृती (Activities)                                    | परिणत (Outcome)                                      |
|--|--|--|
| On line data entry                                   | शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन | शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन |
| शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन | शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन | शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन |
| शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन | शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन | शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन |
| शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन | शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन | शहरी नगरीय विकास कार्यसमितीचे (SLB) कृती निदेश संकलन |

### SLB CELL - GUJARAT

| 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 Municipality       | 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 |

- Government of Gujarat constituted the SLB Cell in Urban Development Department on 23<sup>rd</sup> 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.

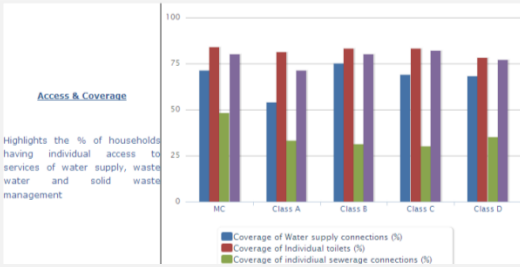
# Online Monitoring



Login  
 Password

[Home](#)   **Performance Assessment**   [Resources](#)   [Important Links](#)   [About Us](#)   [News Scan](#)  
[Framework](#)   [Toolkit](#)   [State Profile](#)   [Know Your City](#)

## Access and Coverage



## State profile of all SLBs

[Home](#)   [Performance Assessment](#)   **Resources**   [Important Links](#)   [About Us](#)   [News Scan](#)  
[Reports & Papers](#)   [Presentations](#)   [Good Practices](#)   [Newsletter](#)  
[Water](#)   [Sanitation & Waste Water Management](#)   [Solid Waste Management](#)   [Cross-Cutting Theme](#)

### Resources > Good Practices

The section hosts 'Good Practices' related to the urban water and sanitation services. The good practices are categorized into four main areas namely, Water, Sanitation, Solid Waste Management and Cross-cutting Themes. Various 'Sub-Themes' reflect different actions, which help to improve performance facets under which creditable work is being done and captured as good practices in the urban water and sanitation sector.

Documentation of good practices plays a critical role in the PAS Project, especially for the Performance Improvement component. The good practices featured here are based on the attempts of various Indian cities to improve services through innovative reforms. These would be helpful for other similar cities in developing their own performance improvement plans (PIPs) and in developing local actions.

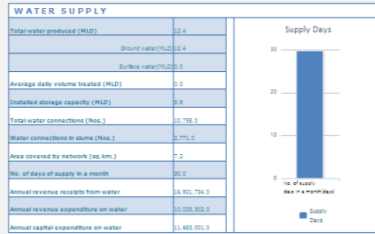
Different aspects of good practices encompass improved coverage, efficiency and equity in service delivery, financial sustainability, implementation of reforms and adoption of innovative approaches. The examples of good practices include the ones developed under PAS Project by CEPT University and its partners along with numerous other good practices documented by various external organizations.

#### Themes for Good Practices for Performance Improvement

| Sr.No. | Major Themes                    | Sub-Themes   | Description   |
|--------|---------------------------------|--|---|
| 1      | Water                           | Additional and improved connections for slum and non-slum households                                 | This includes examples of provision of additional connections in cities with a particular focus on slum households. It covers slum level internal infrastructure along with processes and policies for improved water services including additional connections and simplified processes for new connections.   |
|        |                                 | Regularizing unauthorized connections (including fines, incentives, policy etc)                      | This covers efforts towards detection and regularization of illegal connections to reduce non-revenue water. Amnesty schemes are also covered.  |
|        |                                 | Energy Cost Reduction  | It has instances of cost reduction including energy audit, replacement/replacement of pumping machinery, usage in off-peak hour, and relying on gravity based water leading to treatment plants and reservoirs.   |
| 2      | Sanitation and waste management | 24/7 Water Supply, Metering, Water Audit and Non-Revenue Water (NRW) Reduction                       | This features provision of '24/7' water supply through system enhancement, metering at bulk water production, distribution points and consumer connections and tariffs based on consumption. Additionally, it covers establishment of District Metering Areas (DMAs), differential pricing, hydraulic modeling, water audit to estimate water balance and reduce leak.  |
|        |                                 | Additional and improved toilets, waste water connections for slums and non-slum similar initiatives. | This segment has good practices for provision of toilets, especially in slum households including examples of community involvement and efforts towards open defecation free status. Other examples covered are safe disposal practices, providing additional sewerage connections and upgrading open drains to covered surface drains, processes and policies for improved sanitation services, and simplified processes for new sewerage connections and toilets. |

## Background of Achalpur

| GENERAL INFORMATION          |           |                                       |               |
|------------------------------|-----------|---------------------------------------|---------------|
| Class                        | Class A   | No. of slum settlements               | 32.0          |
| Class                        | Ambar     | Slum population                       | 26,222.0      |
| Area (sq.km.)                | 34.2      | Slum households                       | 11,877.0      |
| Total city population        | 127,318.0 | Total annual city capital receipts    | 21,182,790.0  |
| Total households             | 26,775.0  | Total annual city revenue receipts    | 21,89,128.0   |
| Density (persons per sq.km.) | 3,722.0   | Total annual city revenue expenditure | 248,811,176.0 |
| Total municipal staff        | 468.0     |                                       |               |



| WASTE WATER                                  |           |
|--|-----------|
| Area covered by waste water network (sq.km.) | 3.0       |
| Underground sewerage network (sq.km.)        | 0.0       |
| Open drains (sq.km.)                         | 0.0       |
| Open drains (No.)                            | 3.0       |
| Total sewerage connections (No.)             | 3.0       |
| Sanitation connections in slums (No.)        | 3.0       |
| Installable STP treatment capacity (MLD)     | 3.0       |
| Annual revenue receipts from sewer           | 900,455.0 |

## City Profile of Achalpur

Print    Search

Select State:

Select City:

Select Year:

**Access & Coverage**

Highlights the % of households having individual access to services of water supply, waste water and solid waste management.

Coverage of SS connections:

Per capita supply of wastewater:

Quantity of water supply (liters/capita/day):

Quality of water supply (%):

**Service Levels & Quality**

Highlights the quantity of water supplied to city, continuity and quality of supply.

Continuity of water supply (hours):

Quality of water supply (%):

**Financial Sustainability**

Highlights the revenues accrued to expenses incurred in service operations.

Cost recovery (O&M) in SS services (%):

**Equity in Service Delivery**

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

Coverage of SS connections in 'low' settlement (%):

**Efficiency in Service Operations**

Highlights extent of non-revenue water, functional metering of water connections, and collection efficiency of charges.

Extent of non-revenue water (%):

Efficiency in reduced of customer complaints:

Extent of functional metering of water connections:

Efficiency in collection of SS waste charges:

Select State:

Select City:

Select Year:

Select Sector:

## Overview of all cities

## City profile of all SLBs

## Documentation of good practices

Class: All

Class: (All)

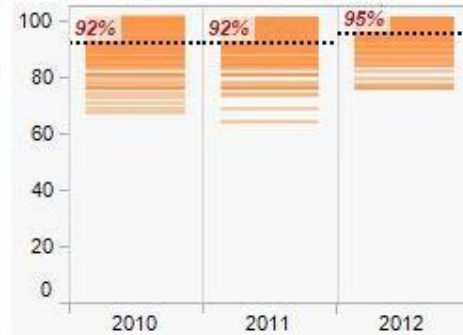
State: Gujarat



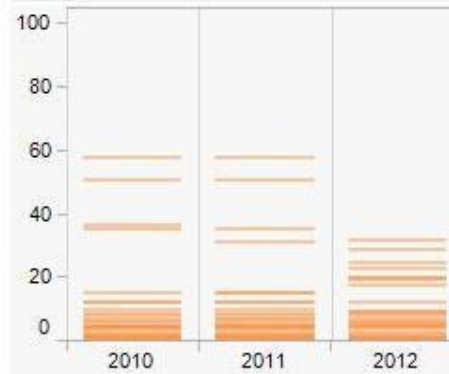
HH Level Coverage



Collection Efficiency of MSW



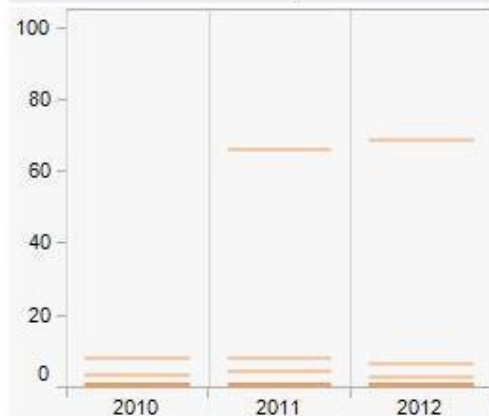
Extent of Segregation



Extent of MSW Recovered



Scientific Disposal



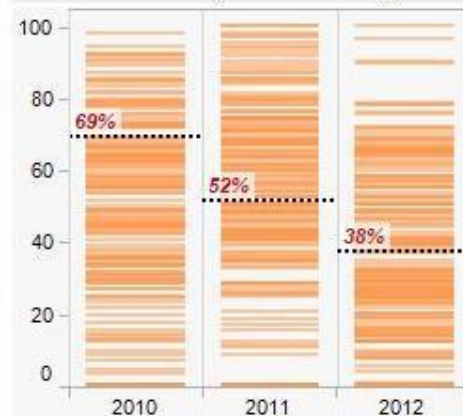
Complaint Redressal



Cost Recovery



Col. Efficiency of User Charges



Class: MC

State

(All)

ULB

(All)

[Back to State](#)

### Access & Coverage

Captures the door to door collection of MSW.

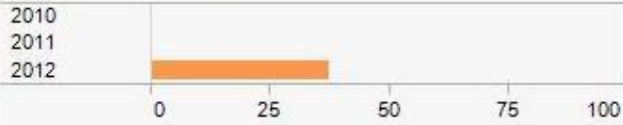
#### Coverage



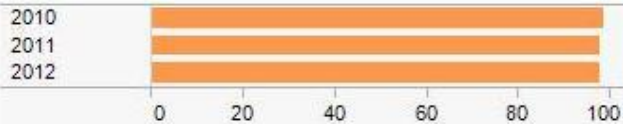
### Equity in Service Delivery

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

#### Slum Coverage (%)



#### Collection Efficiency of MSW



### Service Levels & Quality

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

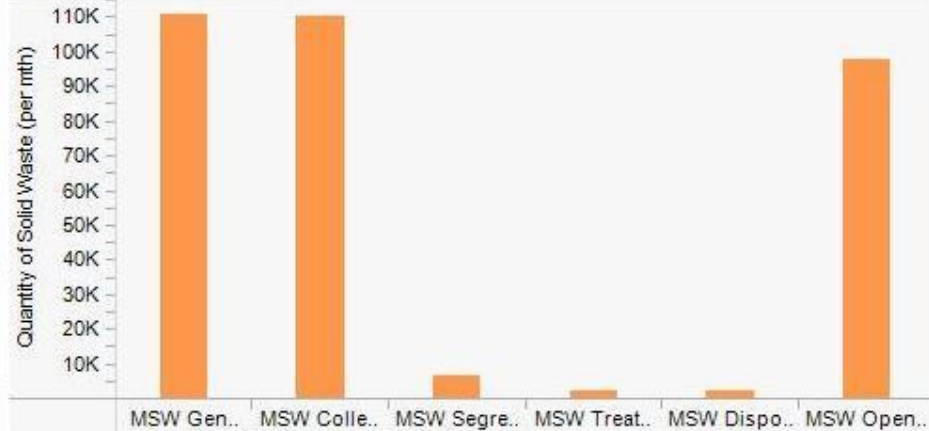
#### Extent of Segregation



#### Extent of MSW Recovered



### SWM Value Chain



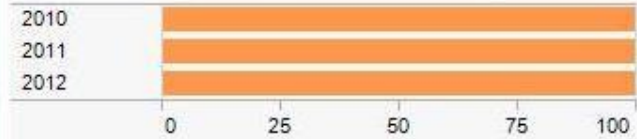
Year

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 Recovery



# Performance Monitoring



# Dashboards showing Ranking of cities for Gujarat

Overall Index

Urban Development Index

Dimensions

Demography

Municipal Services

Urban Finance

Urban Equity

Indicators

3 – Demography Indicators

13 – Municipal Service Level Indicators

5 – Urban Financial and Management Indicators

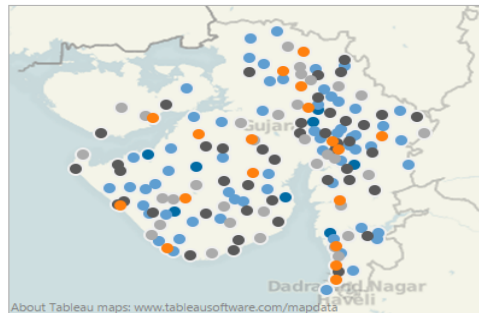
4 – Urban Equity Indicators

- ❑ 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

Ranking of Cities for 2013

Overall Index

| Class         | ULB         | UDI  |
|---------------|-------------|------|
| MC            | Surat       | 0.69 |
|               | Vadodara    | 0.63 |
|               | Rajkot      | 0.57 |
|               | Ahmedabad   | 0.56 |
|               | Bhavnagar   | 0.42 |
| A             | Jamnagar    | 0.37 |
|               | Junagadh    | 0.35 |
|               | Navsari     | 0.52 |
|               | Valsad      | 0.51 |
|               | Patan       | 0.48 |
|               | Anand       | 0.47 |
|               | Nadiad      | 0.47 |
|               | Kalol       | 0.42 |
|               | Jetpur      | 0.39 |
|               | Bharuch     | 0.39 |
|               | Botad       | 0.39 |
|               | Mehsana     | 0.39 |
|               | Veraval     | 0.37 |
|               | Godhara     | 0.35 |
|               | Morbi       | 0.34 |
| Surendranagar | 0.34        |      |
| Porbandar     | 0.33        |      |
| Palanpur      | 0.33        |      |
| Vapi          | 0.29        |      |
| Gandhidham    | 0.28        |      |
| B             | Unjha       | 0.51 |
|               | Himmatnagar | 0.51 |
|               | Petlad      | 0.47 |
|               | Ankleshwar  | 0.47 |



Class  A  B  C  D  MC

Year

Infrastructu...

Finance

Equity

Demograp...

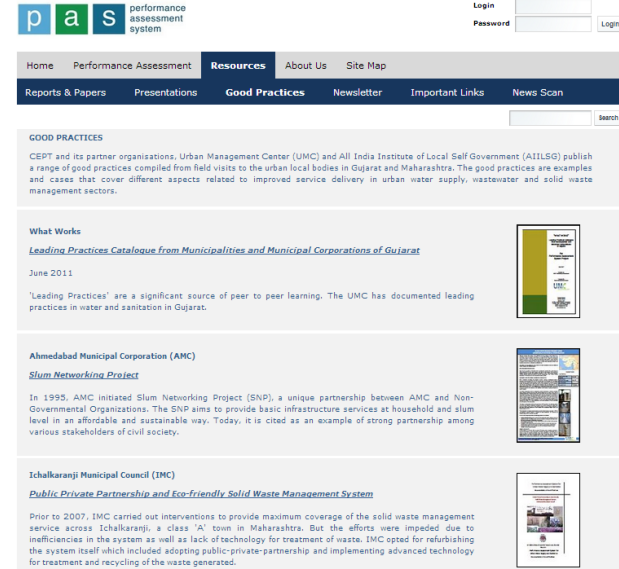
Use slider to adjust the weightages for Sector Index.  
(Note: The sum of the weightages should be equal to 100)

- ❑ 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.



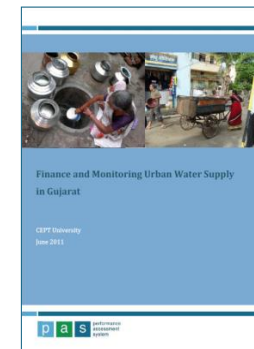
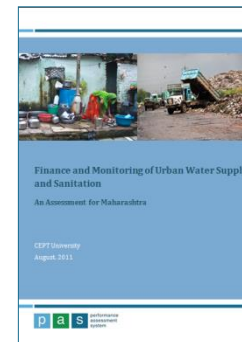
# Performance Monitoring – Other activities

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



The screenshot shows the PAS web portal interface. At the top, there is a logo for 'performance assessment system' and a login field. Below the logo is a navigation menu with 'Home', 'Performance Assessment', 'Resources', 'About Us', and 'Site Map'. Under 'Resources', there are sub-links for 'Reports & Papers', 'Presentations', 'Good Practices', 'Newsletter', 'Important Links', and 'News Scan'. The main content area is titled 'GOOD PRACTICES' and contains three entries, each with a small thumbnail image and a brief description of the project.

*Access to good practices via PAS web portal*

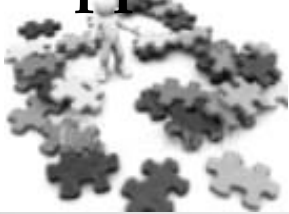


*Reports describe finance and monitoring of urban water supply and sanitation in Maharashtra. It assesses the flow of funds in UWSS sector and the associated monitoring framework within the larger context of the urban sector in both States*

# Performance Improvement Models and tools

# Approach to performance improvement planning

## Conventional Approach



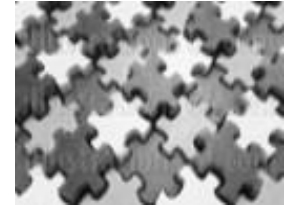
**'PROJECT'**  
*based approach*

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

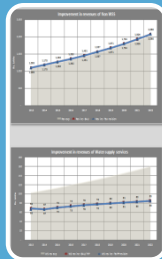
IMPROVEMENT PLAN OPTIONS



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

| STANDARDISED SERVICE LEVEL BENCHMARKS  |   |   |   |   |   |   |  |
|--|---|---|---|---|---|---|--|
| PERFORMANCE ASSESSMENT SYSTEMS (PAS) PROJECT   |   |   |   |   |   |   |  |
| TARGET MODEL   |   |   |   |   |   |   |  |
| USER GUIDE   | SUB-TARGETS   |   |   | GUIDELINES                              |   |   |  |
| WATER SUPPLY   | WASTE WATER   | SOLID WASTE   |   | SUMMARY                                 |   |   |  |
| <b>PLEASE IN APPROPRIATE VALUES FOR YOUR CITY IN ALL THE BLACK CELLS</b>   |   |   |   |   |   |   |  |
| <b>SELECT CLASS:</b><br>Class A<br>Class B<br>Class C<br>Class D<br>Class E<br>Class F<br>Class G<br>Class H<br>Class I<br>Class J<br>Class K<br>Class L<br>Class M<br>Class N<br>Class O<br>Class P<br>Class Q<br>Class R<br>Class S<br>Class T<br>Class U<br>Class V<br>Class W<br>Class X<br>Class Y<br>Class Z | <b>POPULATION:</b><br>1,00,000<br>2,00,000<br>3,00,000<br>4,00,000<br>5,00,000<br>6,00,000<br>7,00,000<br>8,00,000<br>9,00,000<br>10,00,000<br>11,00,000<br>12,00,000<br>13,00,000<br>14,00,000<br>15,00,000<br>16,00,000<br>17,00,000<br>18,00,000<br>19,00,000<br>20,00,000 | <b>HOUSEHOLDS:</b><br>10,000<br>20,000<br>30,000<br>40,000<br>50,000<br>60,000<br>70,000<br>80,000<br>90,000<br>100,000<br>110,000<br>120,000<br>130,000<br>140,000<br>150,000<br>160,000<br>170,000<br>180,000<br>190,000<br>200,000 | <b>BASIC INFORMATION (L100-10)</b><br>SUBPOPULATION SHARE (%)<br>AREA (sq.km)<br>DISTRICT |   |   |   |  |
| WATER SUPPLY   |   |   |   |   |   |   |  |
| M3/s and million litres per day (MLD)  |   |   |   |   |   |   |  |
| Year   | 2010-11   | 2011-12   | 2012-13   | 2013-14                                 | 2014-15                                 | 2015-16                                 |  |
| <b>Coverage of individual water supply</b><br>Number of households covered with individual connections<br>Additional number of households connected to public supply<br>Equivalents required for I&M to achieve target (No. table)<br>Income generated for financing coverage (Rs. table)                          | 40<br>100,000<br>10,000<br>100<br>1,000   | 50<br>200,000<br>20,000<br>200<br>2,000   | 60<br>300,000<br>30,000<br>300<br>3,000   | 70<br>400,000<br>40,000<br>400<br>4,000 | 80<br>500,000<br>50,000<br>500<br>5,000 | 90<br>600,000<br>60,000<br>600<br>6,000 | 100<br>7,000<br>70,000<br>700<br>7,000 |
| <b>Per capita supply at consumption end (liters/day)</b><br>Water production (million liters/day)<br>Additional water requirement (million liters/day)<br>Equivalents required for supply water treatment (No. table)  | 80<br>100<br>100<br>100   | 90<br>200<br>200<br>200   | 100<br>300<br>300<br>300  | 110<br>400<br>400<br>400                | 120<br>500<br>500<br>500                | 130<br>600<br>600<br>600                |  |
| <b>Extent of fractional metering of water supply connections (%)</b><br>Number of water supply connections metered<br>Additional number of connections metered required to achieve   | 0<br>50<br>100<br>150   | 0<br>50<br>100<br>150   | 0<br>50<br>100<br>150   | 0<br>50<br>100<br>150                   | 0<br>50<br>100<br>150                   | 0<br>50<br>100<br>150                   |  |

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

| WATER TARIFF MODEL   |   |
|--|---|
| Brief description of the model<br>This model is to assist urban local bodies to determine water tariff to recover 100% cost of operations and maintenance<br>The model is based on guidelines for urban local bodies for fixing charges of water supply & sewerage services, G.O. 2008/L1 No. 207/06/V00, dated- 2 August 2010 |   |
| Data Input:  | The user is required to enter the key data needed to operate this model for following areas<br>I City details<br>II Type of connections and consumer consumption<br>III Water supply quantity & non revenue water (NRW)<br>IV Water expenditure<br>V Current water tariff<br>Specific instructions for individual points of data have been provided in the input sheet itself |

## OD Free City

| Category                | Sub-category      | Annual O&M Expenditure (Rs. Crores) |         |         |         |         |         |                    |
|-------------------------|-------------------|-------------------------------------|---------|---------|---------|---------|---------|--------------------|
|                         |                   | Class A                             | Class B | Class C | Class D | Class E | Class F | Total (Rs. Crores) |
| Capital Expenditure     | Sanitary latrine  | 100                                 | 200     | 300     | 400     | 500     | 600     | 2,100              |
|                         | Water supply      | 150                                 | 300     | 450     | 600     | 750     | 900     | 3,150              |
|                         | Street lighting   | 50                                  | 100     | 150     | 200     | 250     | 300     | 1,050              |
|                         | Public works      | 20                                  | 40      | 60      | 80      | 100     | 120     | 420                |
|                         | Urban development | 30                                  | 60      | 90      | 120     | 150     | 180     | 630                |
|                         | Public health     | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
|                         | Public works      | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
|                         | Public health     | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
|                         | Public works      | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
|                         | Public health     | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
| Operational Expenditure | Sanitary latrine  | 100                                 | 200     | 300     | 400     | 500     | 600     | 2,100              |
|                         | Water supply      | 150                                 | 300     | 450     | 600     | 750     | 900     | 3,150              |
|                         | Street lighting   | 50                                  | 100     | 150     | 200     | 250     | 300     | 1,050              |
|                         | Public works      | 20                                  | 40      | 60      | 80      | 100     | 120     | 420                |
|                         | Urban development | 30                                  | 60      | 90      | 120     | 150     | 180     | 630                |
|                         | Public health     | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
|                         | Public works      | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
|                         | Public health     | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
|                         | Public works      | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |
|                         | Public health     | 10                                  | 20      | 30      | 40      | 50      | 60      | 210                |

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

## Life Cycle Costing

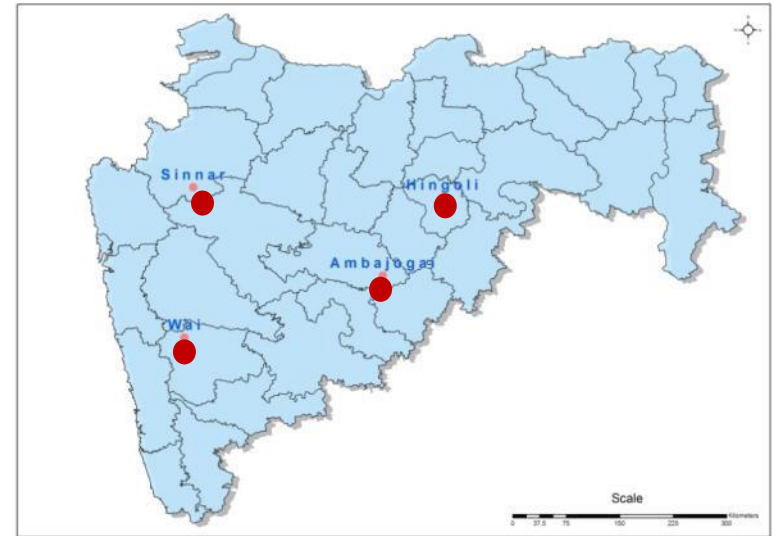
Assists ULBs to analyze lifecycle costs of sanitation

| OPEN DEFECATION FREE CITIES  |   |            |                |
|--|---|------------|----------------|
| PERFORMANCE ASSESSMENT SYSTEMS PROJECT (PAS)   |   |            |                |
| ODF Phase Class 'A' cities of Maharashtra  |   |            |                |
| State level implications of ODF scenario<br>Scenario 1: Urban area to be met through provision of all connections<br>ODF financial requirements - Scenario 1 |   |            |                |
| <b>Capital Expenditure</b>   | State<br>1,000  | MLR<br>100 | Total<br>1,100 |
| <b>Operational Expenditure</b>   | State<br>1,000  | MLR<br>100 | Total<br>1,100 |
| <b>Project expenditure</b>   | State<br>2,000  | MLR<br>200 | Total<br>2,200 |
| <b>Types of facility</b>   | Number of units to be built<br>Sanitary latrine<br>Water supply<br>Street lighting<br>Public works<br>Urban development<br>Public health<br>Total units |            |                |
| Scenario 2: Urban area to be met through provision of individual water supply connections<br>ODF financial requirements - Scenario 2                         | State<br>1,000  | MLR<br>100 | Total<br>1,100 |

# Performance Improvement Support to selected cities

# City Sanitation Plans in Small Towns

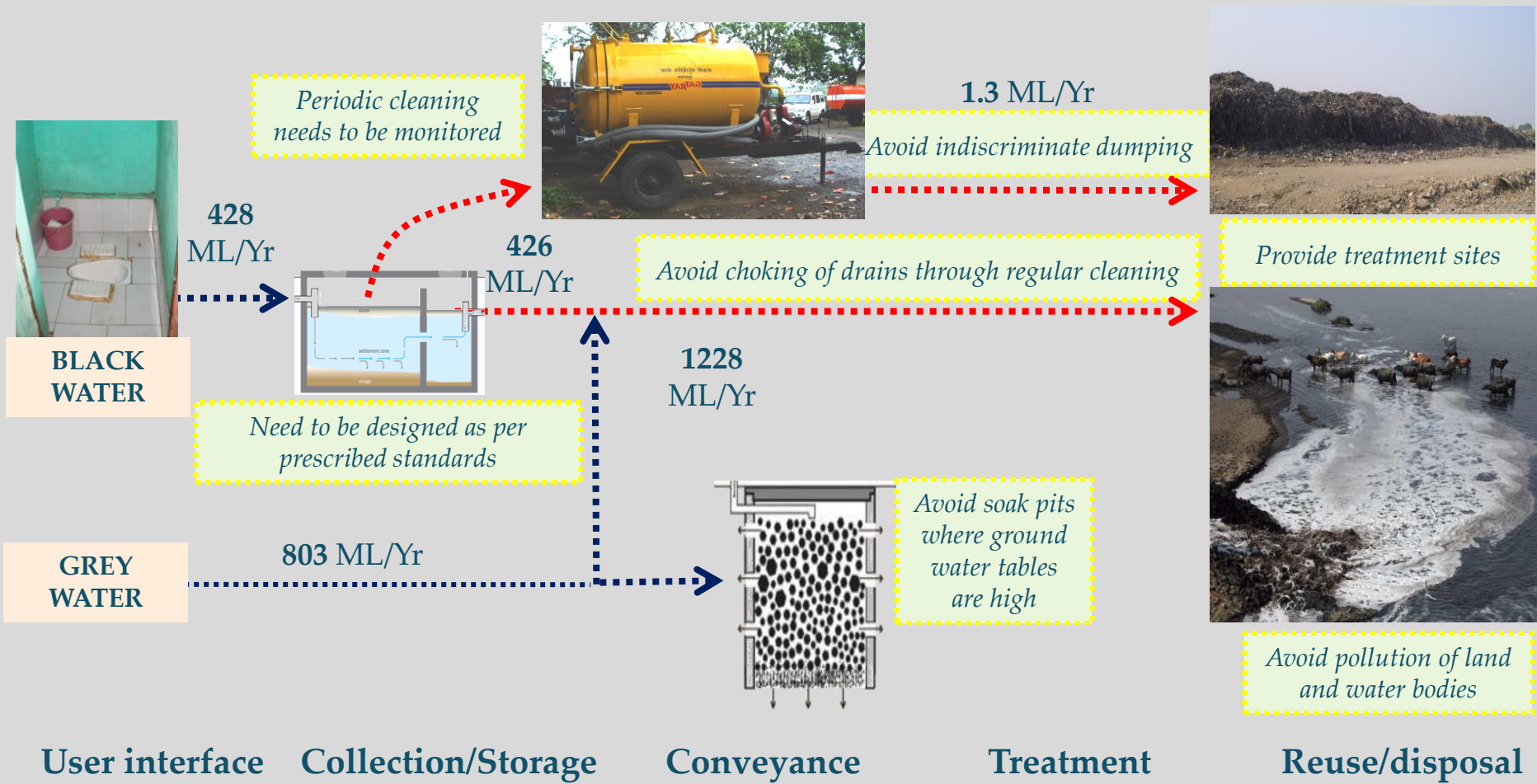
|                         | Wai    | Sinnar | Hingoli | Ambajogai |
|-------------------------|--------|--------|---------|-----------|
| Population              | 36,053 | 65,251 | 85,401  | 80,000    |
| Area (sqkm)             | 3.6    | 51.4   | 16.7    | 10.2      |
| No. of prabhags / zones | 5      | 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



Existing Links  
In the value chain



Missing Links  
In the value chain

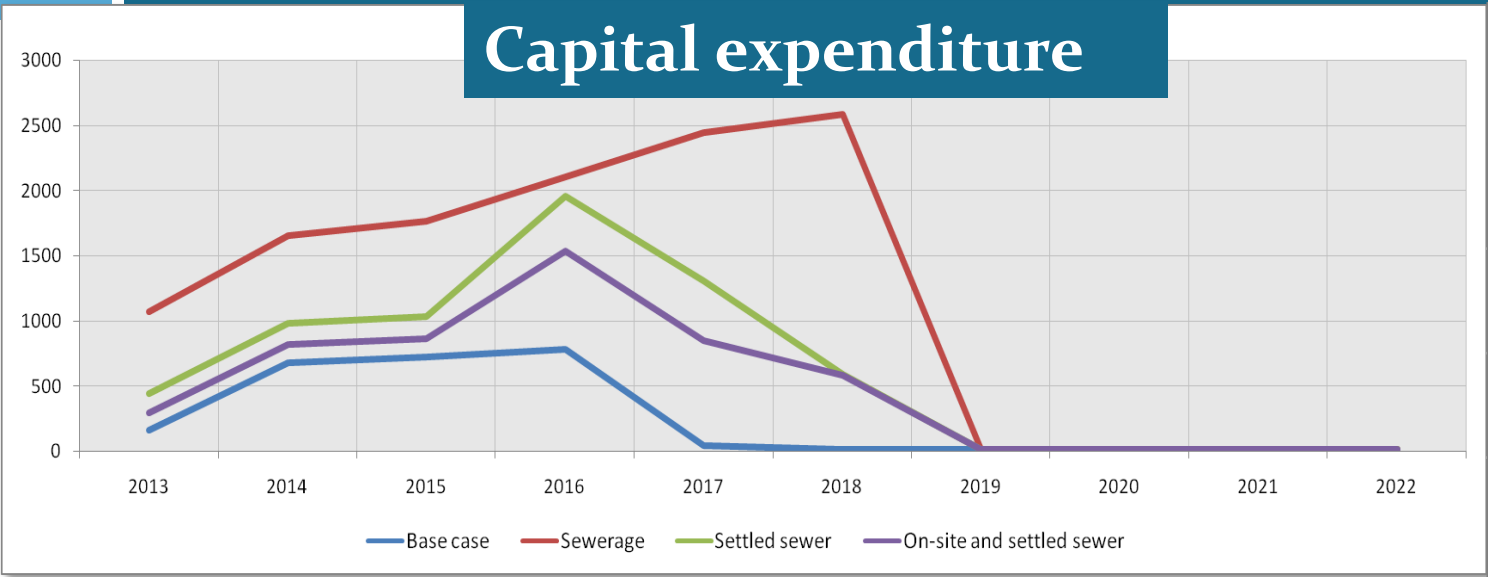


Areas for Intervention  
in the value chain



# Costs of sanitation options differ greatly!

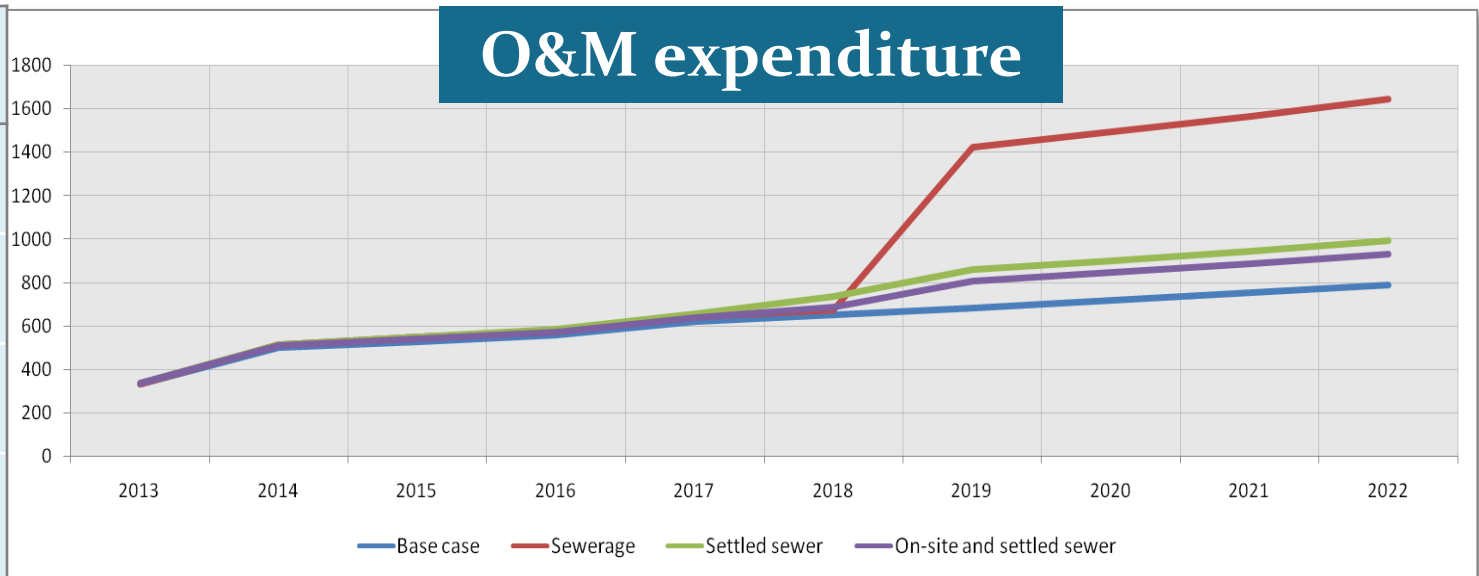
## Capital expenditure



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

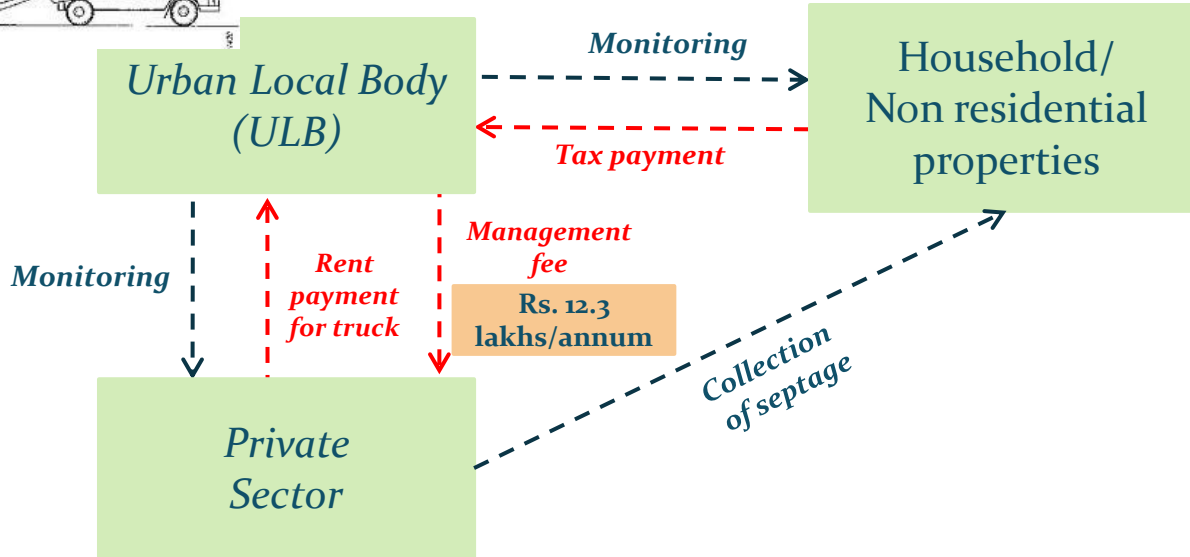
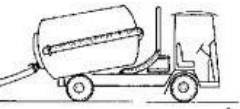
**Capital expenditure on regular sewerage network is almost double the other options!**

## O&M expenditure



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

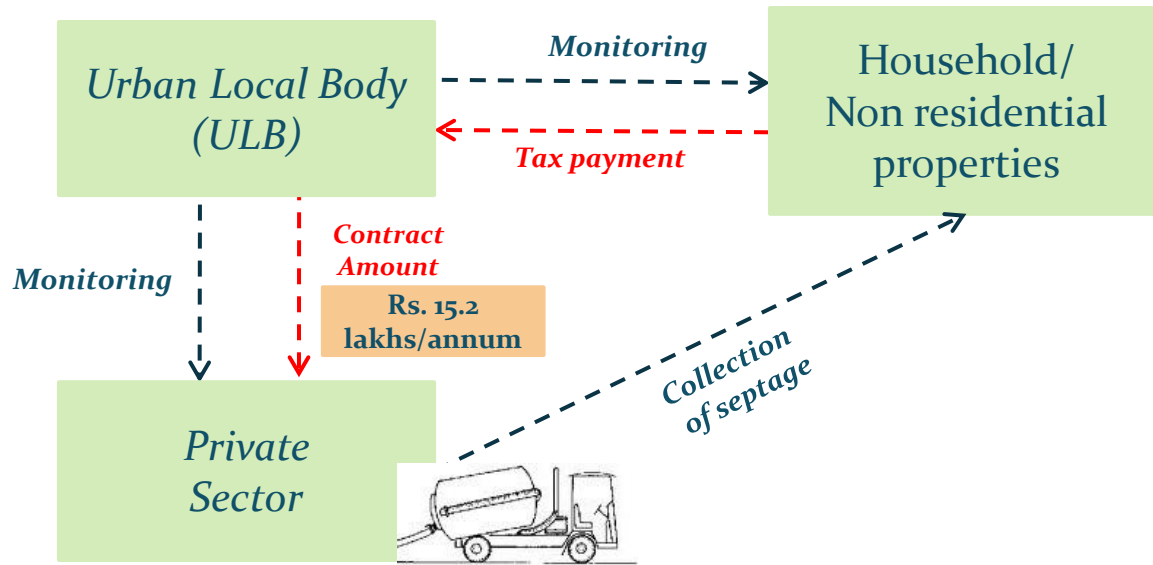
# Business models for desludging services



## 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



## PPP - Scenarios

50% Equity

100 % Equity

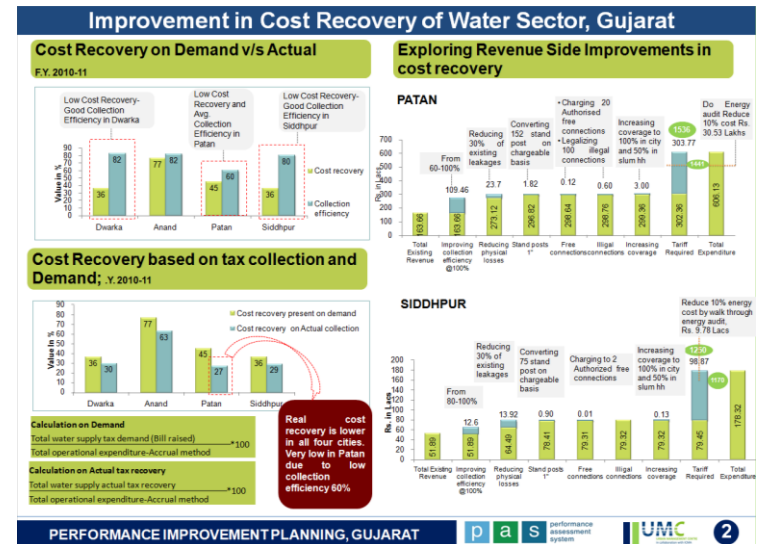
Pay back -  
2.2 Years  
ROE - 109%

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



MINISTRY OF URBAN DEVELOPMENT  
GOVERNMENT OF INDIA

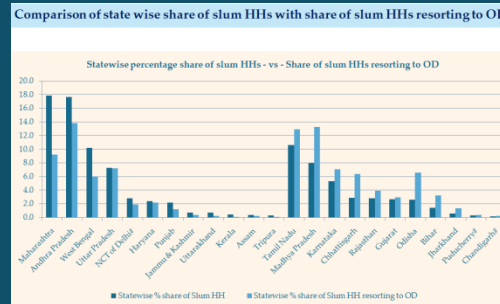
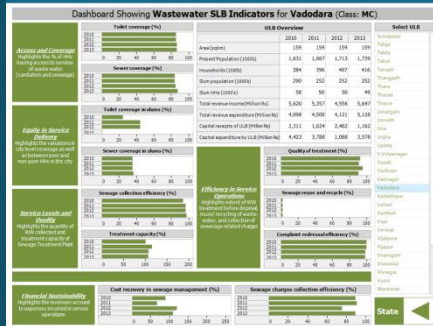
Improving urban services through  
**SERVICE LEVEL  
BENCHMARKING**



SLB NATIONAL ROLL OUT WORKSHOPS  
 Andhra Pradesh-Hyderabad-10<sup>th</sup> Dec. 2010  
 Andhra Pradesh-Vishakhapatnam-30<sup>th</sup> Nov 2010  
 Andhra Pradesh-Rajahmundry -4<sup>th</sup> January 2011  
 Orissa-Bhubaneswar-25<sup>th</sup> Feb 2011  
 Orissa-Bhubaneswar-25<sup>th</sup> Feb 2011  
 Orissa-Bhubaneswar-26<sup>th</sup> Feb 2011

## SUPPORT TO SLB NATIONAL STEERING COMMITTEE MEETINGS

## NATIONAL DATABASE FOR SLB BASELINE AND TARGETS



- 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.

# Activities as National Technical Support Partner



## ORGANISE CAPACITY BUILDING WORKSHOPS

**PAS** in over **400+** cities in two states

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.



To know more, write to [pas@cept.ac.in](mailto:pas@cept.ac.in)



## 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



CEPT University,  
Ahmedabad, India  
[www.cept.ac.in](http://www.cept.ac.in), [www.pas.org.in](http://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 (Netherlands) in their Pro-poor Benchmarking (PROBE) programme
- ❑ Membership and contributions to the Post-2015 deliberations for WASH, and waste water and groups



the PROBE Project





**Thank You**

[www.pas.org.in](http://www.pas.org.in)

[meeramehta@cept.ac.in](mailto:meeramehta@cept.ac.in)

[dineshmehta@cept.ac.in](mailto:dineshmehta@cept.ac.in)

[pas@cept.ac.in](mailto:pas@cept.ac.in)