Session : URBAN WATER REGULATION AND PLANNING :
Strategic Asset Management

STATUS IN INDIA: PI APPLICATION AND THE ROAD TO STRATEGIC ASSET MANAGEMENT

p a s performance assessment system

Performance Assessment Systems (PAS)

Presentation Structure

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Situation Assessment in India
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Tools for Monitoring
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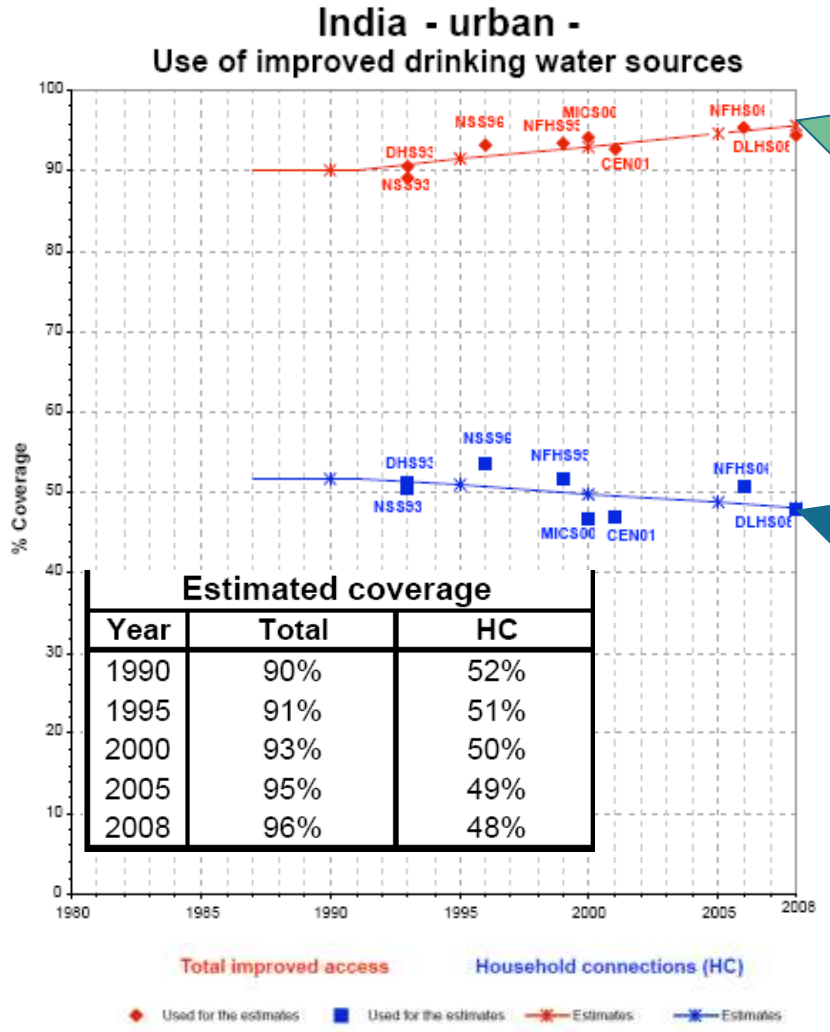
Situation Assessment in India

India WATER SUPPLY – improved basic access but decline in household level services



Estimated coverage

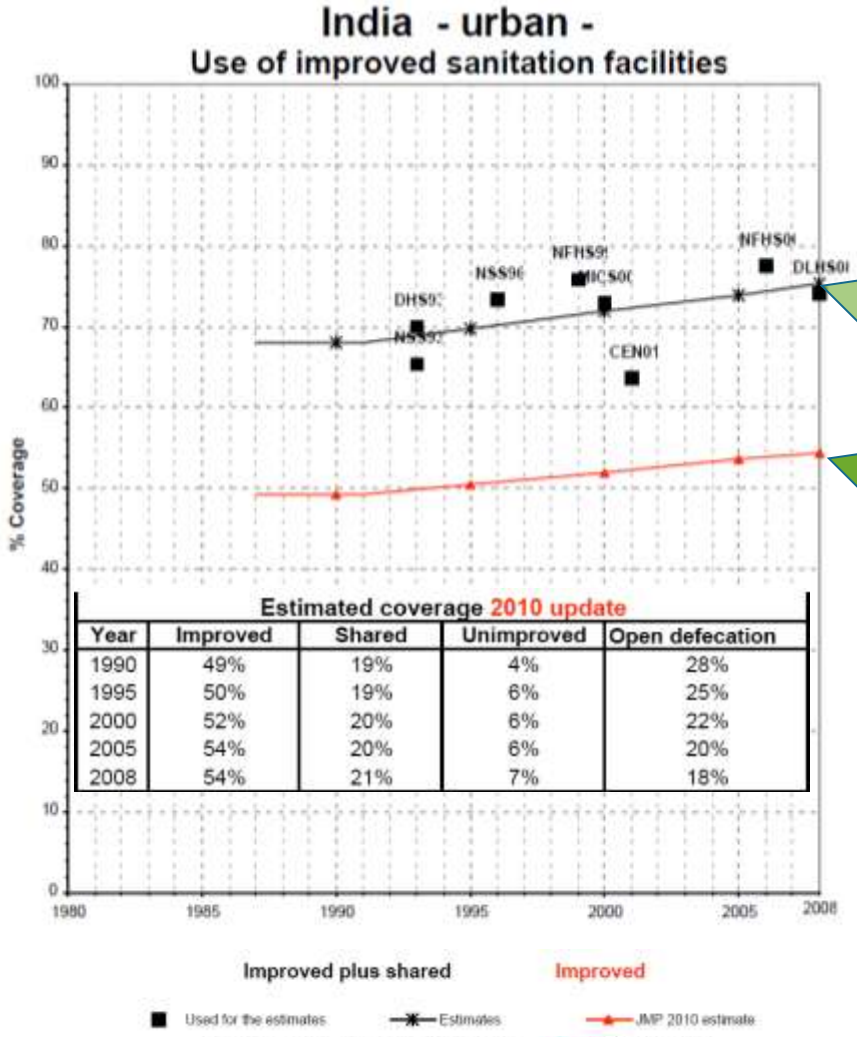
Year	Total	HC
1990	90%	52%
1995	91%	51%
2000	93%	50%
2005	95%	49%
2008	96%	48%

Basic access in urban India has reached nearly 95% by 2008.

% Household level connections in urban India has declined from 52% in 1990 to 48% by 2008.

Source: WHO-UNICEF Joint Monitoring Program, 2010 update

India SANITATION– improved basic access but marginal increase in household level services



Estimated coverage 2010 update

Year	Improved	Shared	Unimproved	Open defecation
1990	49%	19%	4%	28%
1995	50%	19%	6%	25%
2000	52%	20%	6%	22%
2005	54%	20%	6%	20%
2008	54%	21%	7%	18%

Basic access in urban India has reached only 75% in 2008.

% Household level toilet coverage in urban India has only slightly increased from 49% in 1990 to 54% in 2008

Source: WHO-UNICEF Joint Monitoring Program, 2010 update

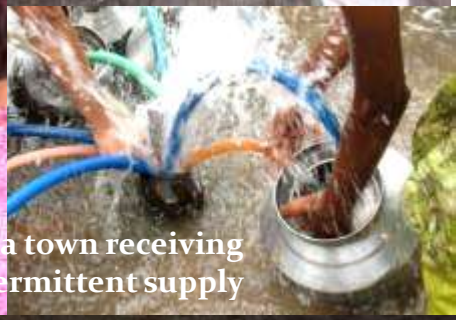
Asset Creation/Maintenance ⟺ Service delivery outcomes

Water supply

Leakage in transmission main

Scene in a town receiving intermittent supply

Issues of low pressure



WS distribution lines over storm drains

Wells as supply source

Consumer metering

Asset Creation/Maintenance ⟺ Service delivery outcomes

Waste water

Non functional community toilet

Septic tanks constructed on roads

Collection, transportation and treatment systems

Open defecation

Sullage disposed in open drains

Cleaning overflowing and blocked drains

Asset Creation/Maintenance ⟺ Service delivery outcomes

Solid Waste Management

Door to door and secondary collection

Transportation of waste

Indiscriminate dumping of solid waste

Vermi-composting of solid waste

Need to ASSESS PERFORMANCE… TRACK INVESTMENTS and OUTCOMES

No/ little information on quality, service levels and financial sustainability of WSS services

Limited information available on access of urban poor households to water and sanitation services

Assessment of impact from past investments difficult

Standardized information system for comparable and regular situational analysis

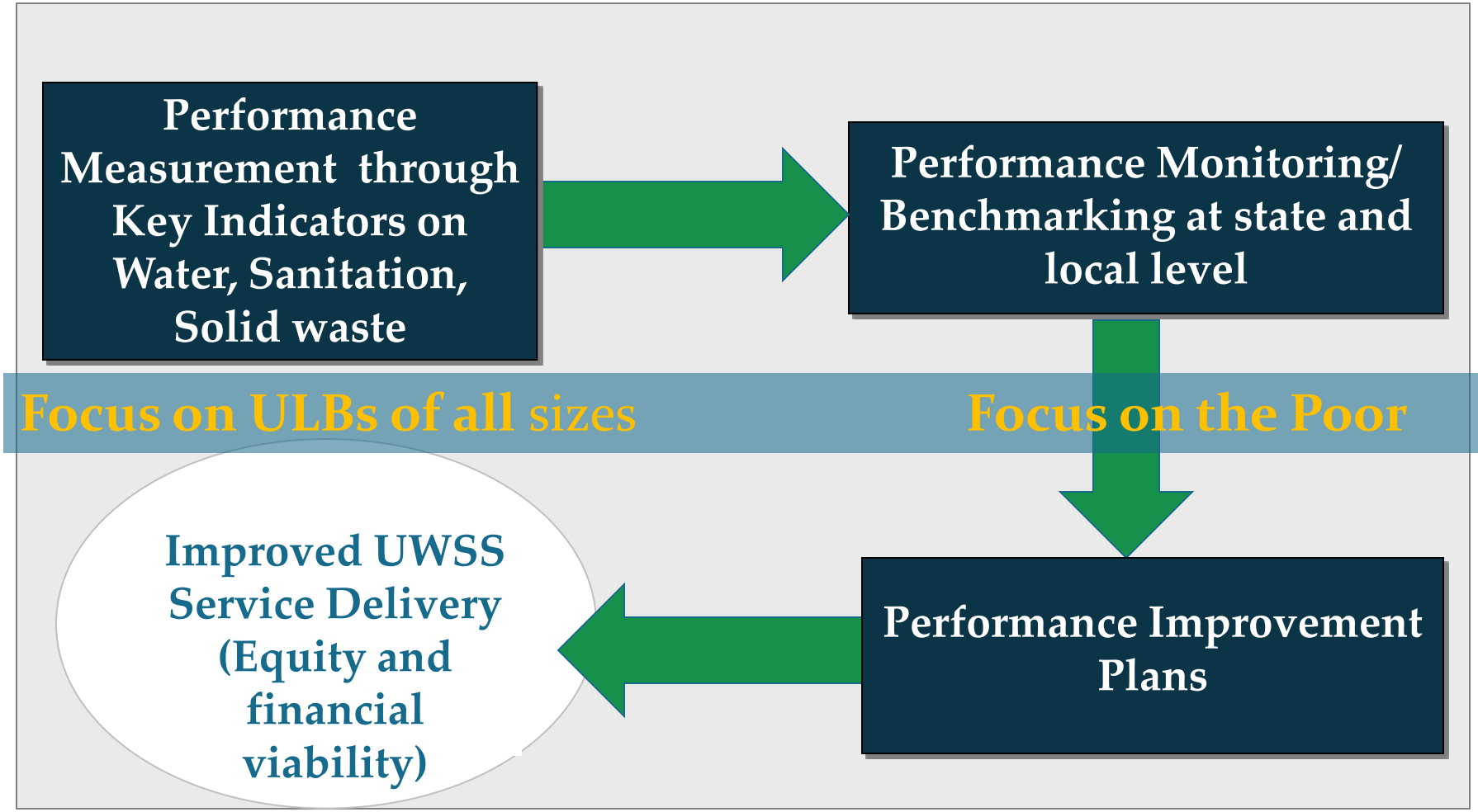
Support improved allocation of resources and decision making

Grants from state and central governments can be linked to local performance

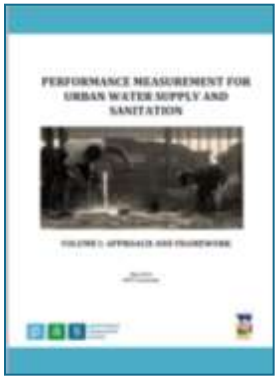
About PAS

WHAT IS PAS?

A sustainable statewide performance assessment system for improving access to the poor and un-served, and achieve financial sustainability

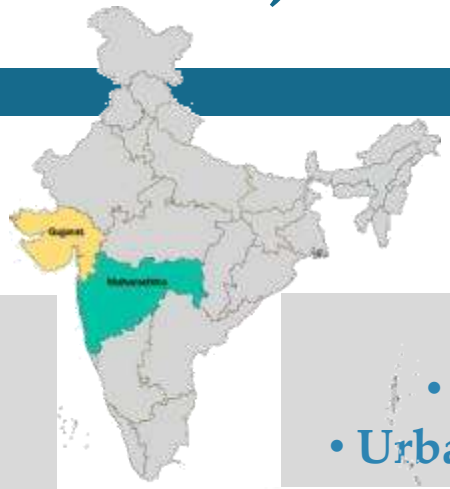


First statewide benchmarking effort in India



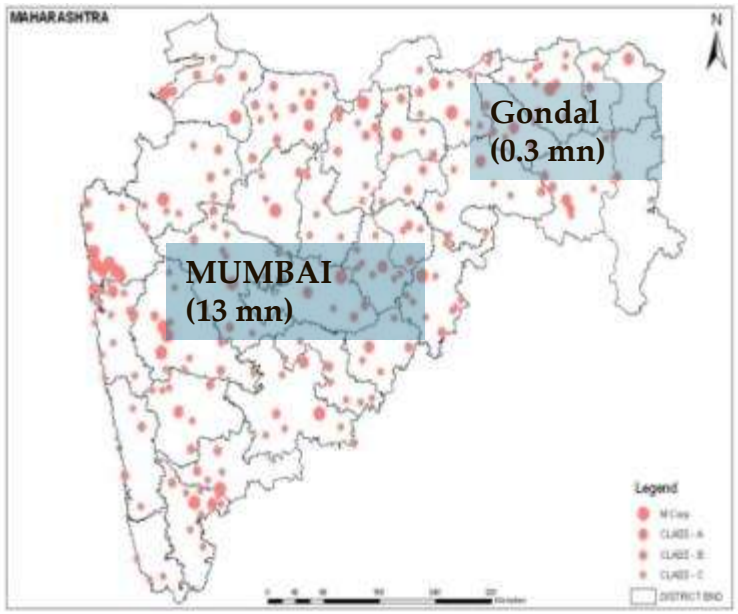
- Establish **Statewide** Urban WSS Performance Assessment System
- **Cover all 400 towns** in the two states – support development of performance measurement for different size-class of towns
- Not a one-off event but **implemented for 5 years** and linked to GOI's **Service Level Benchmark** Initiative
- Plan to **mainstream** in local and state government **data systems, planning, monitoring, review and fund allocation (budget) processes** over the Project period

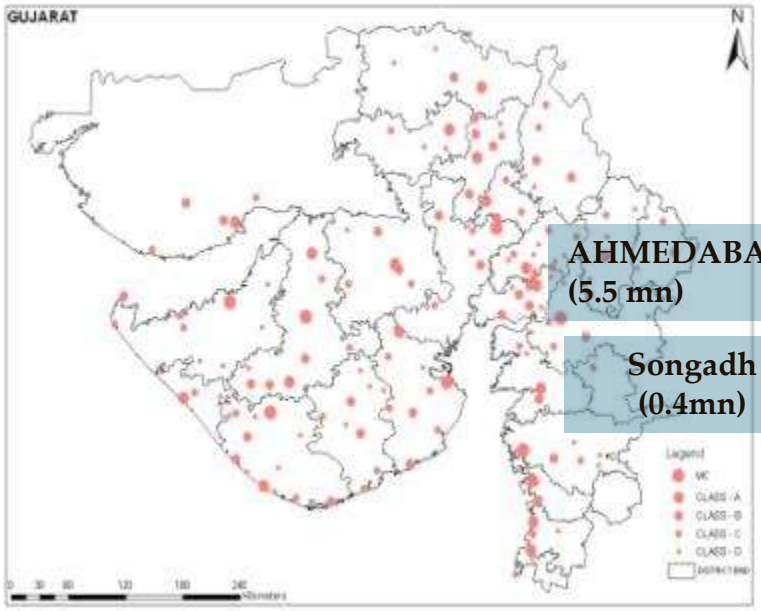
Coverage of PAS Project



Maharashtra State
- 248 Urban Centers
- Population – 51 mn

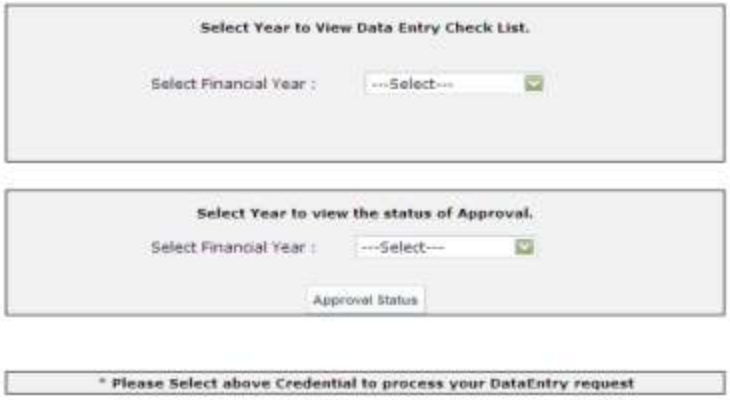
Gujarat State
- 167 Urban Centers
- Urban Population –25.7 mn





Source: Provisional figures by the Office of the Registrar General, India, 2011

Online data collection tools



Approval of data entry by the Commissioner/Chief Officer as well as state agencies

Online modules for performance assessment & target setting

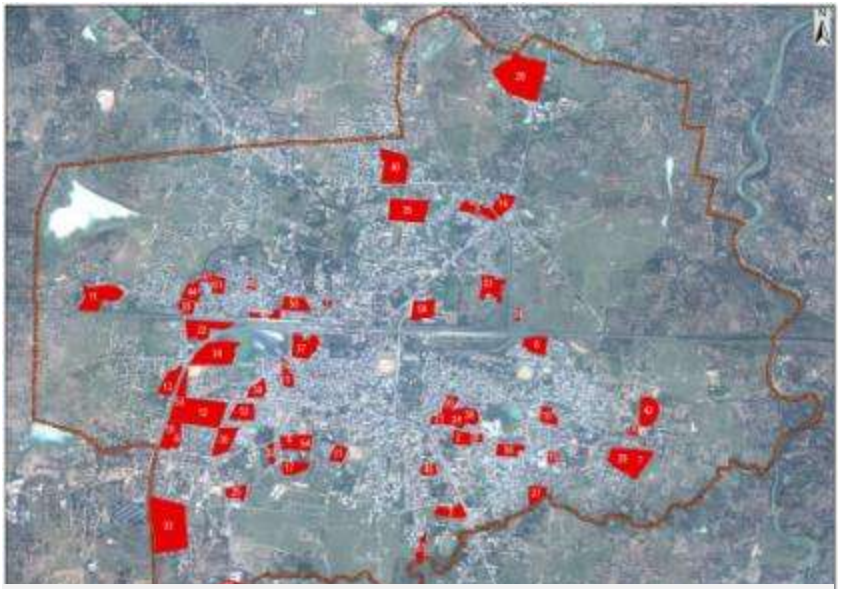
Slum Information systems: settlement level

PERFORMANCE ASSESSMENT SYSTEM (PAS) PROJECT

SLUM SETTLEMENT LEVEL INFORMATION

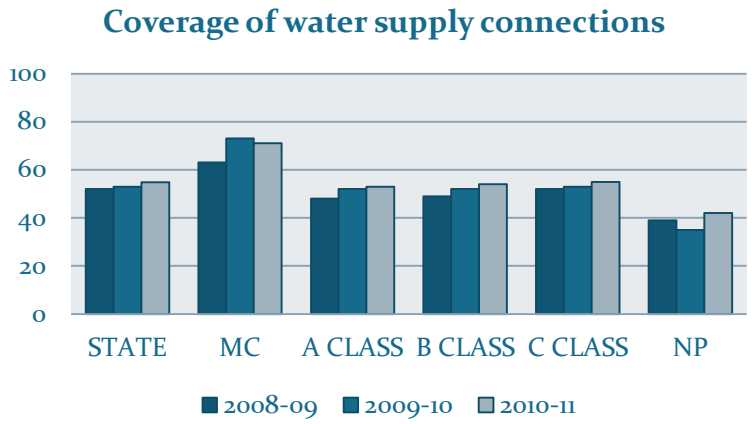
	Name of ULB		
	Name of Slum		
S.No	Description of data elements	Unit	2010-11
	General Details		
1	Location	(1,2,3,4,5,6)	
	1: Along Nallah (Major Stormwater Drain), 2: Along Other Drains, 3: Along Railway Line, 4: Along Major Transport Alignment, 5: Along River/ Water body bank, 6: Hazardous or Objectionable		
2	Status of slum settlements	(1,2,3,4,5,6)	
	1: Notified slum, 2: Non- notified slum, 3: Chawl, 4: Encroached land, 5: On Private land, 6: On Govt. Land		
3	Slum population	Number	
4	Number of households in the slum	Number	
5	Tenure of the land on which the slum is located	(1,2,3)	
	1: State Govt, 2: Municipality, 3: Private, 4: Illegal occupation		
	Services to slum households at settlement level		
	Water supply	*Unit*	*2010-11*
6	Does the municipality supply water to your settlement?	Y/N	
7	*If Yes, number of households having individual tap/ connections*	Number	
8	Number of households dependent on public/ community standpost	Number	
9	Number of functional standposts	Number	
10	Number of days of water supplied to the households	Number	
11	Number of hours of supply to the households	Number	
	Sanitation and sewerage	*Unit*	*2010-11*
12	Is your settlement connected to underground sewerage network?	Y/N	
13	*If Yes, number of households having individual sewer connection*	Number	
14	Number of toilets connected to sewerage network	Number	
15	Number of toilets connected to soak pits	Number	
16	Number of toilets connected to septic tanks	Number	
17	Number of toilets connected to open drain	Number	
18	Number of toilets connected to service latrines	Number	
19	Number of toilets which are not connected to any network/ disposal systems	Number	
20	Number of households that have individual toilets	Number	
21	Number of community toilets	Number	
22	Total number of seats in community toilets	Number	
23	Total number of functional seats in community toilets	Number	
24	Number of households that use community toilets	Number	
25	Number of pay n use toilets	Number	
26	Total number of seats in pay n use toilets	Number	
27	Total number of functional seats in pay n use toilets	Number	
28	Number of households that use pay n use toilets	Number	
29	Number of households that defecate in the open	Number	
30	Are there any complaints regarding sanitation services provided by the municipality?	Y/N	
31	Is there satisfaction of grievances redressed?	Y/N	
	Solid Waste Management	*Unit*	*2010-11*
32	Service provider for door to door collection of solid waste in slum settlements	(1,2,3,4)	
	1: ULB, 2: Private party, 3: residents, 4: No service provider		
33	*If Yes, number of households covered by primary collection of solid waste*	Number	
34	*If Yes, frequency of primary collection of solid waste*	Number	
	1: daily, 2: every 2 days, 3: once a week, 4: once in 2 weeks		
	Storm Water Drainage	*Unit*	*2010-11*
	1: fully connected, 2: partially connected		
38	Is the slum settlement connected to open drain	Y/N	
39	Is the slum settlement prone to flooding incidents	Y/N	
40	*If Yes, number of days of water logging*	Number	
	1: <15 days, 2: 15-30 days, 3: > 30 days		
41	Type of road connectivity to the slum settlement	(1,2,3)	
	1: CC road, 2: stone paving, 3: No connectivity		
42	Are street lights present in the slum settlement?	Y/N	

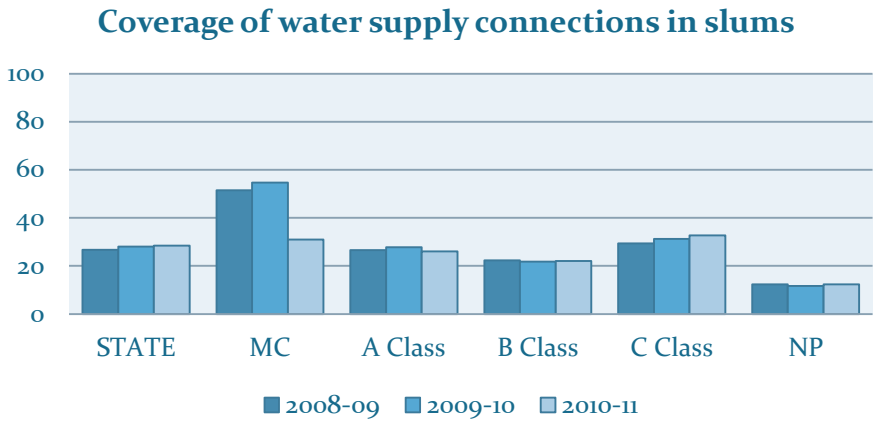
Capture of slum settlement info like ownership, legal status, water supply and sanitation services

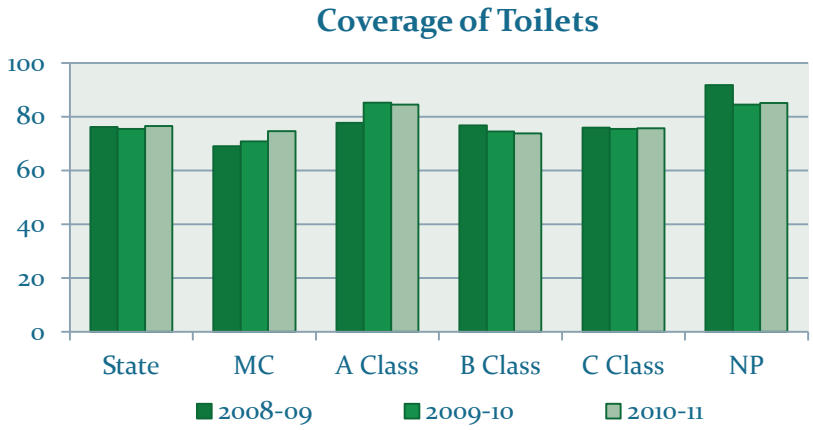


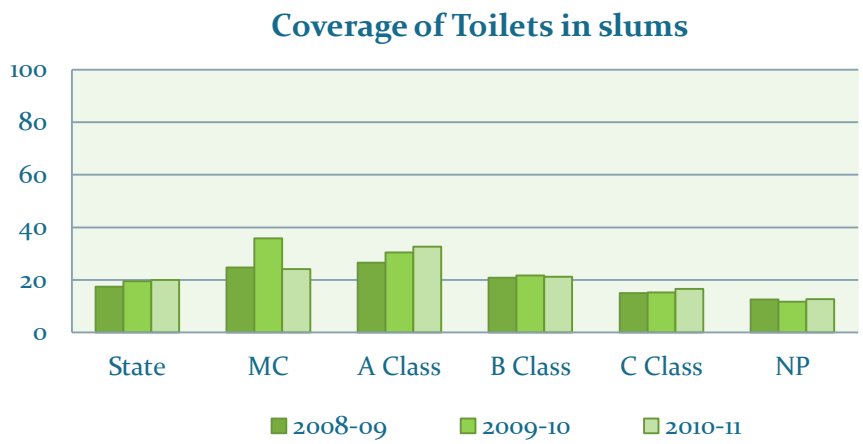
Mapping slum settlements with information on services

Trends over the three years









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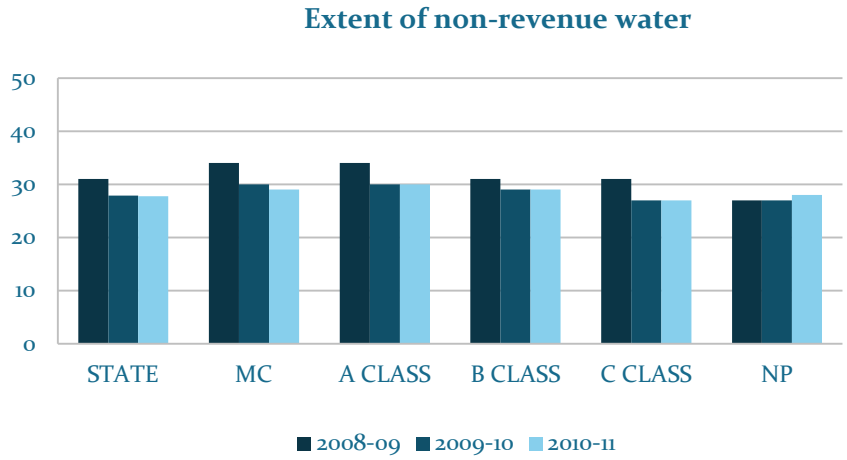
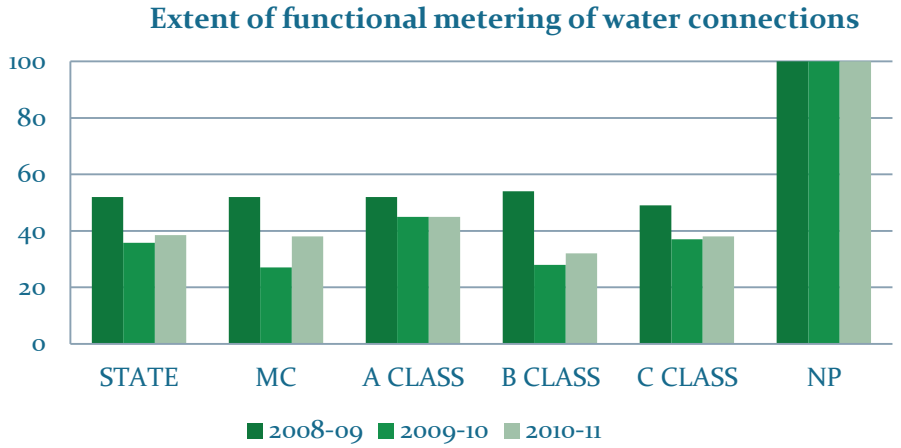
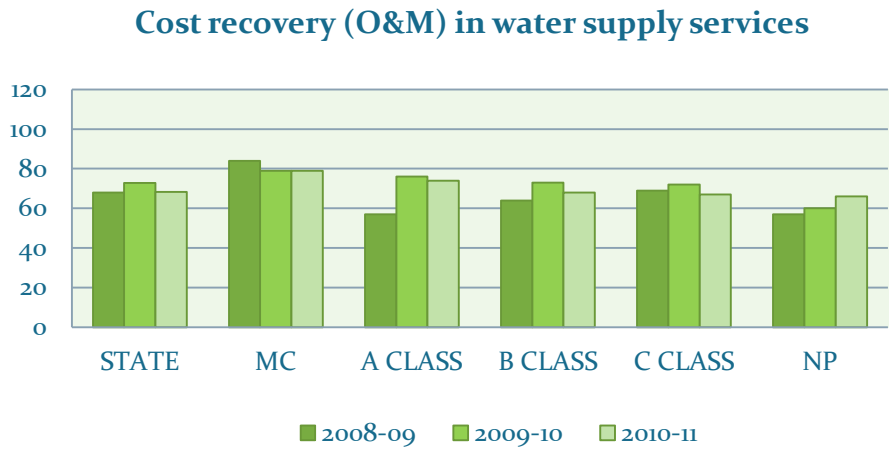






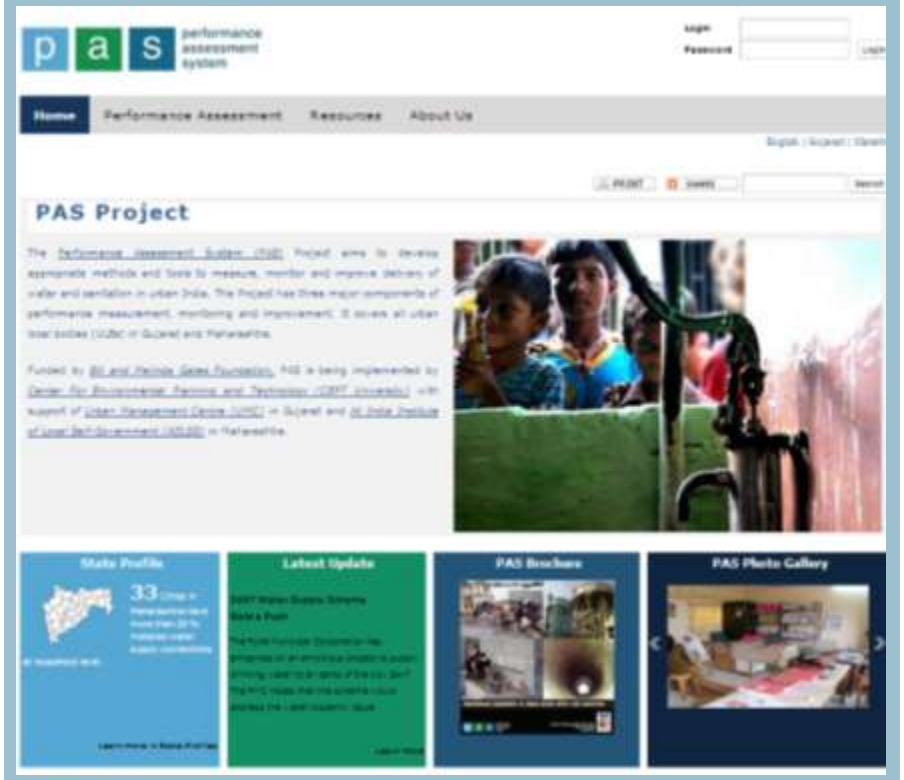
Tools for monitoring

Performance Monitoring

Alignment of PAS information with state and central government programs to track progress on performance

- 13th Finance Commission: Standardized Service level benchmark
- JNNURM/ UIDSSMT
- MSNA/ Sant Gadge Baba
- Nirmal Gujarat
- Regular reporting to DMA/ DoM

Gujarat and Maharashtra state wide PAS web portal for performance monitoring

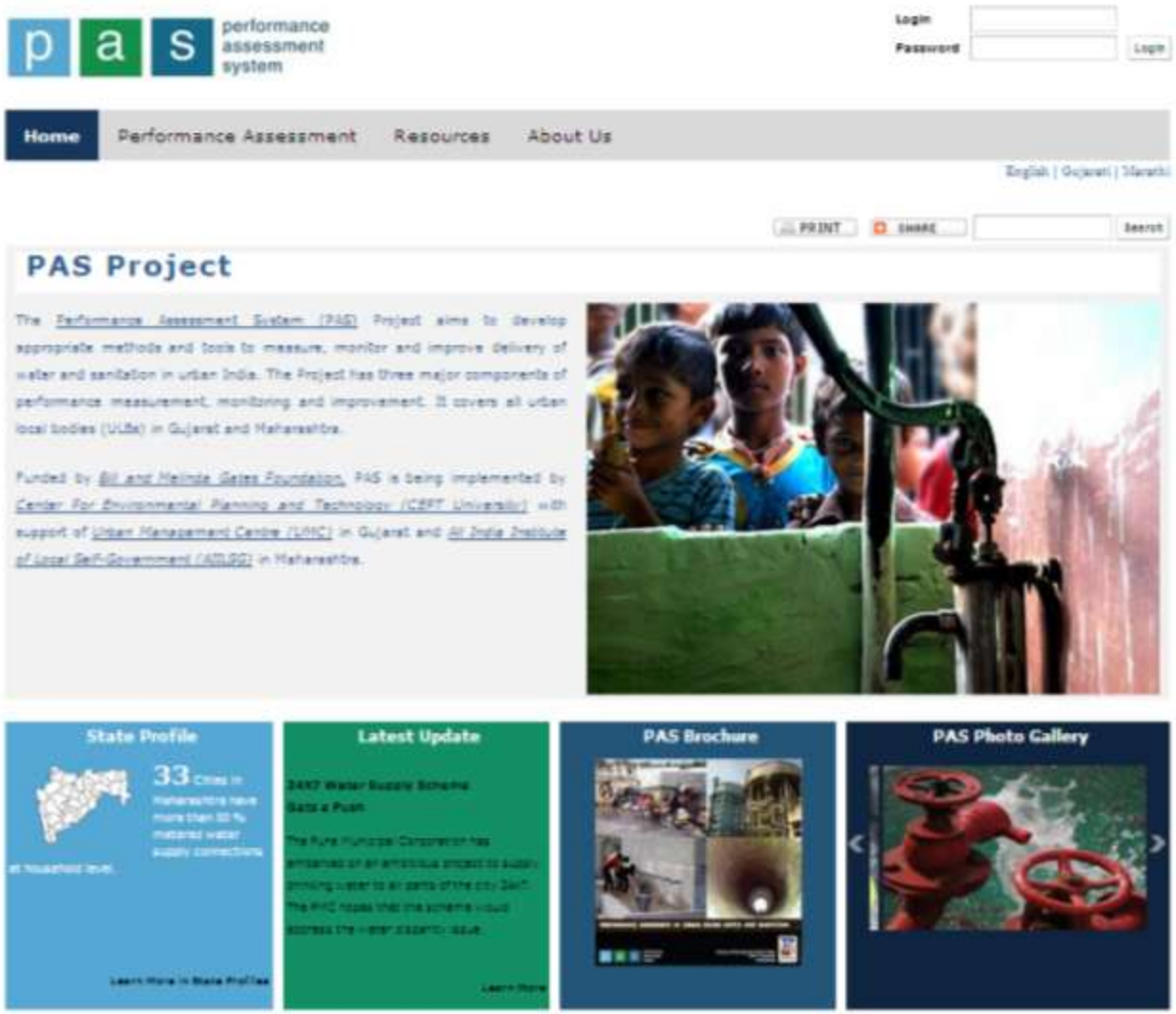


Web Portal

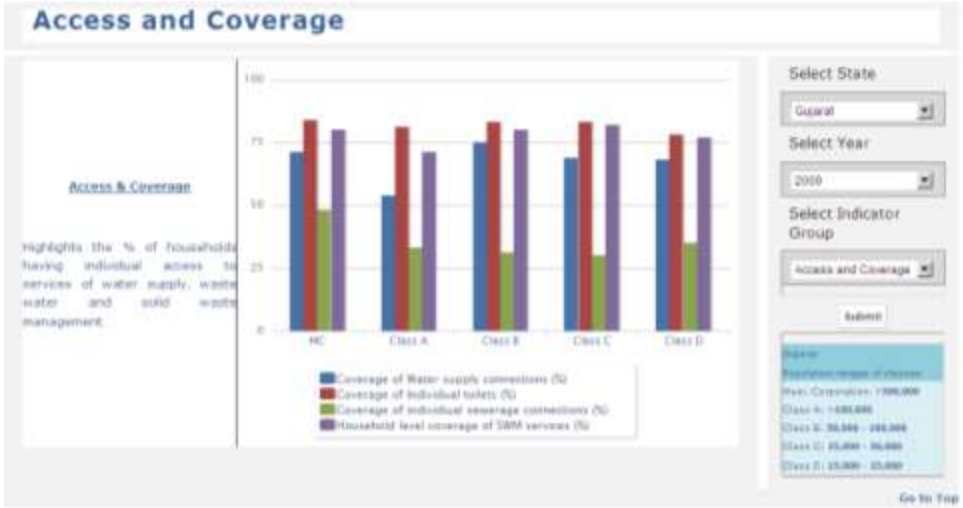
Tracking UWSS performance of cities by state agencies

Cities can track their service levels against benchmarks

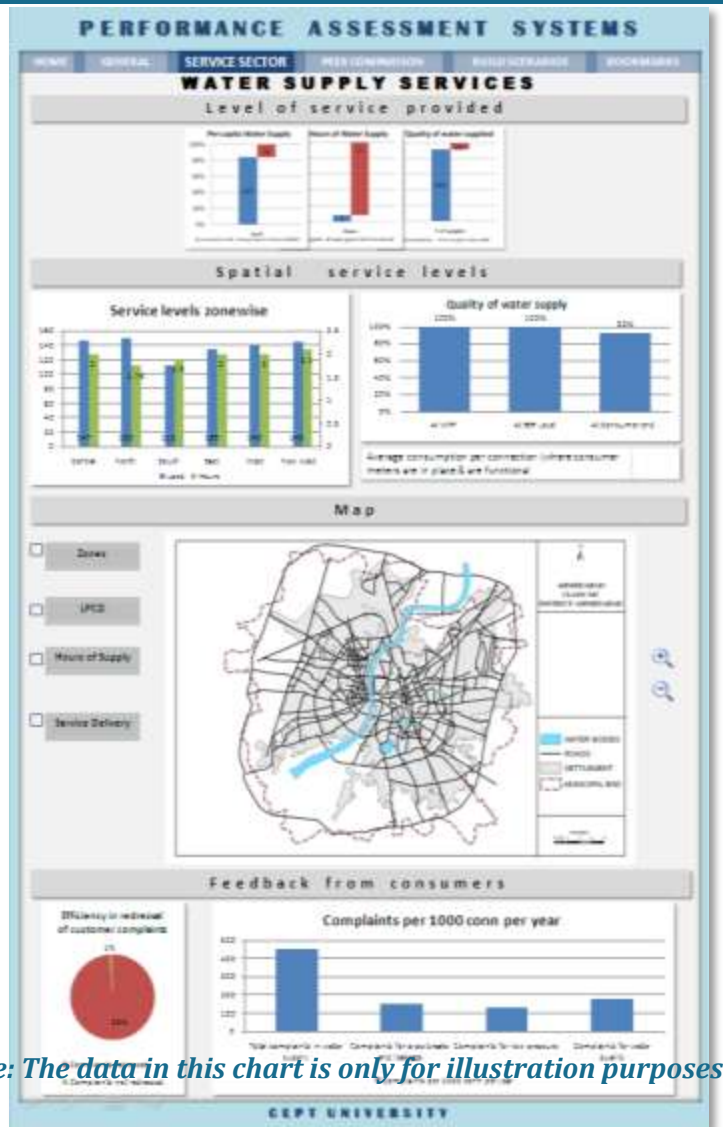
Cities can compare their performance with peers

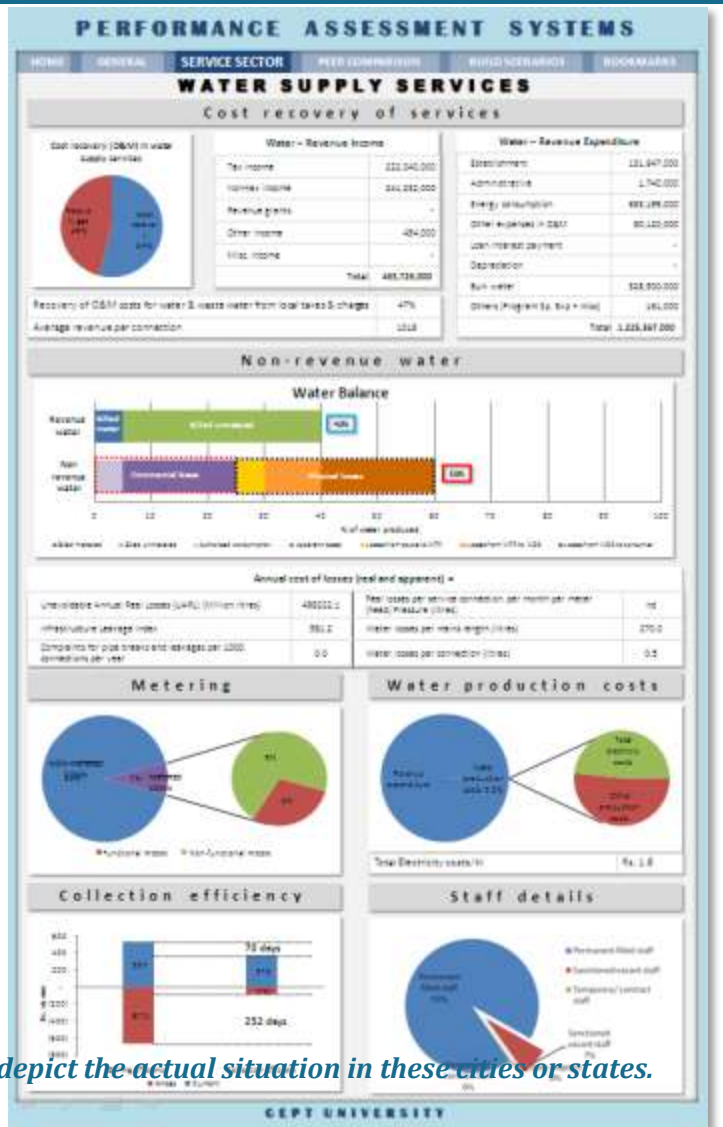


Repository of the portal



Dashboard



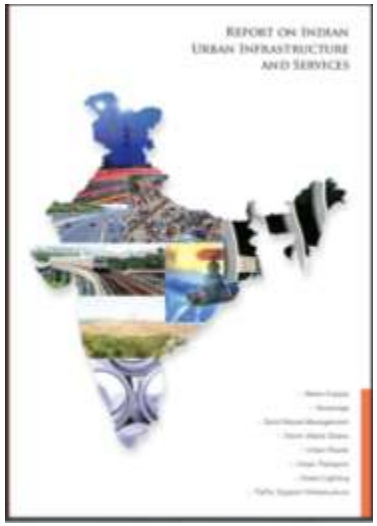


Note: The data in this chart is only for illustration purposes. It does not depict the actual situation in these cities or states.

Towards Strategic management of UWSS Assets in India

Indian Context : Increasing O & M costs as compared to Capital Investments

- Recently HPEC report in India estimates the investment in water supply in the cities and towns of India for the 20-year period, 2012-2031, as well as the associated operations and maintenance (O&M) expenditure for existing and new assets
- The high O&M cost for water supply (relative to the capital investment requirement) is on account of the large base of existing assets. (total capex requirement is Rs 3.2 lakh crore and O&M requirement is Rs 5.5 lakh crore)
- Also specifies per capita norms for O&M for UWSS services



Recommendation from HPEC:
Increase investment in urban infrastructure from 0.7 per cent of GDP in 2011-12 to 1.1 per cent by 2031-32
In association, increase spending on maintaining assets - old and new

Source: Report on Indian Urban Infrastructure and Services, March 2011. (The High Powered Expert Committee (HPEC) for Estimating the Investment Requirements for Urban Infrastructure Services)

Asset Information Systems : Where are the ULBs ?

Asset Information framework

→ What is the current state of my assets?													What LOS is req'd?			Which assets are critical?				What are the best investments?				What is the best funding strategy?					
→	Asset Registry					Performance				Remaining Life				Lifecycle Costs				Demand & LOS			Risk Exposure				Opt'l O&M		Opt'l Capital			Expend-itures			Funding			
→	Identify assets	Ownership	Location	Description	Components	Capacity	Physical condition	Service levels	Financial efficiency	Date Acquired	Betterment Dates	Expected Useful Life	Remaining Service Life	Original Historical Cost	Historical Betterment Costs	Future Refurbish Costs	Future Replacement Cost	Current & Future Demand	Business Objectives	Current & Future LOS	Probability of Failure	Consequence of Failure	Redundancy Factor	Risk or Criticality	Operation & Mtce Strategies	Operation & Mtce Strategy Costs	Capital Investment Strategies	Capital Strategy Costs	Capital Strategy Dates	10 yr Investment Priorities	25+ yr Expenditure Profile	Ave O&M & Renewal Annuities	Estimated Tax Based Funding	Est'd Rate / Fee Based Funding	Estimated Other Funding	Asset Management Plan

Source: Saskatchewan MAIS Feasibility Study

Being declared by 14 States as per 13th Central Finance Commission requirements since 2010

Partially attempted by ULBs and under Municipal Accounting reforms

Asset inventory and assessment will help ULBs in India to develop comprehensive view of future financial needs of assets and review their performance

Paradigm Shift Required

From Asset Creation to Asset Maintenance / Management

INVESTMENTS

- Focus on the targets of water and sanitation has been on increasing service coverage
- New Investments at Centre & States paying less attention to O&M, increasing the risk to performance outcomes

Jawaharlal Nehru National Urban Renewal Mission

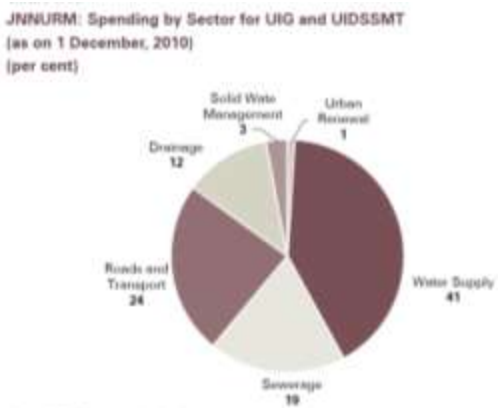
JnNURM

સુવર્ણ મહોત્સવી વર્ષ ૨૦૧૦-૧૧

સ્વર્ણિમ ગુજરાત 1960 - 2010

ASSET CREATION

- Less attention on improving the operation and maintenance (O&M) of existing assets
- Lesser expenditure on rehabilitation of exstg. infrastructure
- Corresponding reduction in quality of service delivery



PERFORMANCE

Inappropriate design

+

Lack of O & M

=

Performance failure

PAS Efforts : From Performance assessment to Strategic Asset Management

Performance Measurement

Assessment on Asset Condition (Risks & Costs)

Towards Integrated Asset Management

Largely ULBs in India are at Performance measurement Stage

INFORMATION

ENGINEERING

MANAGEMENT

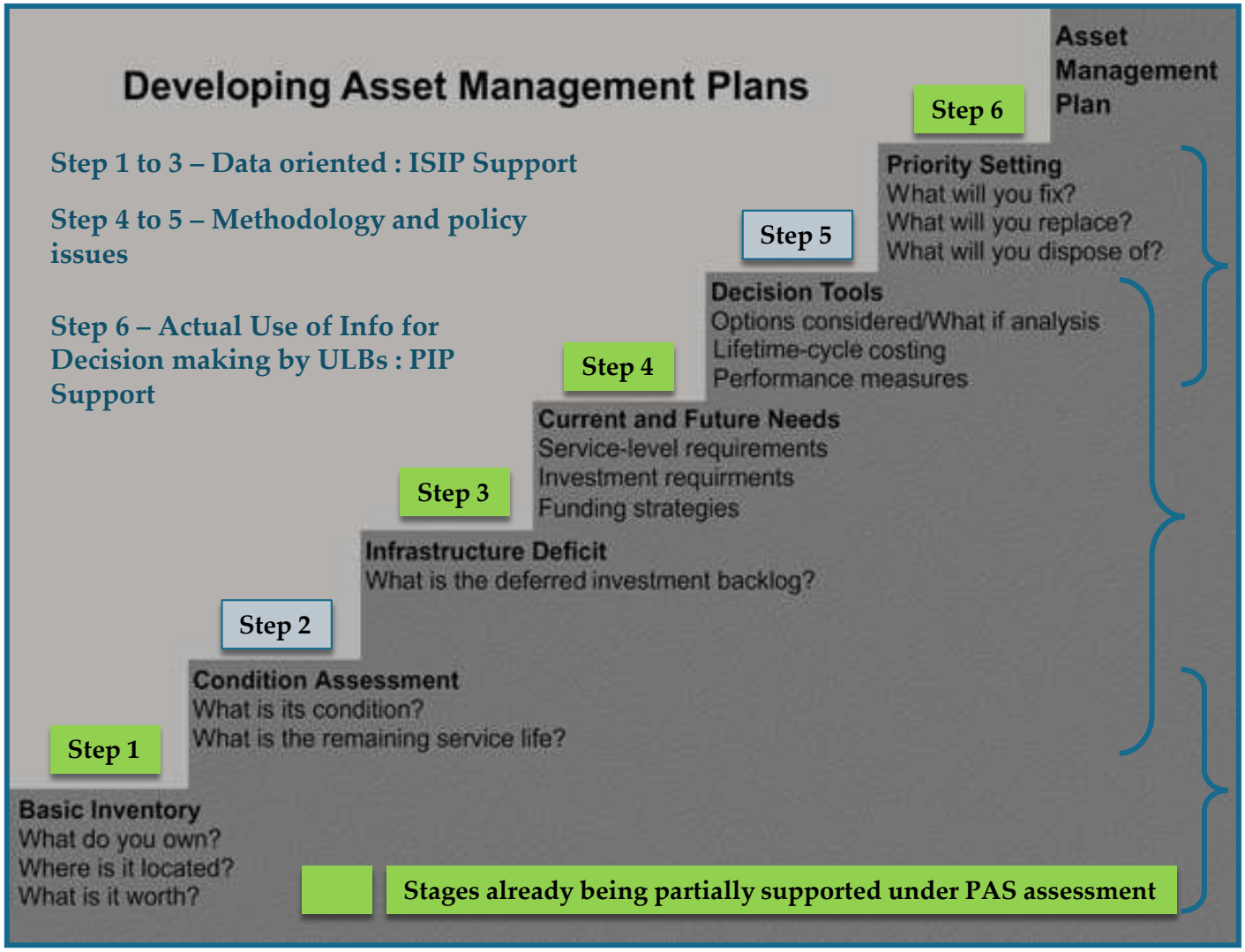
PERFORMANCE

RISK

COSTS

Stepping Stone to ASSET MANAGEMENT

Support to ULBs through various Stages of Asset Management Plan



Decision-making, Actual Implementation of Model

Support to select ULBs for Development of models / Tools

Asset Information System

PIP Support

ISIP Support

City level Asset Information from PAS Checklist (R I)

Water
Groundwater sources
Surface water (Own source) sources
Other water sources
New water projects / schemes to be commissioned over the next 3 years
Water Treatment Plants
Water Distribution Stations
Automated systems (e.g. SCADA)
Total length of network: trunk, transmission, and distribution (km)
Total length of road network in city (in km)
Total area under water distribution network (sq.km)
Connections Data (residential / non residential)
Computerised systems used for data related to water connections
Sewerage & Sanitation
Individual toilets
Areas with / without piped sewerage network
Sewage Pumping stations
Sewage Treatment Plants
Automated systems adopted for monitoring waste water treatment plant operations
Computerised systems used for data related to wastewater

SWD network
Under-ground
Surface: Covered
Surface: Uncovered
Solid waste management
Collection bins for segregation
SW treatment plants
Weigh bridges
Land for open dumping and scientific landfills
Computerised systems used for monitoring operations related to SWM
Type & details of vehicles for SWM (nos, capacity , etc)
Slums
Individual water connections
Group connections
Stand posts
Individual toilets
seats in pay-n-use toilets (functional toilets)
seats in community toilets (functional toilets)
Individual sewerage connections

Example of State UWSS Profile: Gujarat

166 ULBs serving 50 lakh HHs

4214 (sq kms) of Urban Area

30 lakh connections; less than 1% metered

2292 (sq.kms) of area under water distribution network

1153 (sq.kms) of area with access to piped sewerage network

73 water treatment plants in 166 cities

131 new projects in next 3 years (2009 - 2012)

Will augment 1252 MLD of additional water supply for ULBs

Source: Preliminary results from Round I data collection (2008-09)

CITY level : Current & Future Needs for UWSS

CITY level Tools to arrive at:

Total Infrastructure Investment to cover deficit & Build Scenarios for Improvement Actions

- Selection of actions & simulation of the impact of possible actions on the Performance Indicators for SLBs
- Select, individual actions and measure the benefits as well as the cost implications

- Allows Inputs in the costing assumptions as well as customised cost assumptions for actions
- involves multiple iterations between Performance Indicators, Possible Actions and Financial Resources of the ULB

BHUSAWAL MUNICIPAL COUNCIL 2010 - 2020

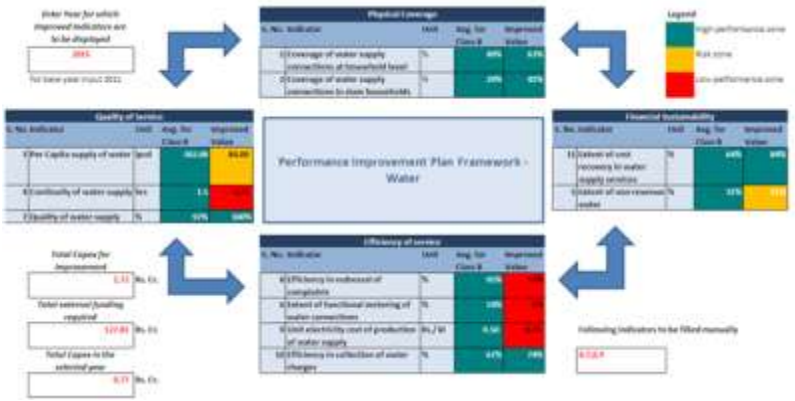
Class A Municipal Council

PERFORMANCE IMPROVEMENT PLAN	PRESENT SCENARIO	SCENARIO I	SCENARIO II	SCENARIO III
SECTOR PERFORMANCE SCORES				
Water Supply				
Waste Water				
Solid Waste				
FINANCIAL PERFORMANCE				
Total capital expenditure (Rs lakhs)	-			
Capex from own source (Rs lakhs)	-			
Capex from grants (Rs lakhs)	-			
Total debt requirement (Rs lakhs)	-			
Minimum DSCR				
Total UWSS O&M expenditure (Rs lakhs)				
UWSS cost recovery (%)				
Water supply actual & proposed tariff (Rs/ annum)				
KEY PERFORMANCE INDICATORS				
WATER SUPPLY				
Coverage of connections at household level	38.00%	38.00%		
Coverage of water supply connections in slum households	19.00%	19.00%		
Per Capita supply of water	70.76	65.79		
Continuity of water supply	-	-		
Extent of non revenue water	48.00%	48.00%		
Extent of functional metering of water connections	0.00%	0.00%		
Quality of water supply	99.61%	99.61%		
Efficiency in redressal of complaints	27.00%	27.00%		
Unit electricity cost of production of water supply	-	0.00%		
Efficiency in collection of water charges	28.66%	28.66%		
Extent of cost recovery in water supply services	38.32%	35.18%		

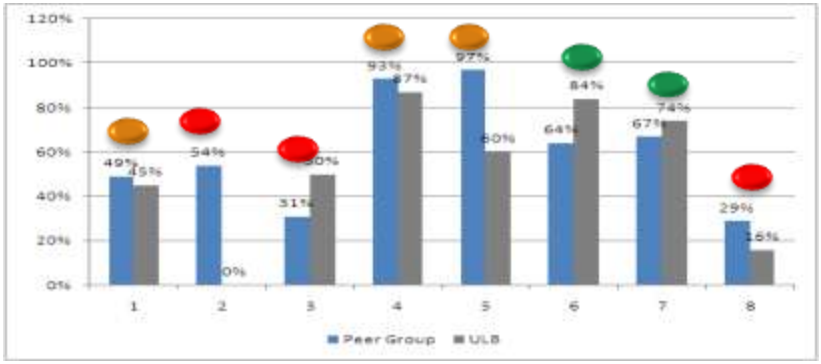
Helps arrive at Investment requirements and possible lending based on Municipal finance assessment

Priority Setting for Improvement Actions

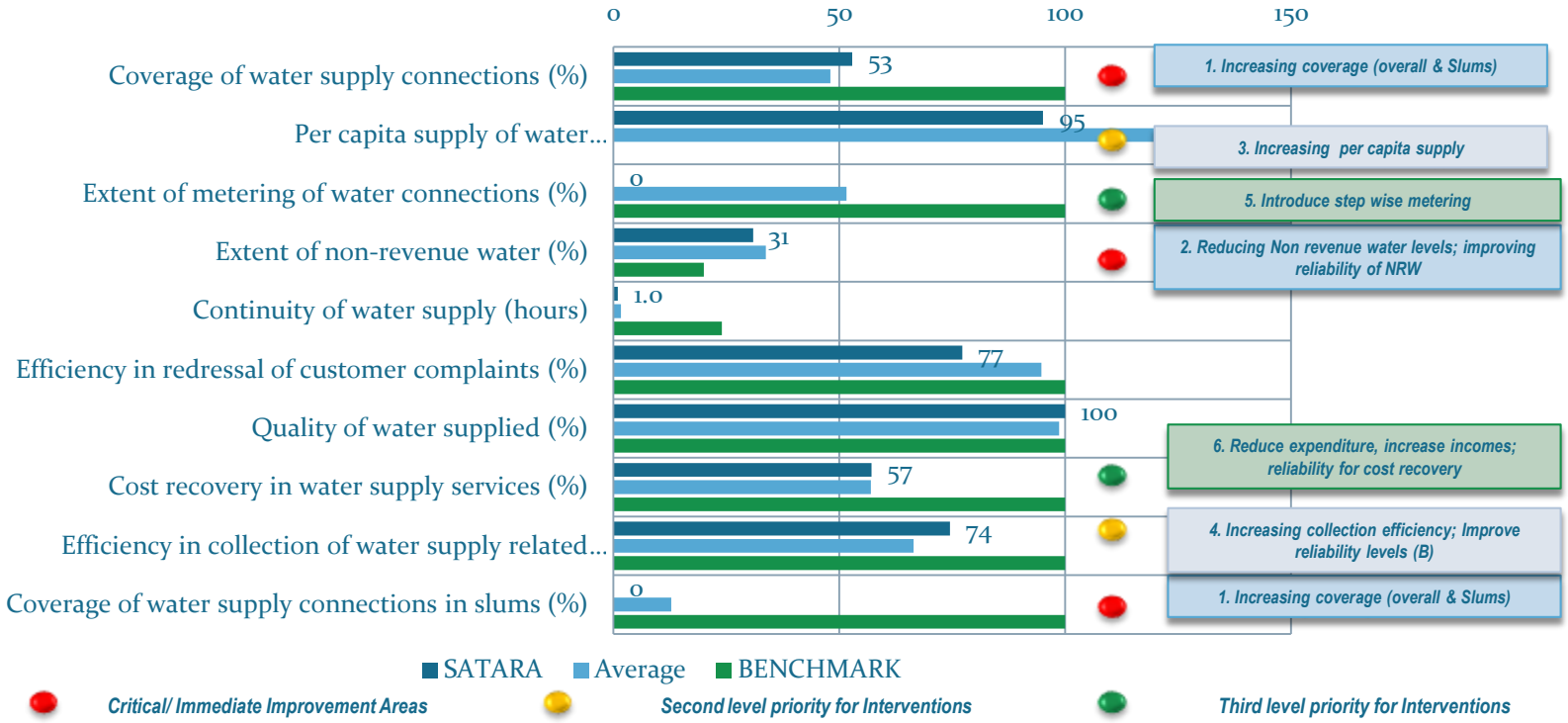
Use Scorecard to arrive at improvement in indicators by choice of Actions



Comparative assessment and traffic light analysis: Through Peer Comparison



Comparative :Through on site Assessment



UWSS Assets : Expectations from varied Stakeholders

- Service Delivery Outcomes

→ Elected Representatives / Central & State Government/ Consumers

- Financial Sustainability

→ City Managers / State Agencies

- Network Design & Analysis

→ Water Engineers

- System Operations & Maintenance

→ Maintenance Staff (fitter, valve men, sanitary inspectors etc.)

Thank You

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