

PERFORMANCE ASSESSMENT SYSTEMS (PAS)

performance assessment system



India Water Supply – improved basic access but decline in household level services



Chawl residents shell out lakhs but taps remain dry

aujarat Mahila Housing Sewa Irust accused of duping Rajeemagar residents of lakhs of rupees under pretext of helping them get regular water supply and drainage connections



"Despite living in a district headquarters, we get drinking water once in four days. Both state and central governments have neglected



us. Except 108 emergency services, healthcare services in the district are shoddy. The Congress candidate is welleducated and wellqualified."

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Water situation grave in state, warns expert

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The JNNURM envisage states

undertaking a total of 23 eriormo

Coming soon: a law to guarantee govt service

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govt plans to map slums

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Problems with WSS services and the Response...

Water woes: Kapurai villagers threaten stir against VMC

Villagers accuse civic body of providing better facilities to newly-developed colonies

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JNNURM needs pvt help as state funding dries up

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Need to ASSESS PERFORMANCE... TRACK INVESTMENTS and OUTCOMES

- Little is known about the quality, service levels and financial sustainability of WSS services
- Only limited information available on access of urban poor households to water and sanitation services
- This makes assessment of impact from past investments difficult

- Need for a standardized information system for comparable and regular situational analysis
- This can support improved allocation of resources and decision making
- Grants from state and central governments can be linked to local performance



Need for Performance Information in urban water and sanitation

- 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
- Only limited information on access of urban poor households to water and sanitation is available
- Lack of WSS information leads to misallocation of resources
- Difficult to assess impact of past investments

Resources for WSS is not a major constraint – around USD 10 billion invested in urban WSS over 7 years –Gujarat has allocated over One Billion USD for Sanitation



WHAT IS PAS?

THE FIRST STATEWIDE BENCHMARKING EFFORT IN INDIA

- Past efforts by ADB, WSP and Government of India
 - Covered only a few (20 to 25) cities through a one-time effort
 - Lack of standard set of indicators with clear definitions
 - Data reliability issues
 - Lack of use by utilities or state/national governments
- GoI recently initiated benchmarking in UWSS through its Service level Benchmarking (SLB) IN 27 Cities





- 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

States and Urban Coverage - PAS Project



Source: Projections by the Office of the Registrar General, India, 2001

Mainstreaming PAS

- 8
- Links established with GOI's Service Level Benchmark (SLB)
- CEPT team provided initial inputs for 4 of the 27 pilot cities studies
- CEPT represented on the advisory panel of GOI to roll out SLB in all states
- 13th Finance Commission has provided USD 2 billion as performance based grants
- □ JNNURM-2 to be linked to performance

Context

- Two states of India: Gujarat and Maharashtra – more urbanised
- □ 400+ cities, 70+ million population, 20% living in slums
- Inadequate coverage in slums

Poor service levels in small and medium towns

Poor state of information



WHAT IS PAS?

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



Performance Measurement Framework

Evolution of measurement framework



F		h
	GOALS	
Universal	Service Levels &	Financial
Coverage	Quality	Sustainability
Access and	Quantity	O&M Cost
Coverage	Continuity	Recovery
·	Quality	
	REFORMS	
Equity	Efficiency in	Eff. in
(connections)	operations	Billing/collection
Zonal variations	Extent of NRW,	Collection efficiency
Slums	treatment, reuse	
	Complaint redressal	
	Metering	
	LOCAL ACTION	
Equity	Efficiency in	Cost
(inhabited area)	operations	Effectiveness
Equity (pop/shared	Quantity and quality	Costs (losses, unit
facility)	NRW	O&M & electricity expenditure)
Coverage of utility		-
network across the city	Complaint redressal	Billing(arrears)
	Staffing	



How different is PAS from other efforts

- A well-defined Framework of Service Goals Management/Reforms and Local Actions
- Inclusion of Indicators on Equity both spatial and by economic groups (Slum/Non-Slum)
- Reliability scores of information supplied are objectively assessed
- State-wide approach covering all cities
- Working in partnership with governments



Measurement Framework **Goals-Reforms-Local Action**



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water, Consumer grievance redressal

Water – Indicators and Benchmarks

	Benchmark
Water: Key Performance Indicators	set by GoI
Access and Coverage	
Coverage of individual water supply connections (%)	100
Service level and Quality	
Per capita supply of water (lpcd)	135
Continuity of water supply (hrs per day)	24
Quality of water supplied (%)	100
Financial Management	
Cost recovery (O&M) in water supply services (%)	100
Efficiency in Service Operations	
Extent of NRW (%)	<25
Efficiency in redressal of customer complaints (%)	100
Functional metering of water connections (%)	100
Equity in Service Delivery	
Coverage of individual water connections in slums (%)	100
Spatial variation in individual water supply connections (Ratio)	
Spatial variation in per capita water supply (Ratio)	

Approach to Local Action Indicators

To help identify local actions to improve performance on selected KPIs – e.g. Non-revenue water

Water Balance	% Authorized and unbilled consumption to total supply
	% Losses from source to water treatment plant (WTP)
	% Losses from WTP to water distribution station (WDS)
	% Losses from WDS to final consumption (includes both leakage on service
	connections and unauthorized consumption)
	% of identified illegal connections that are regularized
Indicators for	Water losses per connection (litres)
Operational	Real losses per service connection per month per meter (head) Pressure
assessment of water	(litres)
losses	Water losses per mains length (litres)
	Unavoidable Annual Real Losses (UARL) (Million litres)
	Infrastructure Leakage Index (ratio)
Indicators for Financial	Annual cost of losses (real and apparent) (Rupees)
impact of water loss	Annual revenue loss from NRW (Rupees)

Approach of data reliability assessment under PAS is linked to actions for improving quality of data

Reliability Bands	Description	Actions needed to achieve higher reliability
Α	Automated data systems, with periodic updation	Develop GIS linked computerized property tax, connection registers etc
В	Manual systems of data recording, with periodic updation	Computerize property tax, connection registers etc along with household records
С	Partially developed manual systems of recordings, with extrapolation of missing data	Introduce household estimate in manual records for property tax, connection registers etc.
D	No systems of data recording	Develop a system of manual records for property tax, connection registers etc.

Excel based data collection tool

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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



The project is to develop a Performance Assessment System (PAS) for Urban Water supply and Sanitation using appropriate methods and tools to measure, monitor and improve delivery of the services in cities and towns in India.



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Web Portal



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The Project

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City Profile

45% of the slum

Learn More in City Profile

Username

Password

State Profile

36% of 11011 the cities in DSC are

solely dependent on groundwater as their source of water supply

Learn more in State Profiles

Features

2.5 billion settlements in ASC do not people do not have access to adequate sanitation.; roughly two fifths if the world's population. have water supply connections at household level.

Read More in Features



State level analysis

Access and Coverage:



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

City Profile

Ahmedabad : City Profile



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

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²⁵ Tools for improved information

Formats used by city government for water quantity measurement

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1.00	3428	3430	401	10.00	100	200.00	+00.000	1010	1000	910.00	0.02	38.18	240.0
-47.11	. 64 12	110	0001	+0.00	12.0	- 198.DI	1319	10.00	10.00	1146.00	0.00	- R.00	1111
11.00	44.10	- 74.1f	 (H) 	20.00	47.00	341.85	3450	: 15.80	18.00	- III.eC	2.00	60.00	3103
11.41	46-11	0.00	3.348	-47	10.00	20210	40.18	5450	10.00	18.55	3.00	62.01	211.7
1.00	ALC:	81.05	1.11	2.26	47-00	-145-00	45.4	85.74	32.00	5.40		61.40	1000
- 11.18	10 2	2.80	8.75	41.40	34.20	29.0	.75.91	15.75	31.00	3.000		34.52	254.
2.10	NU. 101	1.10	/ 2.12		44.22	247.34	To AL	1.5	30.00	3.00		39.07	244.7
11-42	- 62.21	1.30	812	48.13	\$1.75	111.00	34.04	14.75	80.00	34.00		67.20	227.1
- 100	20121	- 80.00	4.20	2.01	16.27	144.25	19.47	17.11	80.00	34.44	100	41.85	2711
12.44	48.71	0.00	9.12	42.10	A7 311	1000 e 1	111.04	14.19	10.00	4.70	1.00	· 81.75	271.4
8.32	19.22	10.00	.3.19	0.00	04.72	111.96	37.16	1438	81.21	8.00	3.00	111.10	171.1
12.10	- 1	- 1.10	813	46.03	- 44.90	117.300	79.78	17.17	10.00	1.00	1.01		24.1
1.05	1.00	0.00	0.00	6.00	0.55	1.05	0.00	211-838	1.00	1.00	0.00	0.00	0.5
778.34	3852.91	1164.60	285.62	1004.10	2011.46	9104.38	2419-21	3049.40	101.40	2441.60	33.75	ineres.	6445.0

Flow of Data

27		
STAFF	DATA USED/ INPUT	DATA RECORDED/ OUTPUT
Pump operator <i>HOURLY</i>	Pump Operations	Pumping hours
Deputy Engineer <i>DAILY</i>	Pumping hours	Water quantity calculation
City Engineer <i>DAILY</i>	Water quantity calculation	Water production & supply at various levels
Commissioner, Standing Committee, Technical Advisor, City Engineer MONTHLY	Water production & supply at various levels	Water supply quantity review for , current & next month
Commissioner, Mayor, WW committee chairman, Tech Advisor, Dy Comm, CE BI – TRI ANNUAL	Water supply quantity review for past few months	Water supply quantity review for rest of the year
Commissioner, Standing Committee, Mayor, WW committeechairman, Tech Advisor, Dy Comm, CE <i>ANNUAL</i>	Water supply quantity review for a last year	Water supply quantity planning for next year

WATER PRODUCTION MONITORING





Performance Improvement

Using PAS to improve service levels...



ULBs needs to know **how** to improve service delivery and achieve desired targets...

Case Study: Low cost Water Audit in a Small Town

Population (2009 projected)	130, 863	
Area of city	17.24 sq km	
Population in	28694 (22% of total	
Slum	population)	
	Bulk Water	
Source of water	Purchase (Narmada)	
supply	Ground water (21	
	bore wells)	
	12.7 MLD Bulk	
Quantity of	treated purchase	
water supplied	water	
11	3 MLD Ground	
	water	







PERFORMANCE ASSESSMENT SYSTEMS FOR URBAN WATER SUPPLY AND SANITATION IN GUJARAT	MAPTITLE	DRAWN BY	LEGEND	LEGEND	A AL	en lan
A Research Project in Association with Urban Management Centre (UMC)	kalol		SURVEY POINT 1 "CONNECTION 4 34" CONNECTION 1 12" CONNECTION 12" CONNECTION 10" MONOFAL IND WARD BND			astı niv avr hm

Center for Enviornment Plannning and Technology Kasturbhai Lalbhai Campus, University Road, Navrangpura, Ahmedabad-380009



Kalol: NRW and Losses

Parameter	Actual measurement
System Input Volume	17.3 MLD
Billed Quantity (Revenue water)	7.99 MLD
NRW	53.82%

Categories of Losses	Actual measurement		
Losses from source to WDS (Leakage in transmission mains)	1.71 MLD	9.9%	
Losses at WDS (Leakage and overflows at storage tanks)	0.61 MLD	3.5%	
Losses from WDS to Consumer (Leakage on service connections and illegal connections)	6.99 MLD	40.4%	

Exploring investment options for financial sustainability - Kalol



■ base ■ Increased Revenue

Note: The data in this chart is only for illustration purposes. It does not necessarily depict the actual situation in this city.

Areas that can be targeted by Kalol to improve cost recovery ...

THEME	ACTION AREA	CAPITAL INVESTMENT & FEASIBILITY STUDIES	PROCESS IMPROVEMENT	POLICY INTERVENTION	
	Distribution network	Expansion of network in uncovered areas			
ACCESS AND	New connections		Ease the process for giving connection		
COVERAGE	Slum coverage	Provide internal infrastructure in slums		Delink tenure issues to provide services	
	Illegal connections		Detection & regularization of illegal connect	tions on regular basis	
		Source augmentation		Explore alternate sources	
	Water supply	Increase capacity of existing sources	Water conserv	vation options	
		Upgrade treatment capacity	Water conserv	vation options	
SERVICE LEVELS AND QUALITY	Establish DMA	Hydraulic modelling			
		Install meters & pressure gauge			
	Water quality survelliance		Conduct regular tests at all levels (WTP, WDS, consumer level)	Strictly follow CPHEEO norms for water quality	
	Consumer redressal		Establish compliant recording system	Prepare citizen charter and follow	
	system		Streamline redressal process by ULB staff		
	Reduce water losses	Water audit	Peouler look detection		
		Replace/ rehabilitate network	Regular leak detection		
	De la companya de la	Energy audit			
	Reduce energy expenses	Replace/ repair electrical equipments & pumps			
	Increase revenue			Rationalize tariff structure	
VIABILITY			Establish multiple points for paying taxes	Clauses like incentives & penalty fine to	
	Billing & collection		Bill all customers on time	citizens. Frame strategy to target arrears	
			Prepare assets database	Dedicated budgetary allocations for asset maintenance	
	Asset management		Linking maintenance schedule with staff responsibilities		

Case Study: Ahmedabad: Universal Access to WSS

Ahmedabad Municipal Corporation

- Population 3.5 Million (Census,2001)
- > Area 190 sq.km
- > Density 18256 per sq.km.
- > No. of Admin Zones 5
- > No. of wards -44

Extended Boundary AMC

- Population 4.9 Million (AMC, 2007)
- > Area 466 sq.km
- > Density 10,515 per sq.km.
- > No. of Admin Zones 6
- > No. of wards -52

Interventions in Slums by State & AMC

1971	198	1	1991	2001	Present
			Individual toilets sch	eme (1990)	
 Slum Survey (1974 Slum Census in 1974 Family card vall the slum of No of pocket No. of Huts - Resolution: 	s carried out was issued to dwellers s – 1200 - 82177 All these individual	 Solve the scheme (1980-81) Solve the scheme is scheme is scheme is scheme introduced State/AMC contribution 80% and 20% by beneficiaries Scheme reaches to approx. 3000 families over 10 years of period due to rigid specification and complex procedure 	Individual toilets sch 80:20 scheme v AMC contribut Scheme reacher Slu Objective: Inte Main Compon community de Scheme reacher Won Dubai Inte Pocket level su Service level: V To reach slum after 1976 or SN Unique Schem	was modified and introduced 90:14 tion 90% and 10% by beneficiaries es to approx. 14000 families till dat im Networking Project (1996) egrate slums with City & city infras eent: Physical infrastructure, Land velopment etc. es to 47 slums with 5000 families of ternational Award	te structure d tenure for 10 years, over 13 years um Survey (2001) due to slums develop ler) and ownership gram (2004 onwards)
	-			individual toilets has been const Biometric & Total stat arry out city wide HH level biom	ion Slum Survey (2009)
			(JnNURM refo		cure survey for stuffis

Service Level: Water: 47% & toilet: 57% in slums

Local level Programs for the Poor

Under the PAS Project support is being provided to the Ahmedabad Municipal Corporation for

Organizing available data on slums

•Developing a Slum information system on a GIS platform

•Use of GIS tools to identify key projects

•Developing investment plans for slum infrastructure with funding from GOI and local programmes.



GIS Based Information System for Slum

- Full survey of all 500 slum Pockets
- Biometric survey of 325,000 slum households Households: 359,625





In-situ Service Up gradation

SLUM WARD_FINAL WATERBODIES

- Minimal relocation of slums only those slums that are in vulnerable conditions are to be relocated
- On site services package to be provided to all the other slum pockets.

No. of Slum Pockets		No. of water Connection Required	Toilets
495	131,350	68,208	57,390

Source: Biometric Socio-economic Household survey, AMC (2010)

Finance: In-situ up gradation

Cost Component	2010	2011	2012	2013	2014	2015	2016	Total
	1	1	1.07	1.14	1.21	1.28	1.35	IOLAI
Slum Infrastructure Cost	8.3	29.2	31.3	33.3	35.4	37.4	39.5	214.4
Individual service Cost	3.9	8.6	10	10.5	8	3.5	4	48.5
Project Management Cost	1.6	2.8	3.1	3.3	3.3	3.3	3.4	20.8
Total Cost	13.8	40.7	44.4	47.1	46.7	44.2	46.9	283.7

(Rs. In Crore)

Potential Sources of Finance (USD 60 million)

- Central Government assistance through MoHUPA 50%
- State Government- 25%
- ≻ Community 10%
- City Government: 15% from revenue surplus allocated for Pro-poor activities

What can infrastructure do in Slums

BEFORE





Performance Improvement

Tools for stepwise improvement planning



5-Year Plan for PAS



Challenges for PAS

- Mainstreaming PAS in state and local government systems
- Use of PAS for investment decisions at local and state level – creating incentives through upward, downward and internal accountability
- □ Gradually improving quality of information
- □ Further develop equity indicators
- KPIs for sanitation are too focused on sewerage system – need to develop indicators for cities without sewerage



Thank You