WATER SUPPLY AND SANITATION IN SLUMS
PAS PROJECT, INDIA

pas performance assessment system

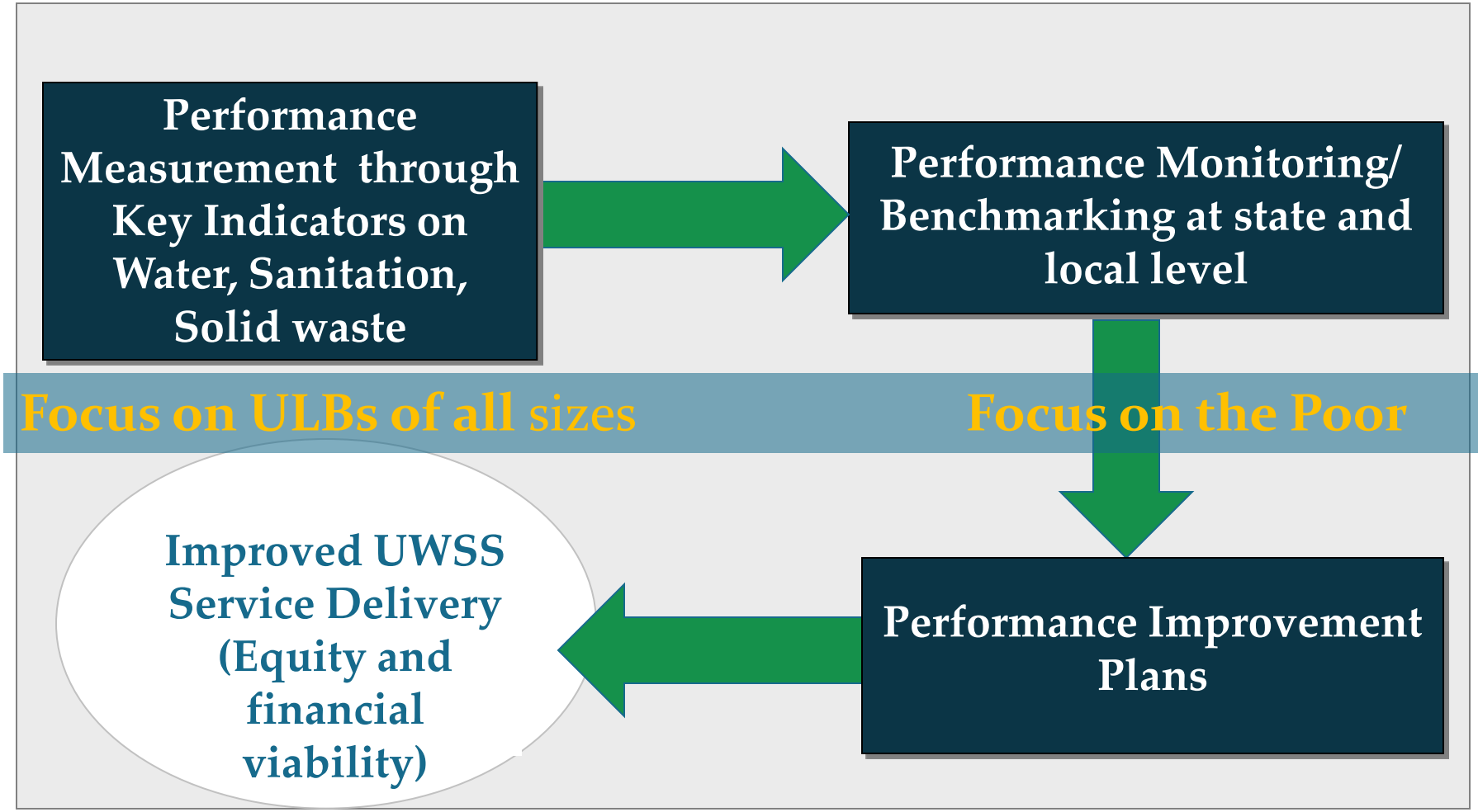
JMP Urban Task Force Meeting, Nairobi, June 2011

Outline

- **About the PAS Project**
- Service provider surveys
- Household surveys
- Key lessons

WHAT IS PAS?

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

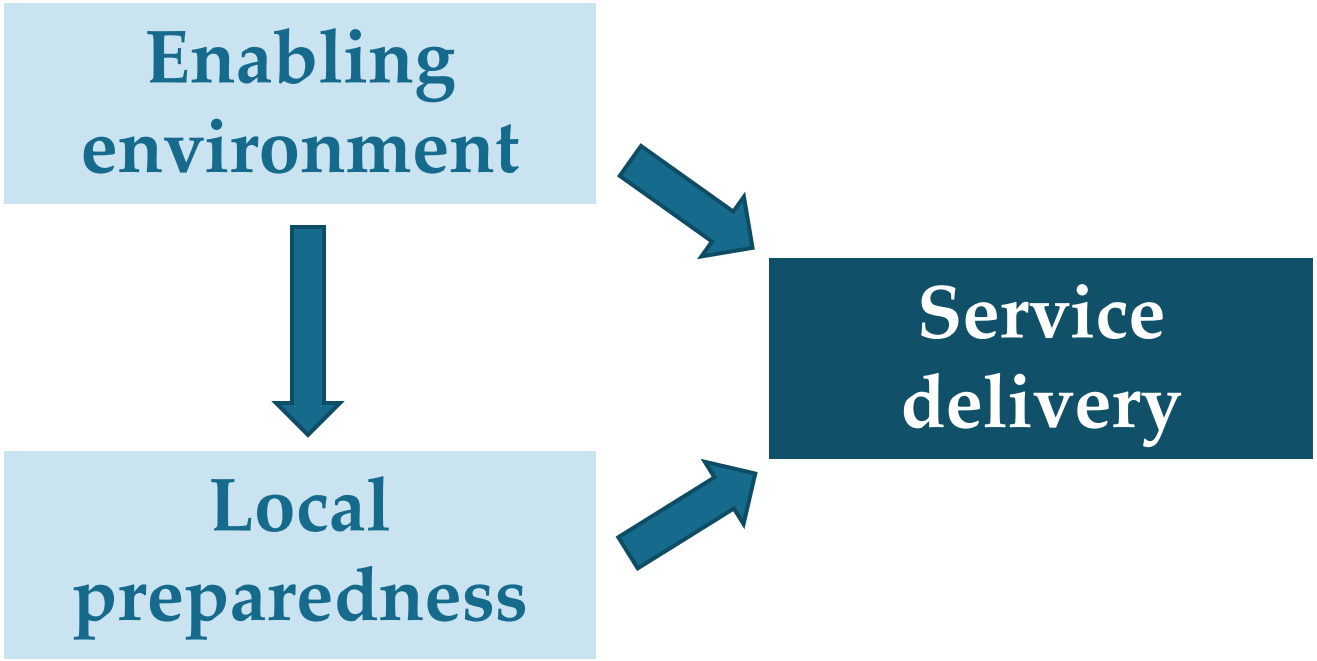


Population, Poverty and Slums, 2001

	Gujarat	Maharashtra
Total Urban Population (million) in 2001	18.9	41.1
% urban	35.9	40.9
Rate of growth of urban population % (1991-2001)	21.4%	34.4%
% of urban population below poverty line (2000)	15.6%	25.8%
Total Slum Population (million) in 2001	3.4	10.7
% of urban population in 'slum settlements' (2001)	18.1%	26.0%

Source: Population: Census of India 2001, 2011; Poverty: Planning Commission, GOI, 2007; Slums: NBO 2010.

Framework for Equity Assessment



Framework for Equity Assessment

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

Equity Assessment – PAS Project

- **Service provider surveys**
  - ULB surveys – Services in slums (water, toilets, sewerage, SWM); policy, finance for slum services and connection processes
  - Slum settlement surveys – service levels, quality
  - Mapping of slum locations (50 cities) and detailed plans of each slum (Ahmedabad) for use in planning
- **Household surveys**
  - State level (by size class of cities) estimates for slum and non-slum households for: access and coverage, service levels and quality, costs and complaint redressal

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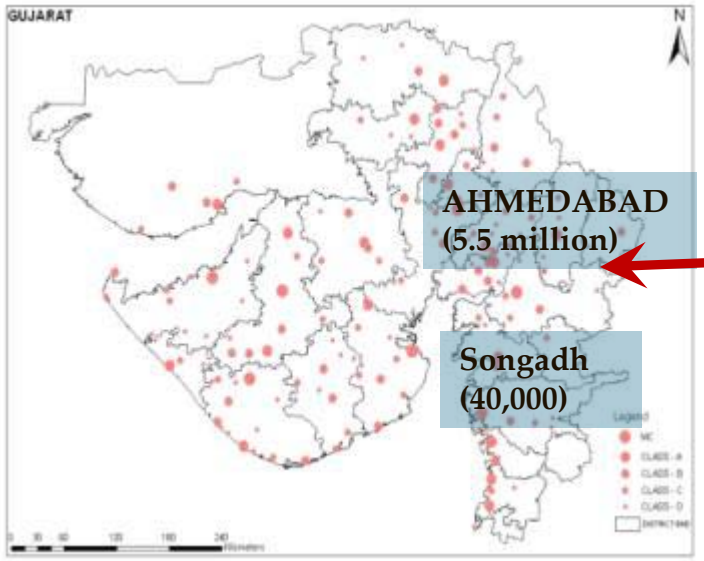
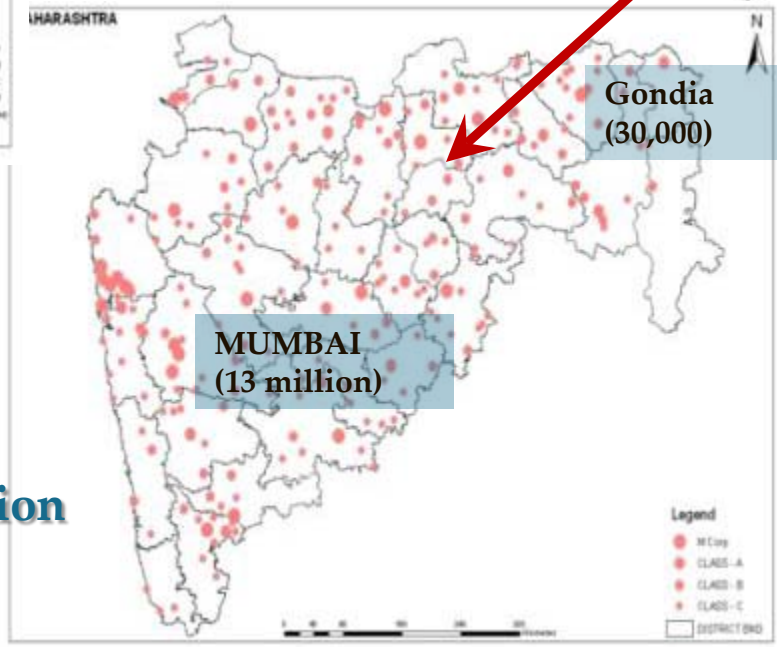
Scale of Service Provider Surveys, 2009



Gujarat State

166 Urban Centers

Population – 24 million



Maharashtra State

248 Urban Centers

Population – 51 million

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

Indicators for Equity Assessment

Theme	Key Indicators
Enabling Environment	Presence of policy enabling provision for services in slums (Y/N)
	Connection charge for urban poor to non poor in WSS (ratio)
	Provision of UWSS services to non-notified slums (Y/N)
	% of slum settlements covered under property tax assessment
	Access to funds from national/ state schemes for services in slums (Y/N)
Local level Preparedness	% budget for pro poor activities
	Efforts made to simplify connection procedures for slum HHs (Y/N)
	% of slum settlements having internal network (water supply, drainage)
Service Delivery	% of households with access to improved UWSS services in slums
	% of households with access to on-premise facilities in slums
	% of households defecating in open in slums
	Coverage of UWSS services at HH level in slums (%)
	Spatial variation in individual water supply connections (Ratio)
	Spatial variation in per capita water supply (Ratio)

Magnitude of Slums – 2009

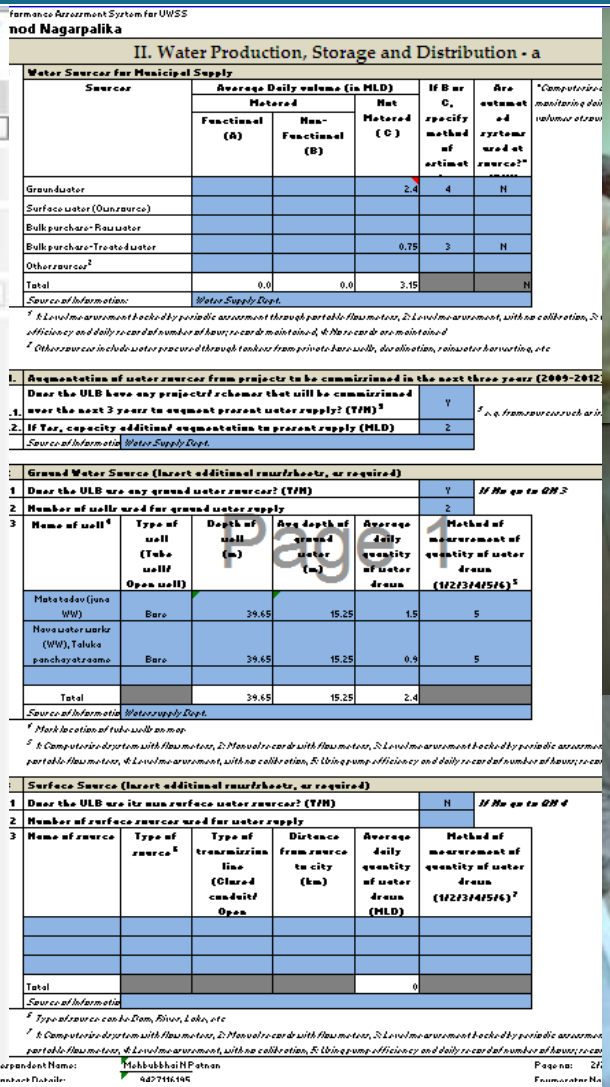
	No. of slum settlements	Average households/ settlement	Households in slums
Gujarat	**4,681**	**190**	**0.9 million (17.7%)**
Maharashtra	**6,696**	**412**	**2.8 million (27.4%)**
	36% on 'non-notified' slums		20% of ULBs (50) report no slums
	Almost 2,000 settlements in Mumbai with slum population share of 55% to total population and 700HHs/settlement		

Source: Based on results from PAS Project Round I surveys for 2009,

Methods for Data Collection and Analysis

- Orientation for city (utility) officers on benchmarking
- Information collected from cities through visits to each city in Gujarat, and data workshops/camps in Maharashtra
- Data verified for internal consistency and from preliminary results by CEPT and partners
- Preliminary results being reviewed by the state governments
- For selected cities mapping of slum locations, and for Ahmedabad GIS-based analysis of all slums
- Round 2 surveys have been initiated across all cities, and will include slum settlement surveys in all slums in all cities

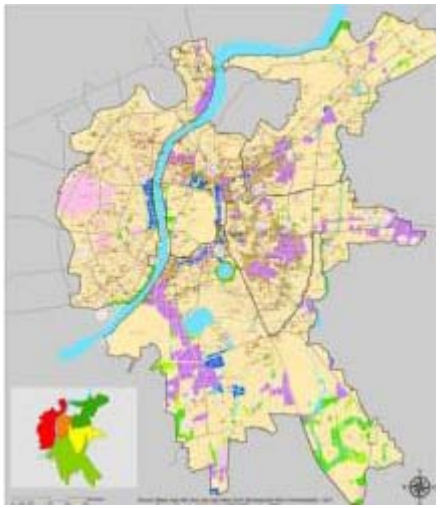
Data Collection Tools – excel/ online



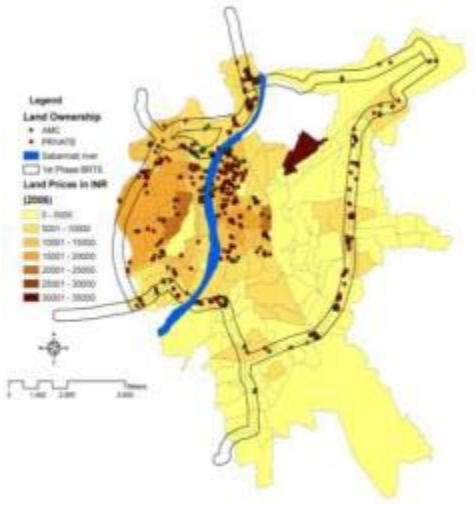
Decision Making Tools

- PAS Project is assisting Ahmedabad Municipal Corporation to develop a GIS based slum information system.
- Will help in policy decisions and effective planning; ranging from a single slum settlement to the entire city.

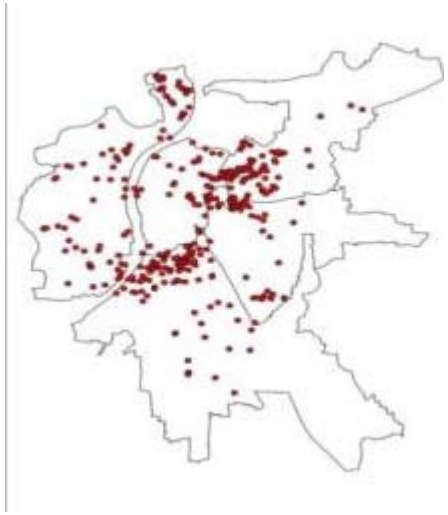
Location of slums w.r.t. land use of city



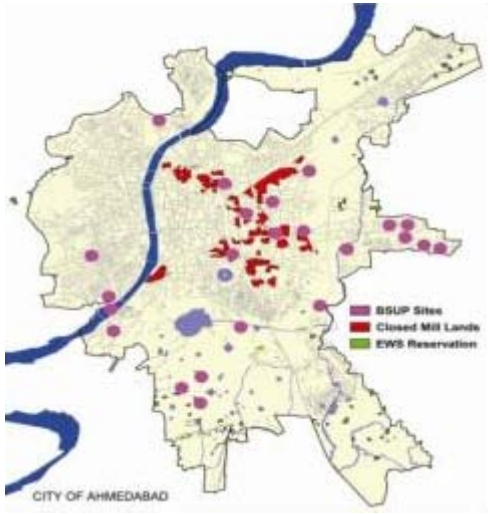
Slum pockets located on High land price



Identification of slums that need to be relocated



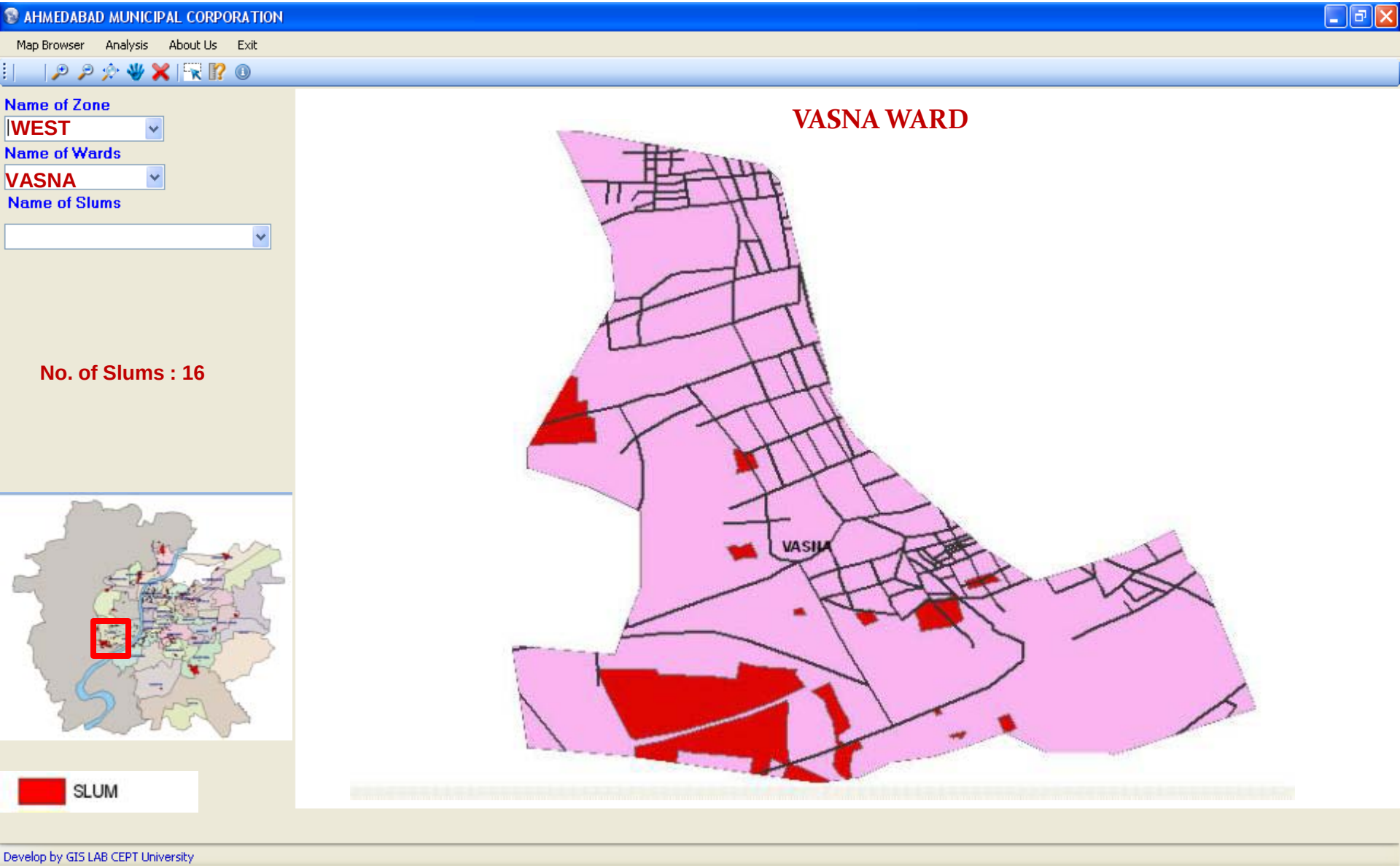
Land bank Identification



- Identify slums under different slum redevelopment model based on current level of infrastructure and settlement size.
- Will enable inter-departmental linkages and regular updating of slum database

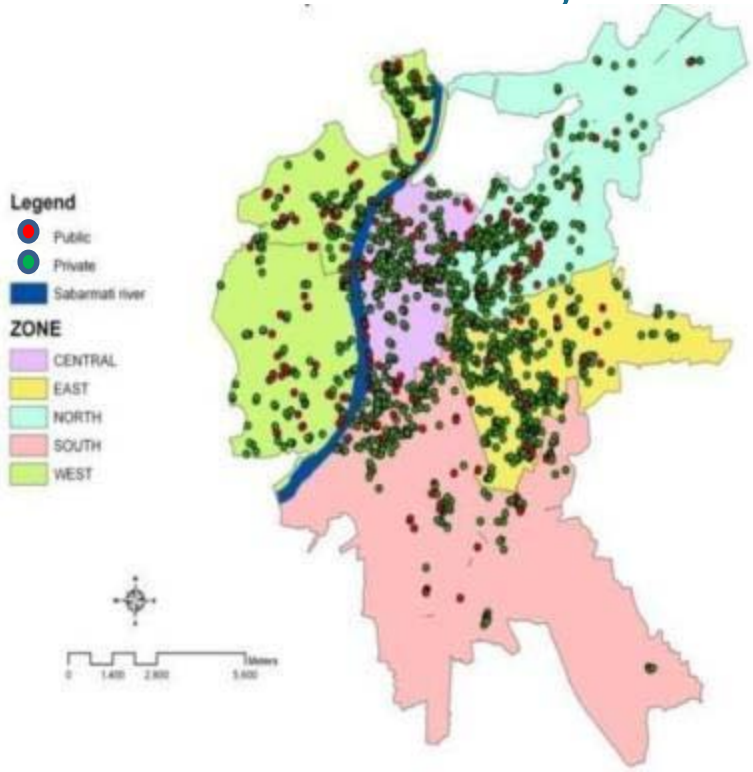
Source: Based on maps prepared with AMC under the PAS Project 2009-10, and CEPT student exercise for "slum-free city", 2008.

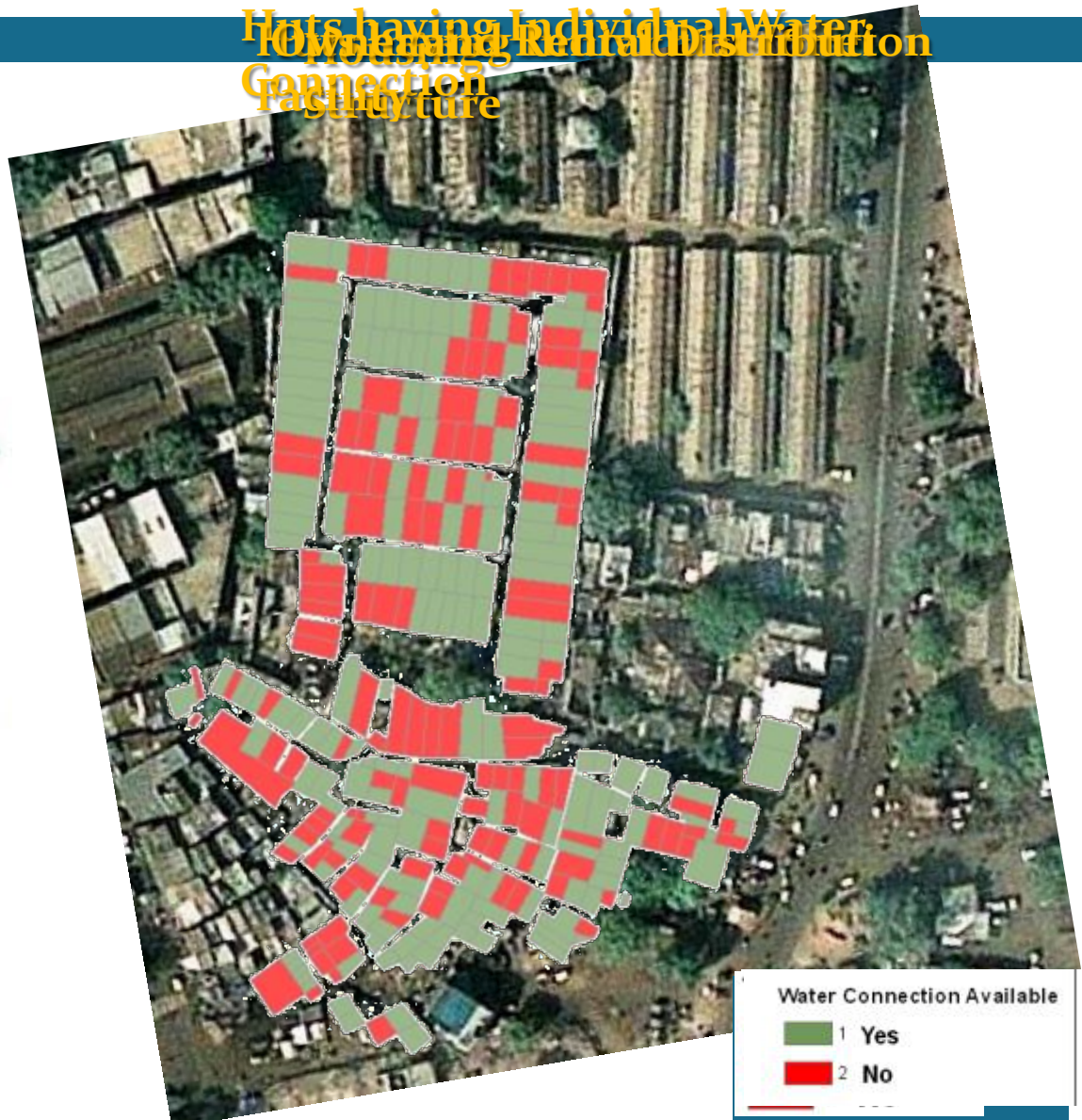
Example: GIS Based MIS for Slums



GIS Based Information System for Slum

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





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Approach to Household Surveys

- Household surveys to assess service performance with a focus on **access and coverage, levels and quality of service, consumer grievance redressal and household expenditure**
- Sample size of **15,000 households** to give state levels estimates with breakdown by:
  a) city category (size class)
  b) slum/non-slum differentials (7500 HHs from slums)
- Study and surveys contracted to **the Nielsen Company (ORG Centre for Social Research, India)**

Sampling for State Estimates

City Category	Gujarat		Maharashtra	
	No. of Towns	Sample	No. of Towns	Sample
Category – I Cities (MC1): Municipal Corporations with a population more than 1 million Sample Size	4	2400	4	2440
Category – II Cities (MC2): Municipal Corporations with a population less than 1 million)	3	2000	8	2200
Category –III Cities (Class A): Class A Towns (Population more than 100,000)	8	1600	8	1840
Category –IV Cities (Rest Category): Class B, C and D Towns (Population less than 100,000)	20	1200	20	1200
Total	**35**	**7200**	**40**	**7680**

From each city category Neighbourhoods identified as slums and non slums with the help of ULBs.

Neighbourhoods were selected to give equal proportion to slums and non-slums

From each selected Neighbourhood 20 HH were selected using Systematic Random Sampling for HH survey.

Appropriate weights used to arrive at city and category-wise estimates

Household survey conducted using PDAs thereby taking care of consistency checks in data collection.

Indicators for water service

- **Community/Household level indicators**
  - Access and Coverage
    - ✓ Access – safe water source within 100m, number of households using shared connection,
    - ✓ Coverage – water tap at house level (legal/illegal)
  - Service level
    - ✓ Supply hours, pressure
    - ✓ Consumption – quantity of water consumed
    - ✓ Quality of water - % of tests meeting standards
    - ✓ Coping behaviour – Storage, filtration, pumps,
  - Financial
    - ✓ Monthly expenditure on tariffs and coping costs
    - ✓ Capital investments by households

Access and Coverage– Water Supply

	GUJARAT	MAHARASHTRA
% of households with Access to water supply as per JMP definition	97.6	98.1
% of households with Access to municipal water supply	88.4	91.2
% of households dependent on shared municipal water connections	15.8	38.8
% of households dependent on community stand post	5.8	11.9
% of HH having Municipal Sources but supplementing with additional sources	12.6	19.8
% of households with access to a tap on premise using municipal water supply	82.5	74.5

	GUJARAT		MAHARASHTRA	
	Slum	Non slum	Slum	Non slum
% of households with Access to water supply as per JMP definition	96.1	98.8	97.1	98.6
% of households with Access to municipal water supply	94.7	87.1	95.2	89.6
% of households dependent on shared municipal water connections	12.6	16.5	37.7	39.3
% of households dependent on community stand post	18.7	3.1	25.8	6.7
% of HH having Municipal Sources but supplementing with additional sources	4.2	14.6	11.8	23.0
% households with access to a tap on premise using municipal water supply	66.6	85.8	41.1	88.3

Access and Coverage – Sanitation

	GUJARAT	MAHARASHTRA
% of households with access to safe sanitation (as per JMP definition)	86.2	67.8
% of households with on-site toilet facility	86.4	68.6
% of households dependent on shared toilet facility	2.3	8.1
% of households dependent on Community toilet facility	2.4	18.0
Connected to sewerage	50.4	42.7
% of households Going for Open Defecation	9.2	5.3

	GUJARAT		MAHARASHTRA	
	SLUM	NON SLUM	SLUM	NON SLUM
% of households with access to safe sanitation (as per JMP definition)	54.3	92.9	23.2	84.5
% of households with on-site toilet facility	54.2	93.2	24.3	85.1
% of households dependent on shared toilet facility	3.4	2.0	9.1	7.7
% of households dependent on Community toilet facility	11.8	0.4	51.9	5.4
% of HH Connected to sewerage	30.4	54.7	12.0	54.0
% of households Going for Open Defecation	31.7	4.5	14.7	1.8

Equity Assessment – PAS Project

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Key Lessons – 1

An explicit focus on slums

- Information availability on services to the poor is very scanty and unreliable
- In developing country context, performance assessment and service delivery of WATSAN must have an explicit focus on equity and on slums

Survey Design

- Both service provider and household level surveys are needed
- Survey design to include purposive and adequate sample of slum settlements

Key Lessons – 2

Coverage of all cities and all slums

- Need to assess services in all types of urban areas – large cities to small towns.

Use of information

- Ownership and use of information critical for sustainability and gradual improvements in quality of information (AMC slum free action plan) and in Maharashtra (for ODF cities and PIPs)

Improving data availability

- Addressing the lack of updated and reliable information with local governments – slum settlement surveys, community involvement

Key Lessons– 3

Simplifying household surveys

- Household surveys provide a demand side assessment and more details of actual service received and its quality
- Defining indicators – balancing global with local requirements
- Scope of survey – keep it limited…!!!
- Possibility of cost effective methods – PDAs, mobile phones etc.
- Need for common guidance for such surveys – indicators, survey tool, sampling

Thank You

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