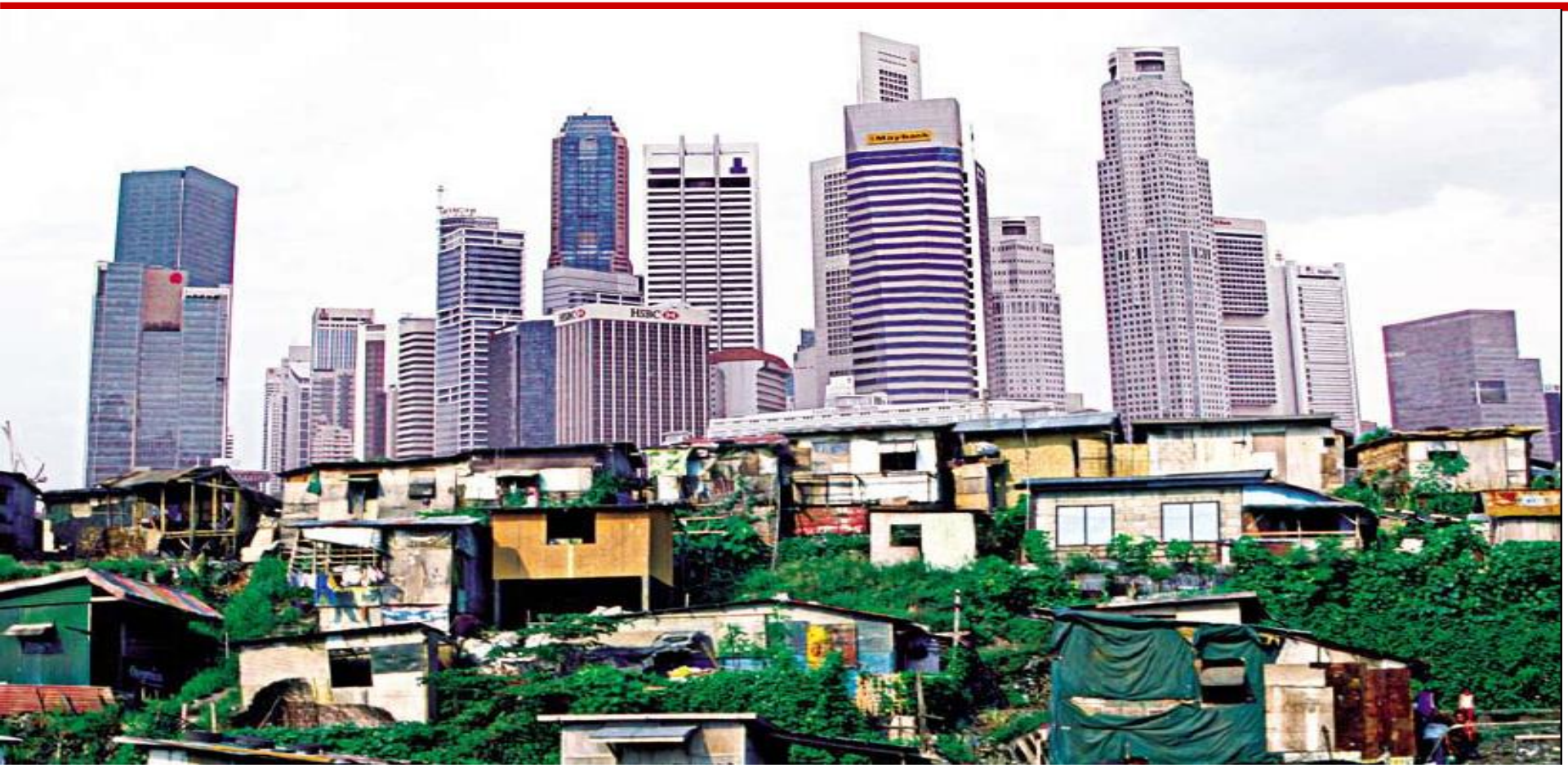
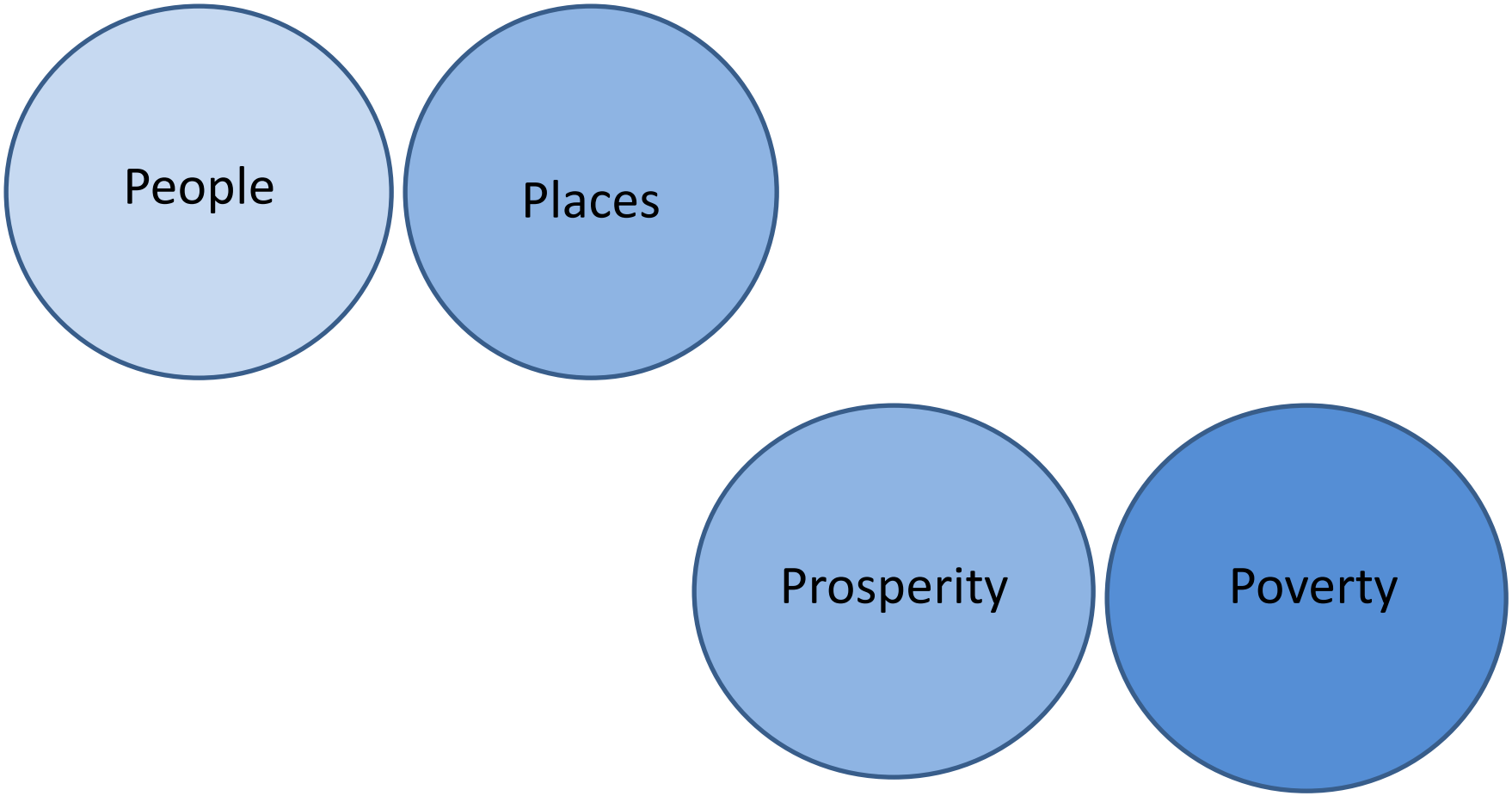
Urban Development and WATSAN services in Low and Middle-Income Countries

Dinesh Mehta, CEPT University, INDIA

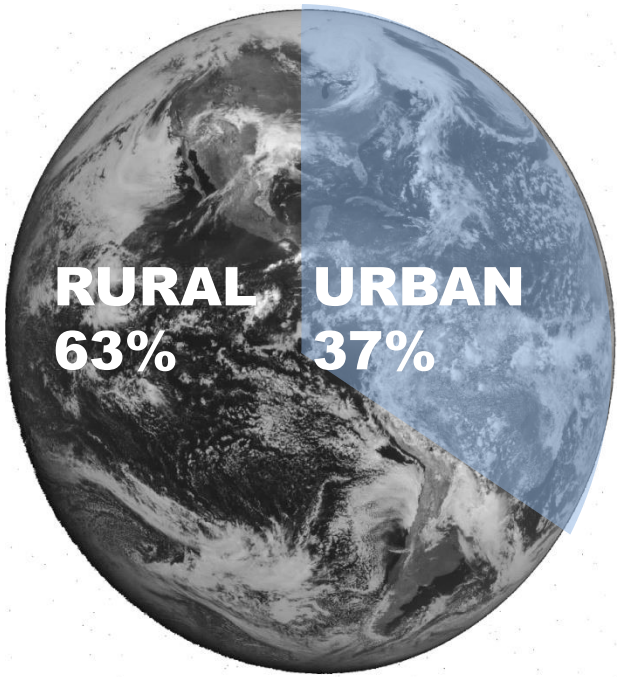


Urban Development – 4 Ps

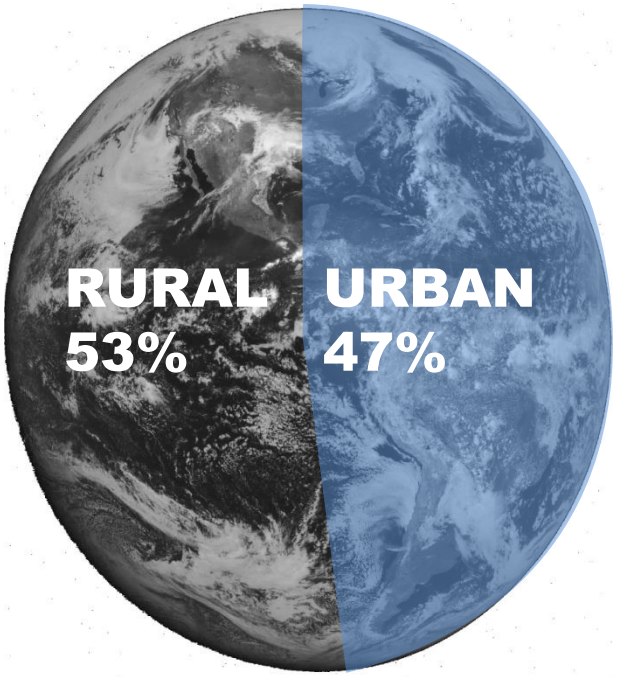


PEOPLE

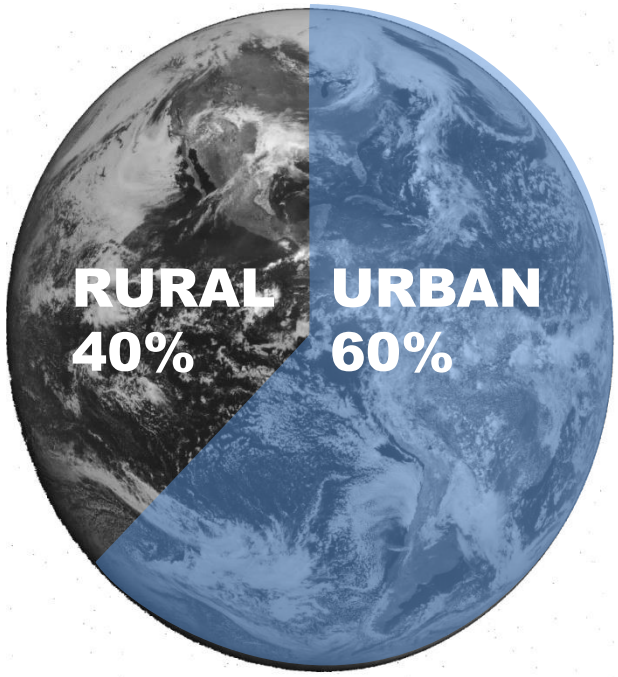
GLOBAL POPULATION URBAN/RURAL



1970

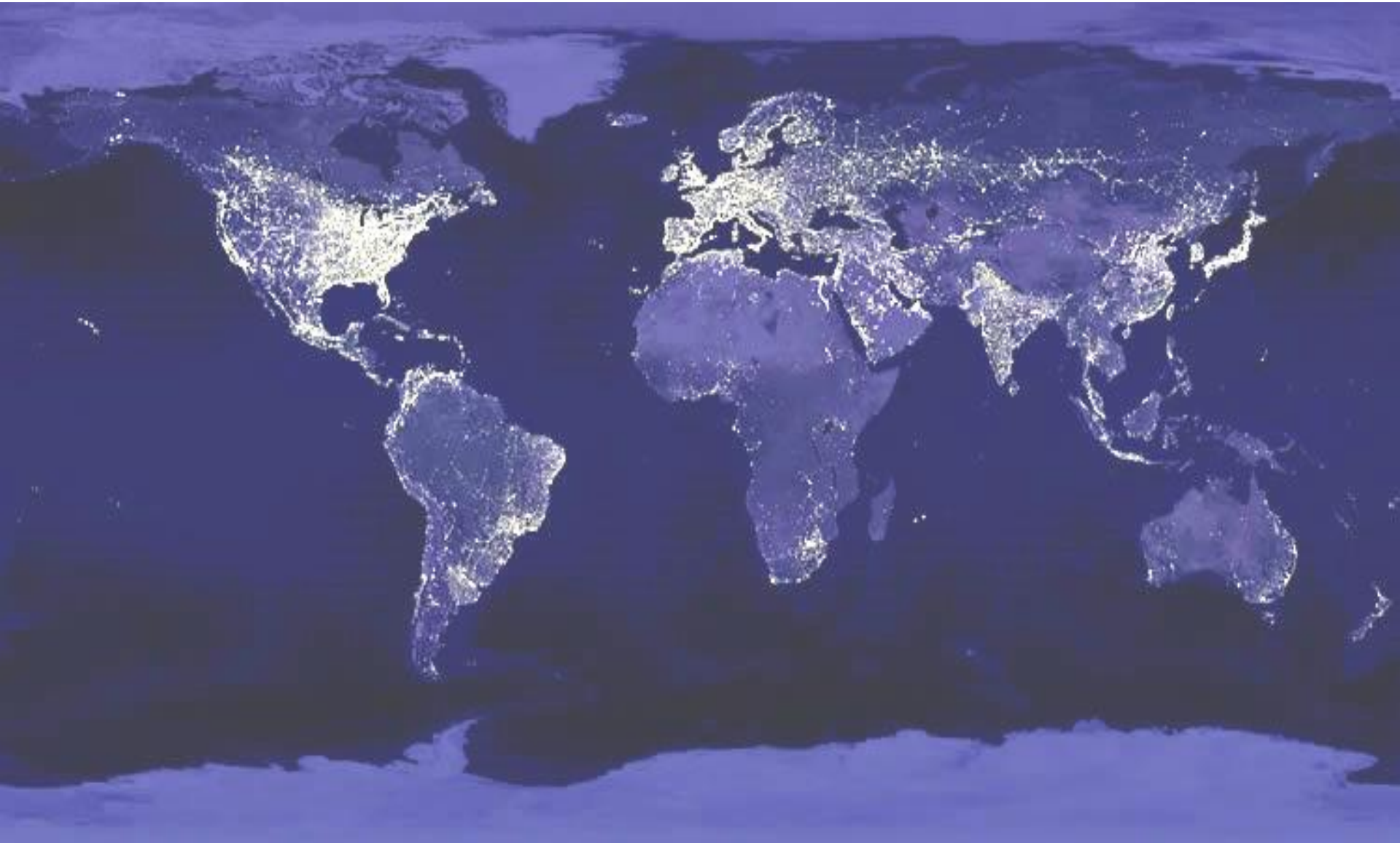


2000



2030

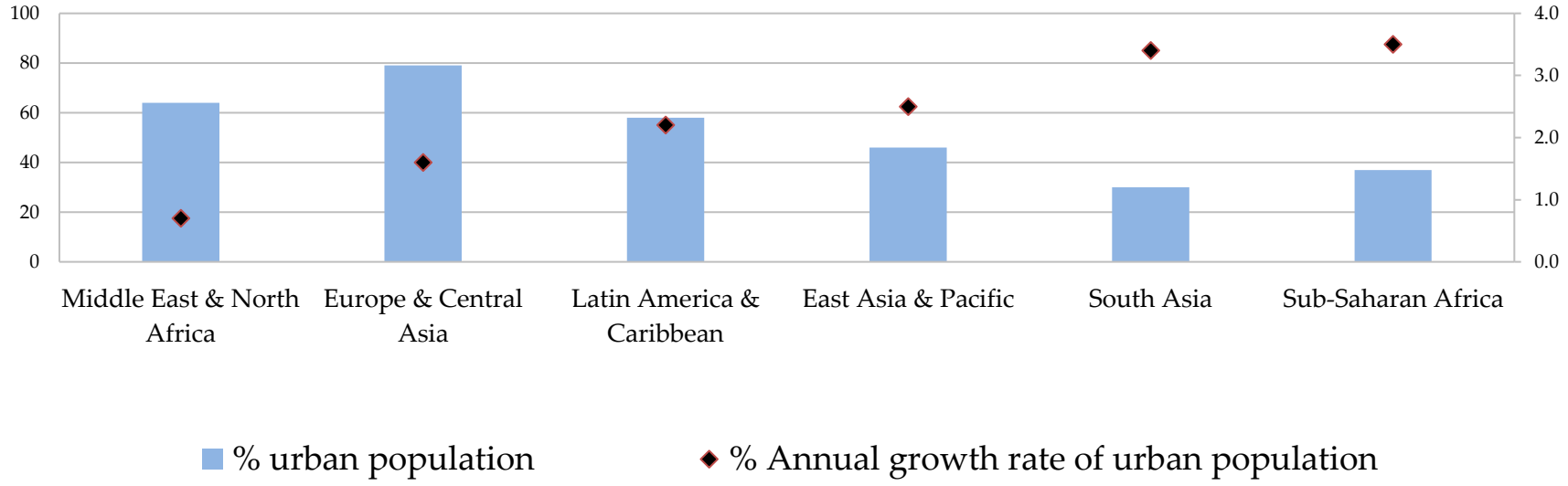
Where are the cities of the world?



LAMIC countries are varied

Low income		Lower middle income		Upper middle income		Total	
No of countries	No of cities	No of countries	No of cities	No of countries	No of cities	No of countries	No of cities
35	1757	56	5836	54	12392	145	19985

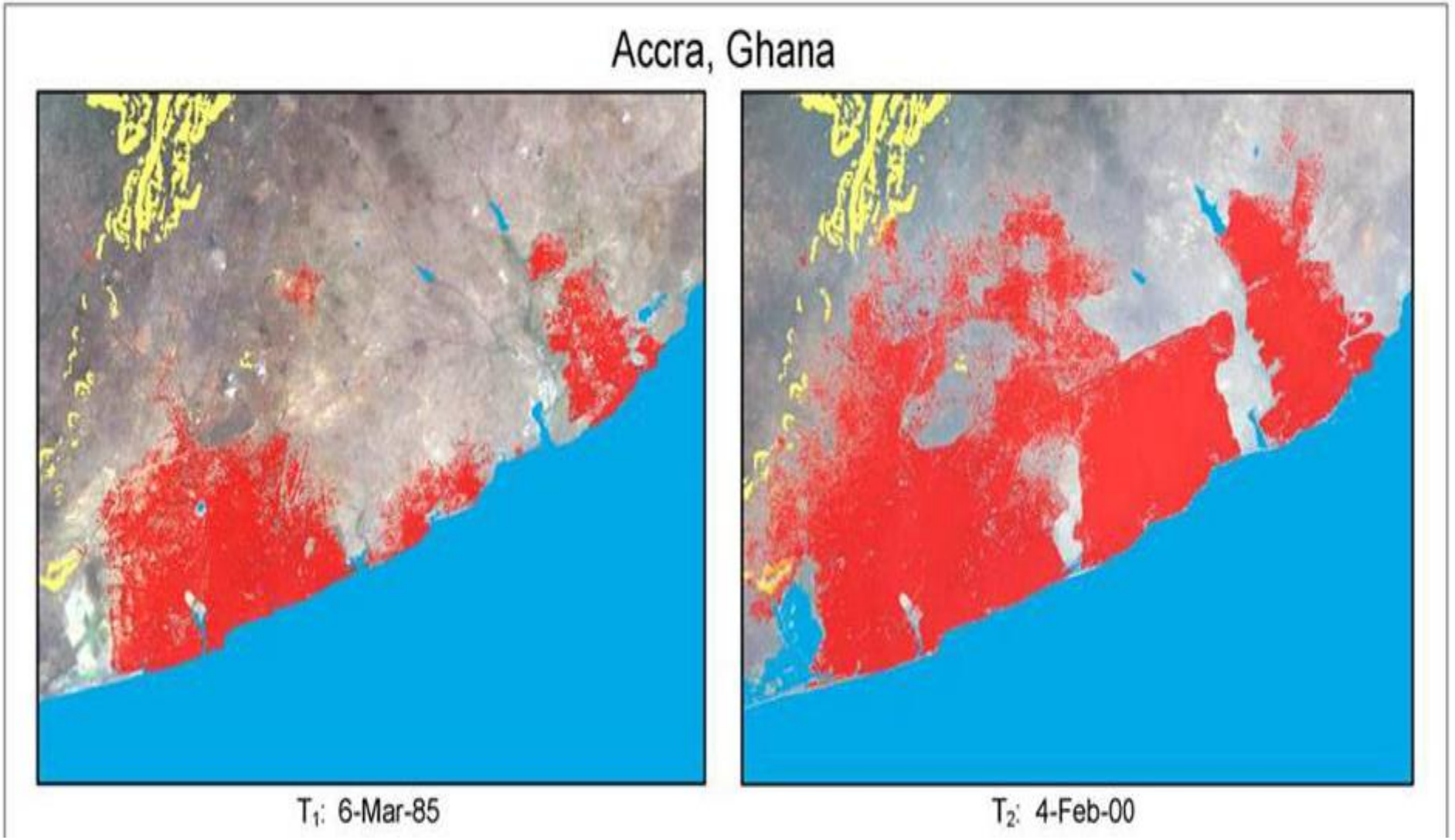
Urbanisation levels in LAMIC



Mehta M and D Mehta (2012), Preparation of Performance Assessment Manual for Water Supply and Waste Water Systems in LAMIC, draft

PLACES

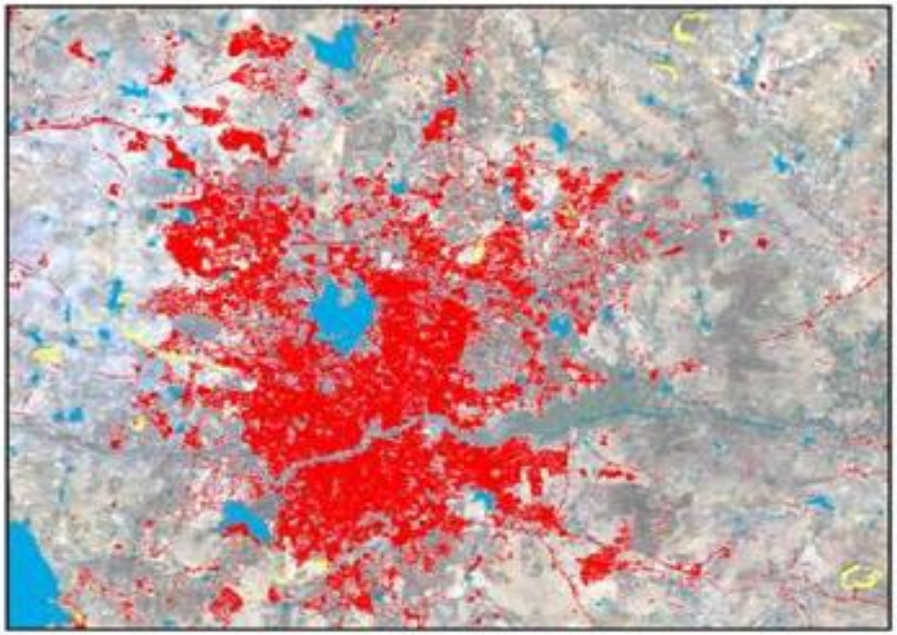
Spatial growth three times population growth



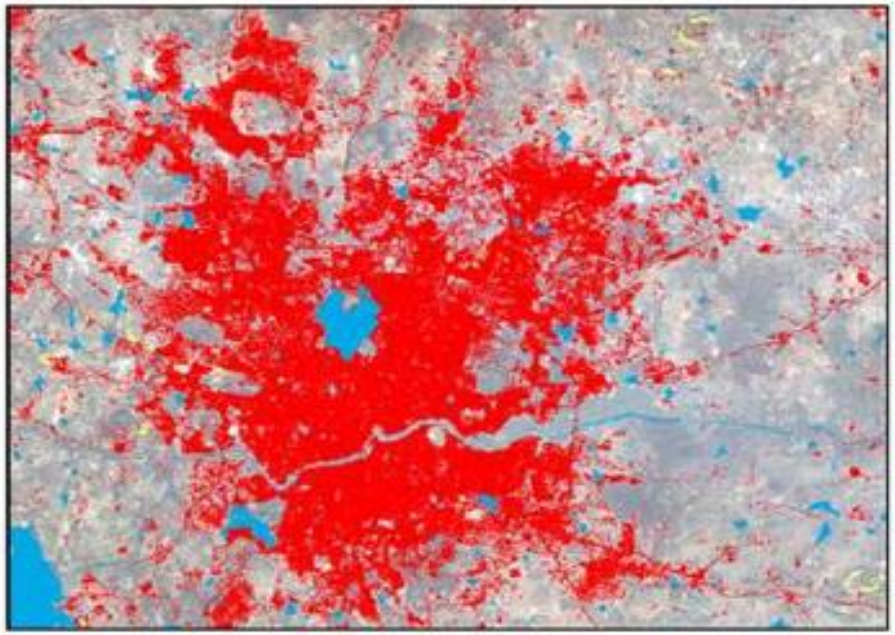
Angels, Schlomo (2005), Dynamics of Urban Expansion, Cities Alliance, World Bank

With expanding cities, infrastructure costs rise

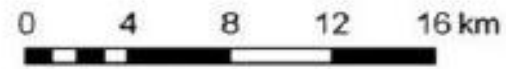
Hyderabad, India



T_1: 21-Nov-89



T_2: 29-Oct-01

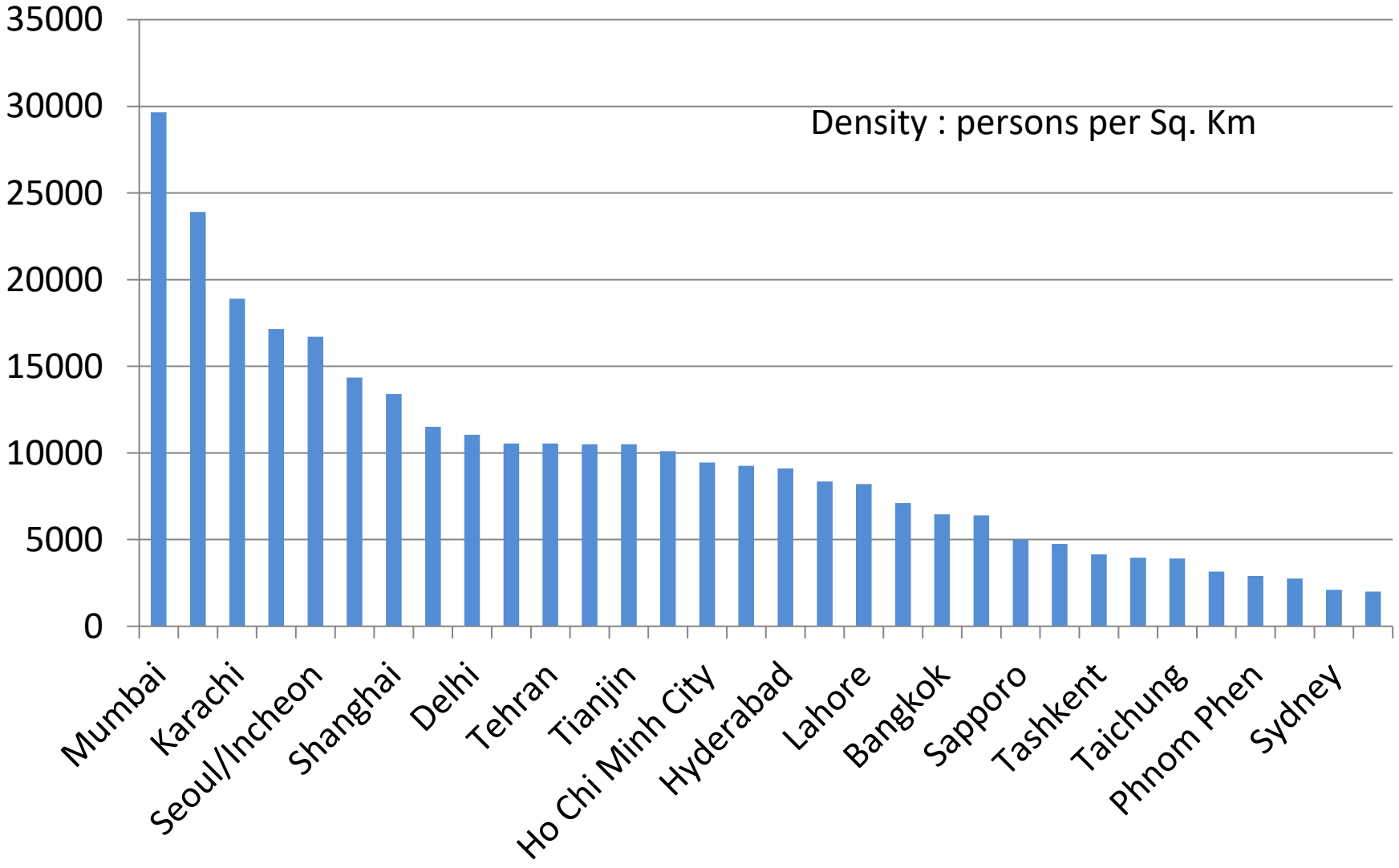


1:300,000

Measure	T_1	T_2	Annual % Change
Population	4,887,789	5,707,677	1.31%
Built-Up Area (sq km)	166.96	301.89	5.09%
Average Density (persons / sq km)	29,275.98	18,906.43	-3.60%
Built-Up Area per Person (sq m)	34.16	52.89	3.73%
Average Slope of Built-Up Area (%)	2.82	3.12	0.84%
Maximum Slope of Built-Up Area (%)	14.43	17.16	1.46%
The Buildable Perimeter (%)	0.94	0.93	-0.04%
The Contiguity Index	0.75	0.88	1.36%
The Compactness Index	0.37	0.38	0.22%
Per Capita Gross Domestic Product	$1,541.53	$2,343.04	3.57%

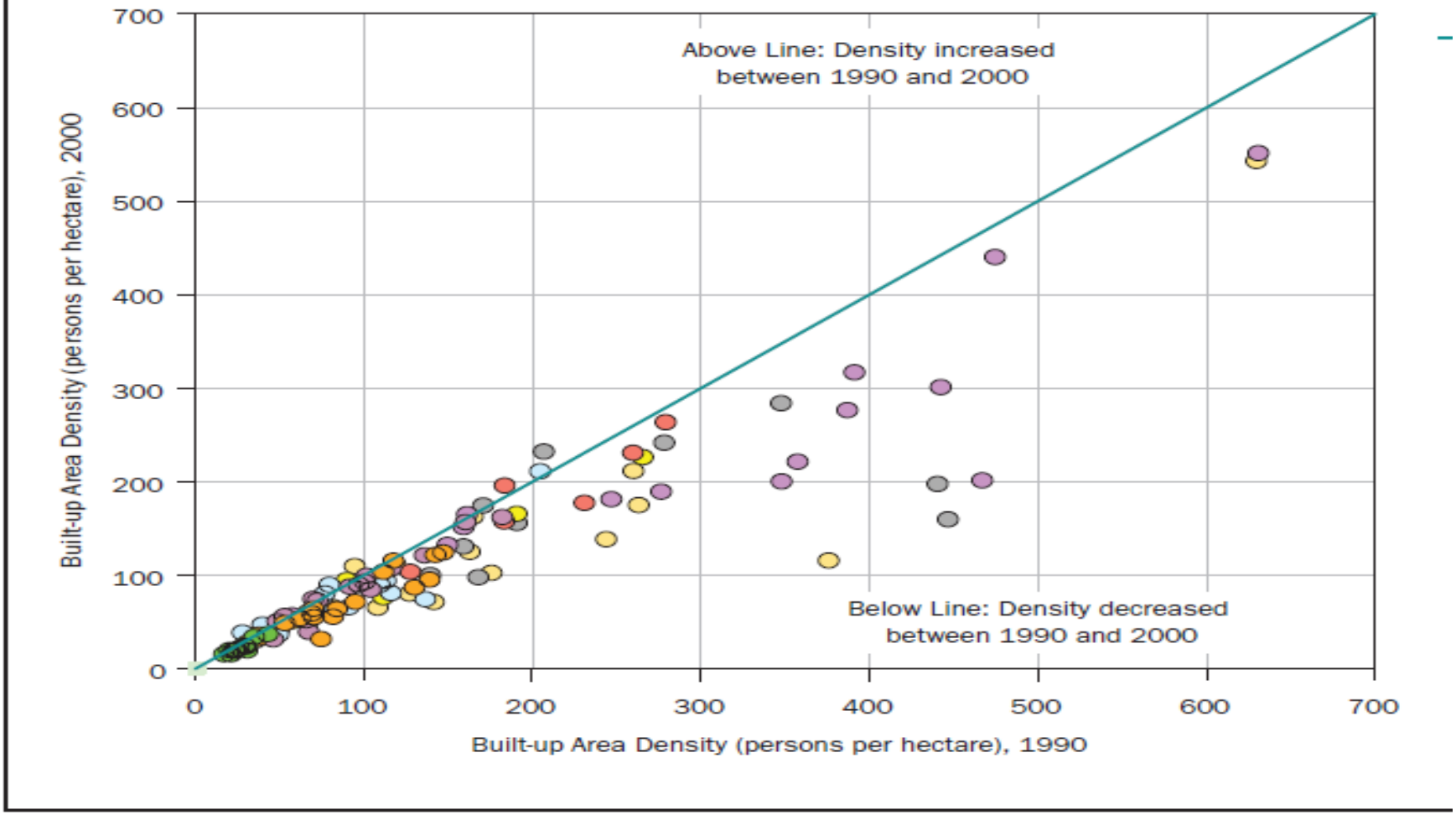
Angels, Schlomo (2005), Dynamics of Urban Expansion, Cities Alliance, World Bank

Cities have High Population Density



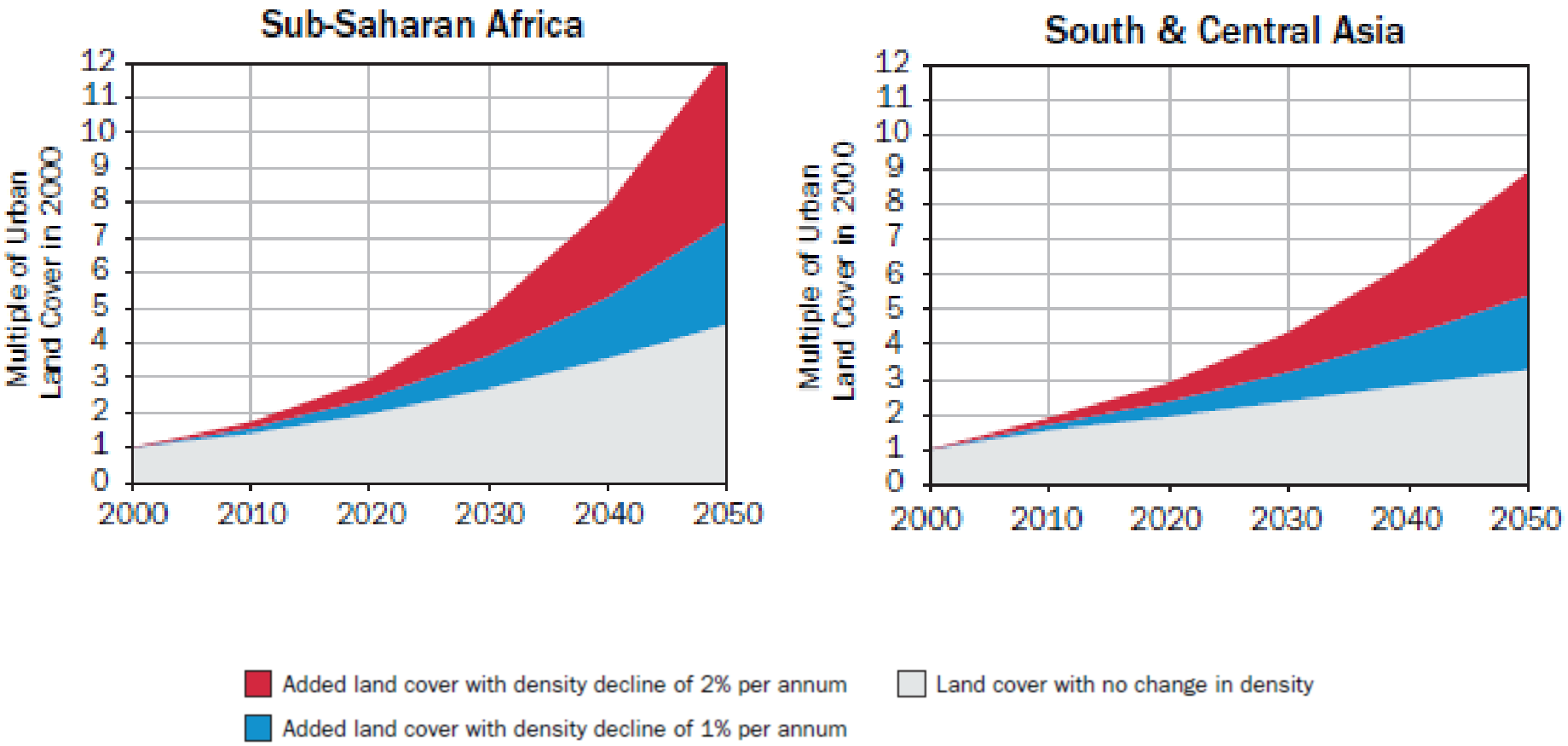
But the densities are declining

FIGURE 2.3
Density Decline in the Global Sample of 120 Cities, 1990–2000



Angles, Schlomo (2011), Making room for a planet of cities, Lincoln Institute of Land Policy

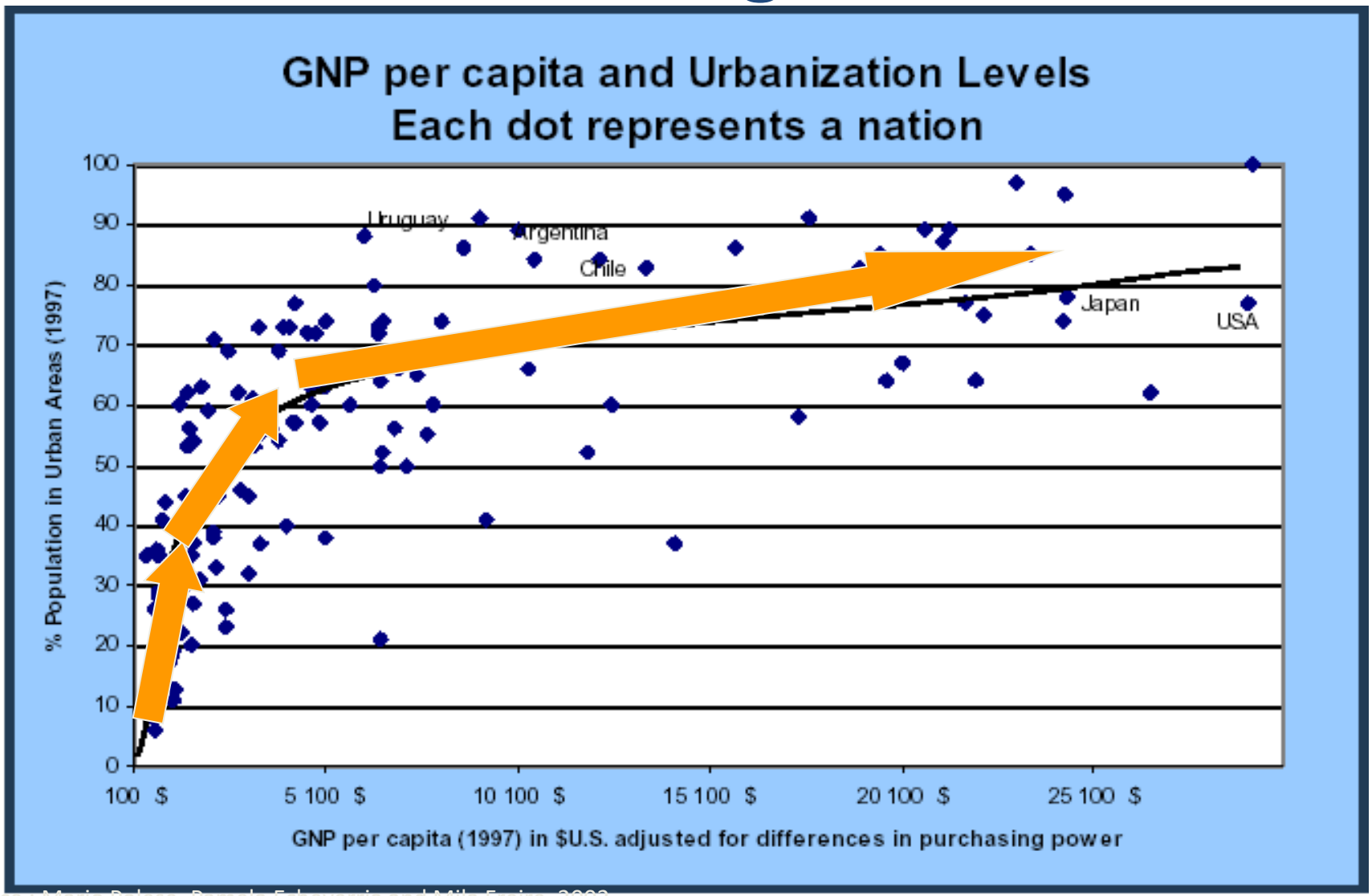
Large Urban land cover due to density declines



Angles, Schlomo (2011), Making room for a planet of cities, Lincoln Institute of Land Policy

PROSPERITY

Urbanisation is the trigger for economic growth



Source : Mario Polese, Pamela Echeverria and Mila Freire, 2002

Prosperous cities

McKenzie Global Institute, (2013) Urban World: Mapping the Economic Power of Cities

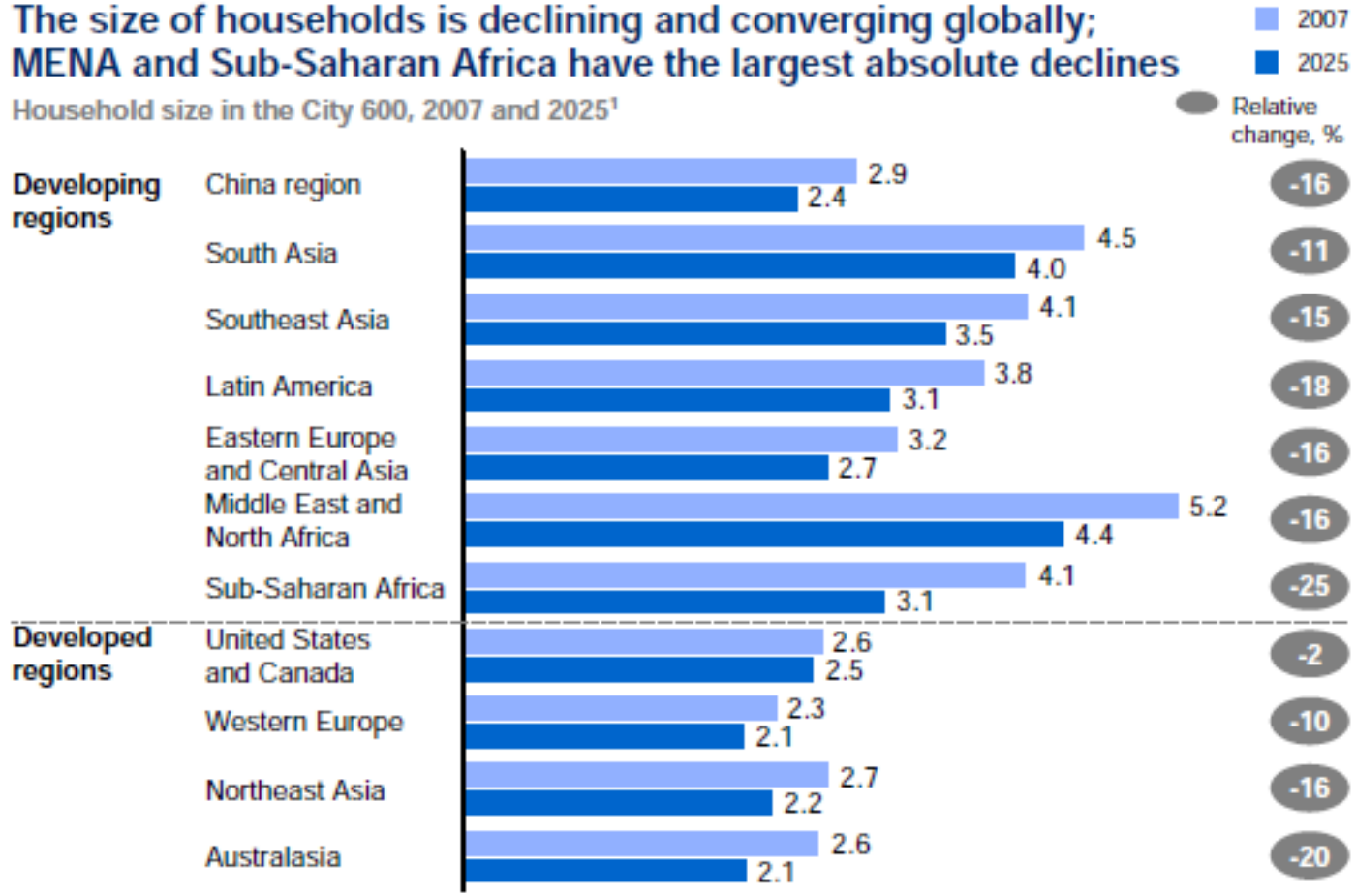
Declining Household Size :

More demand for Housing and related infrastructure

Exhibit 16

The size of households is declining and converging globally; MENA and Sub-Saharan Africa have the largest absolute declines

Household size in the City 600, 2007 and 2025[1]

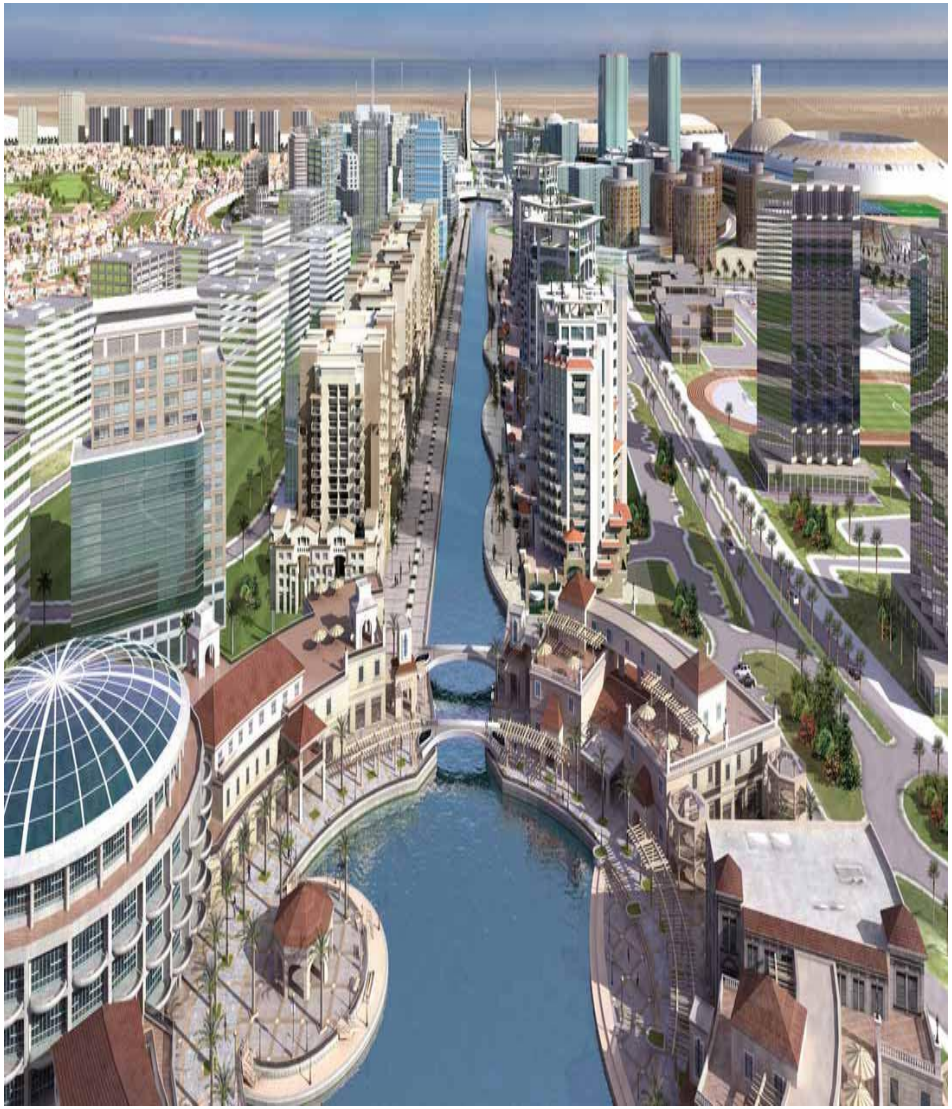


1 Household size calculated by taking the simple average of the household size of all cities within a region.
NOTE: Numbers may not sum due to rounding.

SOURCE: McKinsey Global Institute Cityscope 1.0

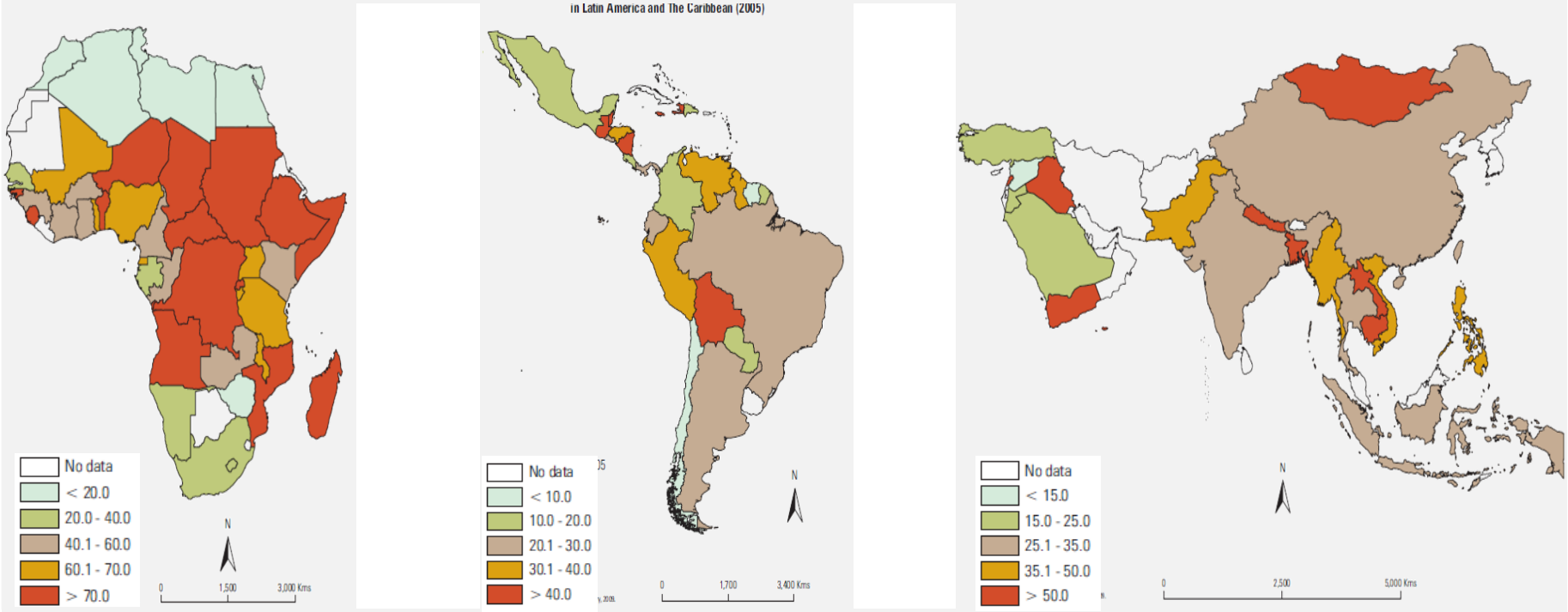
POVERTY

it is an unequal world



Poverty levels and slums in LAMIC

Slum proportion of select countries in Africa, Latin America and Asia



Source: UN-HABITAT, Global Urban Observatory, 2009

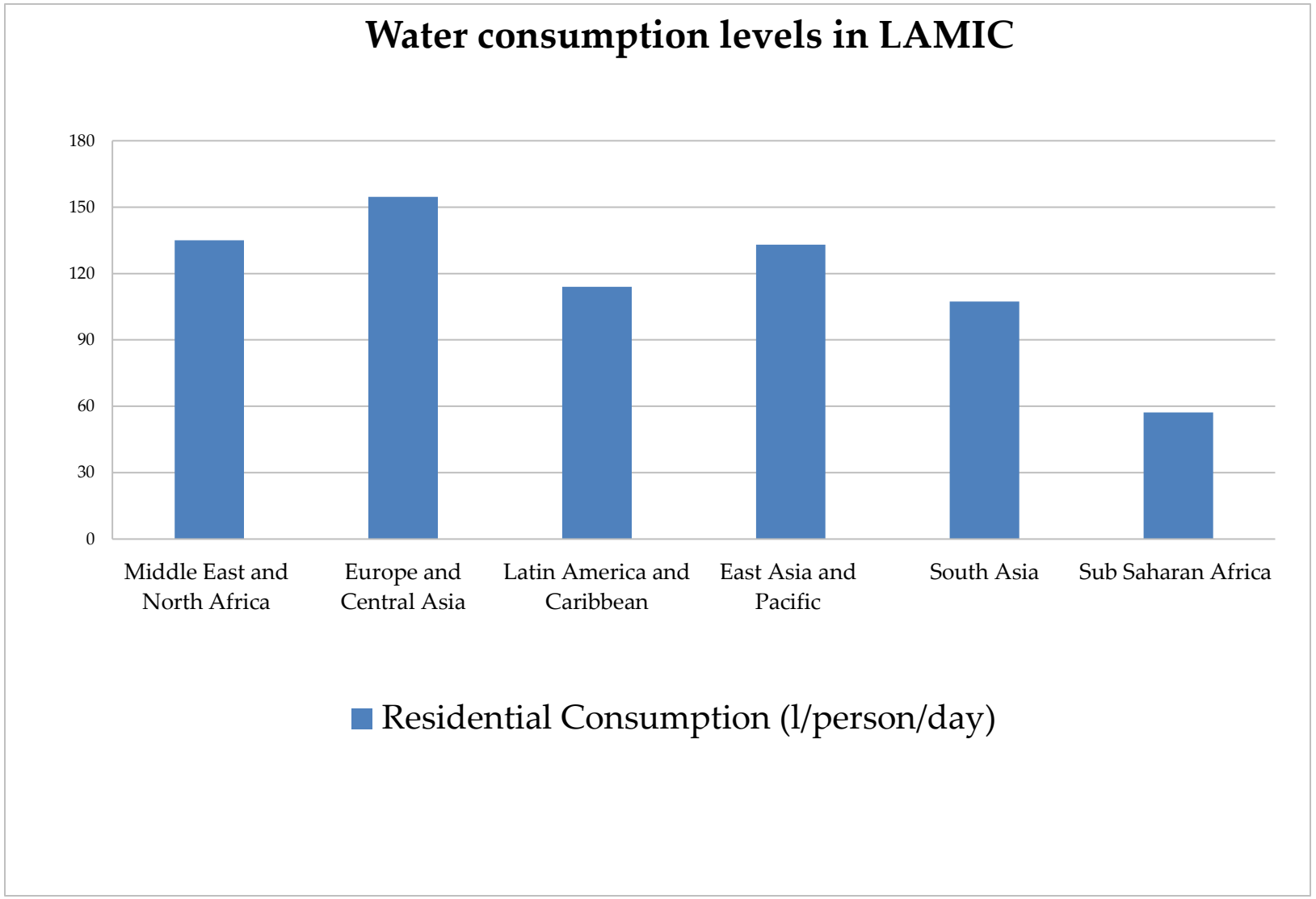
- Regions of ECA, LAC and MENA have between **14 to 20% of their urban population residing in slums**

- Role of **small service providers and affordability** assume significance in this context

The poor are more vulnerable

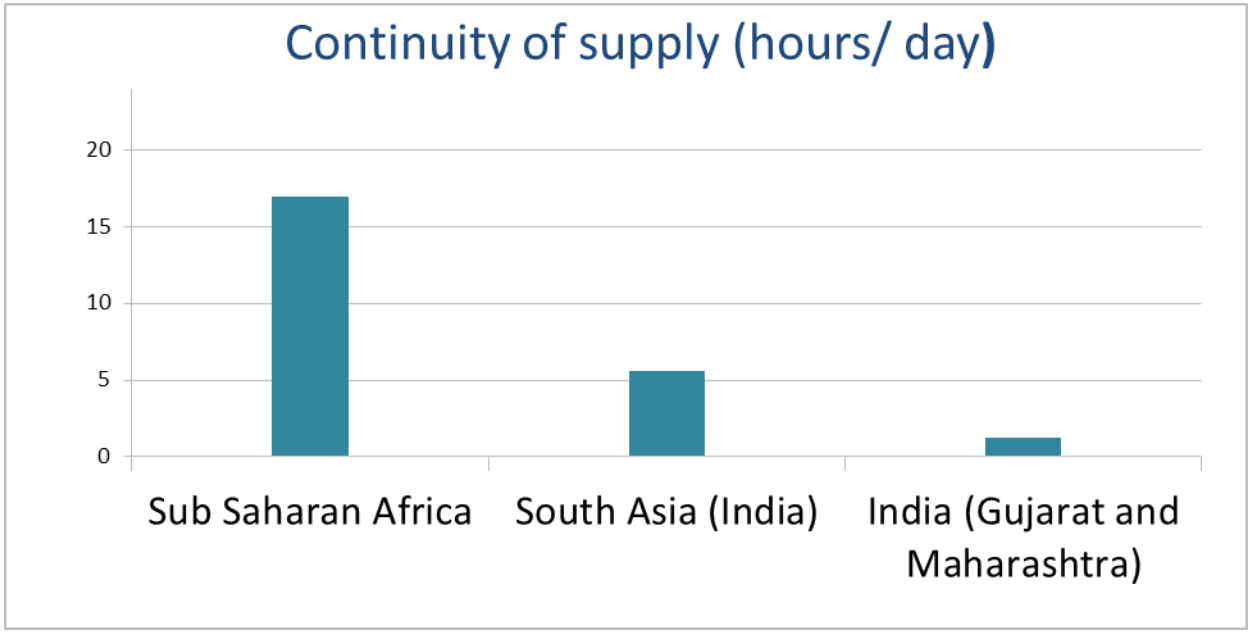
Informal settlements on the bank of a canal in Manila, Philippines. ©Shadow216/Shutterstock

Critical areas of services in LAMIC: Service levels



Mehta M and D Mehta (2012), Preparation of Performance Assessment Manual for Water Supply and Waste Water Systems in LAMIC, draft

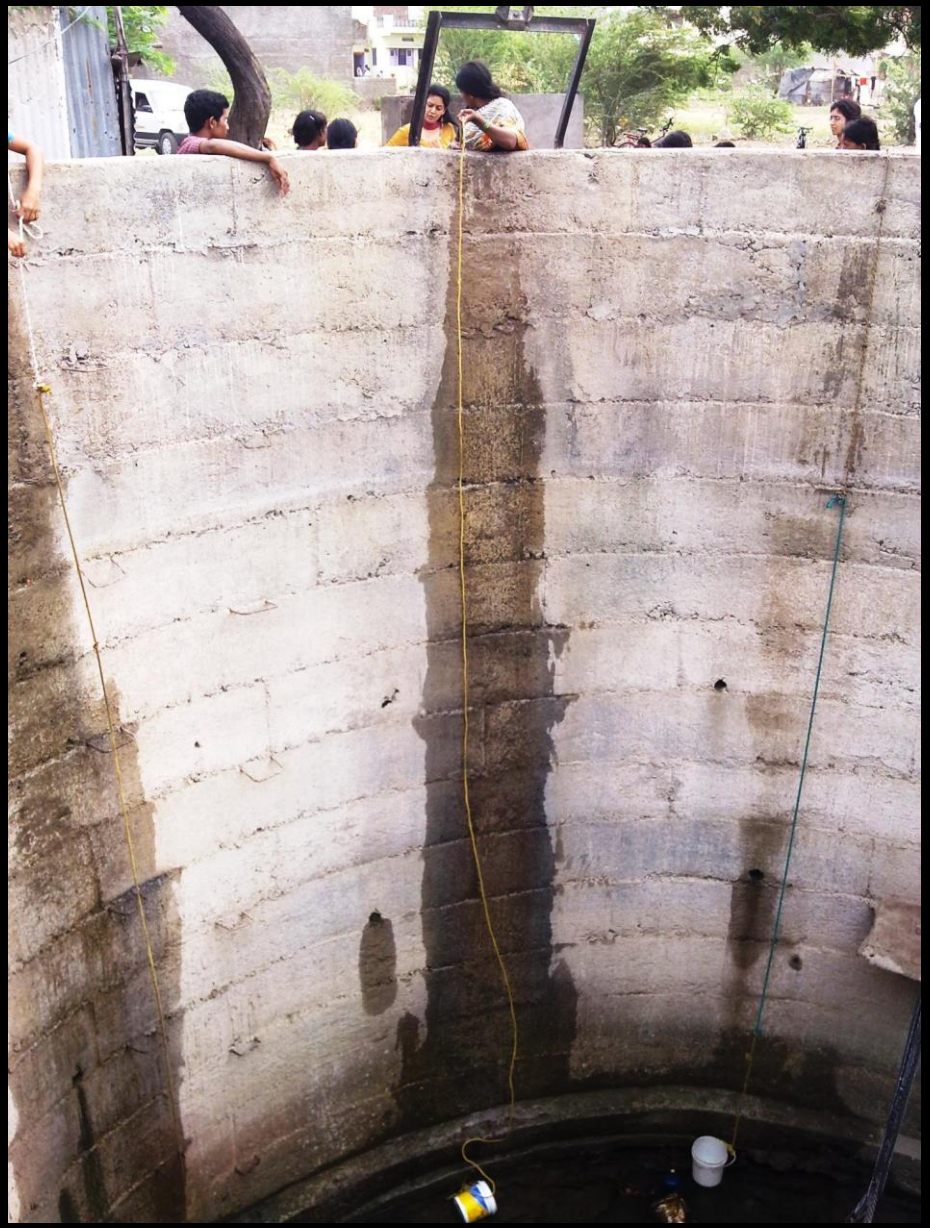
Critical areas of services in LAMIC: Service levels



Days of Supply in a Month

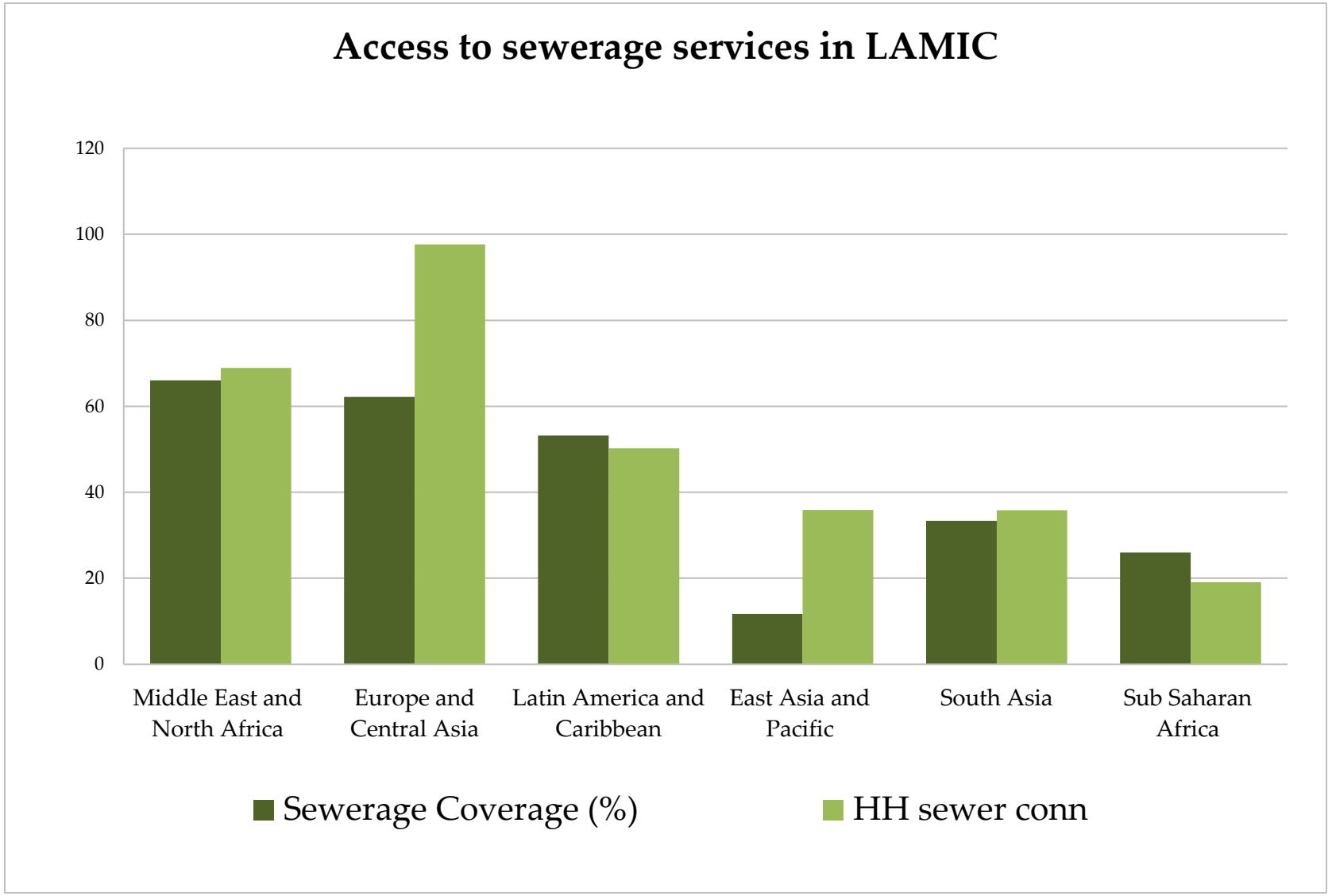
No of days of water supply	No of cities			
	2009 - 10	2010 -11	2011 -12	2012-13
0 -7	8	8	5	4
7 - 15	13	13	14	25
15	46	45	46	37
15 - 30	7	7	6	4
30	91	92	95	97

NON WATER DAYS…



THE ‘WATER DAY’

Critical areas of services in LAMIC: Sanitation coverage

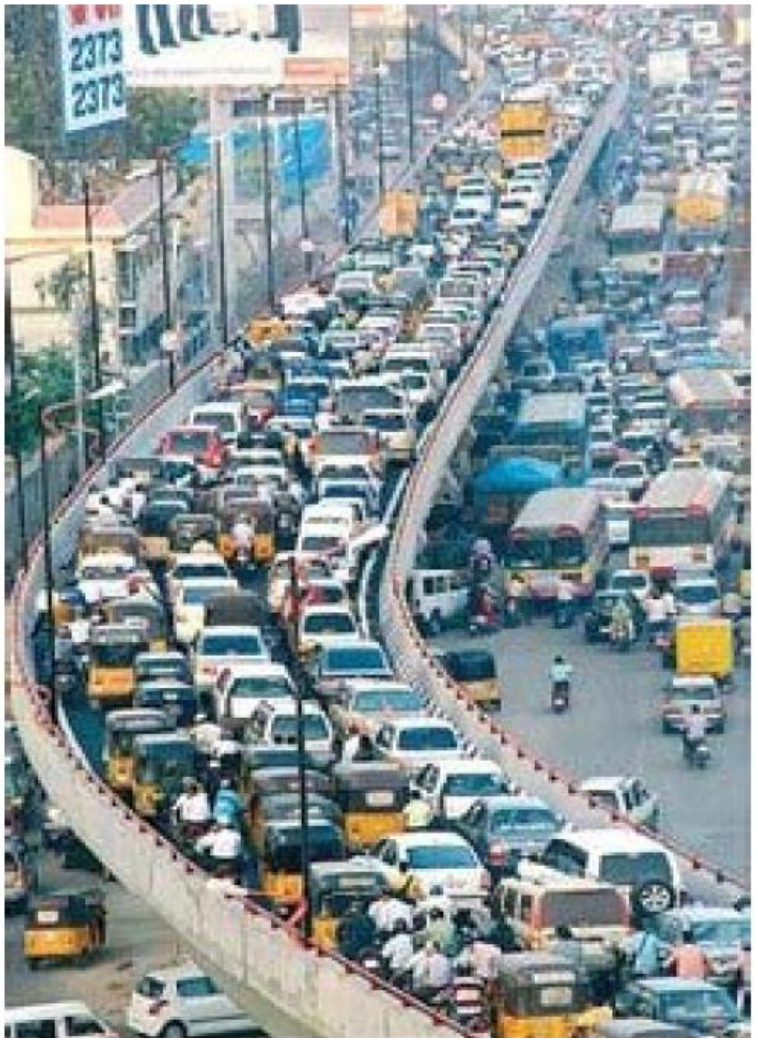


Mehta M and D Mehta (2012), Preparation of Performance Assessment Manual for Water Supply and Waste Water Systems in LAMIC, draft

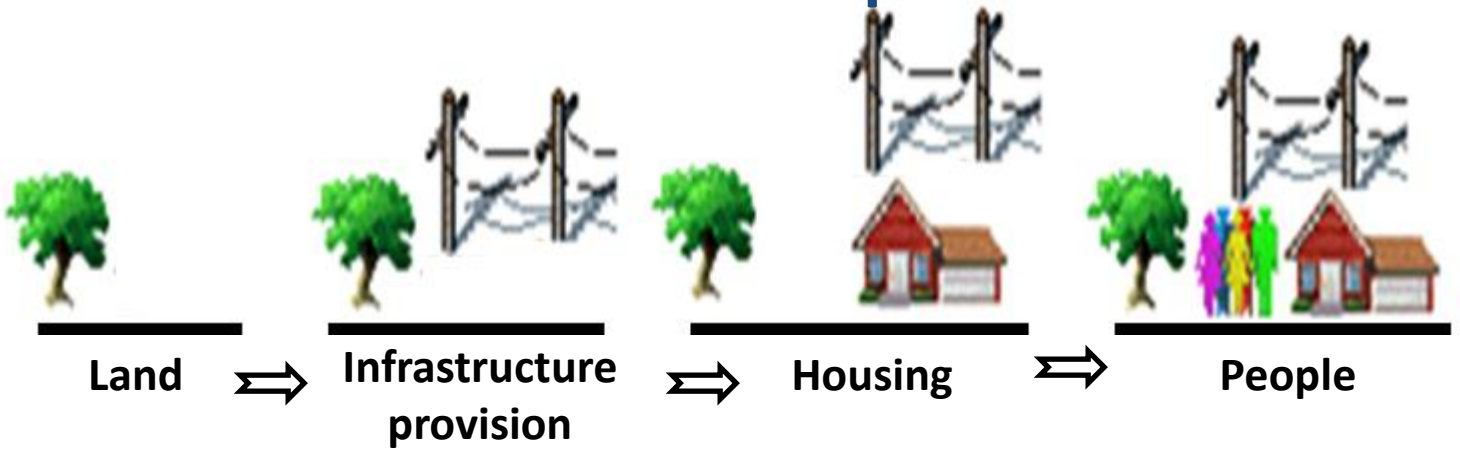
Urban Planning and Challenges of WATSAN

Urban planning dominated by transportation

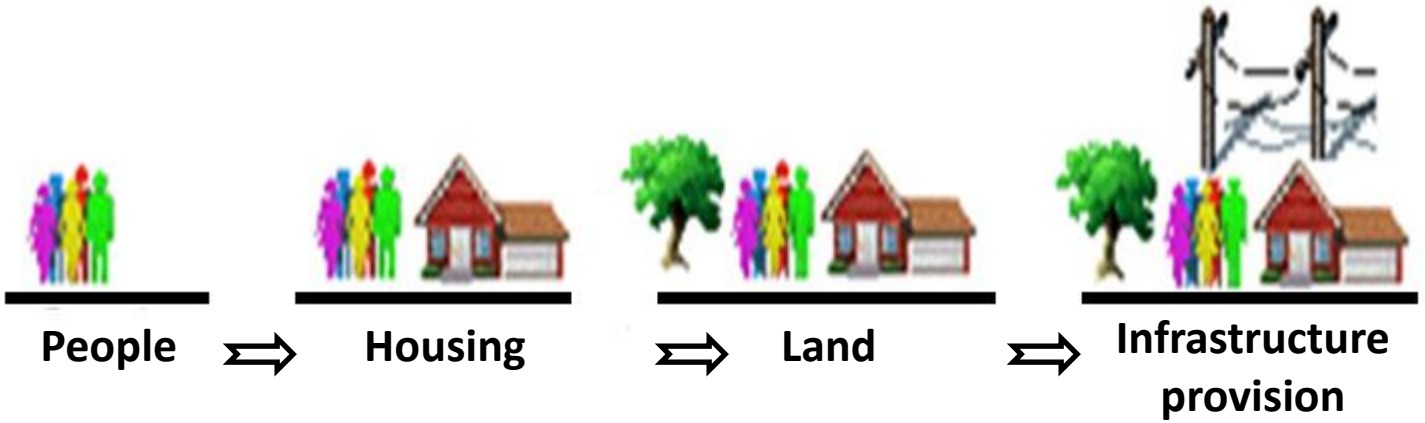
- Land use and transport planning is of paramount concern of planners
- Moving people is more important than serving people with basic services
- It is assumed that all infrastructure will follow roads
- But that is not always the best for water and sanitation systems



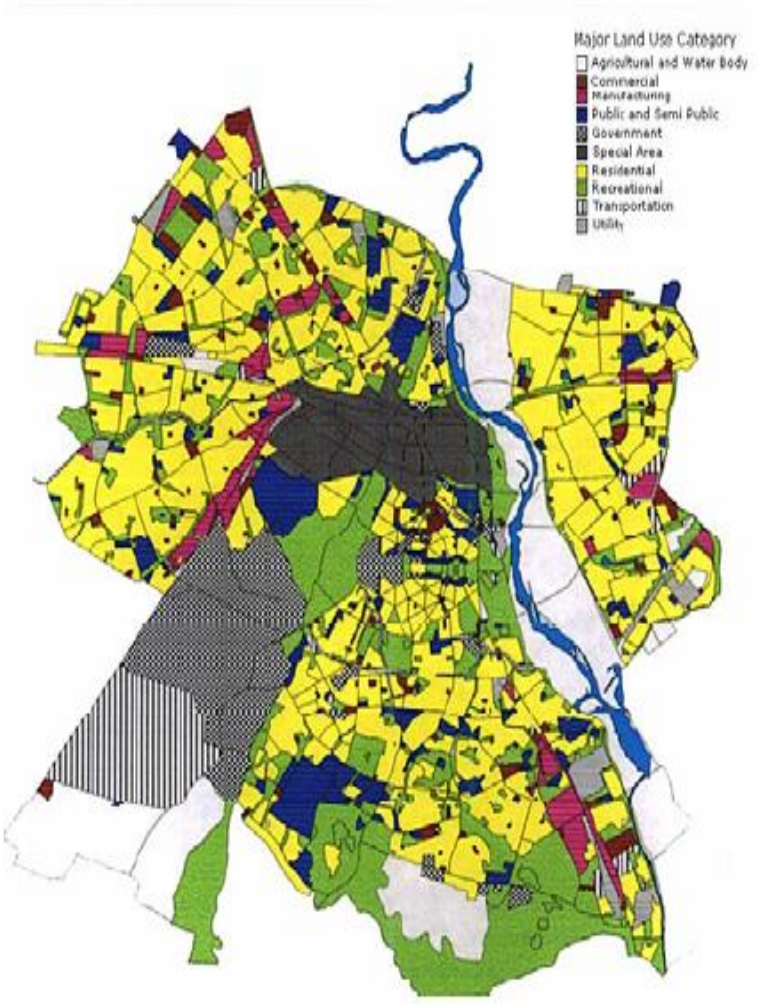
Formal Process of Urban Development



Informal Process of Urban Development



Planning and the Poor : Anti-Poor bias in Planning

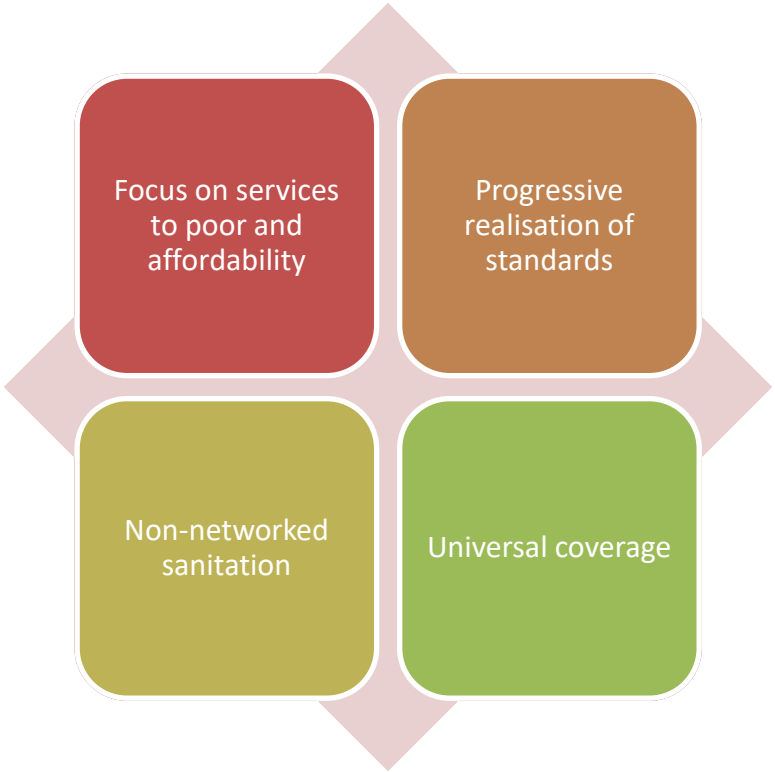


- Urban planning pre-occupied with land and its use
- Vision to make world-class cities only include the non-poor

Why do the poor have no place in our planning?

- Slums have 20-25% of population but use less than 3 percent of land
- The poor do not have title over land and hence are not a part of the planning process

Key focus areas – developed countries versus LAMIC



Themes adopted by major utilities in developed countries

Key focus areas in developing countries

- WATSAN provision in **developed countries** more focused towards
  - Water resources and quality
  - Financial management
  - Customer satisfaction
  - Sustainability

- In **developing countries'** context, focus would also need to include
  - progressive realization of improved standards
  - Universal coverage„
  - Access to sanitation facilities and non-sewered contexts
  - Service delivery to urban poor and affordability

Informed decision making for planning and investment

- Aggregate statistics suggest good coverage of water and sanitation in urban areas
- BUT little is known about the **quality, level and financial sustainability of service**

Need to move from laying pipes to delivering water

PAS

Performance Assessment System

Annual Service delivery profile for 419 Cities in 2 States

covering 32 Key indicators and

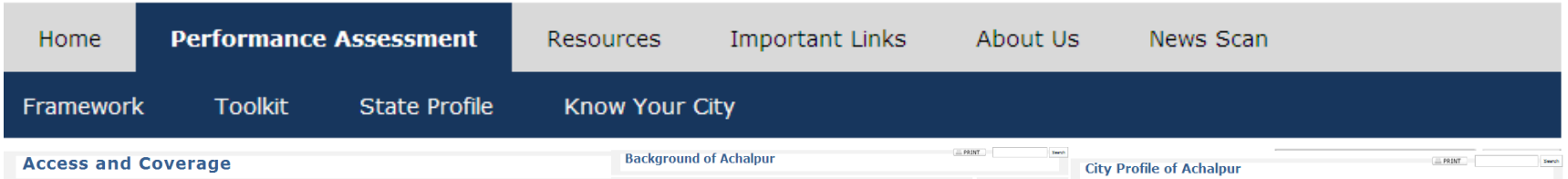
www.pas.org.in

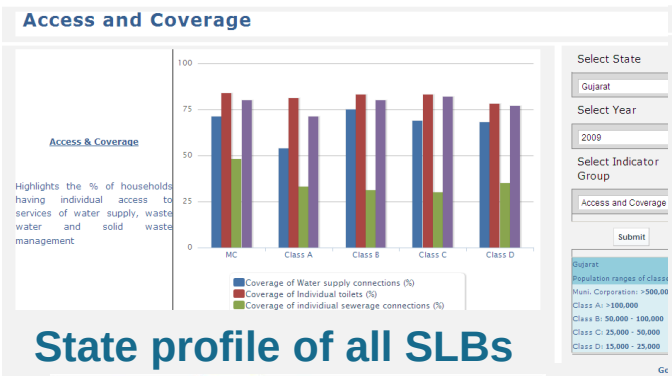
90 local action indicators

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

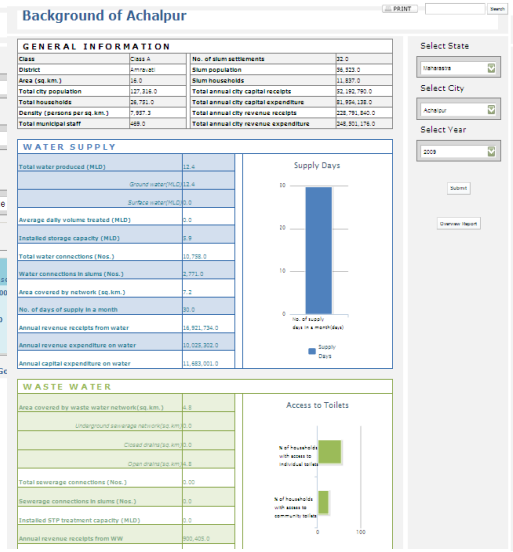
Focus on **Measurement, Monitoring & Improvement**

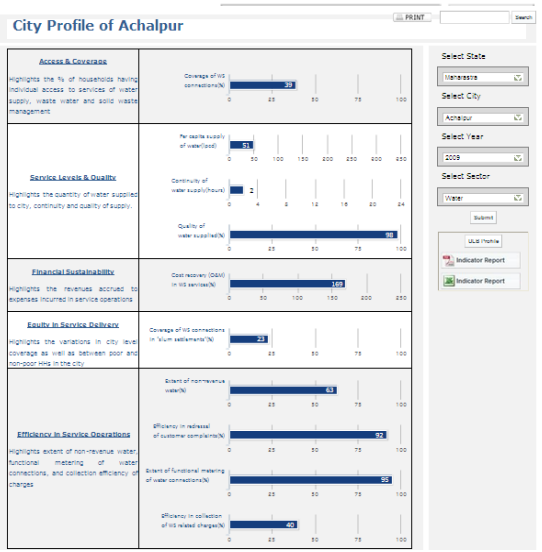
Online Monitoring





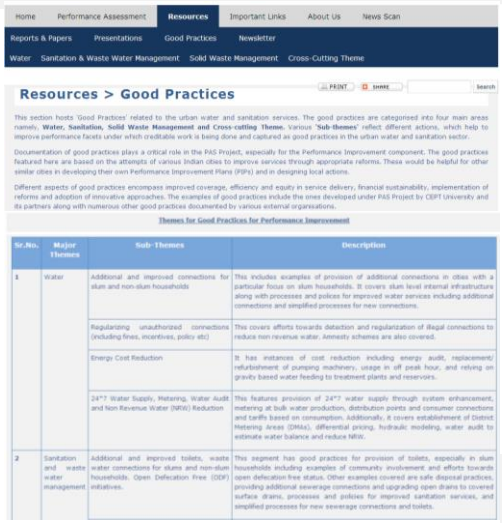
State profile of all SLBs





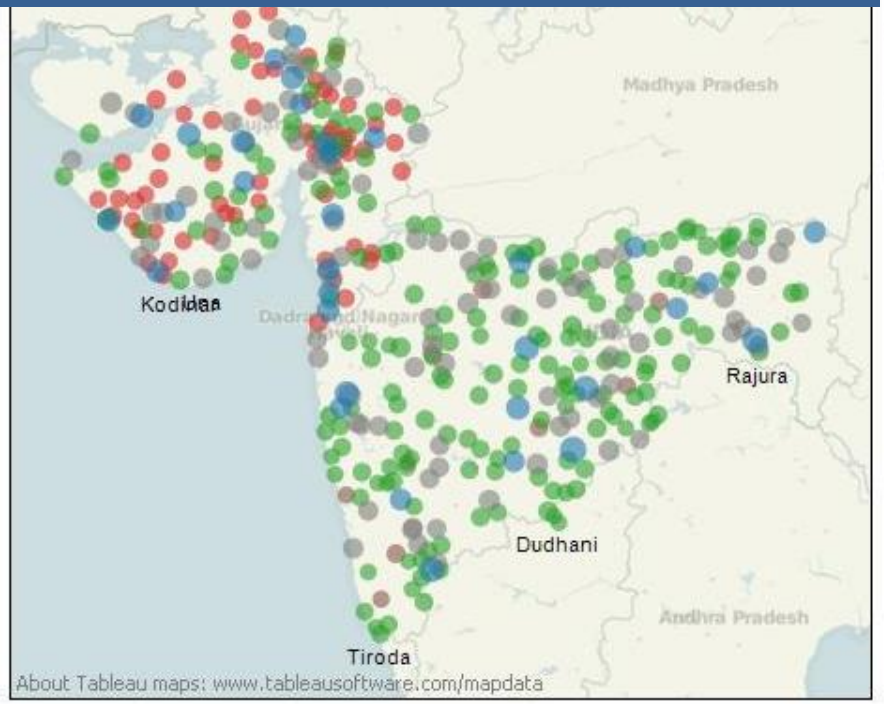
Overview of all cities

City profile of all SLBs



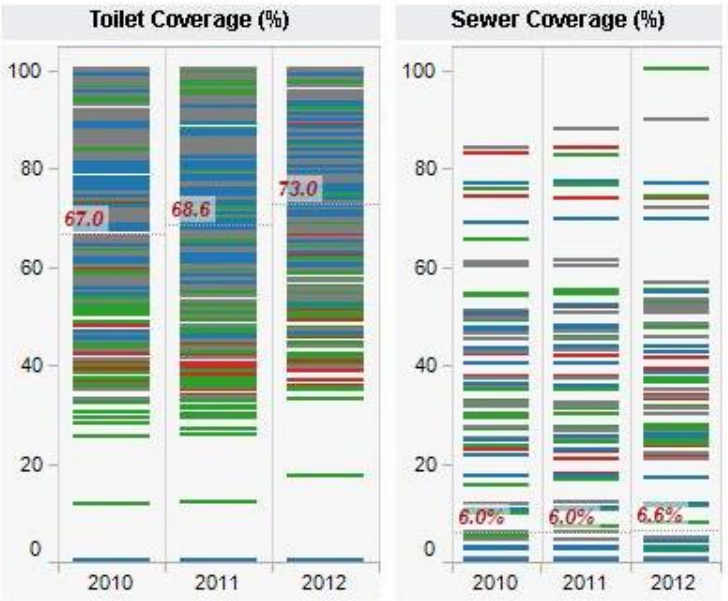
Documentation of good practices

SANITATION IN SMALL TOWNS



Class: A, B, C, D, NP

Key Wastewater Indicators

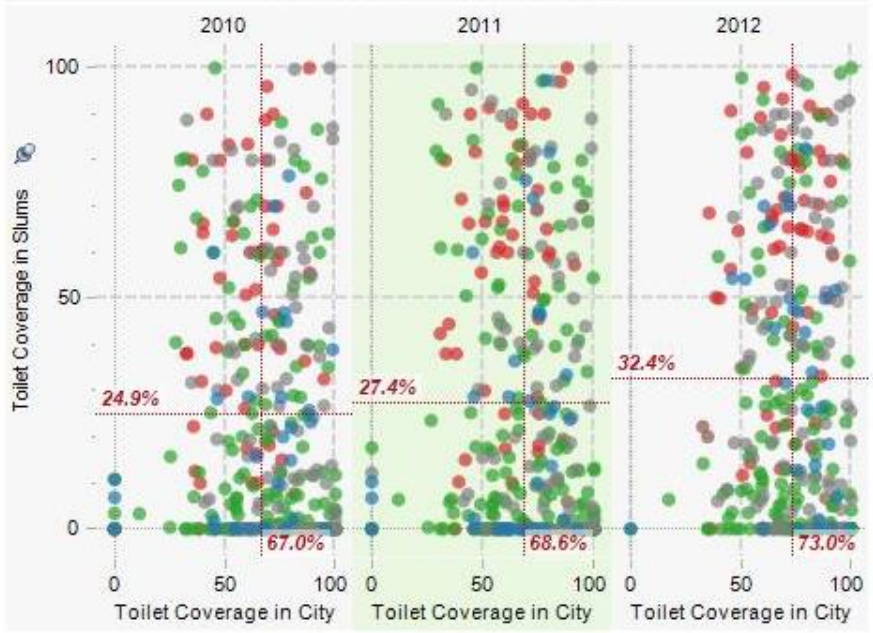


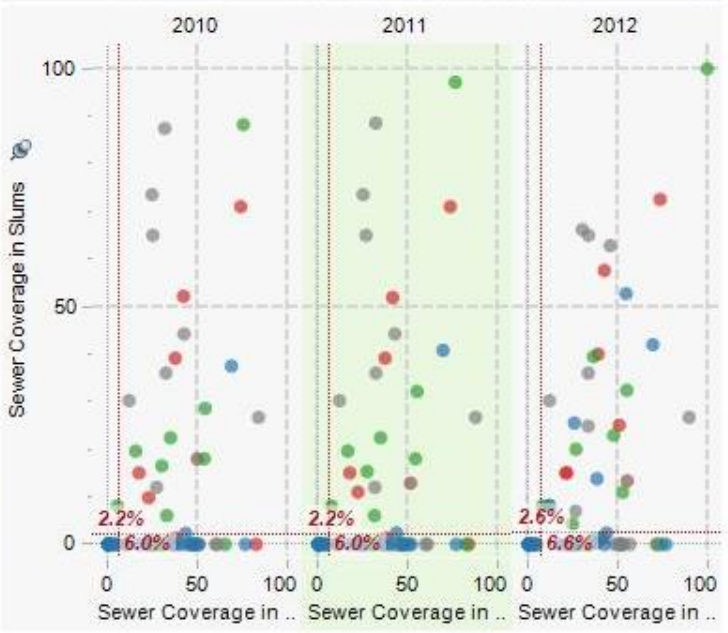
State: (All)

Legends: A, B, C, D, NP

Class Filter: (All), MC, A, B, C, D, NP

Population: ≤ 15,283; 2,000,000; 4,000,000; 5,667,511

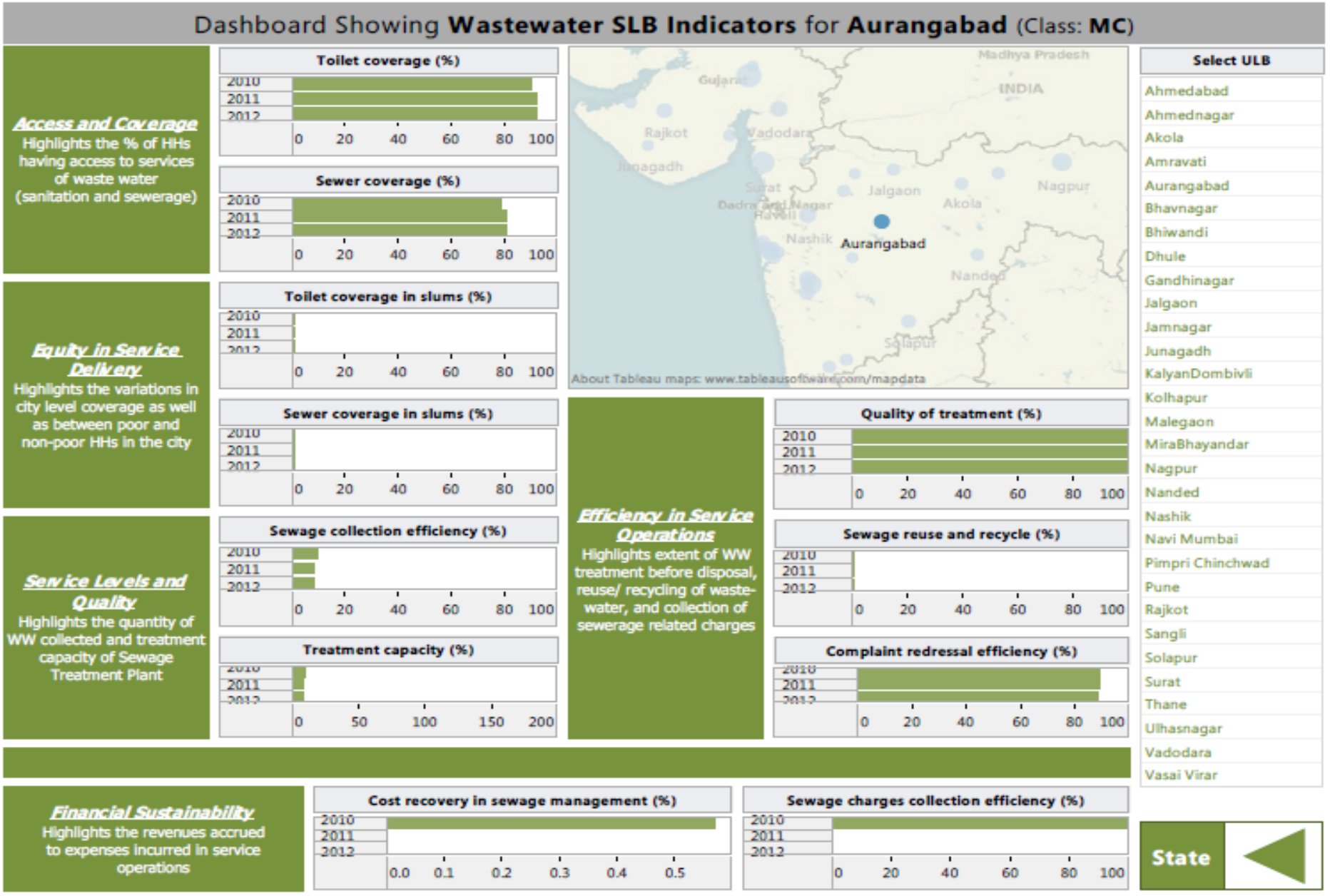




Select ULB

- Achalpur
- Ahmadpur
- Akkalkot
- Akot
- Alandi
- Alibagh
- Amalner
- Ambad
- Ambajagai
- Ambernath
- Amod
- Amreli
- Anand
- AnjangaonSurji
- Anjar
- Anklav
- Ankleshwar

City level dashboard



REACHING OUT TO THE POOR

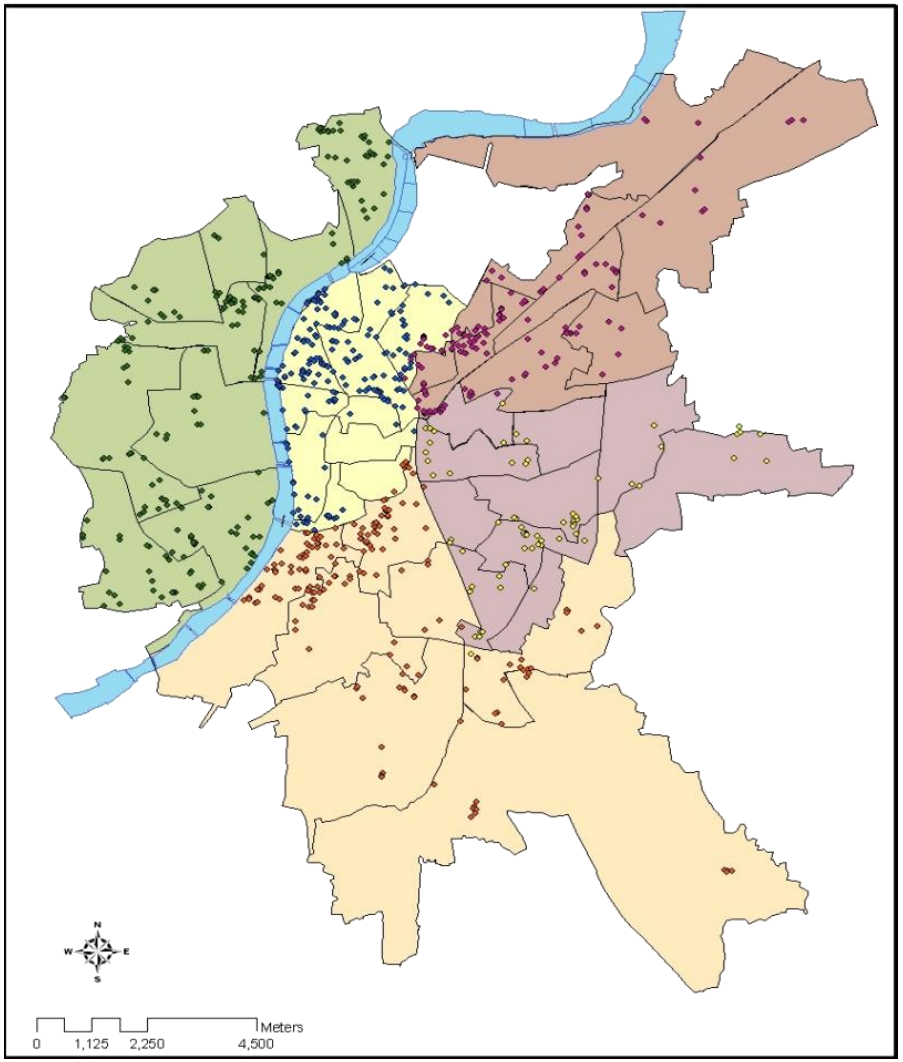
Access to water and sanitation for the poor

Support to the Ahmedabad municipal Corporation for using improved slum information to achieve universalization of household level water and sanitation services

•Slum information system on a GIS platform

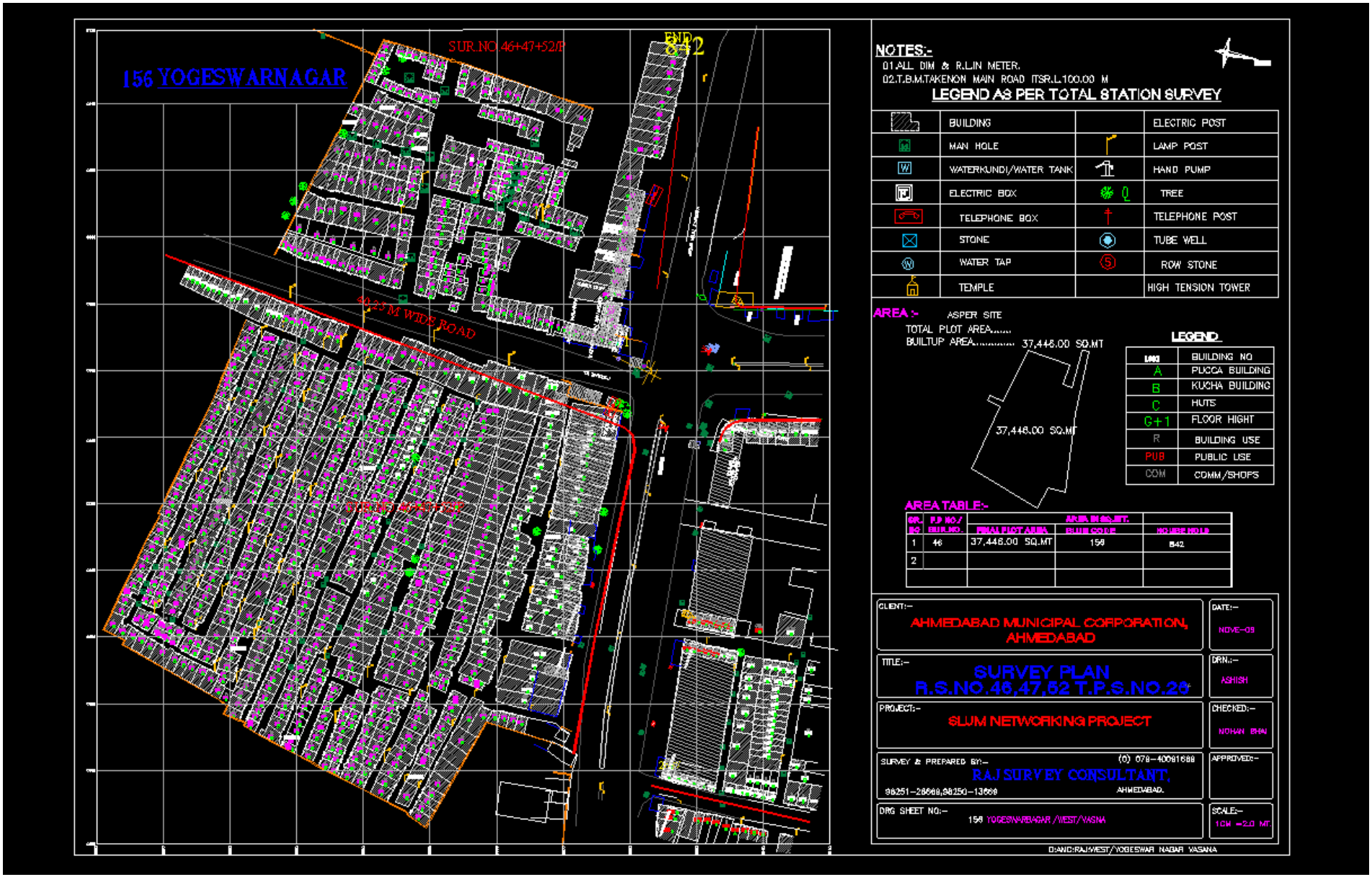
•Use of GIS tools to support decisions and strategy development

•Financial model to support policy choices on technology, cost sharing, implementation packaging by size and service levels



Ahmedabad – population 6.0 million; slum population approx. 1.2 million

Total Station Survey of all Slums



Demonstration: GIS Based MIS for Slums: Jadiba Nagar

Web enabled GIS based module linked with intranet

Source: Preliminary Survey Result of Biometric & Total Station Survey, AMC, 2010

Thank You….

www.pas.org.in

dineshmehta@cept.ac.in