ARC – 590 SMART CITIES

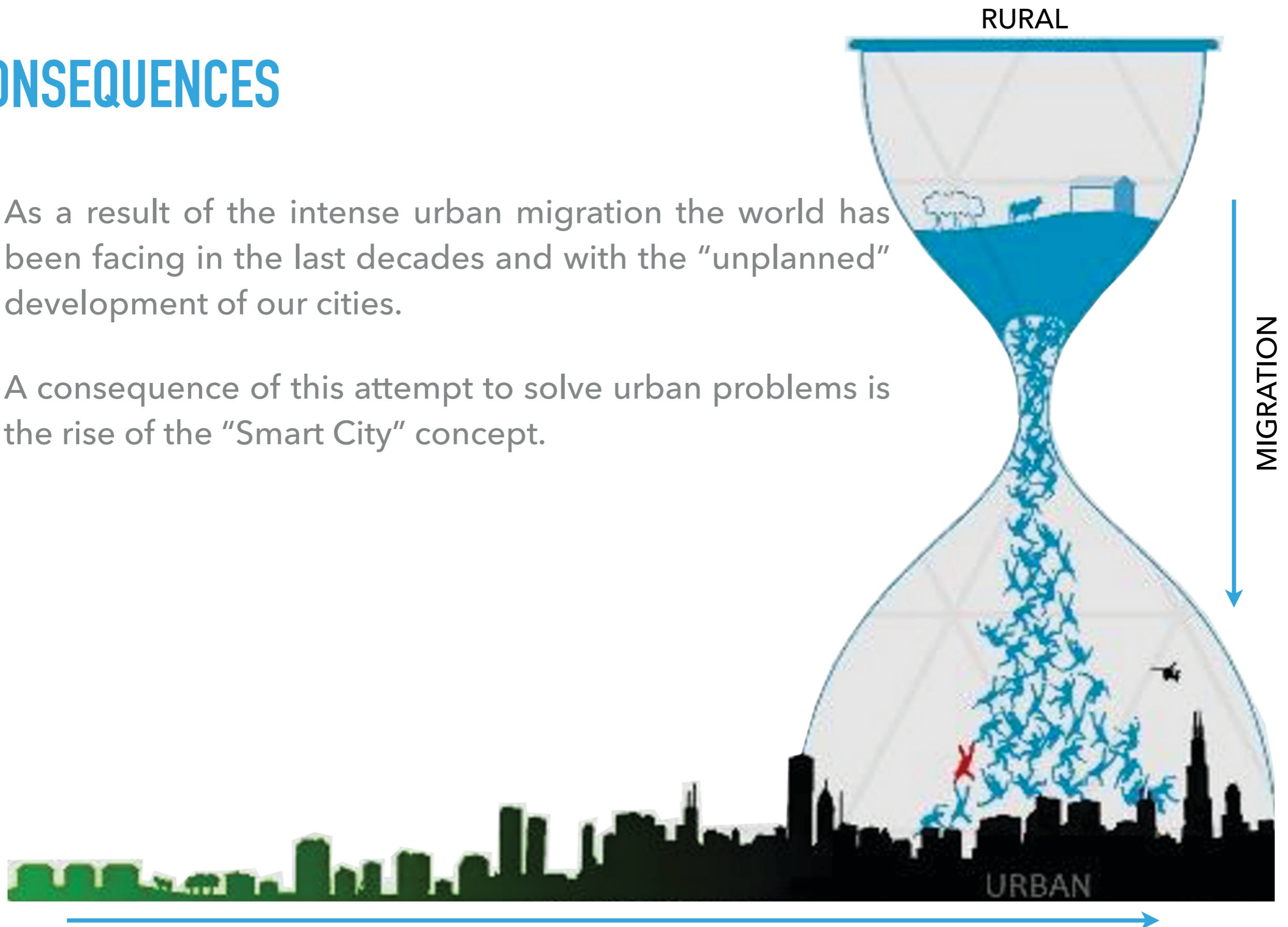# URBANIZATION

▸ Cities are engines of growth for the economy of every nation.

▸ Urbanization is not merely a modern phenomenon, but a rapid and historic transformation of human social roots on a global scale, whereby predominantly rural culture is being rapidly replaced by predominantly urban culture

ARC 590 - SMART CITIES

CONSEQUENCES

▸ As a result of the intense urban migration the world has been facing in the last decades and with the "unplanned" development of our cities.

▸ A consequence of this attempt to solve urban problems is the rise of the "Smart City" concept.

RURAL

MIGRATION

URBAN

WHAT IS A 'SMART CITY'?

▸ A city equipped with basic infrastructure to give a descent quality of life, a clean and sustainable environment through application of some smart solutions.

▸ A smart city is an urban development vision to integrate information and communication technology and internet of things technology in a secure fashion to manage a city's assets.

▸ A smart city is promoted to use of urban informatics and technology to improve the efficiency of services.

▸ Around the world old cities have been retrofitted and some brand new cities are being built on greenfield land, fully planned and oriented to be smart from their first draft plans.

▸ These huge projects are getting global attention and attracting talented professionals, large corporations and massive investment.

CHARACTERISTICS OF SMART CITY

▸ Major technological, economic and environmental changes, aging populations, urban population growth and pressure on public finances have generated interests in smart cities.

▸ Smart city uses information technology to:

Use of physical infrastructure though artificial intelligence and data analytics

Engage with local people n local governance

Open innovation processes and e-participation
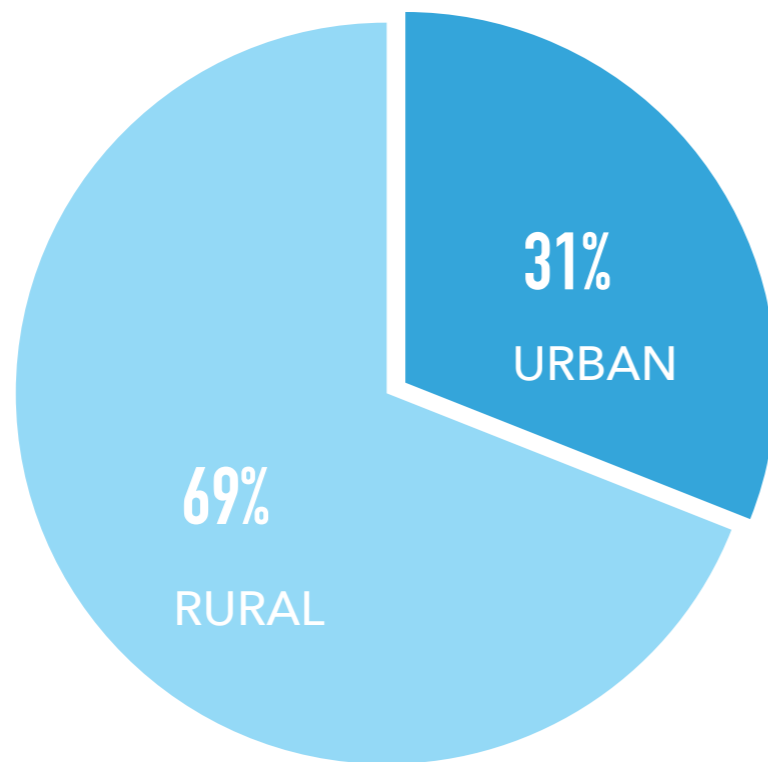
THE ORIGIN

▸ The concept of smart cities originated at the time when the entire world was facing one of the worst economic crises.

▸ In 2008, IBM began work on a 'smarter cities' concept as part of its Smarter Planet initiative.

▸ By the beginning of 2009, the concept had captivated the imagination of various nations across the globe.

▸ Countries like South Korea, UAE and China began to invest heavily into their research and formation.

▸ Today, a number of excellent precedents exist that India can emulate, such as those in Vienna, Aarhus, Amsterdam, Cairo, Lyon, Málaga, Malta, the Songdo International Business District near Seoul, Verona etc.

Building smart cities is not just a fashion trend; they are needed by the entire civilization as a sustainable solution for urban life (Townsend, 2013).
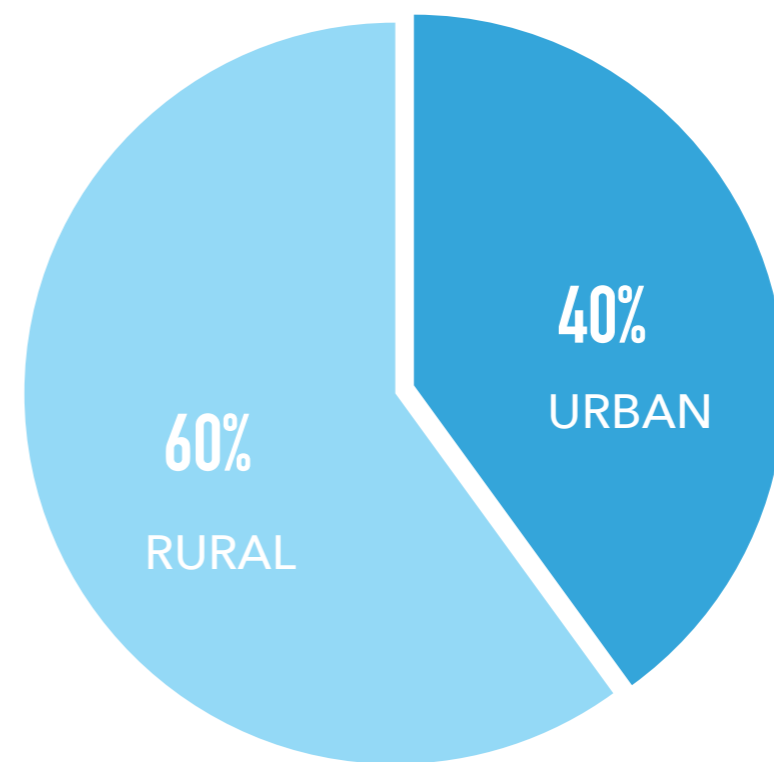
CONCEPT

▸ There is no universally accepted definition of a smart city.

▸ It depends on level of development

▸ Willingness to change and reform

▸ Resources and aspirations of the city residents.

▸ A smart city would have different connotation in different countries, even within different cities of same country.

NEED

31%
URBAN

69%
RURAL

India's current population (Census 2011)
Urban population contributes 63% of India's GDP

40%
URBAN

60%
RURAL

India's population by 2030 (Census 2011)
Urban Population will contributes 75% of India's GDP

▸ This requires comprehensive development of physical, institutional, social and economic infrastructure.

▸ The focus is on sustainable and inclusive development

▸ The idea is to look at compact areas, create a replicable model which will act like a light house to other aspiring cities.

SMART CITY MISSION SOLUTIONS

Smart Solutions – Basic Infrastructure

E-Governance and Citizen Services

1. Public Information, Grievance Redressal
2. Electronic Service Delivery
3. Citizen Engagement
4. Citizens - City's Eyes and Ears
5. Video Crime Monitoring

Waste Management

6. Waste to Energy & fuel
7. Waste to Compost
8. Every Drop to be Treated
9. Treatment of C&D Waste

Water Management

10. Smart meters & management
11. Leakage Identification, Preventive Maint.
12. Water Quality Monitoring

Energy Management

13. Smart Meters & Management
14. Renewable Sources of Energy
15. Energy Efficient & Green Buildings

Urban Mobility

16. Smart Parking
17. Intelligent Traffic Management
18. Integrated Multi-Modal Transport

Others

19. Tele-Medicine
20. Incubation/Trade Facilitation Centers
21. Skill Development Centers

SMART CITY FEATURES

▸ Promoting mixed land use in area-based developments.

▸ Housing and inclusiveness.

▸ Creating walkable localities.

▸ Preserving and developing open spaces.

▸ Promoting a variety of transport options.

▸ Making governance citizen-friendly and cost effective.

▸ Giving an identity to the city.

▸ Applying Smart Solutions to infrastructure and services in area-based development in order to make them better.

SMART CITY STRATEGY

1 What is a Smart City
A city equipped with basic infrastructure to give a decent quality of life, a clean and sustainable environment through application of some smart solutions

Targeted no of cities
100

Central outlay for 5 years
₹48,000 crore

2 Basic Infrastructure
Assured water & electricity supply, sanitation & solid waste management, efficient urban mobility & public transport, robust IT connectivity, e-governance & citizen participation, safety & security of citizens

3 Smart Solutions
Public information, grievance redressal, electronic service delivery, citizens' engagement, waste to energy & fuel, waste to compost, 100% treatment of waste water, smart meters & management, monitoring water quality, renewable source of energy, efficient energy & green building, smart parking, intelligent traffic management system

Area-based development plans that can be replicated across a city

3 Redevelopement
50 acres
Replacement of existing built-up area and preparing a new layout plan with enhanced infrastructure by way of mixed land use (example Kidwai Nagar in Delhi)

1 Retrofitting
500 acres
Planning in an existing built-up area in a municipal ward, preparing plan with citizen participation (example Connaught Place in Delhi, Bhendi Bazar in Mumbai)

2 Greenfield
250 acres
Introduce smart solutions in a vacant area using innovative planning (example land pooling/land reconstitution in Outer Delhi, GIFT city in Gujarat)

The basic criteria for selection of a city/municipal area

- Implementation of e-governance & online grievance redressal mechanism
- Publication of e-newsletter
- Putting all government expenditure online for public
- Swachh Bharat: at least 5% increase in coverage of latrines since 2011 Census
- Track record of paying salary to employees
- Track record of urban reforms and citizen participation being introduced

HOW IT WILL WORK

After govt announces the guidelines, states will be asked to nominate names of cities for a 'City Challenge Competition' & the chosen ones will get Central fund of Rs 100cr each year for 5 years
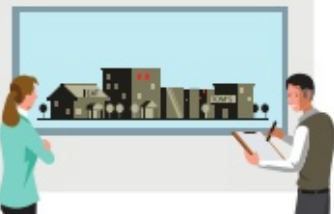
All states will get at least one smart city: A Special Purpose Vehicle will be created for each city to implement Smart City action plan. The SPV will be signed with the urban local body, state government and the Centre for implementation of the project
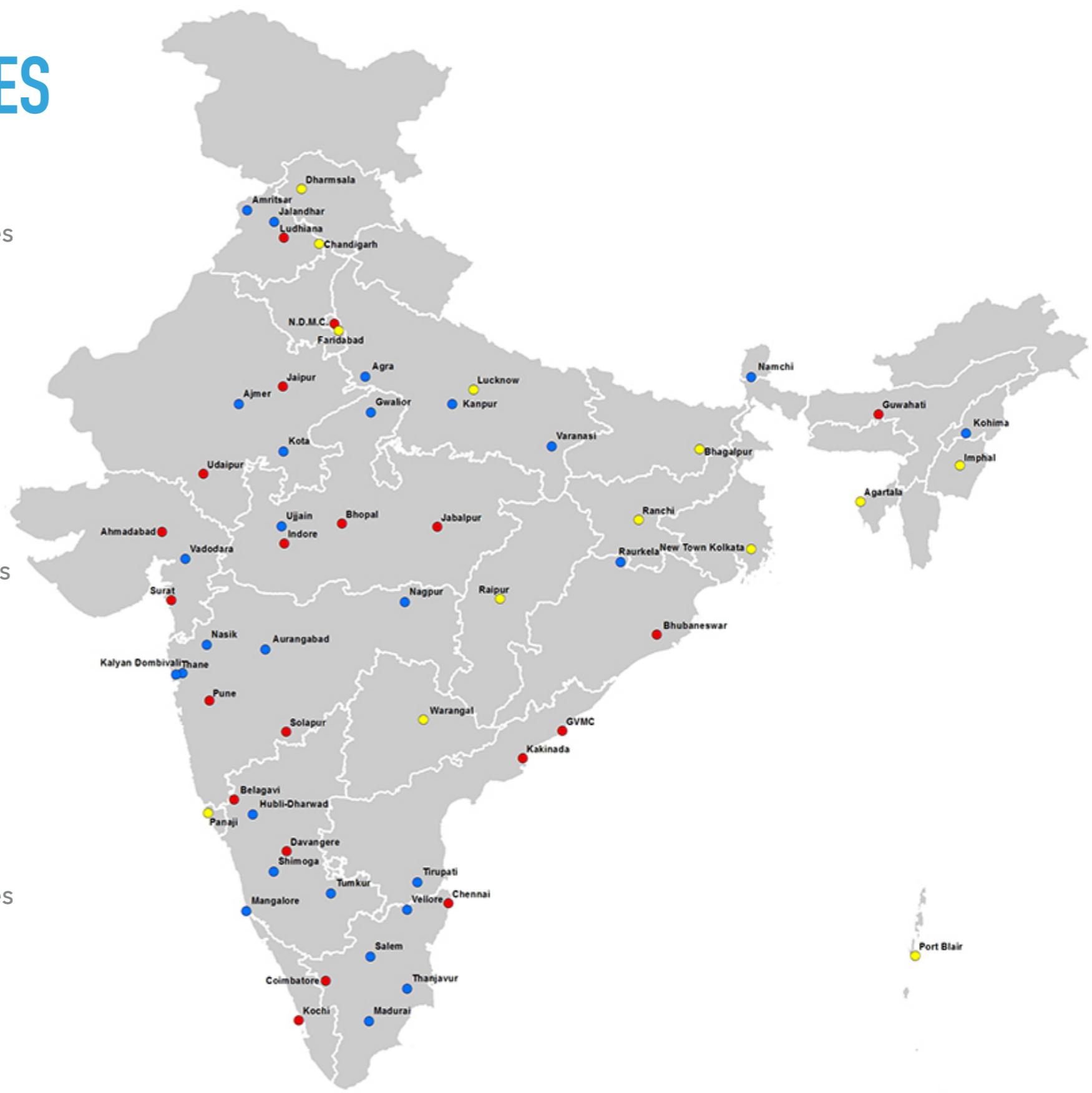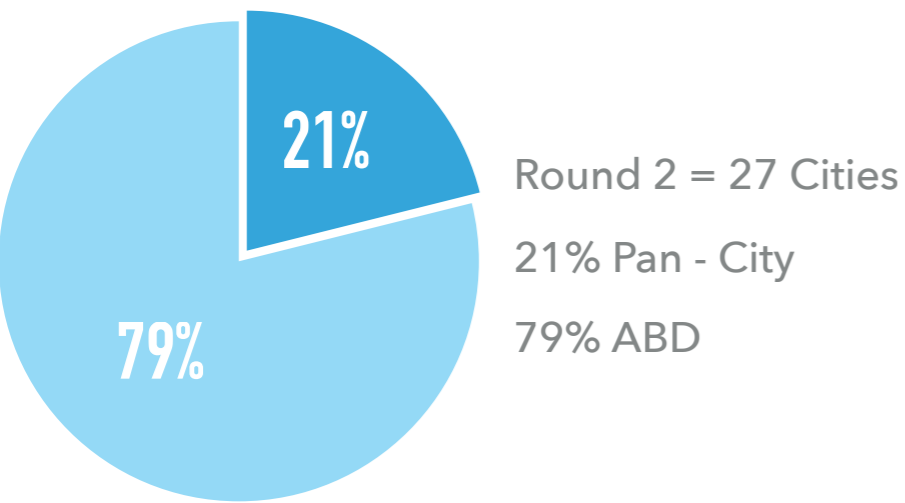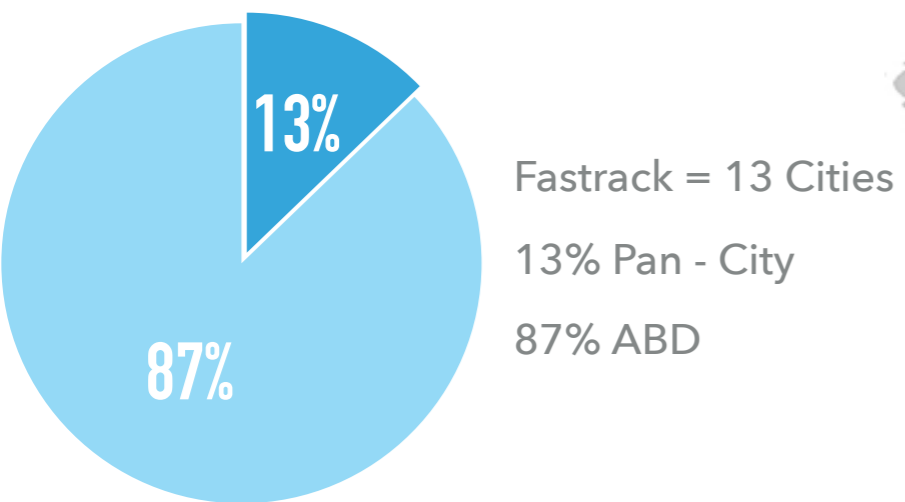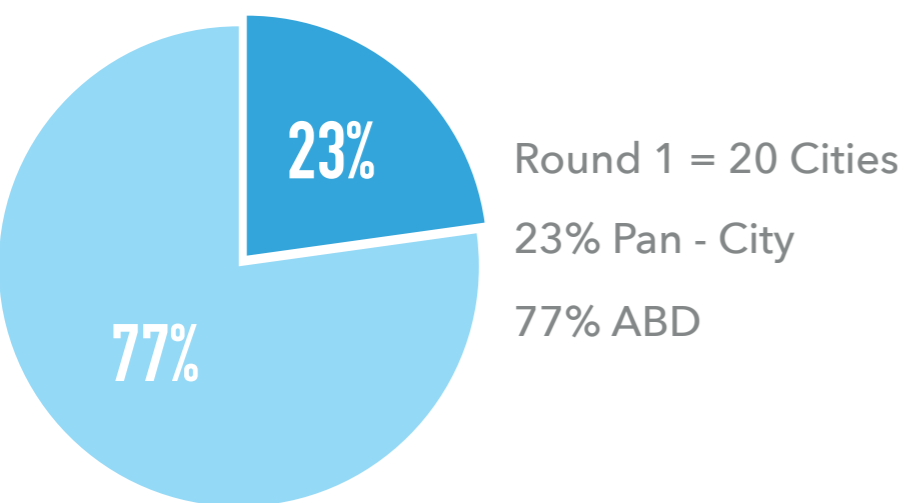
Smart Cities Council India has been formed: It is part of the US-based Smart Cities Council, which is a consortium of smart city practitioners and experts, with a 100-plus member and advisor organizations operating in over 140 countries

What's the next step? The next step is identification of the 100 cities and for this a city challenge competition to be conducted by Bloomberg Philanthropies is envisaged. The current plan looks to select 20 cities this year followed by 40 each in the next two years
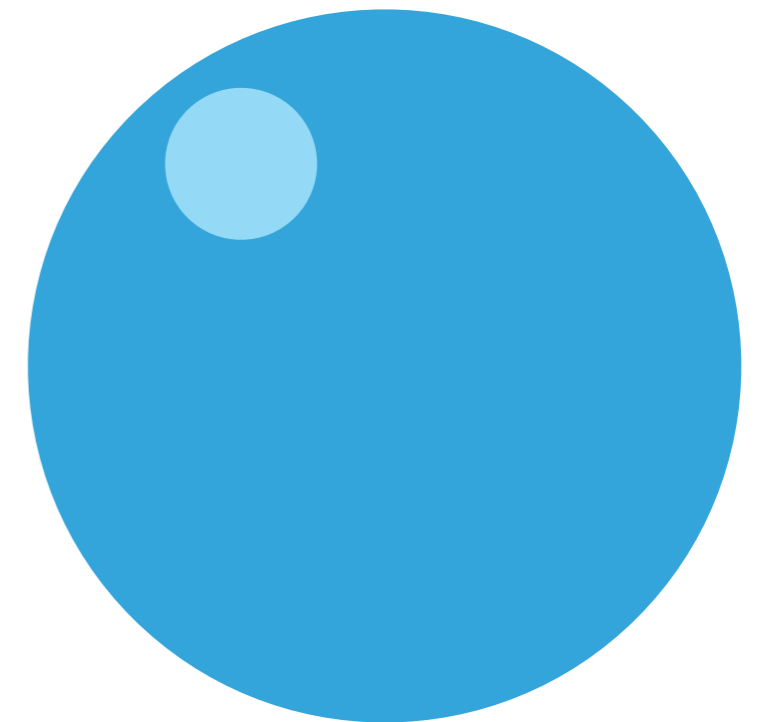
SELECTED SMART CITIES

23%

77%

Round 1 = 20 Cities

23% Pan - City

77% ABD

13%

87%

Fastrack = 13 Cities

13% Pan - City

87% ABD

21%

79%

Round 2 = 27 Cities

21% Pan - City

79% ABD

Dharmsala
Amritsar
Jalandhar
Ludhiana
Chandigarh
N.D.M.C.
Faridabad
Jaipur
Agra
Ajmer
Gwalior
Lucknow
Kanpur
Kota
Varanasi
Namchi
Guwahati
Kohima
Bhagalpur
Imphal
Udaipur
Ahmadabad
Ujjain
Bhopal
Jabalpur
Ranchi
Agartala
Vadodara
Indore
Raurkela
New Town Kolkata
Surat
Nagpur
Raipur
Nasik
Aurangabad
Bhubaneswar
Kalyan Dombivali
Thane
Pune
Solapur
Warangal
GVMC
Kakinada
Belagavi
Hubli-Dharwad
Panaji
Davangere
Shimoga
Tumkur
Tirupati
Mangalore
Vellore
Chennai
Salem
Coimbatore
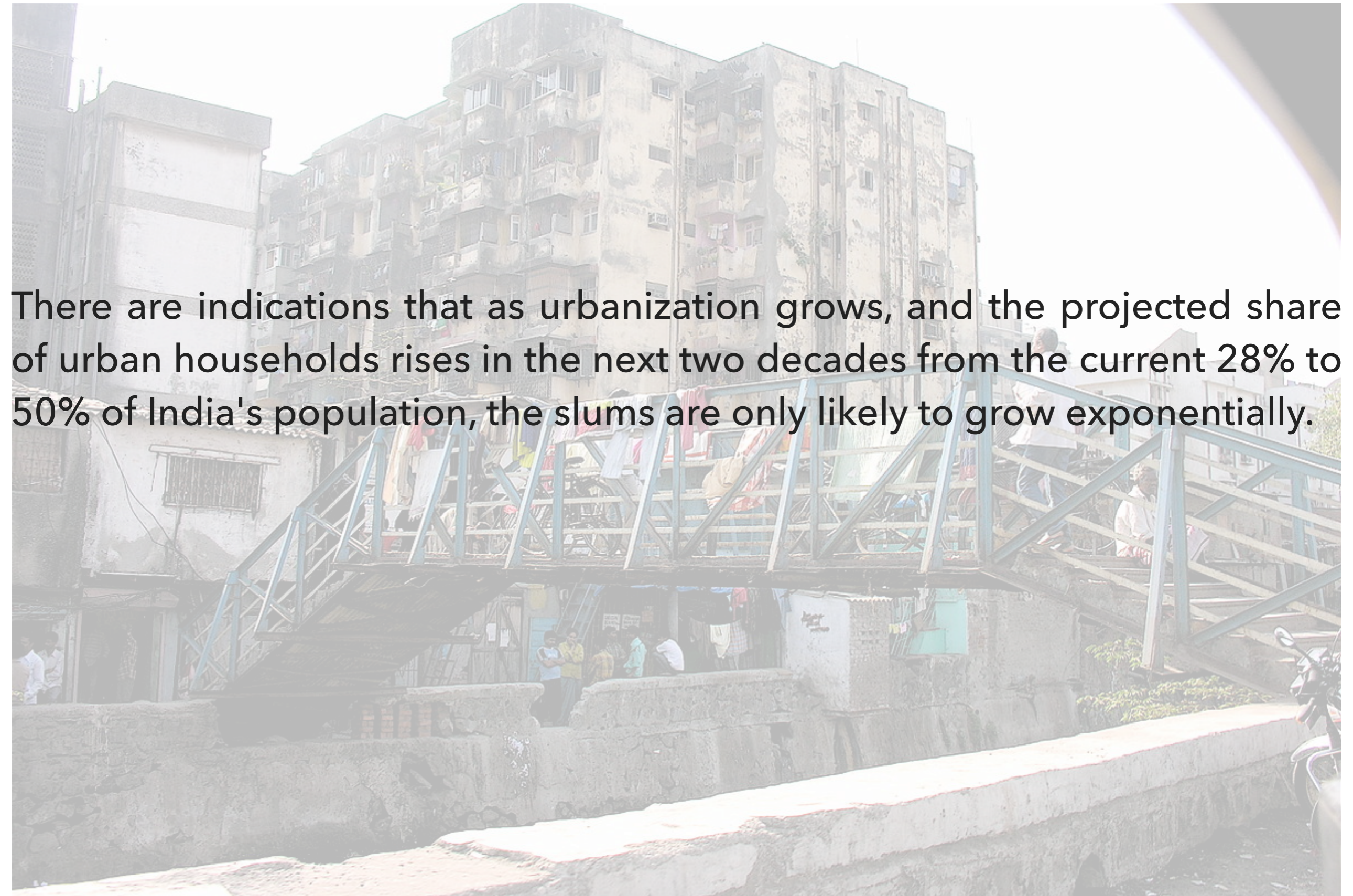Thanjavur
Kochi
Madurai
Port Blair

ESSENTIAL FEATURES

▸ Area-based development will transform existing areas (retrofit and redevelop), including slums.

▸ Comprehensive development will improve quality of life, create employment and enhance incomes for all.

▸ In the case of redevelopment and greenfield models of Smart Cities, in addition to the essential features, at least 80% buildings should be energy efficient and green buildings.

▸ Additionally, of the total housing provided in greenfield development, there should be at least 15% in the affordable housing category

DEMOGRAPHICS

▸ As India is still on the path of development, there is large number of people living below the poverty line.

▸ These people usually live in slum areas connected to the city.

▸ While 62% people in the cities are slum dwellers, it is 38% in all million-plus cities that include mega metros like Delhi and Mumbai

▸ These slums will mostly proliferate in sleepy towns and in semi-rural areas, a consequence of an accelerating rural to urban shift across the nation.

9% of the total projected national population of 1.28 billion in 2017 would be Slum Population

There are indications that as urbanization grows, and the projected share of urban households rises in the next two decades from the current 28% to 50% of India's population, the slums are only likely to grow exponentially.

Slums are informal urban settlement with population density higher than Cities average population.

DRAWBACKS

▸ Many plans have been proposed to transform slums to a modern township.

▸ This would mean proper housing, health-care and education.

▸ Such re-building project is estimates to cost over billion dollars.

▸ But residents fear that re-building will be lengthy and will destroy the local economy.

▸ Development could be a double edged sword by bringing private industries.

▸ For them better living could negatively affect their own means of livelihood.

PRESENT SCENARIO

▸ Many Government housing organization provide affordable housing for people below poverty line.

▸ But they sub-lease their houses and go back to the slums dwellings.

▸ They don't want vertical up-liftment.

▸ Also slum dwellers cannot afford the houses provided.

▸ They are not skilled to perform other jobs for income and pay bills or rent.

Will the question of slums settlement be solved by proposing affordable housing scheme in Smart city mission?