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Connecting cities: India

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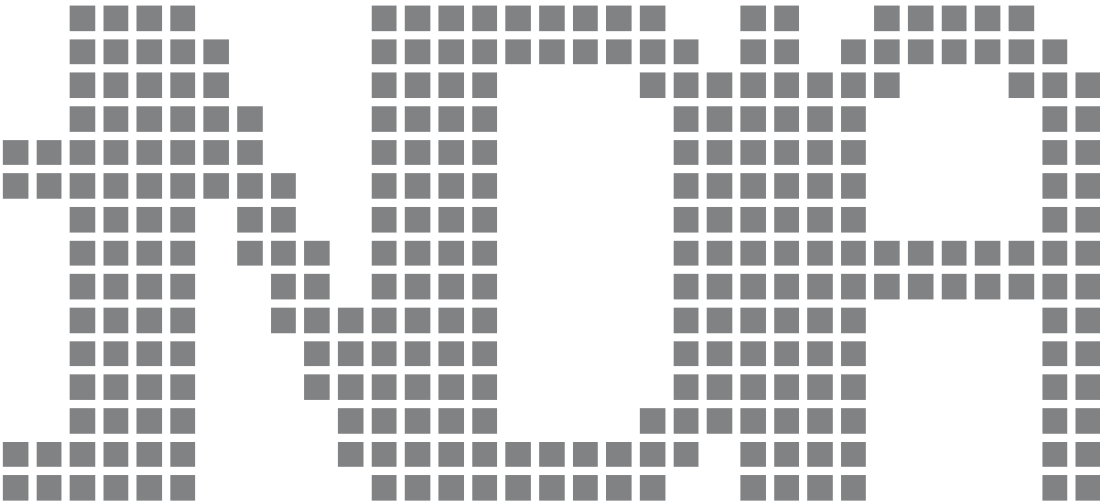
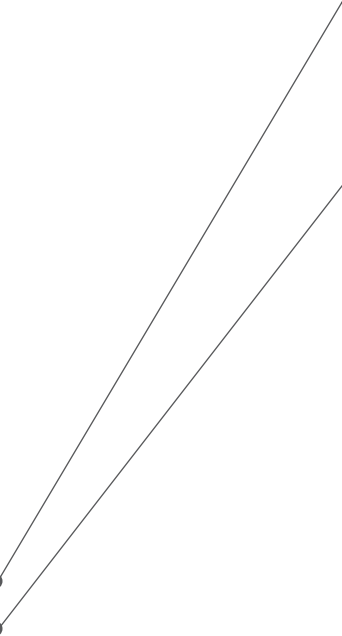
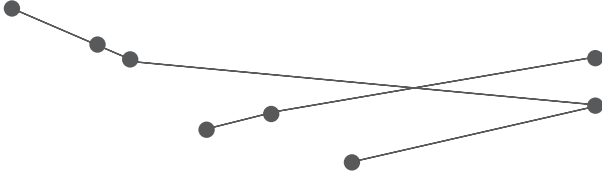
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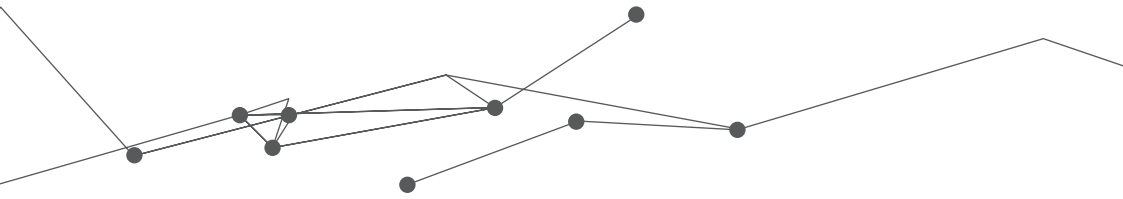
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CONNECTING CITIES
:INDIA







CONNECTING CITIES
:INDIA

A RESEARCH PUBLICATION FOR THE
9TH WORLD CONGRESS OF METROPOLIS

Essays by
Philipp Rode
Rit Chandra
Amitabh Kundu
Narinder Nayar
Bombay First
H. S. Sudhira
Chetan Vaidya
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Chris Johnson
Richard Hu
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Published by
Metropolis Congress 2008





FOREWORD

THE 9TH WORLD CONGRESS OF METROPOLIS, TO BE HELD IN Sydney in October 2008, is a great opportunity to generate research into the future direction of cities. With this in mind, the organisers of the congress have developed a number of research publications that explore new concepts related to cities as well as the emerging cities of India and China.


In organising the Congress, we found that there was a network of researchers and commentators about cities across the globe who had very interesting issues to raise. While many of these will be presenting papers at the Congress, we also thought it would be useful to develop a series of publications that raise these issues in a provocative manner. The first of these books will be about networks—the concept of cities interacting across the globe. The second examines the spreading urban regions around many cities followed by publications that look in detail at the cities of China and India. The final book will examine the impact on cities of major events such as the Olympic games.

Contemporary world urbanisation, particularly the rise of Chinese and Indian cities, means both opportunities and challenges for Australian cities. These publications put Sydney and other Australian cities in scenarios with global counterpart cities to benchmark their urban performance. The provocative topics are aimed to trigger fruitful debate in government, private sector and the general public regarding how to create better strategies for the future of Australian cities.

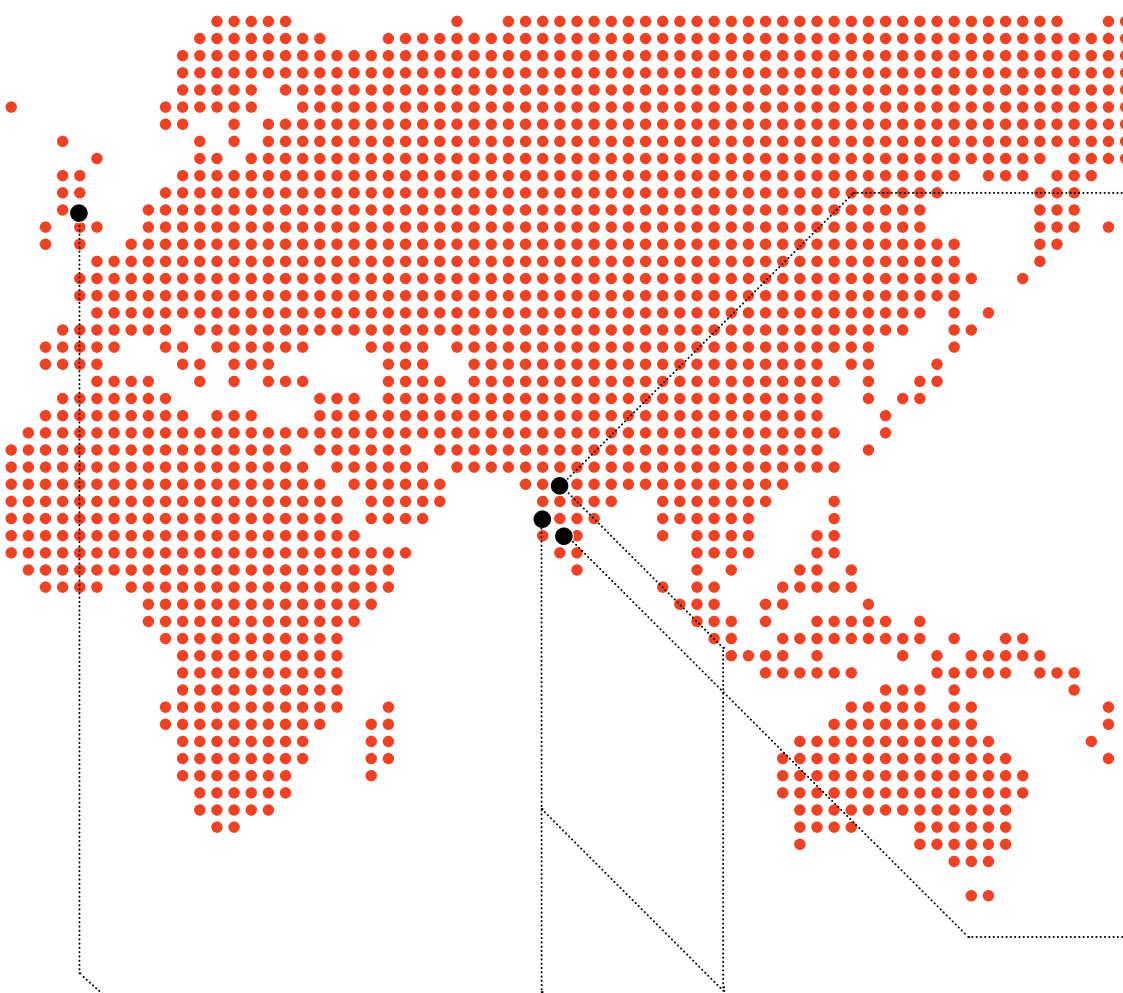
We would like to thank all contributors, sponsors and research coordinators. Without their work, these publications could not have been possible. The influence of their contributions will be far reaching.

CHRIS JOHNSON





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PHILIPP RODE
LONDON, UK

Philipp Rode is Executive Director of the Urban Age Program and Associate of the Cities Program at the London School of Economics and Political Science. As a researcher and consultant, he is involved in interdisciplinary projects comprising urban governance, transport, city planning and urban design. He has previously worked on several multidisciplinary research and consultancy projects in London, Barcelona, New York and Berlin and was awarded the Schinkel Urban Design Prize 2000.

NARINDER NAYAR
MUMBAI, INDIA

As Chairman of Bombay First, *Narinder Nayar* was instrumental in arranging a study together with McKinsey on how Mumbai could be transformed into a world-class City over the next 10 years. Following this study, several initiatives have been taken by the Maharashtra Government including constituting a Citizens' Action Group of which Nayar is the Vice Chairman. He is also an active member of the Empowered Committee headed by the Chief Secretary to monitor various ongoing projects in Mumbai.

CHETAN VAIDYA
MUMBAI & NEW DELHI, INDIA

Chetan Vaidya is the Director of the National Institute of Urban Affairs (NUIA). He has more than 30 years of experience in urban development planning and management working. Since 1995, he has worked as Deputy Project leader on USAID's Financial Institutions Reform and Expansion (FIRE) project which worked with Indian cities to develop medium term fiscal frameworks and improve market-based financing of urban infrastructure projects to increase access of poor to urban services.



AMITABH KUNDU
DELHI, INDIA

Dr. Amitabh Kundu is Professor of Economics at Jawaharlal Nehru University, New Delhi and a member of National Statistical Commission. He has been a Visiting Professor a number of international universities and has worked as Consultant for UNDP, UNESCO, UNCHS, ILO, Government of Netherlands etc. He has worked as Director of National Institute of Urban Affairs, Indian Council of Social Science research and Gujarat Institute of Development Research and is in the Editorial Board of several journals. He has about twenty books and two hundred research articles, published in India and abroad, to his credit.



RIT CHANDRA
DELHI, INDIA

Rit Chandra is an urban planner based in Delhi. He is currently pursuing a PhD at the Department of Planning at University College London, and is also working on local economic development issues at the International Labour Organisation Sub-Regional Office in New Delhi. His research interests lie in urban governance, and local economic development, in particular skills development for the informal economy, and cluster development of micro-enterprises.



H.S. SUDHIRA
BANGALORE, INDIA

H. S. Sudhira is currently with the Directorate of Urban Land Transport (Urban Development Department), Government of Karnataka, India. He has recently submitted his doctoral research thesis at the Indian Institute of Science, Bangalore, India. For his research, he has addressed issues concerning urban governance, management and planning, besides the impact on environment and infrastructure. Besides his research interests, he also volunteers for the India Literacy Project. www.ilpnet.org

CONTRIBUTORS

INTRODUCTION / CHRIS JOHNSON

MODERN URBAN INDIA

The bustle and chaos associated with Indian cities encompasses only 27% of the country's population. The other 73% of India's population still live in rural areas and villages spread across the countryside—yet across the world, half the population now live in cities.

CHETAN VAIDYA, THE DIRECTOR OF THE INDIAN NATIONAL INSTITUTE OF URBAN Affairs (NUIA) believes that India's urban population, currently around 285 million people, is likely to become twice this by 2030, indicating how important the urbanisation of India will be in coming years. Cities like Mumbai, Delhi and Bangalore are likely to continue growing while many smaller towns will become cities in their own right.



LARGEST INDIA CITIES

UNITED NATIONS SECRETARIAT

WWW.ESA.UN.ORG/UNUP

1 MUMBAI	18,978,000
2 DELHI	15,926,000
3 KOLKATA	14,787,000
4 CHENNAI	7,163,000
5 BANGALORE	6,787,000
6 HYDERABAD	6,376,000
7 AHMEDABAD	5,375,000
8 PUNE	4,672,000
9 SURAT	3,842,000
10 KANPUR	3,162,000
11 JAIPUR	2,917,000
12 LUCKNOW	2,695,000
13 NAGPUR	2,454,000
14 PATNA	2,158,000
15 INDORE	2,026,000
16 VADODARA	1,756,000
17 BHOPAL	1,727,000
18 COIMBATORE	1,696,000
19 LUDHIANA	1,649,000
20 AGRA	1,592,000



THE MAYOR OF MUMBAI IS A
MEDICAL DOCTOR WHO OVERSEES
THE 220 COUNCILLORS IN A
COLONIAL COUNCIL CHAMBER

To encourage participation in the Sydney Metropolis Congress, I visited a number of Indian cities to meet the Mayors and get to understand some of the pressing issues the cities faced. I began with Mumbai, which now has over 18 million residents across the Mumbai Metropolitan Region. The Mayor of Mumbai is a medical doctor who oversees the 220 councillors in a colonial council chamber. Dr Shubha Raul is acutely aware of the need for the city to improve its infrastructure while at the same time helping slum dwellers. The city is looking at following the example of New Delhi in building a new 'metro' rail line. Narinder Nayar, a Mumbai business man, set up *Bombay First* to encourage the city's development and has now become the chairman of Bombay First. His chapter in this book examines the study undertaken in 2003 with McKinsey to see how Mumbai could be transformed into a world-class city. The study benchmarked Mumbai with 10 world cities including Shanghai, Hong Kong and Sydney. Among their recommendations were plans to boost economic growth by 8 to 10% per annum, to improve mass transport, and to increase the availability of low income housing. Narinder lobbied the Indian Prime Minister about the importance of cities and believes that this had some influence on the establishment of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). Chetan Vaidya explains the role of the Urban Renewal Mission in investing RS 1,000 billion (approximately US \$11 billion) over a seven year period into urban renewal projects. Indeed, everywhere I travelled in India, the JNNURM was a widely discussed topic in city governance circles.

SUB-CONTINENT STATISTICS

CIA WORLD FACTBOOK

2008 POPULATION

1.15 BILLION

MEDIAN AGE

25 YEARS

2007 GDP

US\$ 1,099 BILLION

GDP PER CAPITA

US\$ 2,700

MOBILE PHONES

233 MILLION

FIXED PHONE LINES

50 MILLION

VOTERS

370 MILLION

TV STATIONS

562

ANNUAL GDP GROWTH

+9.2%

URBANISATION RATE

27.8%

UNDER THE POVERTY LINE

25%

SERVICES (% OF ECONOMY)

52.9%

INDUSTRY (% OF ECONOMY)

29.4%

AGRICULTURE (% OF ECONOMY)

17.6%

FOUR HOURS OUTSIDE MUMBAI SITS THE RELATIVELY SMALL CITY OF PUNE—now 4.6 million people. I had been invited to visit the city by Vandana Chavan, a previous Mayor who had become involved with the Metropolis movement. Through Vandana's typical Indian hospitality, I ended up having morning tea with the current Mayor of Pune, Rajlaxmi Bhonsale, yet another woman, and learnt about the impressive State of the Environment report the city of Pune produced. We also visited a new Eco City on the edge of Pune called Magarpatta, developed in conjunction with 120 farming families who are still co-owners of the city. Magarpatta will have 100,000 jobs in the IT industry and 30,000 people living in a harmonious environment incorporating solar power, and waste and water recycling. As far as the eye could see, concrete framed buildings were emerging to cope with the immense urban growth.

To test the smaller scale of the Indian city, I also visited Pimpri Chinchwad, a relatively small city of one million people that has worked very closely with the private sector through industrial development. Once again, the Mayor was a woman (the 74th amendment to the constitution required one-third of Mayor's to be women) and the Commissioner of the city explained the rapid growth that was occurring. Commissioners are the most senior official in each city and they are generally rotated from one city to another every three years.

Completing my city visits was the capital city of India, New Delhi, with a population of around 15 million people. Here, the central government has a strong role as well as the state of New Delhi and the media use typical Indian names like 'The Centre' or GOI (Government of India). Two important women are again leading the city, with Chief Minister Sheila Dikshit and Mayor of New Delhi, Arti Mehra. These are both impressive women juggling the role of urban governance with all its competing interests. In New Delhi, I also met with Executives of TATA Consulting Services who were working with the city of Kolkata to re-engineer their business systems through new technology. The same executives then explained how they are also developing franchised kiosks across rural India where villagers could access technology through trained helpers.



PHILLIP RODE AND RIT CHANDRA OF THE URBAN AGE HAVE WRITTEN A CHAPTER comparing Mumbai, New Delhi, Kolkata and Bangalore. They indicate that in the 1990s India's population grew by 23% but Mumbai grew by 21%, Bangalore 38% and Delhi by a massive 70%. Kolkata was almost stagnant with 4% growth. The Urban Age chapter goes further to investigate densities and finds that Mumbai averages 27,000 people per km² with peaks of 50,000 people per km²—this is higher than Manhattan. New Delhi has a comparatively low density at an average of 9,000 people per km².

Amitabh Kundu, a professor at Jawaharlal Nehru University (JNU) in New Delhi looks at the devolution of planning to be the joint responsibility of stakeholders like industrial and business enterprises, public and private organisations and resident associations. Professor Kundu sees the spatial concentration of urban growth increasing as he points out that cities of a million plus claimed 26% of urban population of 1981, 32% in 1991 and 38% in 2001.

H.S. Sudhira traces the emergence of Bangalore as one of the fastest growing cities in the world. The city has grown spatially by more than ten times since 1949, emerging from its traditional role as a garden city to fill a new role as the 'Silicon Valley' of India. Sudhira's chapter explores the government's structure of the city through the City Corporation and the development authorities. But it is Chetan and Hitesh Vaidya's paper on creative financing of urban infrastructure that really strikes home in how India can handle its growing population. They refer to the *74th Constitutional Amendment* which gave Urban Local Bodies (ULBs) responsibility to provide services for urban water supply, sewage, sanitation drainage and solid waste management. An emerging issue in India now is how these ULBs can finance infrastructure in ways that contribute to the macro scale of massive cities but also the micro scale of how to fund individual water supply pumps for low income rural settlements. This book traces Indian urbanity from the macro level of the statistics of population growth right down to the provision of an individual water tap in a low income settlement.



1







URBAN INDIA: COMPARING MUMBAI, DELHI, KOLKATA AND BANGALORE

PHILIPP RODE & RIT CHANDRA

A snapshot of India's four largest cities:
Mumbai, Delhi, Kolkata, and Bangalore
based on their populations, density,
transport and urban governance.



**IN THE 1990S, INDIA'S POPULATION GREW
BY A DRAMATIC 23%—BUT THIS FAST
GROWTH WAS OUTPACED IN MAJOR CITIES**

THE 21ST CENTURY GROWTH OF cities lies primarily in Asia and Africa. Here, the urban population is expected to double between 2000 and 2030. Unlike the first wave of gradual urbanisation that took place in Europe and North America over 200 years, this second wave can be characterised as ‘shock urbanisation’, taking place at a speed that most developing countries are finding difficult to cope with. Infrastructure and housing provision is proving inadequate in many cases, and early signs of urban sprawl—although at much higher density levels—are succeeding in pushing out city residents even further and leading to long commutes and deteriorating quality of life.

In line with the larger picture above, the major Indian cities of Mumbai, Kolkata, Delhi and Bangalore have been following a continuous trajectory of population growth from the start of the twentieth century. In contrast, the cities in the richest, early urbanising countries have seen population growth slow and even reverse, although cities like New York and London are now in a new cycle of relatively slow growth. In the 1990s, India’s population grew by a dramatic 23%, but this fast growth was outpaced in the main cities. In Delhi, the number of residents jumped by 70% and Bangalore grew by 38%. Mumbai’s population grew by 21%,

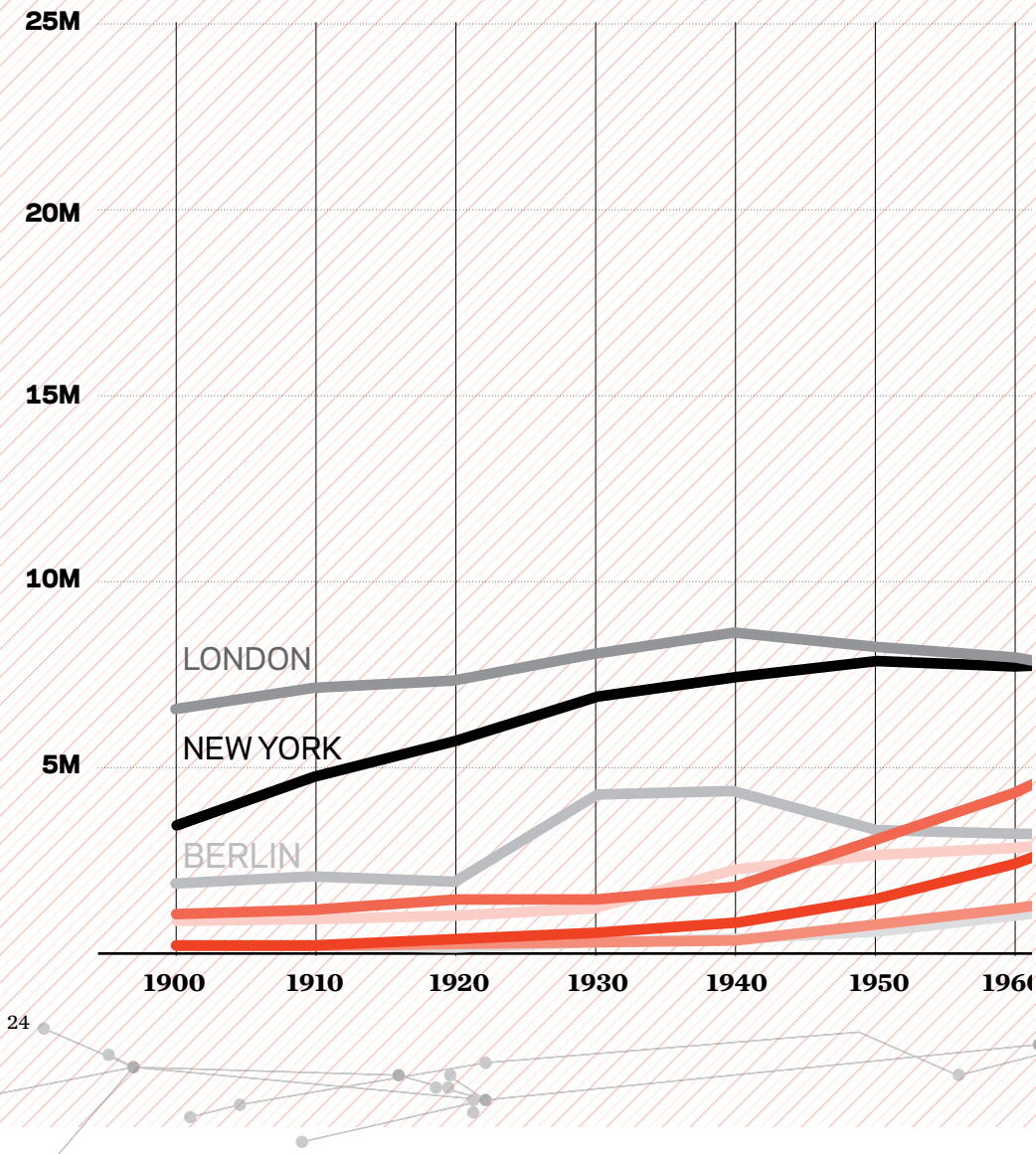
falling back slightly on its relative position. In contrast Kolkata’s population was almost flat, at least by Indian standards, at 4% growth. Projections suggest population growth nationwide will continue but at a reduced rate of 14% to 2010, with growth in Bangalore pulling ahead of Delhi and other cities. Experts also contend that small and medium towns are less likely to grow than these larger metropolitan centres.

Mumbai and Kolkata have much longer histories as large cities than other Indian examples. Both reached populations of a million by 1910 and developed at a similar time to New York, London and Berlin. In contrast, Delhi and Bangalore became large cities much more recently. Delhi reached a million residents by 1950, Bangalore during the 1950s.

FIGURE 1
POPULATION OVER TIME IN SELECTED CITIES

Sources: Multiple datasets including Census of India (2001) and city specific sources.

Cities across the world are growing following occasional decline in the mid-20th Century. All figures refer to the administrative area of each city. The white lines represent projections.



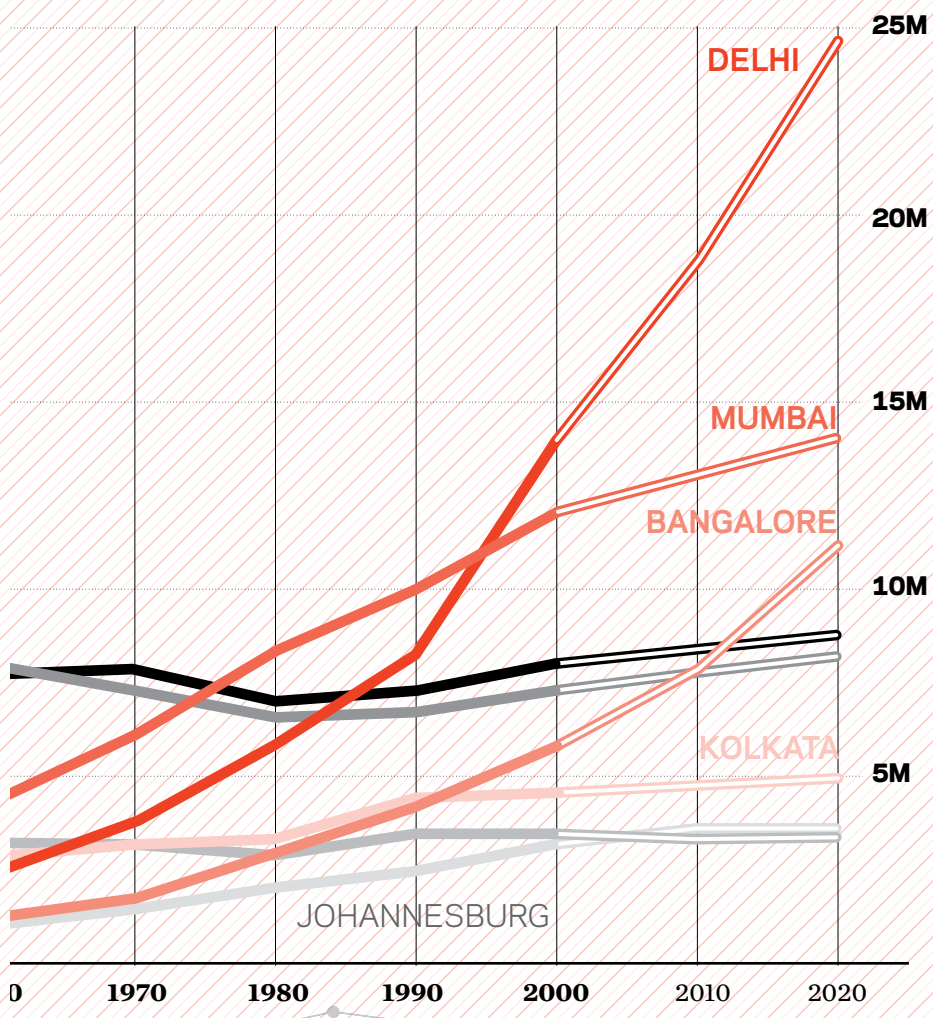
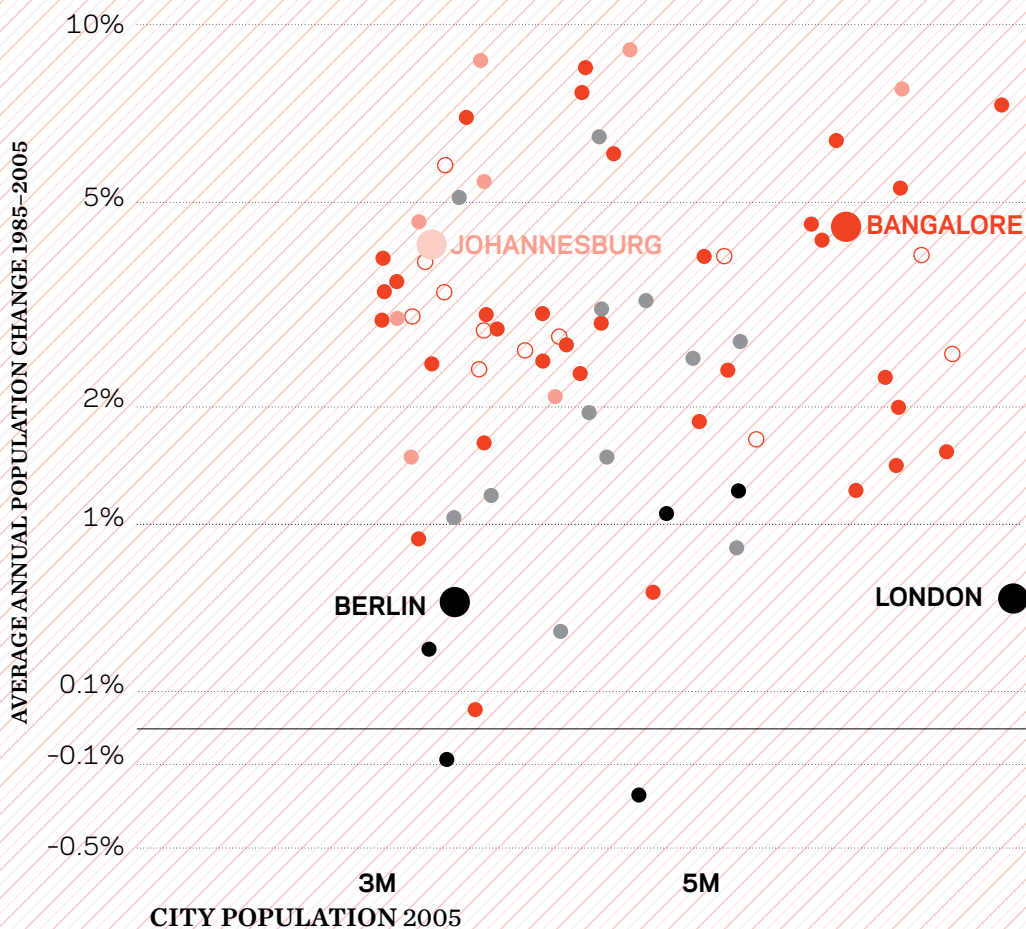
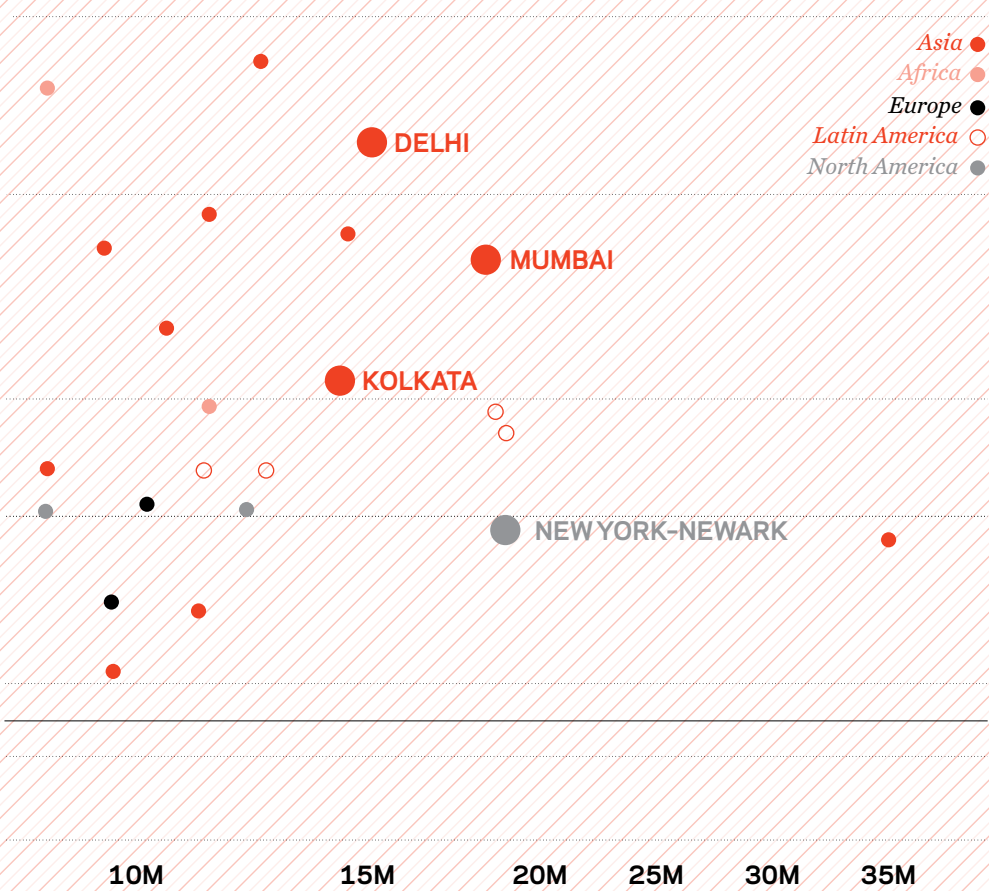



FIGURE 2
CITY SIZE AND POPULATION GROWTH

Source: UN World Urbanisation Prospects, 2007 Revision

The figure below shows the size and population change for all cities with more than three million residents (2005). The numbers for each city are based on UN calculations for urban agglomerations. Indian cities are among the largest, and fastest-growing, in the world.








Cities worldwide have become knowledge-based and service-oriented economies. Clearly, evidencing this transformation is the distribution of employment by economic sector. In all urban centres analysed by *Urban Age*, the service sector employs more than half of the urban labour force. However, the reduced employment share of urban manufacturing does not diminish the importance of the sector. Manufacturing firms and urban production complexes still support the leading sectors of a city's economy, often through linkages that are far from apparent.

In addition, the labour force in large cities is being augmented by economic migration from rural areas. Reduced land holdings over successive generations, a generally weak rural non-farm economy, and low wages compared to the urban areas are prime economic reasons for this movement of poor farm workers into cities. However, skilled as these people might be in agriculture, their skills are of not much use in the urban milieu and, consequently, they are forced to join the ever burgeoning ranks of low-skilled workers searching for jobs in urban areas. Employment commensurate with their skills is available only in the informal economy where wage rates are low and there is no employment security. In most developing country contexts, these informal networks provide basic services to the vast majority of the urban population, and also generate the majority of urban employment and GDP.

At a regional scale, manufacturing remains a source of dynamism. Various industries employ up to a third of the city's labour force, making manufacturing one of the pillars of this rapidly expanding economic node of global relevance. The majority of people in Indian cities work in the services sector, even though the nature of 'services' is significantly different between Indian cities and other economies. While Mumbai, for example, has a high rate of 81% in the general services sector, this includes communications, social and personal services as opposed to the business and financial services in other service sector dominated cities. Bangalore retains a significant amount of manufacturing with over 43% and even Mumbai still employs 18% of its population in the secondary sector.

The restructuring reflects a national trend whereby Indian cities are jumping to a predominantly service-based urban economy from a largely rural-based economy, side-stepping the protracted process of formal industrialisation that has affected so many cities of the western world.



**INDIAN CITIES ARE JUMPING TO A
PREDOMINANTLY SERVICE BASED
URBAN ECONOMY FROM A LARGELY
RURAL BASED ECONOMY**



MUMBAI

WITH 18 MILLION RESIDENTS, THE LARGER MUMBAI Metropolitan Region is the world's fifth most populous metropolitan region. The capital of the State of Maharashtra, Mumbai is a city of 12 million. This area known as Greater Mumbai stretches over 438 km², and it has an extremely high population density (27,348 people per km²). Mumbai is the entertainment and financial capital of India but the city also has the largest slums in the country. Mumbai contributes 40% of national income tax and 60% of customs duty. In purchasing power parity, Mumbai is estimated to have a US \$143 billion economy. Per capita income is US \$12,070. In India, Mumbai has a higher than average product per capita, service-sector employment and car ownership rates. On the other hand, the city has a lower home ownership rate and the ratio of young people in Mumbai is slightly below the national average. Key challenges facing Mumbai include traffic congestion, the loss of wetlands, frequent flooding and critical issues concerning housing and the city's slums. Yet the urban region continues growing. Some projections state that Mumbai will overtake Tokyo as the world's largest city by the year 2030.

SIZE

438 KM²

RESIDENTS

12 MIL

PEOPLE PER KM²

27,348

STRENGTHS

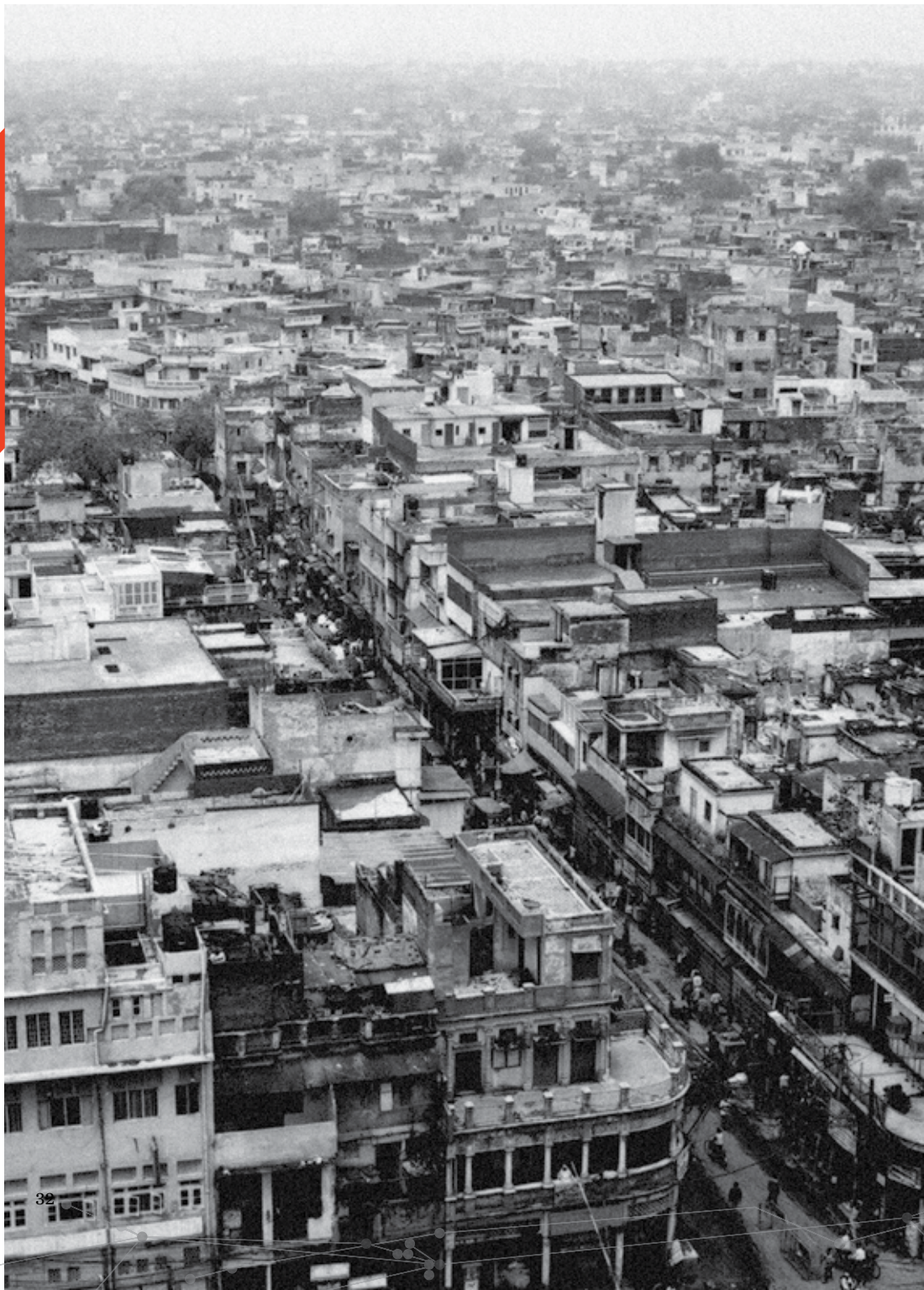
ENTERTAINMENT
FINANCE

CHALLENGES

TRAFFIC
CONGESTION
LOSS OF
WETLANDS
FREQUENT
FLOODING
SLUMS



**WITH 18 MILLION RESIDENTS,
THE GREATER MUMBAI
METROPOLITAN REGION IS THE
WORLD'S FIFTH MOST POPULOUS**





DELHI

DELHI HAS A POPULATION OF 14 MILLION. IT IS THE second largest metropolis in the country and it has utmost political importance as India's national capital is located in New Delhi. Delhi spreads over an area of 1,483 km². For the standard of urban areas in India, Delhi has the relatively low density of 9,340 people per km². The region's estimated product of US \$158 billion is the equivalent to 4% of the Indian economy. Delhi's per capita income of around US \$11,500 more than doubles the national average. Also indicative of the city's wealth is its high rate of car ownership, although the local homeownership rate is slightly below the average for India. Delhi is specialised in the services sector. Dominating the urban economy are booming activities in the tertiary sector such as IT and related services. Delhi faces the challenges of rapid population growth and largely unplanned urban expansion. Among the city's problems are its dispersed infrastructure, increasingly unaffordable housing and growing slums. Other problems include traffic congestion and significant ecological degradation in the surrounding region.

SIZE

1,483 KM²

RESIDENTS

14 MIL

PEOPLE PER KM²

9,340

STRENGTHS

SERVICES
IT

CHALLENGES

RAPID POPULATION
GROWTH
UNPLANNED
URBAN EXPANSION
OVER STRETCHED
INFRASTRUCTURE
UNAFFORDABLE
HOUSING
GROWING SLUMS
TRAFFIC
CONGESTION
ECOLOGICAL
DEGRADATION



BANGALORE,
KARNATAKA

BANGALORE

BANGALORE, THE CAPITAL OF THE STATE OF KARNATAKA, is the third largest city in India. With an estimated population of 6 million and an area of 226 km², Bangalore has the relatively high density of 19,125 people per km². Bangalore is the heavy-industry centre of Southern India. Though more than half of employment is in services, the main sectors of Bangalore's urban economy also include aerospace, telecommunications, machine tools, heavy equipment, and defence. Recent economic growth largely owes to the booming IT sector and related activities. Accounting for 35% of the country's software exports in 2004, Bangalore has earned the nickname of 'the Silicon Valley of India'. The city's product is US \$94 billion, with a per capita income of US \$11,646. Bangalore has a high car ownership rate but less than half of its population are home owners. Rapid urbanisation and growth in this city has led to higher levels of pollution. Waste disposal, sewerage and sanitation problems, loss of tree coverage and high traffic congestion constitute the city's main problems and future challenges.

SIZE

226 KM²

RESIDENTS

6 MIL

PEOPLE PER KM²

19,125

STRENGTHS

HEAVY
INDUSTRY
IT

CHALLENGES

POLLUTION
WASTE
DISPOSAL
SEWERAGE &
SANITATION
LOSS OF TREE
COVERAGE
TRAFFIC
CONGESTION



OVANI
POWER DRESSING



Nitesh
INFRASTRUCTURE

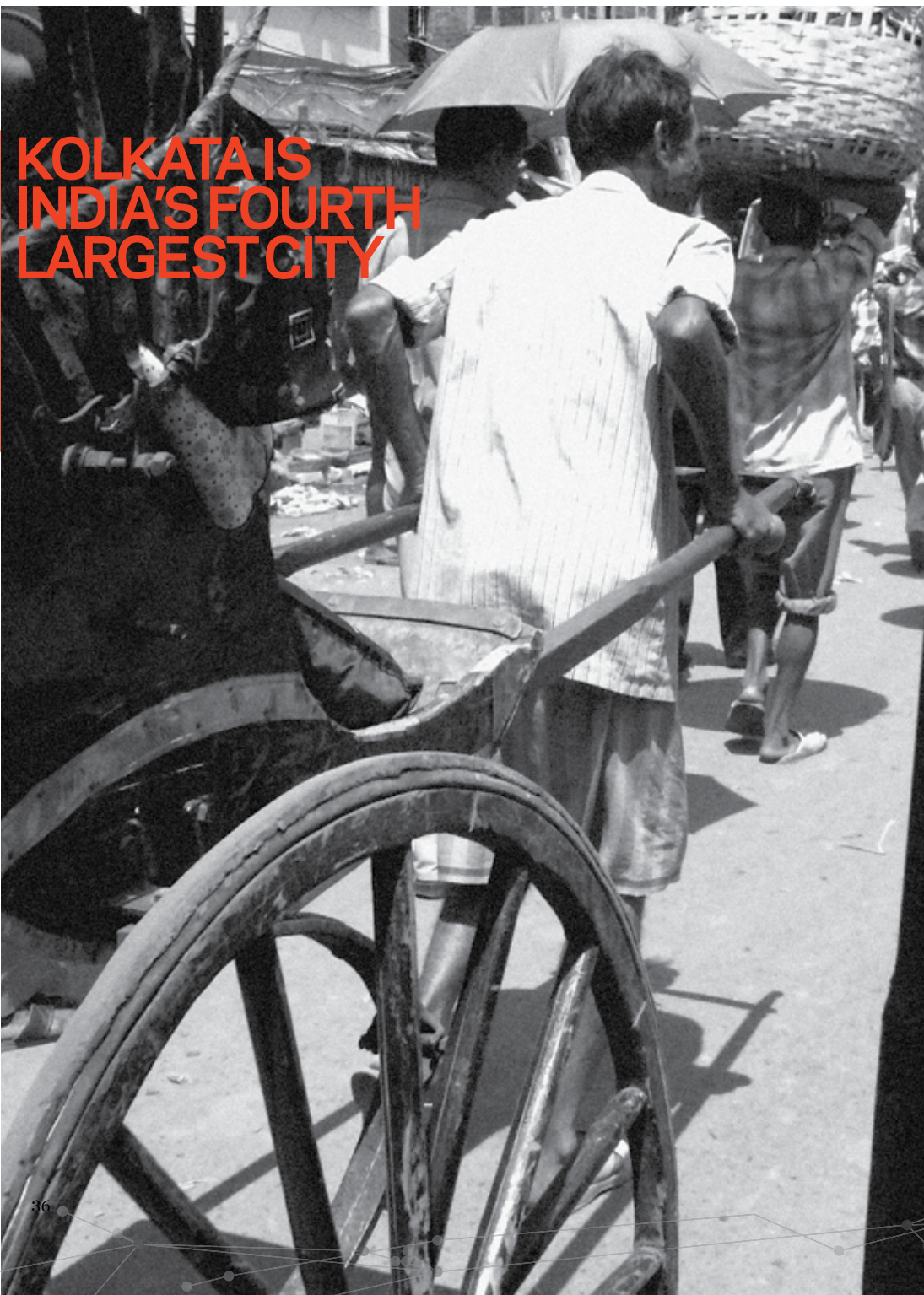
BOOKS

SALE
UP TO 75% OFF ON EIGHT TITLES

GOLD • DIAMONDS • PLATINUM
JOSCO
JEWELLERS

dainty Jewellery
The Affordable Modern Solution To Your Jewellery Needs

**KOLKATA IS
INDIA'S FOURTH
LARGEST CITY**





KOLKATA

KOLKATA IS INDIA'S FOURTH LARGEST CITY AND THE capital of the State of West Bengal. Kolkata's city boundaries house a population of 4.6 million living within a tightly drawn area of 187 km². This makes the city's density reach 24,454 people per km². The Kolkata Metropolitan Area, which encompasses city, is home to 14.6 million residents. Long acknowledged as the cultural capital of India, Kolkata is also the business, commercial and financial hub of eastern India. The metropolitan product equals US \$94 billion and income per capita is US \$8,520. Kolkata has a diverse industrial profile that ranges from advanced sectors such as electronics to traditional activities such as the processing of jute. Employment in the services sector has reached 61% and it stands far above the average in India. IT and related services lead the current economic boom. These activities are growing at 70% annually, a ratio that is twice the national average. A coastal metropolis, Kolkata suffers from the loss of city wetlands, causing frequent flooding. Housing is also a major concern for this city where the majority of people are renters. Other challenges facing Kolkata include traffic congestion, inadequate infrastructure, and pollution.

SIZE

187 KM²

RESIDENTS

14.6 MIL

PEOPLE PER KM²

24,454

STRENGTHS

CULTURE
ELECTRONICS
JUTE
IT

CHALLENGES

LOSS OF
WETLANDS
FREQUENT
FLOODING
HOUSING
TRAFFIC
CONGESTION
INADEQUATE
INFRASTRUCTURE
POLLUTION

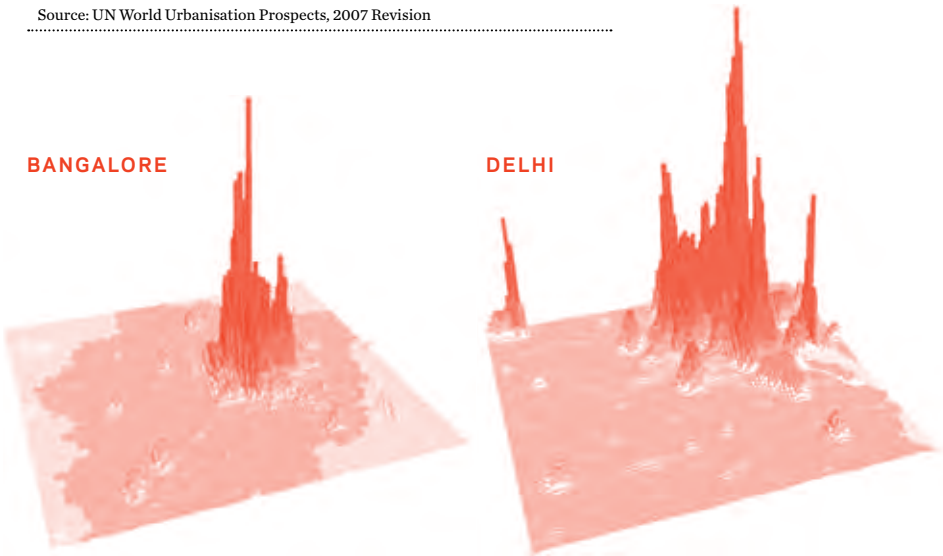
URBAN MORPHOLOGY AND DENSITY

THE ABILITY OF INDIAN CITIES TO ACCOMMODATE HIGH NUMBERS of people in relatively confined areas—albeit many are living in substandard conditions—provides a significant point of comparison in the current debate on urban sustainability and the impact of a city's footprint on energy consumption and climate change.

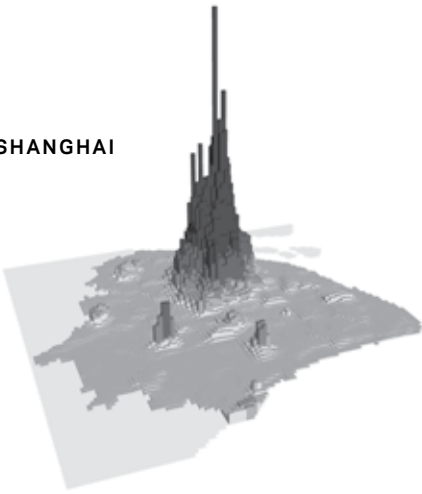
Mumbai constitutes a category on its own. Even though in aggregate terms, Bangalore and Kolkata are similarly dense to Mumbai, the territorial constraints of this island city of Mumbai have created pockets of unusually high urban densities. Within the city limits, the average density surpasses the mark of 27,000 people per km²—a figure that rises to well above 50,000 people per km² (if one only takes the built-up area into account), a level higher than even the highest density peaks in New York City's borough of Manhattan. Furthermore, it is not rare for the densest neighbourhoods of Mumbai to accommodate as many as 100,000 residents per km².

FIGURE 3
DENSITY DISTRIBUTIONS

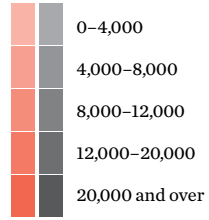
Source: UN World Urbanisation Prospects, 2007 Revision



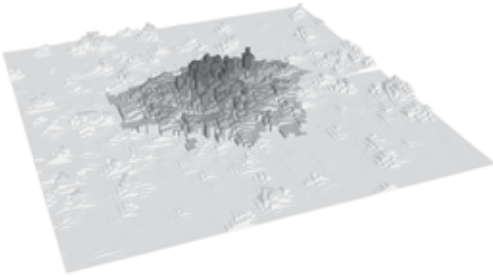
SHANGHAI



Population density (persons/km²)



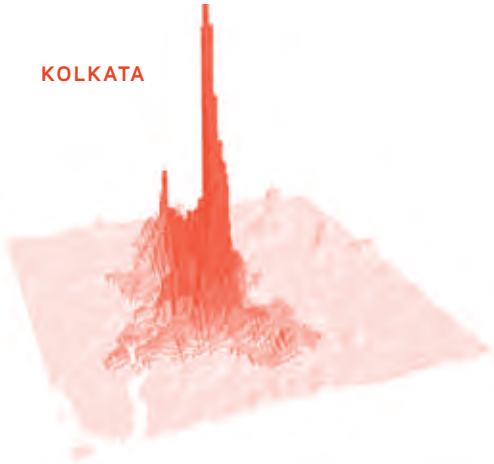
LONDON



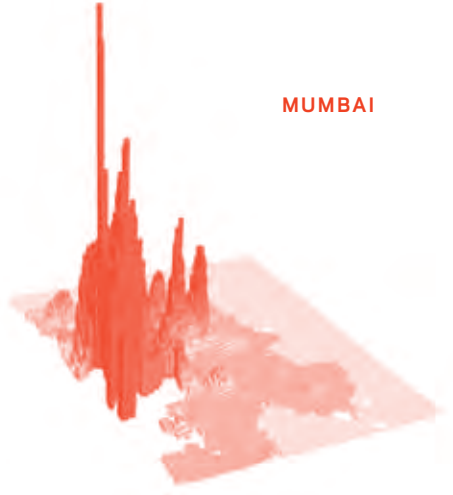
NEW YORK



KOLKATA



MUMBAI



The ability of Indian cities to accommodate such high numbers of people in relatively confined areas provides a significant point of comparison in the current debate on urban sustainability and the impact of a city's footprint on energy consumption and climate change

The density of these cities is changing rapidly as they try to attract foreign and domestic investment as well as fund the infrastructural improvements required to do so. The instrument of choice is modification of building control norms to release extra vertical space by increasing the Floor Space Index (FSI) in the cities. As Amitabh Kundu puts it in 2007, 'The aim is to provide much needed space for businesses and, at the same time, generate resources to pay for improvements in infrastructure by selling the extra FSI—or, in other words, allowing much higher levels of development to pay for public infrastructure.'

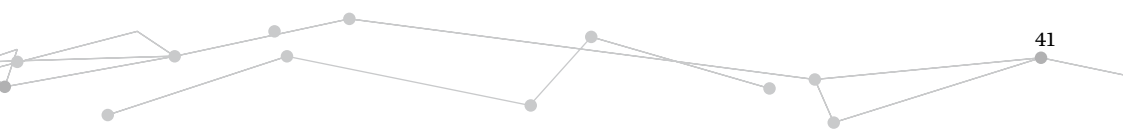
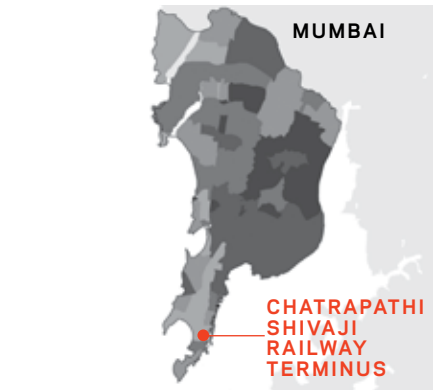
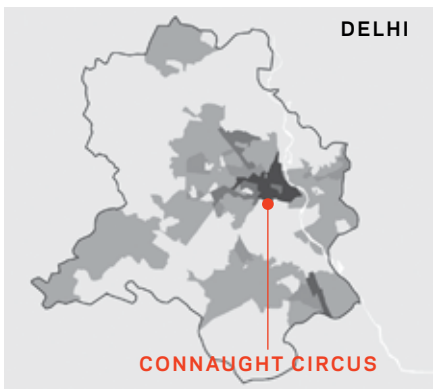
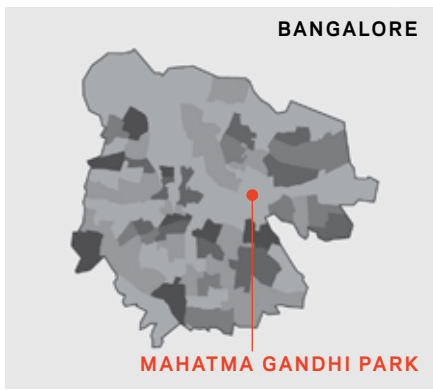
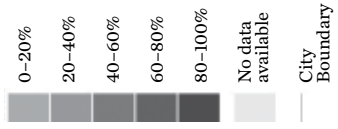
Delhi still invokes interest worldwide, not only as a masterpiece of urbanism in the early 20th Century, but also as a conscious attempt to plan for the functions of a capital city. Accounting for Delhi's lower population density is a legacy of large parks and other open spaces, as well as non-residential buildings and built forms that cannot be converted to residential uses. Nevertheless, Delhi's average density of 9,340 people per km² is still very high by international standards.

The 'shock urbanisation' referred to earlier has uneven consequences for the quality of life for the citizens of these metropolises. Increasing sections of urban population are experiencing severe deprivation in terms of access to physical and social infrastructure, transport, education, employment etc. The majority of low-paid workers are forced to access informal housing markets, and depend on informal access to basic services like water and electricity. Slums have been an integral part of the urban fabric of these cities and are expected to grow given the increasing pressure on urban services.

Increasing privatisation of basic urban services is not expected to be the panacea to the woes of these ill-provided informal settlements. In the Urban Age India Conference Newspaper, November 2007, Amitabh Kundu states, '...the 74th Constitutional Amendment Act makes it possible to provide differentiated levels of amenities in large cities, based on willingness of the users to pay for their services.'

The middle and professional classes' preference for low-density development, in safe and clean settings, ensures that higher quality infrastructure and services are provided in 'their' areas, with limited levels of new construction and no illegal encroachment from new slum development. Low levels of infrastructure and service, lack of basic amenities, poor living conditions and deteriorating law and order are likely to continue in low-income areas, acting as strong disincentives for further in-migration of the poor.'

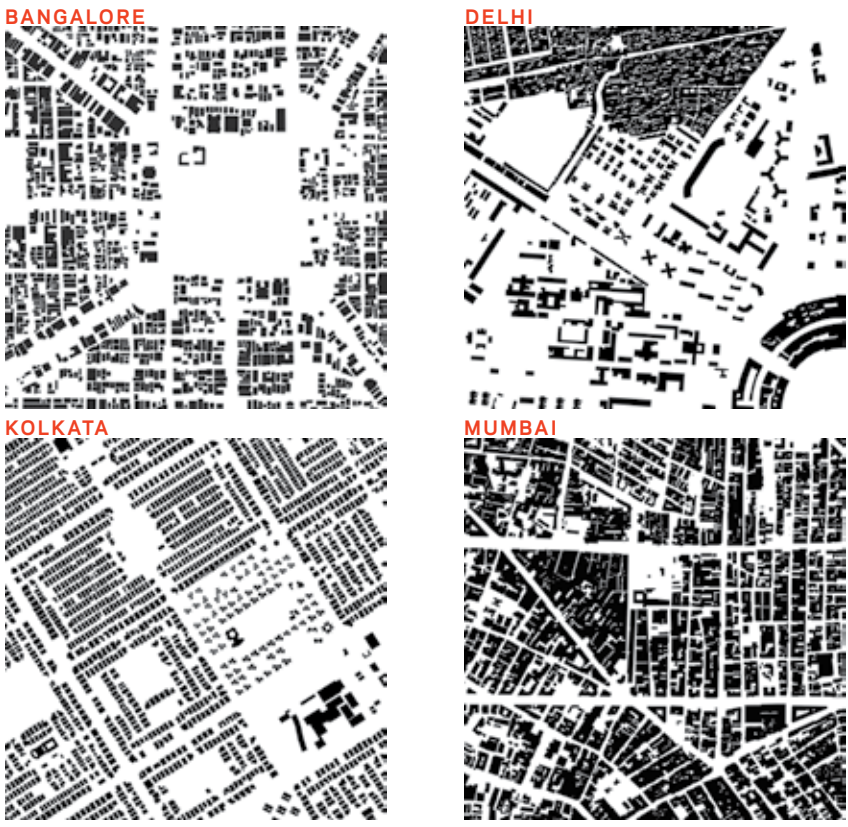
FIGURE 4
PERCENTAGE OF PEOPLE LIVING IN SLUMS
 Source: UN World Urbanisation Prospects, 2007 Revision



The design of city streets, buildings and spaces—their ‘spatial DNA’—plays an important role in securing the liveability and flexibility of urban environments that are undergoing intense processes of change. The spatial structure of Indian cities reveals an intense and compact arrangement of buildings and structures, containing and compressing the open ‘white’ spaces that constitute the public realm of the city.

FIGURE 5
URBAN MORPHOLOGY—FIGURE GROUND

Source: UN World Urbanisation Prospects, 2007 Revision



The central area of Buleshwar Market in Mumbai shows how dense urban blocks are arranged efficiently along main streets and side alleyways. The juxtaposition of the organic developments in Paharganj in Old Delhi, versus the formal circular layout of Connaught Place and other 20th Century freestanding building blocks makes evident the different spatial logics and scale of this multi-faceted city. The Jayanagar and Bhanashankari districts of Bangalore, surrounding a central park, demonstrate the regularity and fine grain of a well-planned city, while Salt Lake City district in Kolkata, a 1960s redevelopment of former wetlands, reveals clarity in space and urban structure with housing units arranged along a regular grid. This can be contrasted with earlier urban development and transport networks that have followed the natural contours of the River Hooghly.

The urban morphology of these cities has also been influenced by particular local administrative arrangements. The city of Delhi is an example of largely organically created (unplanned), high density, low-rise development with a premium on public and open spaces. The city is not faced with any natural geographical constraints and thus, post-Independence, has expanded rapidly in all directions. However, the centre of the city is dominated by the 26km² low density, low-rise Lutyen's Bungalow Zone which comprises the British-constructed colonial capital of New Delhi. The entire Lutyen's Bungalow Zone area is under development restrictions that prohibit any alteration to its original character. These restrictions have effectively isolated it from the market-based dynamics of urban growth operational in the rest of the city, thereby placing severe pressure on adjoining areas. The skewed concentration of public spaces and green open spaces in the Lutyen's Bungalow Zone has reduced the ability of the market to provide these in other parts of the city.

The inability of formal urban planning to forecast demand and urban growth characteristics and to effectively cater to them has also had an impact on the urban morphology of the other metropolitan cities. Bangalore was traditionally conceived as a pensioner's paradise with gardens, lakes, and low-rise plotted developments. In the pre-colonial era, the city developed along traditional south Indian urban patterns with narrow meandering streets, temples, and market squares. However, the tremendous urban explosion unleashed by the unanticipated information technology boom has left planners struggling to cope with the pace of development. Rampant high-rise, high-density development has occurred. But roads, public transport and urban infrastructure have not grown to meet the expansion of the last decade. Simultaneously,



there has been a gradual loss of public space. Mumbai has one of the lower per capita levels of access to open space in the world. In this context, there is significant conflict over the fate of large tracts of under-developed land locked in the mill lands in the centre of the city, and in the huge stretches of dockland on the eastern waterfront. Recent mill land redevelopment have focussed on high-end commercial plazas instead of badly needed green and public spaces, and low-income housing.



TRANSPORT

URBAN TRANSPORT IS AMONGST THOSE ELEMENTS OF URBAN REGIONS that serves well as an overall indicator for critical pressure points. Particularly in rapidly growing cities, transport problems become excellent evidence for the city's struggle to maintain a balance between growth, access and sustainability.

Infrastructure development for mass transit—whether metro, trains or buses—as well as for private vehicles, has had an enormous impact on the patterns of urban growth with long-lasting effects on land use, densities and the residential distribution of different social groups. Urban rail outranks all other forms of travel in terms of its capacity to move vast numbers of passengers throughout a metropolitan region, and its footprint requires relatively small amounts of urban land.

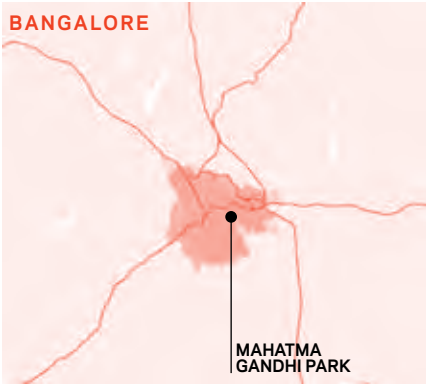
Cities in less economically developed regions have suffered from under-investment, where transport infrastructure has not been able to keep pace with rapid urbanisation. However, with rapid economic development, financial allocations for transport infrastructure, have multiplied. In India, Kolkata opened the first part of its 16.5 km underground line in the early 1980s. While Delhi introduced its system only a few years ago, it currently operates three lines on a 56 km network. With 300 km, Mumbai's suburban rail system is the most extensive on the subcontinent. Transporting more than 6 million passengers each day, it is also one of the busiest rail systems worldwide. In the long run, rail infrastructure such as metro systems are an important component of urban transport for large cities. However, the cost for implementing particularly underground rail are enormous. Instead Bus Rapid Transit (BRT) recently introduced to Delhi is far more effective in delivering high-capacity public transport with a wider reach within the metro region.

FIGURE 6
RAIL INFRASTRUCTURE

Source: UN World Urbanisation Prospects, 2007 Revision

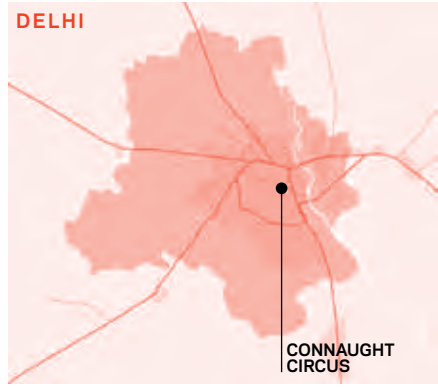


BANGALORE



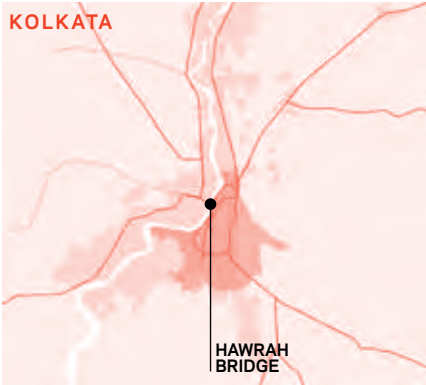
**MAHATMA
GANDHI PARK**

DELHI



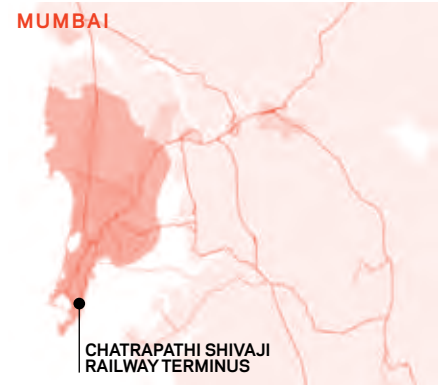
**CONNAUGHT
CIRCUS**

KOLKATA



**HAWRAH
BRIDGE**

MUMBAI



**CHATRAPATHI SHIVAJI
RAILWAY TERMINUS**

LONDON



**TRAFALGAR
SQUARE**

JOHANNESBURG



DOWNTOWN

IN MUMBAI WALKING COMPRISES A MASSIVE 55% OF ALL FORMS OF TRAVEL, WITH CARS BARELY MAKING THE 5% MARK

THE HIGHEST PROPORTION OF ALL MOTORISED JOURNEYS IN INDIAN CITIES TAKES PLACE BY PUBLIC TRANSPORT REACHING OVER 80% IN KOLKATA

Looking at different ways in which people travel (modal splits) helps us understand how people move in cities. The more compact Indian cities reveal a more sustainable dimension than the other cities as a result of the very high numbers of people who take public transport or walk to work—a direct consequence of the proximity of residential buildings (often slums) and offices in these high-density, mixed-use urban environments where distances to work average less than 2 km. In Mumbai walking makes up a massive 55% of all forms of travel, with cars barely making the 5% mark.

FIGURE 7
TRANSPORT MODAL SPLIT

Source: UN World Urbanisation Prospects, 2007 Revision



PUBLIC

PRIVATE

WALK

BIKE

RAIL

BUS

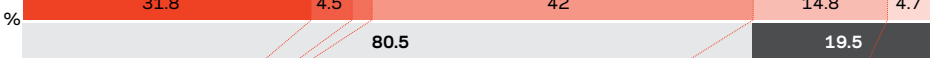
MOTORBIKE

CAR

MUMBAI



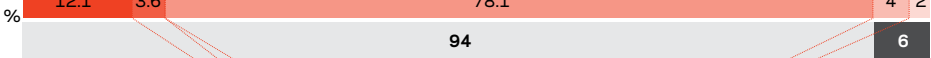
DELHI



BANGALORE



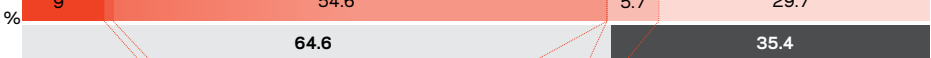
KOLKATA



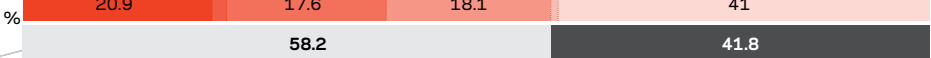
JOHANNESBURG



NEW YORK



LONDON





Average commuting times in Indian cities are low: 28 minutes in Mumbai and 33 minutes in Bangalore, which is less than in New York and London, both around 40 minutes. In Mexico City and Johannesburg they extend to well over an hour on average, with unacceptably lengthy extremes from the poorer peripheral districts. By far the highest proportion of all motorised journeys in Indian cities takes place by public transport, over 80% in Kolkata. Even the most public transport dominated western cities like New York, London and Berlin only manage to reach 50%, 30% and 27% respectively. Around 40% of midtown residents in New York's Manhattan walk to work and over 90% of affluent business workers use public transport to go to London's financial hub.

With a total population of 6 million cars—just above the number of cars produced by Germany in a single year—motorisation in India is still relatively low. However, the country is already the 11th largest car producer in the world with an annual output of 1.3 million. Car ownership is almost exclusively an urban phenomenon and Indian cities are under severe pressure to accommodate this staggering increase. With 1.5 million vehicles, sprawling Delhi has by far the country's largest vehicle fleet—more than Mumbai, Kolkata, Bangalore and Chennai combined—the highest growth with 17% occurs in Bangalore, where about 1,500 vehicles are added each day. While none of these cities are prepared to accommodate this growth, Mumbai's and Kolkata's dense urban environment proves particularly vulnerable to the flood of vehicles. Experts in all four cities warn that the car growth is choking the city.

PUBLIC TRANSPORT

80%
KOLKATA

50%
NEW YORK

30%
LONDON

27%
BERLIN

IN DECEMBER 2005, MANMOHAN SINGH'S GOVERNMENT LAUNCHED THE JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM), A PROGRAM THAT INCLUDES ABOUT USD 11 BILLION OVER 7 YEARS FOR URBAN DEVELOPMENT

SHAPING THE FUTURE OF URBAN INDIA

IN 1992, THE 74TH CONSTITUTIONAL AMENDMENT INTRODUCED A NEW era of Indian governance. It has made three significant contributions to the development of urban local government. First, it provided uniform, democratically elected and accountable local government. Second, it provides for a more integrated planning system through the establishment of District Planning Committees and Metropolitan Planning Committees. Third, this Constitutional amendment makes provisions for the financial sustainability of urban local bodies.

However, over the last 14 years little has changed and planning procedures have remained largely the same. Urban planning is mainly the responsibility of state governments. This includes housing, transport and urban development. In addition, most services related to urban systems are state services. Cities themselves are normally governed by Municipal Corporations with very limited planning powers. The only levy left to the municipalities is property tax. But here, too, the State decides the tax base, rates and modes of assessment. India fares poorly in its record of devolution to local bodies. Civic government expenditure in India is just 0.6% of national GDP, compared with 5% in Brazil and 6% in South Africa.

In December 2005, Manmohan Singh's government launched the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), a program that includes about US \$11 billion over 7 years for urban development throughout the country. The aim is to improve basic services in over 60 cities with a population of over a million, all State capitals and select cities of religious, historical and tourist importance.

As a city-state and the national capital of India, Delhi has its

own state government and is one of the largest municipalities in the country. The state government appoints the Chief Minister who is elected by the State Assembly. In contrast with most urban areas of the country, the state government of Delhi controls neither the municipality nor the development authority. It is these two institutions, run by centrally appointed civil servants, which provide infrastructure and housing, and possess statutory plan-making powers. The elected councillors of the municipality (the Municipal Corporation of Delhi) have only deliberative responsibilities and appoint the Mayor of Delhi. This governance structure is a legacy of Delhi's historical status as 'union territory', administered directly by the national government until 1993.

The urban governance structure of both Mumbai and Bangalore are largely similar. Urban governance involves interventions at national, state and local levels. The national government has a number of powerful departments that provide services and resources for the city. There is a powerful level of state government, headed by a Chief Minister, which operates many services within the city, including roads, housing, education, health, environmental services and policing. The city government is headed by an elected Mayor with limited power. The real executive power lies in the hands of the Municipal Commissioner who is a civil servant appointed directly by the Maharashtra state government. The state government is about to constitute a Metropolitan Planning Committee for the metropolitan area as required by the JNNURM. There is significant overlap between responsibilities at state and city levels. Overall, the city government is relatively less powerful than the state as required by the JNNURM.

Kolkata's government is an amalgam of functions at the national, state (West Bengal) and local level, but with a difference. Unlike other major cities in India, Kolkata operates a Mayor-in-Council (MIC) governance system. The Mayor-in-Council is a 'cabinet' of directly elected members (representing individual city wards) working alongside the Mayor, who acts as the Chief Executive of the city. The Mayor is elected by the Kolkata Municipal Corporation. The city is therefore run on a two-tier management structure: at a mayoral and borough level with responsibilities for street lighting, road repairs, drainage and sewerage, education and disaster management, while the state government of West Bengal, through its Chief Minister, provides higher-level services and complements city functions. Kolkata is also the only large city in India that has created a Metropolitan Planning Committee as required by the JNNURM.



INDIAN METROPOLISES ARE AT THE CROSSROADS

INDIAN METROPOLISES ARE AT the crossroads. An increasingly liberal economic environment has created significant opportunities for cities to leverage domestic and international capital and expertise to improve physical and transport infrastructure, create housing, and generate employment. The central government-led JNNURM program is an attempt to fashion fruitful public-private partnerships in creating infrastructure to deliver basic services, affordable transport, etc. At the same time, sustained levels of economic in-migration into these cities continue to be a major challenge to city officials trying to ensure affordable access to basic services.

However, it must also be remembered that a substantial percentage of the population survives at the margins of decent existence and are potentially at risk of being priced out of market-based development solutions. Therefore, it needs to be ensured that all sections of society

have representation in policy-making and provisions by which they are able to access the resulting physical improvements in the city.

The provisions of procedural innovations to increase democratic representation in local government i.e. the *74th Constitutional Amendment* are a welcome step in this regard. They have been implemented to a degree of success in Kolkata, and are in the process of implementation in Bangalore and Mumbai. However, substantive taxation as well as urban planning and implementation powers need to be devolved to these statutory bodies for them to be truly effective in delivering an acceptable standard of living to the poorest citizen.

This essay is based on research conducted by the Urban Age Program at the London School of Economics and Political Science (LSE). Results were recently published in the report 'Integrated City Making'. Urban Age is a joint initiative of LSE and Deutsche Bank's Alfred Herrhausen Society investigating the future of cities. More information is available on www.urban-age.net. The authors would further like to thank Kay Kitazawa, Richard Simpson and Jayaraj Sundaresan for their support.



2







GLOBALISATION AND EXCLUSIONARY URBAN GROWTH IN DEVELOPING COUNTRIES: THE INDIAN CASE

AMITABH KUNDU

An overview of recent growth and migration trends in rural and urban India with a look at what these indicate for the future of Indian cities

AN ANALYSIS OF THE TRENDS AND PROCESSES OF URBANISATION IN LESS DEVELOPED COUNTRIES REVEALS INADEQUACY OF THE EXISTING INSTITUTIONAL STRUCTURES IN MANAGING CITIES IN THE 'BORDERLESS' WORLD OF TODAY

ANALYSIS OF THE TRENDS AND processes of urbanisation in less developed countries reveals the inadequacy of the existing institutional structure in managing the cities in the 'border less' world of today. These institutions are noted to have no capacity to deal with the demands and pressures that are being generated as a result of the present focus of globalisation. Managing these processes was considered to be an exclusive responsibility of the government and state-owned and state-led institutions, just before few decades. Now, under a decentralised system of planning, it is viewed as a joint responsibility of stakeholders like industrial and

business enterprises, public and private organisations providing the infrastructural services, and resident associations. It is well recognised that city managers have only a limited control over the functioning and growth dynamics of the cities as these are products of complex socio-political forces. The extent to which the government at the city level can impact its economic or demographic growth, therefore, depends on circumstances external to it. This new perspective urges governments at different levels of hierarchy to function in collaboration with the other stakeholders if they want to want to make an impact on the pace and pattern of urbanisation.

The proponents of this market and management oriented perspective believe that this new strategy would accelerate rural urban migration and boost urban growth. It is argued that linking a less developed country with the global economy would result in inflow of capital from outside the country and a rise in indigenous investment. This, in turn, would give impetus to the process of urbanisation since much of the investment and consequent increase in employment would be either within or around the existing urban centres.

This macro perspective and the proposed package of solutions have come under criticism. Indeed, the governments in the developing countries, while assuming the ‘responsibility’ of linking their urban system with the global economy and creating global cities, may impose conditions or structures that are detrimental to the interests of the local population. Often, one observes conflict of interest in between the objective of providing the basic needs to the city population and investing in infrastructure required by the ‘stakeholders’ including international business interests. Unfortunately, the latter in many of the less developed countries have been able to capture the political process and even influence the judicial system, often leading to marginalisation of the interests of the urban poor.

The critics further point out that employment generation in the formal

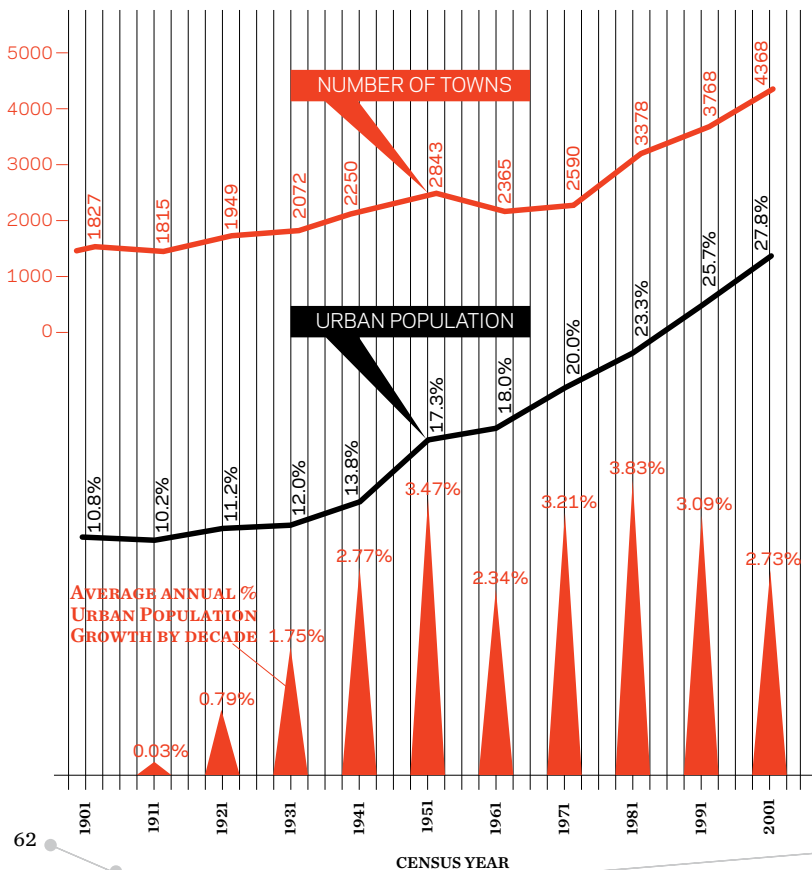
urban economy would not be high due to the capital intensive nature of industrialisation. A low rate of infrastructural investment in the public sector—necessary for keeping budgetary deficits low—would slow down agricultural growth, causing high unemployment and an exodus from rural areas. This would lead to rapid growth in urban populations, with most migrants absorbed within informal economy. The protagonists, as critics of globalisation, thus converge on the proposition that urban growth in the post liberalisation phase would be high. The surprising fact brought out by the data in many of the countries including India is that there has been deceleration in urban growth in recent years. It would, therefore, be important to analyse the validity of all the propositions associated with the thesis of acceleration in urban growth.

TRENDS AND PATTERNS OF URBANISATION AT MACRO LEVEL

THE GROWTH RATE OF URBAN POPULATION IN INDIA, REPORTED BY the first census (1951) after Independence, was recorded as very high—3.5% per annum (FIGURE 1). Demographers had not accepted it as indicative of a long term trend which was attributed to partition of the country, resulting in international displacement of population, as also application of a loose definition of urban centres by the census.

FIGURE 1
NUMBER OF TOWNS, PERCENTAGE AND GROWTH RATE OF URBAN POPULATION IN INDIA SINCE 1901 TO 2001

Note: Estimated population has been taken for Assam and Jammu & Kashmir in 1981 and 1991 respectively
Sources: 1. Paper-2, Rural-Urban Distribution, 1981, 1991 & unpublished city level data from 2001 Census



With the standardisation of the definition in 1961 Census, the rate understandably came down significantly. The 1970s, however, saw a still higher growth rate—at 3.8% per year, and then fell to 3.1% during the 1980s. It has reduced to 2.7% in the 1990s, which is the lowest in the post-Independence period. All these factors have been responsible for a sluggish increase in the percentage of population in urban areas during the period from 1941 to 2001. The declining trend of urbanisation in the country since the 1980s blasts off the popular theory of ‘urban explosion’, ‘over urbanisation’, and dismisses most of the projections made by various expert groups at national and international levels.

An analysis of the distribution of urban settlements and population across size categories reveals that the process of urbanisation has been large city oriented which questions the proposition of a stable morphology in Indian urban structure as put forward by scholars like Rakesh Mohan and Pant. The percentage of urban population in Class I cities—defined as those having over 100,000 people—has gone up systematically over the decades in the last century from 26% in 1901 to 69% in 2001. This is partly due to graduation of lower order towns into Class I category but the importance of a faster demographic growth in these, in making the urban structure top-heavy can not be overlooked (FIGURE 2).

Class I cities have an edge over lower class towns in terms of growth rate. The pattern of growth has remained similar over the past three decades although there is a general deceleration in urban growth in all size categories. Furthermore, this gap has been widened during 1991–2001. The decline in the growth rate of Class I cities is, thus, less compared to all lower categories of towns. One would, therefore, stipulate that the urban structure is becoming more and more top heavy due to the higher demographic growth in larger cities (FIGURE 2). The spatial concentration of urban growth can be seen not only in terms of an increase in the share of urban population in Class I cities but also in that of million plus cities. The latter claimed about 26% of urban population in 1981. This has increased to 32% in 1991 and further to 38% in 2001.

Interestingly, the demographic growth in the capital cities of the national and state governments has been even higher than that of the million plus cities during 1981–1991 (FIGURE 3). The situation, however, has been reversed during the nineties. This reversal can be explained in terms of the strategy of structural adjustment, the fall in the infrastructural investments by the Central and State governments, and

the expenditure control of urban development authorities, adversely affecting the growth of the capital cities. The growth rate of metropolitan cities too has declined in the 1990s—much less than that of other Class I cities—but that can be attributed to the pushing out of manufacturing units along with slums into their degenerated peripheries.

FIGURE 2
ANNUAL EXPONENTIAL GROWTH RATES OF URBAN POPULATION
IN DIFFERENT SIZE CATEGORIES

Notes: The growth rates of urban population in a size category have been computed by taking the population in the category in the base and terminal year, without considering the change in the number of towns therein. The figures in brackets are, however, computed by taking only the population of the towns that belonged to a category, both for base and terminal years.

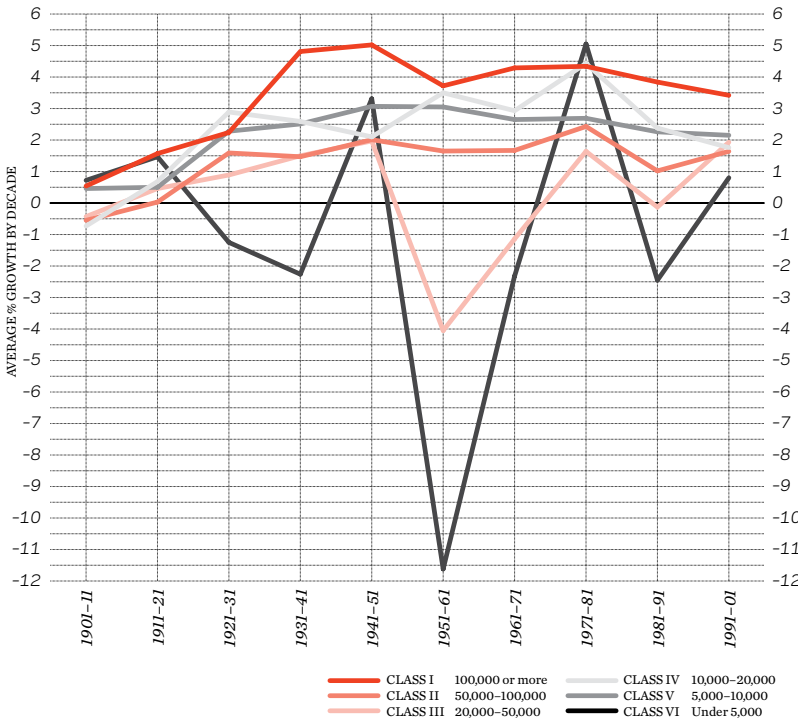
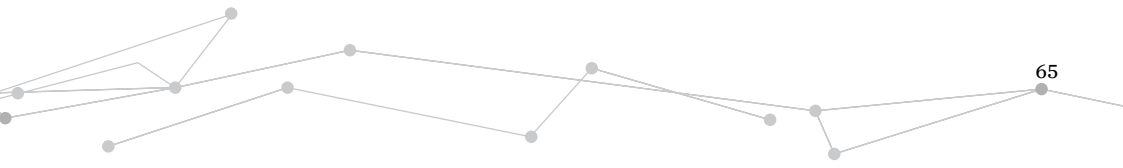
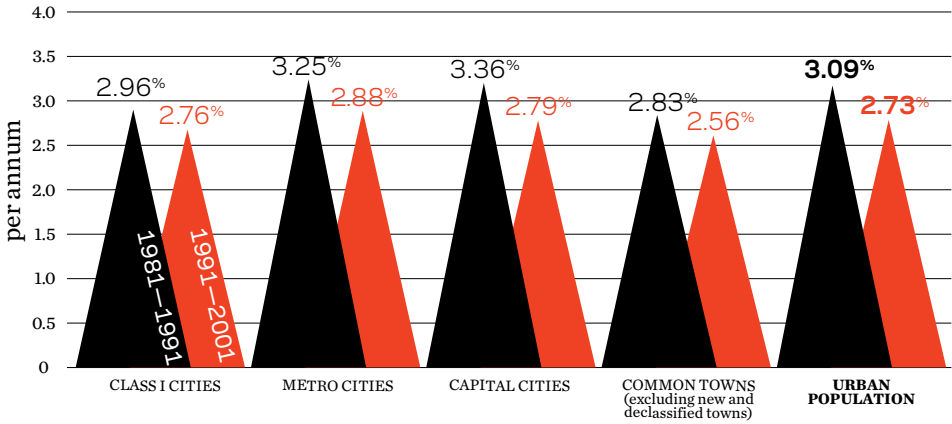


FIGURE 3
ANNUAL EXPONENTIAL GROWTH RATES OF POPULATION IN DIFFERENT CATEGORIES OF URBAN CENTRES

Note: The population growth rates in the first three rows have been computed using the base year population for classification of cities



UNDERSTANDING THE SPATIAL DYNAMICS OF DEVELOPMENT

DURING THE FIRST FOUR DECADES AFTER INDEPENDENCE, URBAN growth has been high in relatively backward and less urbanised states and regions. This is primarily due to the fast growth of small and medium towns and emergence of new towns. Several of these are district and sub-district headquarters that have received some government investment. Besides, many of these towns are absorbing migrants from their impoverished hinterland despite their have a low level of basic services and poor quality of infrastructure. Unfortunately, these could not attract capital investment from capital market or financial institutions due to their weak economic base. The developed states, on the other hand, have attracted migrants to their large urban centres due to industrialisation and infrastructural investment. However, overall growth rate of the urban population works out to be modest or low due to lack of dynamism in small and medium urban centres. On the whole, the relationship between urban growth and economic development across states, works out as negative.

The scenario in the post Independence period is characterised by dualism. The backward states, particularly their backward districts and small and medium towns experienced rapid urbanisation. This can partly be attributed to government investment in the administrative headquarters, programs of urban industrial dispersal, and transfer of funds from the states to local bodies through a need based or what is popularly known as ‘a gap filling’ approach. A large part of RU migration into smaller towns from their rural hinterland in backward states could, however, be explained in terms of push factors, owing to lack of diversification in agrarian economy. In a sharp contrast to this, Class I cities in developed states have recorded reasonably high economic and demographic growth as they could attract investment from within the country and abroad (FIGURE 3). Overall rates of urbanisation, however, work out as modest.

The 1990s, however, made a significant departure from the earlier decades. There has been a concentration or polarisation of urban growth in developed states with the exclusion of backward areas. Many of the developed states registered urban growth above the national average. The backward states, on the other hand, have experienced growth either below that of the country or, at the most, equal. This process is reflected in larger cities recording relatively higher growth when compared to smaller towns. This could, at



least partly, be attributed to the measures of decentralisation whereby the responsibilities of resource mobilisation and launching infrastructural projects have been given to local bodies. Large municipal bodies that have a strong economic base, particularly those located in developed states, having a clear advantage that is manifested in their per capita expenditure figures and high economic and demographic growth.

INCREASING IMMOBILITY AND CHANGING PATTERN OF MIGRATION

IT IS OFTEN ARGUED BY SOCIAL DEMOGRAPHERS LIKE KINGSLEY DAVIS that population in the Indian subcontinent is relatively immobile due to the prevalence of the caste system, joint families, traditional values, diversity of language and culture, lack of education and a predominantly agrarian based economy. By this logic, improvement in the levels of education and that of transport and communication facilities, shift of workforce from agriculture to industry and tertiary activities, modernisation of norms and values would tend to increase mobility. Researchers working in different parts of the world have brought evidence to demonstrate that these improvements have indeed increased population mobility. It will be important to see how India, adopting a development strategy of planned intervention, has coped with the problem of 'friction of mobility'.

An analysis of the pattern of internal migration (excluding the international migrants)—lifetime as well as intercensal—for males and females during the past several decades reveals that mobility has declined both in rural as well as the urban areas. It is well known that male migration is more sensitive to economic stimuli while a large part of female migration can be attributed to marriage and other social factors. Importantly, the percentage of lifetime male migrants to total population has declined consistently over the past few decades, which is noted to be a sharper decline in case of rural than urban areas (FIGURE 4).

The sluggish growth of migrants compared to resident population in urban areas has resulted in the percentage of lifetime (male) migrants and that of intercensal migrants going down during 1971–1981, although the decade saw very high growth of urban populations. In-migration of females into urban areas, too, has declined but at a slower pace, as that is governed by socio-cultural factors, as noted in FIGURE 4. In case this migration trend continues, the pace of

urbanisation in future years is likely to be less than what is projected by most national and international organisations.

A significant development in the late 1990s is the sharp decline in the percentage of migrants reporting economic factors as the reason for migration. This is more conspicuous in the case of females than for males. The importance of poverty and deprivation as a factor in

FIGURE 4
INTERNAL MIGRANTS IN VARIOUS CATEGORIES 1961–2001

Note: Life time migrants are by their place of birth while inter-censal migrants are by their place of last residence for reasons of temporal comparability.

	PERCENTAGE TO TOTAL POPULATION					TOTAL (MILLIONS)
	1961	1971	1981	1991	2001	2001
TOTAL MIGRANTS						
Intercensal	15.0	12.4	12.2	9.7	9.5	98.3
Intercensal Interstate	2.0	1.6	1.6	1.3	1.6	16.8
Lifetime	30.6	28.7	29.4	26.5	29.2	301.1
Lifetime Interstate	3.3	3.4	3.6	3.3	4.2	42.3
MALE MIGRANTS						
Intercensal	11.3	9.4	8.9	6.1	6.2	32.9
Intercensal Interstate	2.2	1.8	1.6	1.2	1.6	8.5
Lifetime	18.3	17.2	16.6	13.8	16.4	87.2
Lifetime Interstate	3.4	3.4	3.3	2.8	3.7	19.7
FEMALE MIGRANTS						
Intercensal	19.0	15.7	15.7	13.5	13.2	65.4
Intercensal Interstate	1.7	1.3	1.7	1.5	1.7	8.3
Lifetime	43.7	41.1	43.1	40.3	43.0	213.7
Lifetime Interstate	3.2	3.4	3.9	3.8	4.6	22.7
RURAL MALE MIGRANTS						
Intercensal	8.4	7.1	6.3	4.2	4.0	15.2
Intercensal Interstate	0.9	0.8	0.7	0.5	0.6	2.3
Lifetime	13.9	12.9	11.5	9.4	10.5	40.2
Lifetime Interstate	1.4	1.3	1.2	0.9	1.1	4.4
URBAN MALE MIGRANTS						
Intercensal	23.8	18.5	16.9	11.7	11.7	17.7
Intercensal Interstate	7.9	5.6	4.4	3.3	4.1	6.2
Lifetime	37.5	33.6	32.4	26.0	31.2	47.0
Lifetime Interstate	12.3	11.2	10.0	8.0	10.2	15.3



migration of males has declined, both in rural and urban areas. The increase in the share of women among migrants under all categories and durations is yet another indication of the growing importance of non-economic factors since marriage and joining the family are the major factors responsible for their mobility.

One observes a positive relationship between per capita expenditure and the rate of migration. The migration rate is as high as 23.3% in the highest consumption expenditure category in rural areas which goes down systematically as we move down, the figure being as low as 4.3% in the lowest category. The same is valid for urban households as well. One may explain this also in terms of migrant households being more enterprising and successfully moving up in expenditure category. Importantly, in-migration rates for SC/ST or for other backward castes are around 6% in rural areas. The rate for other castes is higher—over 8%. In urban areas in-migration rates do not vary significantly across the castes. One would infer that low income/low expenditure is not the major factor behind migration as labour and land market conditions in developed regions or cities have turned hostile to poverty induced migration, in recent decades.

In a fast, globalising economy like India, new employment opportunities are coming up in selective sectors and in a few regions/urban centres. While the poor constitute a large proportion among the migrants, a substantial number among the latter belong to the middle and high income categories, grabbing new opportunities made available in the process of globalisation. The fact that the percentage of migrants has declined and their economic and social status are better than that of non-migrants and has even improved over time, reflect barriers of mobility for the poor. With growing regionalism, service provision being based on market affordability, changes in skill requirements in urban labour market, the emerging productive and institutional structure have become hostile to newcomers. This has made the migration process selective wherein the poor are unskilled labourers who find it difficult to access the livelihood opportunities coming up in developed regions and large cities.

The analysis of in-migration pattern across the states in 1991 reveals that the percentage of interstate (intercensal) net in-migrants are high (above the national average) in most of the states with high per capita income. This pattern can be observed both in rural as well as urban areas. The less developed states, on the other hand, report a high percentage of out-migrants. The pattern of interstate in-migration as well as out-migration, as revealed through NSS data in

FIGURE 5
PERCENTAGE OF MIGRANTS IN DIFFERENT NSS ROUNDS IN RURAL AND URBAN

Source: Various NSS reports

ROUND (YEAR)	RURAL		URBAN	
	MALE	FEMALE	MALE	FEMALE
55 (July 1999–June 2000)	6.9	42.6	25.7	41.8
49 (January–June 1993)	6.5	40.1	23.9	38.2
43 (July 1987–June 1988)	7.4	39.8	26.8	39.6
38 (January–December 1983)	7.2	35.1	27.0	36.6

1999–2000, is about the same as that of the census (FIGURE 5).

Spatial disparity is likely to encourage migration from backward to developed states and regions. Interestingly, the migration pattern in India fits well in these models that assume that optimality in the spatial distribution of economic activities in the long run would be brought about through free movement of the factors of production. Most of the backward states report high rates of out-migration while the developed states are absorbing these migrants.

The changes in migration patterns during the past few decades, however, raises questions regarding the development dynamics in the country. The developed states in the nineties report a much lower percentage of in-migrants than in the 1960s or 1970s. Correspondingly, out-migration from many of the backward states has registered substantial decline. One must ask why, despite growing economic disparity across the states, migration in general and interstate migration in particular should go down? Particularly, out-migration rates in rural areas in less developed states are declining very fast. This would pose serious problems for the people there since these states are experiencing rapid natural growth. A segment of these migrants were seeking absorption in small and medium towns but limitations of infrastructural facilities are becoming constraints, resulting in a deceleration in their growth rates. The impact of increasing immobility of Indian population can be seen in developed states as well. These states have remained immigrating in nature but their rates have gone down. The reports regarding seasonal shortages of labour and high wage rates confirm this result based on the data from secondary sources.

Some scholars have tried to explain the decline in inter state migration during the 1960s and 1970s in terms of developmental programs, launched by the central and state governments in the post Independence period to remove regional disparity. It is argued that better communication and transport facilities have alleviated the need to move employment and education since populations can now commute to neighbouring cities for employment. Undoubtedly, there is some truth in these arguments and would partly explain the decline in migration in the early decades after Independence when spatial inequality was on the decline.

A complementary explanation can be in terms of emergence of a few alternate cities as centres of industrial investment in each state. These centres are having a high level of infrastructure and developed industrial base. Consequently, they are able to absorb a part of the migration stream that, otherwise, would have moved out of the state. Besides, all state governments are making substantial investment in developing their capital city and a number of district/taluka headquarters. These centres receive a large chunk of the subsidised amenities provided through their state governments that are attracting the elites, professionals and industrialists. This has resulted in increased movement of people from backward to developed regions and large cities within the state and not to distant locations outside the state.

All these explanations would stand discounted when we consider that the 1980s and 1990s have seen a significant increase in interstate inequality. A better explanation can possibly be found in terms of growing assertion of regional identity, education (up to high school) in regional languages, adoption of master plans and land use restrictions at the city level, all these directly or indirectly discourage migration. The following section makes an attempt to demonstrate how the neo-liberal paradigm has strengthened some of these factors and ushered in a process of sanitisation of large cities, all these resulting in a decline in rural urban migration and urban growth.

IMPACT OF NEO-LIBERAL PARADIGM ON URBANISATION AND MIGRATION

THE BASIC STIPULATION THAT THE MOBILITY OF THE FACTORS OF production, operationalised through the market, automatically ensures optimal distribution of economic activities and population has been a subject of critical scrutiny at the global level in recent years. Available evidences from both secondary and primary sources in India too suggest that specificities and fragmentations in labour market as also policies of development are hindering mobility of workers. Programs of structural reform have led to the relaxation and removal of the restrictions on movement of commodities, location of industries but unfortunately these have failed to make a dent on socio-economic constraints on movement of labour force or people. There has been resentment and reservation with regard to immigration even in the most developed states like Gujarat and Maharashtra, backed up by regional and communal sentiments, despite migrants constituting the bulk of underpaid workers in informal sector.

Economists advocating opening up policy in agriculture would be happy to accept the thesis of a 'suction mechanism' in labour market, operating within Indian agrarian system. The thesis stipulates that the regions with high and growing land productivity are able to attract migrant workers from other regions, resulting in an equalisation of labour productivity in space. The pattern of land productivity and labour absorption in agriculture during the 1960s and 1970s supported the proposition. It is possible to use this stipulation to build up a rationale for an unbalanced development strategy in agriculture and industry, focusing on only a select few regions having a high growth potential, as often proposed by the advocates of globalisation.

The growth of the manufacturing sector in the nineties has been concentrated in a few developed states and regions as the locational controls and programs to promote industries in backward regions have been withdrawn gradually. This has understandably accentuated both the interstate and intrastate disparity in industrial development. Unfortunately, this has not resulted in an acceleration of migration from the less developed states. As a consequence, many of these states, particularly their backward regions are facing serious problems of unemployment and under employment.

Given the emerging socio-political climate, the possibility that migrant workers, coming from across districts and states, would take up the growing

**STUDIES ON SPATIAL STRUCTURE OF
DEVELOPMENT REVEAL THAT REGIONAL DISPARITY
HAS ACCENTUATED IN RECENT DECADES**

employment opportunities in agriculture or industries in a few developed districts/states and share the benefits with local population, seems rather bleak. Unless the reasons for increasing immobility are properly understood and the factors responsible for it are appropriately tackled, it would be dangerous to follow the strategy of pumping in subsidised agriculture or industry related inputs in select districts or leave the process of development to be determined by forces of global and national market. The analysis of the urban dynamics in the past few decades, as attempted above, helps in questioning these solutions, emerging from the neo liberal paradigm.

Studies on spatial structure of development reveal that regional disparity has accentuated in recent decades. With the launching of the programs of decentralised urbanisation and management solutions, a few large cities, that have stronger economic base have been able to corner much of the institutional and plan funds. This has been facilitated by the system of resource devolution across states and urban centres which has got increasingly linked with capacity to recover costs. Projects that promise quick returns in short run and thereby obtain high rating from financial intermediaries are successful in mobilising the necessary resources from the market. National and international organisations, too, prefer to launch their schemes in developed states and large cities due to, besides the reasons of greater visibility, higher institutional assurance of cost recovery. Also, it is possible to invest large sums of money here with ease with low overhead cost. All these have helped the emergence of a few global cities, further distorting the urban hierarchy. Given this macro scenario, slowing down in the rate of RU migration and urbanisation, concentration of demographic growth in relatively developed states as well as around a few large cities, seems to be a logical outcome.

Small and medium towns, on the other hand, find it difficult to finance any of their development projects through internal resources or borrowings from capital market. The fiscal discipline imposed by the government, credit rating agencies and other financial intermediaries, make it impossible for them to undertake infrastructural investment of any kind. The deficiency in basic amenities is a serious hurdle in their attracting private investment from within or outside the country. It is, therefore, understandable that only a few large cities with strong economic base, that have been able to secure high credit rating and raise resources through bonds and other innovative credit instruments, are successful in attracting population as also economic activities in recent years.

Pursuit of these management solutions for improving governance and resource mobilisation, emerging mostly from American experience and World Bank programs in the developing world, has led to serious problems in Indian cities as socio-economic conditions are markedly different. Many of the international organisations have chosen to



ignore the European experience wherein the state agencies have played an important role in social housing and the provision of basic amenities. They also disregard the ground reality that the federal structure of governance in India has to respond to different types of pulls and pressures. The expectation of quick results and rapidity of implementation have prompted these organisations to identify 'success stories' from different parts of the globe and attempt to multiply them in India. This has been responsible for not giving much attention towards the creation of local structures of accountability within the cities.

Indeed, these efforts are insensitive to the real problems of urbanisation in the country. The aspects of unbalanced urban structure, segmentation of cities and the denial of basic amenities to poor and slum dwellers, for example, have been given marginal attention as ideological contexts have determined the priorities in resource allocation. As a result, the process of urbanisation has become exclusionary in nature. With governmental investment in infrastructure and basic amenities becoming less and less in smaller towns and slum colonies and their failure to attract private or institutional investment, the disparity within urban economy has increased. It is likely to increase further in future years.

FIGURE 6 MIGRATION RATE FOR RURAL AND URBAN MALES IN DIFFERENT MPCE CLASSES 1999–2000

Source: NSS report No. 470: Migration in India, 1999–2000.

RURAL		URBAN	
MPCE CLASSES (RS.)	% MIGRANTS	MPCE CLASSES (RS.)	% MIGRANTS
0-225	4.3	0-300	10.5
225-255	3.7	300-350	13.0
255-300	4.0	350-425	13.4
300-340	4.6	425-500	19.7
340-380	4.9	500-575	21.1
380-420	5.8	575-665	23.9
420-470	6.3	665-775	27.8
470-525	7.3	775-915	30.7
525-615	8.6	915-1120	37.1
615-775	10.7	1120-1500	41.2
775-950	14.5	1500-1925	38.8
950 & above	23.3	1925 & above	43.3
ALL	6.9		25.7



THE PATTERN OF URBAN GROWTH BECAME HIGHLY UNBALANCED IN THE NINETIES, WITH DEVELOPED STATES RECORDING ACCELERATION OF GROWTH RATES

ADOPTION OF PROGRAMS OF structural reform and economic liberalisation in India has led to the withdrawal of the state from the 'commanding heights', as envisaged at the time of launching the programs of planned development after Independence. The institutional vacuum, thus created, is sought to be filled in through the engagement of private sector, revitalisation of local governments and promotion of community and NGO efforts. It is implicitly assumed that the responsibilities of balanced regional development, poverty alleviation, provision of basic amenities and evolving an optimal structure of settlement hierarchy can be passed on to these 'new actors'. The analysis reveals that many of the national level objectives and broader

socio-economic concerns cannot be meaningfully addressed by private sector initiatives, local governments or community based programs, without an institutional structure tackling the challenge at the macro level.

There seems to be a shift in the process of urbanisation that has accompanied the programs of structural reform in the country. The pattern of urban growth has become highly unbalanced in the 1990s, with developed states recording acceleration in their growth rates. The gap in the growth rates between large and small ones has also widened. The relatively backward states that had experienced rapid growth in earlier decades, because of state investment in small and medium towns, have reported no increase or even a decline in urban growth. All these trends

suggest significant increase in intra-urban inequality.

Given this dynamic of urban industrial development, a handful of large cities have been able to corner much of the resources, available for infrastructural and industrial development both from private and public sector. The small and medium towns located away from these 'global centres of growth', particularly those in backward regions, have failed in attracting private investment. All these elements have adversely affected the process of rural urban migration and balanced urbanisation in the country.

Importantly, local governments in large cities are having conflicting development goals. The two major objectives they have are a) serving the needs of the city population, focusing on the poor who are deficient in basic services and b) investing in infrastructure required by national and international business interests. Given this competitive agenda, they often adopt management practices that turn out to be detrimental to the interests of local population, particularly the poor. The business interests in these cities seem to have captured the political process governing their development and are even able to influence the judicial system. This, in the absence of appropriate institutional backup, has led to marginalisation of the poor. There are, thus, reasons to be skeptical with regard to the capacity of municipal governments to meet the needs and aspirations of the people of city dwellers, despite the

present enthusiasm for decentralised decision making.

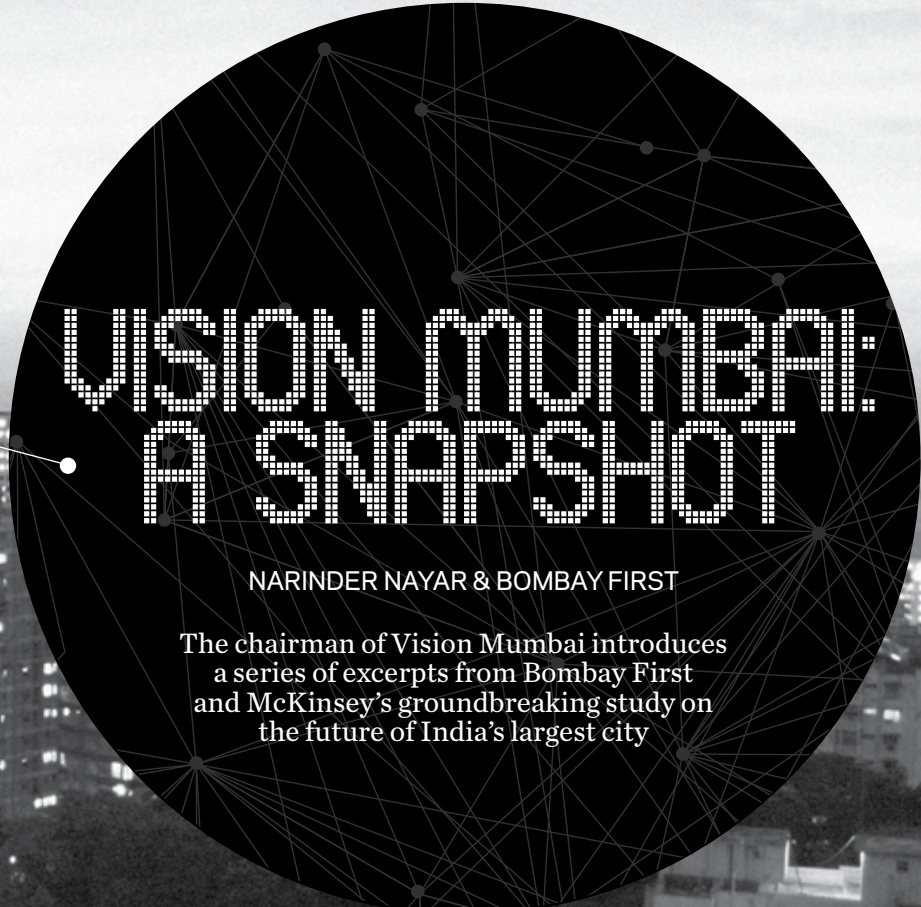
The process of globalisation has led to the weakening of institutions like family, community, common property resources. This has increased the vulnerability of the poor both in rural as well as urban areas, despite reported decline in poverty. Migration which brought about population redistribution from poorer to developed regions and helped them in finding a survival strategy is yet another institution which has come under strain. Despite the increase in regional imbalances, the Indian population has become increasingly immobile due to emerging socio-political factors. This poses a major challenge for the development strategy, currently being pursued in the country. Undeniably, this has increased the vulnerability of the poor. The policy of unbalanced development, if continued despite this ominous trend, can have serious negative implications. It is, therefore, important that the implications of the recent developments are examined with empirical rigour. Also, measures should be worked out, if possible, to stall this declining migration trend. However, if the dynamics of population distribution happens to be largely beyond the scope of governmental policies, there seems to be no choice but to adopt a policy of balanced regional development and disperse economic and employment opportunities to backward regions through planned effort.



3



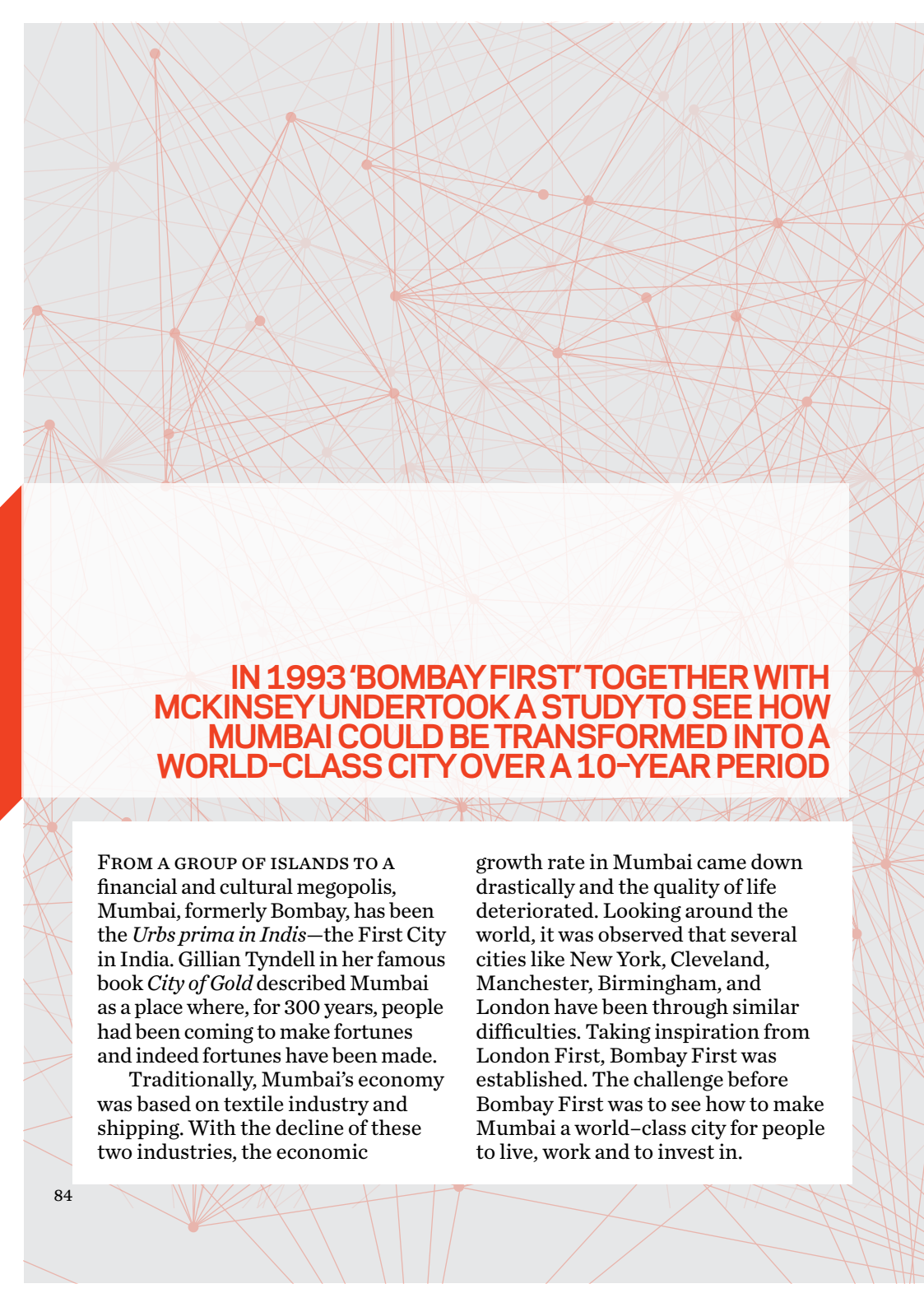




VISION MUMBAI: A SNAPSHOT

NARINDER NAYAR & BOMBAY FIRST

The chairman of Vision Mumbai introduces
a series of excerpts from Bombay First
and McKinsey's groundbreaking study on
the future of India's largest city



IN 1993 'BOMBAY FIRST' TOGETHER WITH MCKINSEY UNDERTOOK A STUDY TO SEE HOW MUMBAI COULD BE TRANSFORMED INTO A WORLD-CLASS CITY OVER A 10-YEAR PERIOD

FROM A GROUP OF ISLANDS TO A financial and cultural megopolis, Mumbai, formerly Bombay, has been the *Urbs prima in Indis*—the First City in India. Gillian Tynnell in her famous book *City of Gold* described Mumbai as a place where, for 300 years, people had been coming to make fortunes and indeed fortunes have been made.

Traditionally, Mumbai's economy was based on textile industry and shipping. With the decline of these two industries, the economic

growth rate in Mumbai came down drastically and the quality of life deteriorated. Looking around the world, it was observed that several cities like New York, Cleveland, Manchester, Birmingham, and London have been through similar difficulties. Taking inspiration from London First, Bombay First was established. The challenge before Bombay First was to see how to make Mumbai a world-class city for people to live, work and to invest in.

In 1993, Bombay First, together with McKinsey undertook a study to see how Mumbai could be transformed into a world-class city over a 10-year period. We bench marked Mumbai with ten cities—London, New York, Singapore, Hong Kong, Sao Paulo, Sydney, Shanghai, Bangkok, Rio de Janeiro and Toronto—and developed a ten-year vision for Mumbai. Our report attempted to provide a comprehensive vision for Mumbai for 2013 with the clear aim of helping it to achieve a world-class status. Principal recommendations to achieve this were:

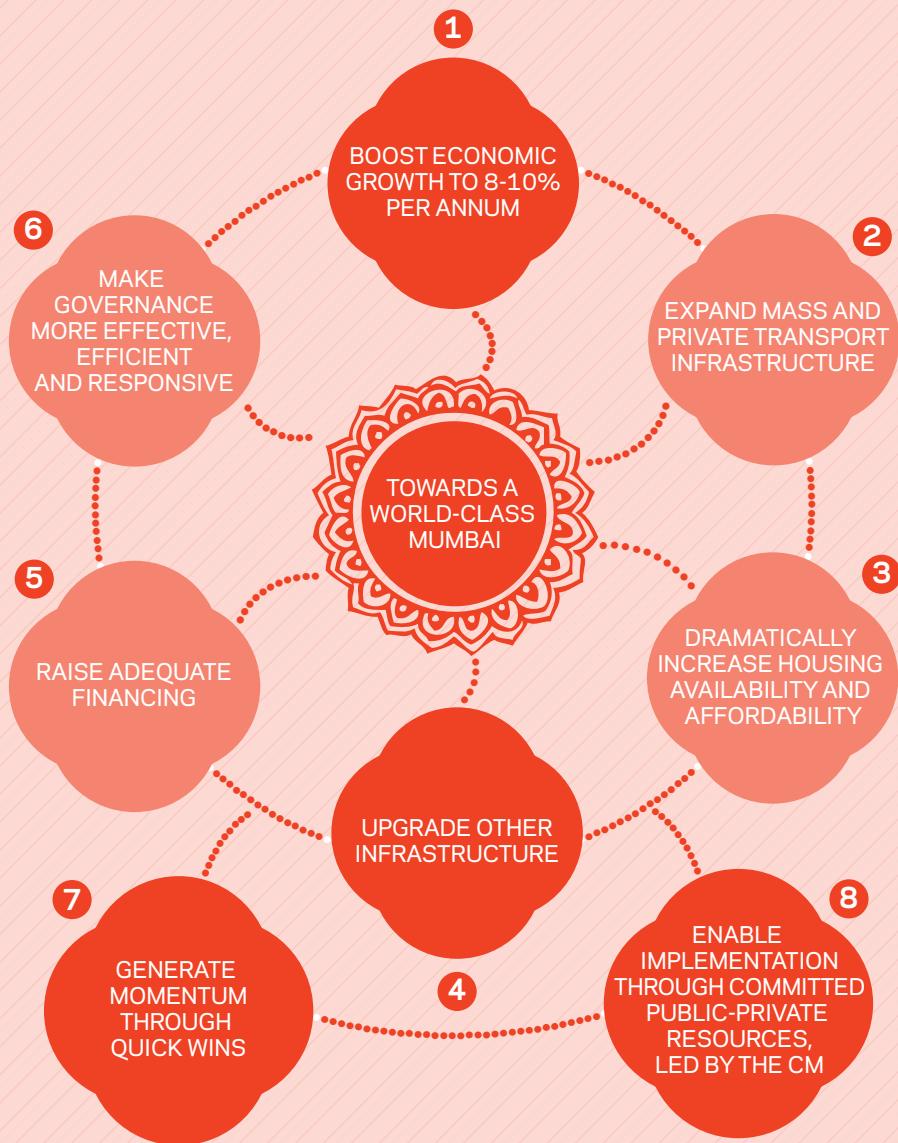
- I Boosting economic growth to 8 to 10% per annum by focusing on services (high and low-end) and developing hinterland-based manufacturing and making Mumbai a consumption centre;
- II Improving and expanding mass and private transport infrastructure, including linkages to the hinterland;
- III Dramatically increasing low-income housing availability (1.1 million low-income houses) and affordability and drive upgradation of housing stock;
- IV Upgrading safety, air pollution control, water, sanitation, education and healthcare;
- V Creating a dedicated 'Mumbai Infrastructure Fund' with an annual funding of US \$400 million and attract debt and private financing;
- VI Making governance more effective, efficient and responsive by corporatising key departments and

streamlining important processes such as building approvals;

- VII Generating momentum through more than twenty quick wins to show visible on-the-ground impact during the next one to two years and;
- VIII Enabling implementation through committed public-private resources, led by the Chief Minister and make key government organisations accountable for results.

The Bombay First initiative had the full support of the State Government, Central Government and the World Bank and a true public private partnership has been established. A major regeneration program involving an investment of US \$60 billion over the next few years has been launched. When we commenced this study five years ago, we had no illusion that the task was going to be easy. But after five years, we now know what the challenges are. While several positive steps have been taken, a lot still needs to be done. The following excerpts from the 2003 report provide a snapshot of this innovative study.

FIGURE 1
EIGHT HIGH PRIORITY INITIATIVES OF 'VISION MUMBAI'



VISION MUMBAI: TRANSFORMING MUMBAI INTO A WORLD-CLASS CITY BY 2013

MUMBAI, AT PRESENT, IS IN REVERSE GEAR. IT IS CURRENTLY LAGGING behind in terms of economic growth and quality of life. Its recent GDP growth is a surprisingly low 2.4% per annum (1998–2002). And this slow down has undoubtedly affected the growth of Maharashtra state, since Mumbai and its surrounding regions contribute over 20% of the state's GDP. To illustrate, the state's growth rate fell from 4.8% per annum in 1994–98 to 4.2% in 1998–2002 when Mumbai's growth rate slipped from 7% to 2.4%, a period in which the growth rate of India was as much as 5.6%.

The quality of life in Mumbai has also worsened and the decline is quite steep. Slums have proliferated and congestion, pollution and water problems have skyrocketed. All of this has resulted in a slippage in rankings (Mumbai fell from 26th place in 1996 to 33rd in 2000 in *Asiaweek's* rankings of the top 40 cities in Asia). On the international stage, Mumbai ranks a poor 163rd (out of 218 cities world-wide) on the *Forbes' quality of life survey* and 124th (out of 130 cities world-wide) on EU's hardship ratings. The situation is likely to worsen over the next decade with an expected population increase of over two million.

MUMBAI RANKS

33

IN ASIaweek'S TOP
40 ASIAN CITIES

124

EU'S HARDSHIP
RATING

163

FORBES QUALITY
OF LIFE SURVEY

All this is most unfortunate considering that Mumbai is both the state of Maharashtra and India's main economic engine. It is quite clear that if Mumbai's decline continues, it will lead to an irreversible decline in Maharashtra's fortunes. Though several very valid recommendations and reports already exist on Mumbai, what is really needed is for Mumbai to undergo a change in mind-set: from thinking incrementally, it must begin to think of making step jumps. The situation, at present, is such that most people refuse to even believe that Mumbai, with its seemingly insurmountable problems, can transform itself into a world-class metro in a 10–15 year time frame. For many loyal Mumbaikars, transforming Mumbai into a livable city or even just being able to prevent its complete collapse is in itself a worthy goal. To become a world-class city, Mumbai needs to make a quantum leap on two fronts: economic growth and quality of life. But that constitutes only the first step towards achieving a transformation that will take 10–15 years.

TO BE A WORLD-CLASS CITY, MUMBAI NEEDS TO MAKE A QUANTUM LEAP ON TWO FRONTS: ECONOMIC GROWTH AND QUALITY OF LIFE

Mumbai's Vision Statement for 2013

Mumbai's aspiration is to become a world-class city in the next 10–15 years. In order to achieve this, it needs to be distinctive on the dimension of economic growth and above average on quality of life. It will, therefore, need to step up economic growth to 8–10% by becoming one of Asia's leading service hubs, with a fast-growing manufacturing base in the hinterland. On the quality of life dimension, comparing it to the benchmark cities revealed that it needed to move from average to above average on mass transport, from poor to above average on private transport, housing, safety/environment, financing and governance. Mumbai will also need to make improvements in the remaining areas, transforming from being average to above average in water/sanitation and education and from above average to world-class in healthcare.

Mumbai's aspirations for 2013

In order to arrive at this end State, the Government must set certain concrete targets. Keeping this in mind, we have formulated quantitative aspirations for the six core areas that Mumbai must focus on.

The six core areas are:

- 1 ECONOMIC GROWTH** To illustrate, real growth needs to jump from the 2.4% between 1997–98 and 2001–02 to 8 to 10% over the next decade, thus creating more than 500,000 additional jobs.
- 2 TRANSPORTATION** Significant improvement is required in both mass and private transportation. In mass transportation, it is imperative to ensure that the travelling population per rail car is kept down to 220 people and there is at least one bus for every thousand people. At present, suburban rail congestion is such that during peak hours there are more than 570 people per rail car in certain sectors. For private transportation, increasing the average speed of travel, tripling the freeways/expressways and increasing the number of public parking spaces by order of magnitude is essential.
- 3 HOUSING** Here, some of the aspirations include bringing down the number of people living in the slums from the current 50–60% to 10–20%. Mumbai also needs to increase housing affordability by, for instance, bringing down housing rental costs from their current 140% of per capita income to about 50%.
- 4 OTHER INFRASTRUCTURE** (safety, environment, water, sanitation, education and healthcare): Mumbai needs to upgrade its performance in all these areas. For example, despite the healthy statistics on crime, it needs to further improve the law and order environment. Also, it must drastically reduce air pollution from the unsafe 1,000 micrograms per cubic metre (mcm) that it currently is to 50–100 mcm.
- 5 FINANCING** Here, reaching one of the benchmarks would involve reducing the percentage of administrative expenditure from its current 50 to less than 25, thereby enabling increased fund availability for development and maintenance.
- 6 GOVERNANCE** An immense improvement is needed in governance. For instance, the time required for the key process of building approvals should be reduced from 90 to 180 days to less than 45 days.

Setting these quantitative targets will help calibrate the impact of the various initiatives and recommendations along measurable parameters.

Learning from Successful City Transformations

To understand whether it is possible for Mumbai to achieve Vision Mumbai, we studied the transformations of ten other cities. We studied the efforts of two international cities—Cleveland and Shanghai—that became world-class. The partial turnaround of four Indian cities—Hyderabad, Nagpur, Surat and Thane also highlighted learnings specific to the Indian context.

In all of these city transformations, as well as a host of others that took place in Singapore, London and New York, three things seemed to be of paramount importance: **a)** A city needs to actively focus on economic growth; **b)** It must focus on a few high-impact projects with public-private partnerships so that it achieves visible impact ; **c)** It must have at its helm a committed leader ably supported by a well co-ordinated body of administrators.



EIGHT INITIATIVES, ONE GOAL

I. BOOST ECONOMIC GROWTH TO 8-10% PER ANNUM

TO BECOME A VIBRANT, WORLD-CLASS CITY, MUMBAI NEEDS TO GROW at 8 to 10% per annum: an increase of four to five percentage points over what it achieved in the last four or five years. This will allow it to create over 500,000 additional jobs, thus preventing an increase in unemployment. It must therefore focus on four thrust areas: high-end services; low-end services; hinterland-based manufacturing; and its transformation into a consumption centre.

First and foremost, Mumbai must focus on reducing the currently high 'cost of doing business' (mainly due to high real estate costs) across all these areas. Over and above that, Mumbai needs to launch a set of specific initiatives that have two themes—creating centres of excellence and offering a set of attractive incentives. These themes are illustrated through the use of a few examples.

1 Target four high-end services—financial services, health-care, IT enabled services and media/entertainment/telecom

Focusing on these will add 2-3% to Mumbai's GDP growth and over 200,000 additional jobs over the next ten years. In the financial services sector, Mumbai is far ahead of the rest of India. However, the State Government needs to work with the centre to ensure Mumbai becomes the 'centre of choice' within Asia for all new financial infrastructure (such as the debt market, offshore trading). In healthcare, the MCGM (Municipal Corporation of Greater Mumbai) should grant public hospitals the autonomy to enter into public-private partnerships and become global centres of excellence in important fields such as cardiac care and diabetes. To promote media/entertainment, the existing Film City must be upgraded to world-class levels by lowering taxes/duties and by offering tax incentives to promote post-production and animation work. Mumbai must put a strong investor marketing and management process in place so that IT/ITES can regain its historical premier position.

2 Create jobs in three low-end service sectors—construction, hotels/tourism/recreation and modern format retail

This initiative could create an additional 500,000 jobs over the next ten years and enhance the Mumbai GDP growth rate by 1–2%. To give recreation a fillip, five to ten diverse attractions should be made world-class. Mumbai could truly become a ‘city that never sleeps’ if it were to allow shops, restaurants and bars flexible operating hours. For boosting the modern format retail sector, it will be necessary to increase land supply, allow flexibility in operational hours and labour laws while decreasing the number of permissions needed to operate. The Government should zone areas for supermarkets and hypermarkets in large land parcels such as the Mill Lands. Another possibility is to promote the creation of large outlet malls on the highways. This will boost the construction and retail industries which are the key drivers of economic growth and employment.

3 Convert the hinterland into a manufacturing and logistics hub

The hinterland has a huge potential to expand and bring in an additional investment of \$8 billion and over 200,000 jobs over the next decade.

4 Lower tax rates to make Mumbai a consumption centre

Mumbai has a large demand base and continues to enjoy its position as India’s commercial capital. However, it has not yet fulfilled its potential of becoming India’s and, eventually, Asia’s consumption centre. This is mainly driven by the extremely high cost burden on the end customer compared to other cities in India. Research on various countries (e.g. China) indicates that reducing the tax burden and rates does in fact boost demand as well as tax revenues. Doing so will also place Mumbai in a prime position of being able to attract new manufacturing investments. The Government, therefore, should move towards reducing or eliminating octroi, reducing sales tax, road tax and stamp duty rates while increasing user charges.

**TO BECOME A VIBRANT,
WORLD-CLASS CITY, MUMBAI NEEDS
TO GROW AT 8-10% PER ANNUM**

II. IMPROVE AND EXPAND MASS AND PRIVATE TRANSPORT INFRASTRUCTURE

WHILE MUMBAI MAY BE ACKNOWLEDGED AS HAVING ONE OF THE MORE extensive and efficient transport networks within India, its infrastructure is woefully inadequate by world-class standards. It is not hard to conjure up images of traffic snarl-ups in the key arterial roads during peak hours, a desperate hunt for a parking spot and trains with people hanging out from all sides. To substantiate this with numbers: peak hour rail capacity averages more than 500 per rail car on key sectors against an aspiration of 220. When there are more than 350 people per rail car, not only is severe congestion an issue, but even the safety of passengers cannot be guaranteed. Two key issues constitute the crux of the problem: a) Severe north-south congestion on the western and central rail lines and the key arterial roads and b) A lack of east-west connectivity within the city and between the city and the hinterland.

Several projects are either already underway or being planned to address these two issues. However, even after these initiatives have been implemented, Mumbai will still have a long way to go to reach its target.

PEAK HOUR RAIL CAPACITY AVERAGES MORE THAN 500 PEOPLE PER RAIL CAR OF 220. WHEN THERE ARE MORE THAN 350 PEOPLE PER CARRIAGE, CONGESTION IS AN ISSUE, AND THE SAFETY OF PASSENGERS CANNOT BE GUARANTEED

To truly solve Mumbai's congestion and connectivity problem, what is needed is: a) Systematically developing four to five emerging Central Business Districts (CBDs)—Bandra-Kurla, Andheri-Kurla, Vashi/Belapur and Dronagiri—and improving their connectivity with each other and with key residential areas. This will reduce the current north-south pressure to and from the Nariman Point CBD; and b) Providing 'end-to-end' north-south and east-west rail and road connectivity in the form of ring rails and ring freeways. All world-class cities have express ring freeways (6-8 lane roads with no signals) around the city such that a freeway can be accessed from any point in the city in less than ten minutes.

NASAI CREEK

FIGURE 2 MUMBAI'S FUTURE TRANSPORT NETWORK OVER NEXT 8-10 YEARS

Source: Team analysis; interviews; workshops

RS 25,000 CRORE
FUNDING NEEDED OVER AND ABOVE MUTP AND MUIP

GORAI

OPTIMISE EXISTING RAIL AND ROAD NETWORK (PART OF MUTP, MUIP)

GOREGAON

JOGESWARI

ANDHERI

INNER RING RAIL BETWEEN BANDRA, ANDHERI, KURLA, GHATKOPAR AND GOREGAON (Bandra to Juhu underground)

INDUSTRIAL AREA

NEW MUMBAI

INNER RING FREEWAY CONNECTING BANDRA TO NARIMAN AND KURLA

GHATKOPAR

THANE CREEK

VASHI

BKC

BANDRA

KURLA

CHEMBUR

VASHI BRIDGE

BELAPUR CBD

PANVEL

MUMBAI

SEWRI

NHAVA

JNPT

DRONAGIRI

CHURCHGATE

NARIMAN POINT

CHATRAPATI SHIVAJI TERMINUS

MUMBAI TRANS HARBOUR RAIL AND ROAD LINK (MTHL)

LEADING TO OUTER RING FREEWAY AND RAIL

- Ring freeway connecting South Mumbai to Pune Expressway back to Bandra
- Ring rail connecting sewri to Nhava-Sheva and back to Kurla through harbour line

III. DRAMATICALLY INCREASE HOUSING AVAILABILITY AND AFFORDABILITY

MUMBAI'S REAL ESTATE PROBLEMS ARE BOTH IMMENSE AND COMPLEX. The problems encompass both sides of the income spectrum. At the lower end of the spectrum, there is a huge shortfall of affordable housing—50 to 60% of Mumbai's population lives in slums—reflecting the high price of housing in the city. At the higher end, residential and commercial real estate is extremely expensive, yet lacking in quality (dilapidated buildings, lack of green spaces and parking facilities, inadequate infrastructure). In addition, rental housing (as a percentage of total housing) is 5 to 10% as compared to international benchmarks of 40 to 50%.

For it to become a world-class city, Mumbai must ensure that housing becomes more affordable, the rental housing market is resuscitated, land is developed in an integrated manner and the city housing stock is upgraded. Specifically, the percentage of the population living in slums must fall to 10–20%, housing prices should be no more than three to four times the annual household income, and the percentage of rental housing (to total housing) should be 30–40%. In addition, Mumbai should start creating islands of excellence in world-class housing and commercial complexes, as well as upgrading its housing stock.

To achieve this aspiration, Mumbai must create 1.1 million low-income houses over the next decade. Furthermore, we should define the pricing and affordability carefully.

The current Slum Rehabilitation Authority (SRA) initiatives will create a supply of less than 150,000 units over the next ten years, leaving a huge shortfall of 950,000 low-income housing units over the next decade, which will result in a further increase in slums. For Mumbai to achieve its aspiration it is, therefore, imperative that the Government undertake five initiatives:

1 Increase land availability by 50–70%

One bold initiative which will guarantee tangible results in increasing land supply is increasing FSI (Floor Space Index) to an average of 3–4 in as many zones as possible linking it to a redevelopment program, which will add close to 30 to 40% more land. Another example is reducing the transaction cost and increase liquidity by reducing stamp duty and rescinding the Urban Land Ceiling Act (ULCA) which today results in unclear land titles.

2 Create 800,000 low-income houses to rehabilitate existing slum-dwellers by redesigning the Slum Rehabilitation Authority (SRA) process

It is commercially unviable to rehabilitate almost 60% of existing slum land because of current market prices, the incentive ratios provided under the SRA and the generosity of the current scheme (with its promise of ‘free housing’). Therefore, the SRA scheme, as it is currently designed, is likely to be unsuccessful. Hence, what we propose is that the Government reform the SRA process such that slum dwellers get free land, but contribute partially towards the cost of construction.

- Adhere to strict targets and timelines
- Move to market-based auctions to choose the developer:
- Optimise the SRA approval process

50-60% OF MUMBAI'S POPULATION LIVES IN SLUMS—REFLECTING THE HIGH PRICE OF HOUSING IN THE CITY

3 Build 300,000 additional low-income housing units by creating ‘Special Housing Zones’ (SHZs) through targeted incentives

As indicated earlier, to avoid the development of new slums, the Government should develop 300,000 low-income homes. Dozens of cities around the world (e.g., New York, Beijing and Shanghai) have spurred on the development of low-income rental housing by providing a variety of incentives to developers.



4 Create islands of excellence through integrated development

Mumbai has the opportunity to create true ‘islands of housing and commercial excellence’ in areas such as the Mill Lands, the Port Trust lands and the Bandra Kurla Complex. These are relatively large tracts of land in prime urban areas. If they are redeveloped holistically to include high-class housing with earthquake resistance buildings, enough open spaces, 40 foot wide roads, excellent transport connectivity, urban plazas, hospitals, museums and retail developments on the waterfront, they can provide a model for the rest of the city. These world-class ‘islands of excellence’ will begin to attract both corporate investment and talent for high-end services.



5

Redevelop the city block-by-block

Eventually, as in most world-class cities such as Hong Kong and Manhattan, Mumbai city should be redeveloped in eight to ten phases in order to give it a fresh, new look and improve building infrastructure (e.g., according to some estimates, Manhattan was rebuilt in eight to ten phases in the last 100 years). What this means is that entire city blocks will have to be demolished and rebuilt with modern infrastructure: earthquake resistant buildings, wide roads, correct infrastructure and open areas for gardens. To encourage this type of redevelopment, the State Government should put together a package of incentives that include FSI increases, exemption on stamp duties, etc. Of course, certain areas like the heritage buildings will need to be excluded from the redevelopment process.

IV. UPGRADE OTHER INFRASTRUCTURE

ALTHOUGH OTHER INFRASTRUCTURE IN THE CITY IS RELATIVELY better than its transportation and housing infrastructure, the Government needs to further strengthen six areas if Mumbai is to become world-class.

1 Create a safer law and order environment

Although crime rates in Mumbai are comparable with other world-class cities, recent sporadic events have led to some unease among its citizens. Hence, the police force needs to launch a slew of tactical initiatives to reduce crime still further and pacify the public.

2 Reduce air pollution

Various agencies will need to play their parts in reducing the dangerously high levels of air pollution currently prevailing to the relatively safer levels of 50–100 micrograms/m³.

3 Increase the availability and reduce the contamination of water

The MCGM will need to spend Rs 7,500 crore over the next ten years to improve the water supply and distribution infrastructure. While the currently planned projects will substantially increase the amount of water being brought into the city, money must still be spent on relaying the pipelines to reduce leakages and prevent contamination, bringing down 'Unaccounted For Water' (UFW) from the current 30–35% levels to 15–20%.

4 Create more viable options for the disposing of solid waste

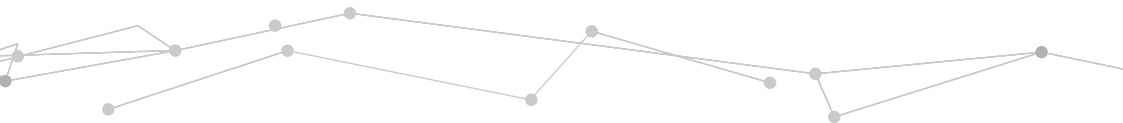
Today, Mumbai's landfills are bursting at the seams. Not only is there a dire shortage of sanitary landfills, the large open landfill in Deonar (where 70% of the solid waste is disposed of) is fast reaching saturation point. The MCGM, therefore, must go into overdrive on two fronts: a) Reduce the further generation of garbage by instituting 'zero-garbage' campaigns; and b) Create viable alternative landfill sites.

5 Upgrade access to and quality of education

Education in Mumbai can be improved by launching three initiatives: **a)** Expediting the release of land for the setting up of five to ten high quality private schools (e.g., increasing incentive ratios for amenity) to reduce one of the key complaints of executives relocating to the city; **b)** Promoting the adoption of the city's municipal schools by NGOs and communities to reduce drop out rates (e.g., Karnataka, Vietnam); and **c)** Stepping up both quality and quantity of vocational training, especially around the new areas of retail and recreation.

6 Improve healthcare services

The public healthcare system falls woefully short when it comes to issues of quality and responsiveness of service. A large part of this is explained by the considerable over-burdening of the 20 or more municipal hospitals. At the same time, utilisation of primary healthcare facilities (i.e., around 150 municipal out-patient dispensaries and maternity homes) is abysmal.



V. RAISE ADEQUATE FINANCING

THE QUESTION ASKED MOST OFTEN BY SKEPTICS IS NOT WHAT NEEDS to be done for Mumbai, but how the huge investment will be funded. Our high-level estimates indicate that Mumbai's economy has the ability to both find and raise the necessary funding.

The good news is that the Government will need to put in only around Rs 1,500 crore per year or Rs 15,000 crore over the next ten years to finance the Rs 50,000 crore, the rest coming from long-term loans that can be financed based on user charges and increased tax collections. We estimate that Rs 1,500 crore per year contributed by the taxpayer will attract private investment in housing, power, telecom and other key economic growth sectors such as manufacturing and services to the amount of Rs 150,000 crore over the next ten years, thus giving a 1:10 multiple.

Although Mumbai's economy is capable of funding this expenditure, it is important that the money is 'ring-fenced' in an exclusive Mumbai Infrastructure Fund (MIF). This will be similar to what the National Highway Development Program (NHDP) did on getting a dedicated annuity of Rs 4,000–6,000 crore every year from their Re.1 cess on petrol and diesel and funding a Rs 60,000 crore national highway program with it.

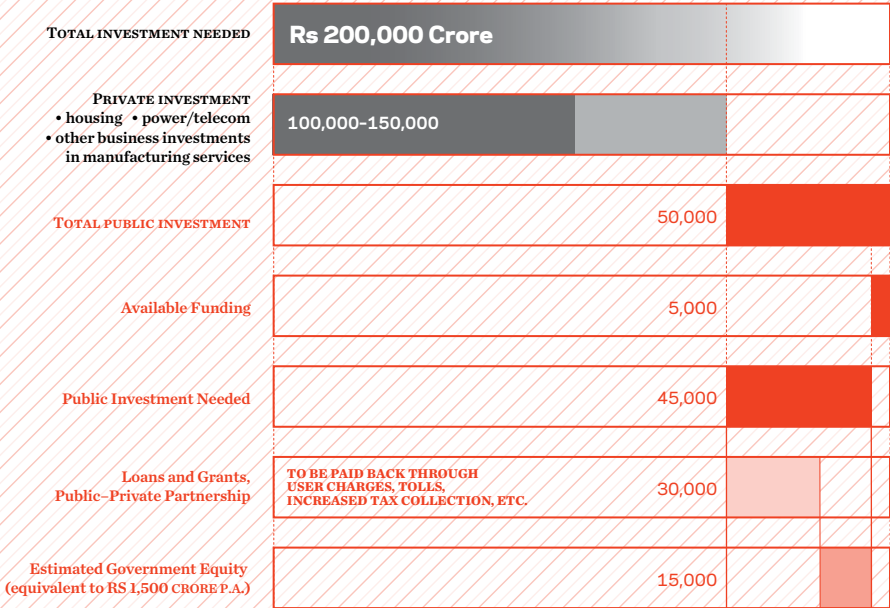
The Government has a variety of sources at its disposal, which are more than adequate to generate the required Rs 1,500 crore annuity stream for the Mumbai Infrastructure Fund. They are largely driven off increased spend efficiency and better collection, rather than tax rate increases. These sources can be grouped into three streams:

- 1 Increase in user charges and collection efficiency**
This stream can generate about Rs 1,000 crore per annum. Of this, the increase in property tax collections could be a major revenue-earner.
- 2 Improvement in the MCGM's own efficiency**
This lever can generate around Rs 600 crore per annum through better contracting procedures and reduction in administrative expenditure (e.g., privatisation and putting a freeze on hiring).
- 3 Better utilisation of Government land assets in and around Mumbai**
This can generate another Rs 200–500 crore per annum from the sale of developed land and from converting the Government's leasehold properties to freehold.

1 CRORE = 10 MILLION RUPEES

FIGURE 3
FINANCING PLAN

Source: Test analysis



On a longer-term basis, the Government needs to rebalance the financing sources for Mumbai such that they are dependant less on stamp duty and octroi and more on income from property taxes, user charges and an escrowed share of the State's sales tax collections. This is in line with what most major cities follow and will enable the increase of economic activity and promote efficiency.

VI. MAKE GOVERNANCE MORE EFFECTIVE, EFFICIENT AND RESPONSIVE

A HUGE IMPROVEMENT IS NEEDED IN ALL ASPECTS OF GOVERNANCE IN Mumbai. In a recent study of several governments around the world, McKinsey distilled the principles of high-impact governance. Based on these principles, Mumbai will need to focus on three main areas:

1 Create the right structure

The government should corporatise those departments which need to be completely integrated across the city and have economy of scale of investment, e.g., water, roads (including maintenance), while decentralising those functions best conducted at the ward level (trees, encroachment, etc.). Certain important functions should be consolidated. For example, to improve coordination and accountability in the long term, Mumbai should consider creating a single transportation agency by combining MCGM (roads department), MRVC and the Mumbai-related transportation functions of the PWD, MMRDA and MSRDC.

2 Make the concerned agencies accountable by instituting target setting, MoUs and monitoring processes

All government agencies need to set targets for output and outcome. All key departments and agencies should then sign annual MoUs based on these targets with the Empowered Committee. The Government should exercise tight result-oriented control over these departments (i.e. close monitoring of budgets and performance against targets) but should allow operational autonomy for implementation (recruiting, contracting, budget allocation, etc.). The Government should make these MoUs public for transparency and for creating electoral pressure.

3

Streamline key processes

The government will need to ensure that some key governance processes are streamlined so that unnecessary hassles and costs are reduced. These include:

- **Redesigning the building approval process:** The average time taken for this process can be reduced from between 90 and 180 days to 45 days by first creating a ‘green channel’. This channel will allow almost 50% of the applications to get automatically approved by an architect. The Government must appoint a select panel of architects who are empowered to approve/and certify applications for the building process; it must also increase the transparency of earlier concessions granted.
- **Using ITS interventions at all levels of Government interaction:** All processes involving the interaction of the Government with various stakeholders (e.g., with citizens, investors, State, Centre and local government officials) can be computerised for increased efficiency. To illustrate, Hyderabad has more than 20 e-seva kendras that act as ‘one-stop online shops’ for over 30 citizen-facing and business-facing services.

VII. GENERATE MOMENTUM THROUGH QUICK WINS

FRANKLY, MUMBAIKARS HAVE NOW GROWN SICK AND TIRED OF slogans and reports. What is needed is focused, ‘on the ground’ implementation and results that will be visible in as short a time period as 1 to 2 years. So, although the detailed planning and implementation of the six major initiatives described earlier will continue, Mumbai should show results with more than 20 quick-wins.



23 QUICK WINS

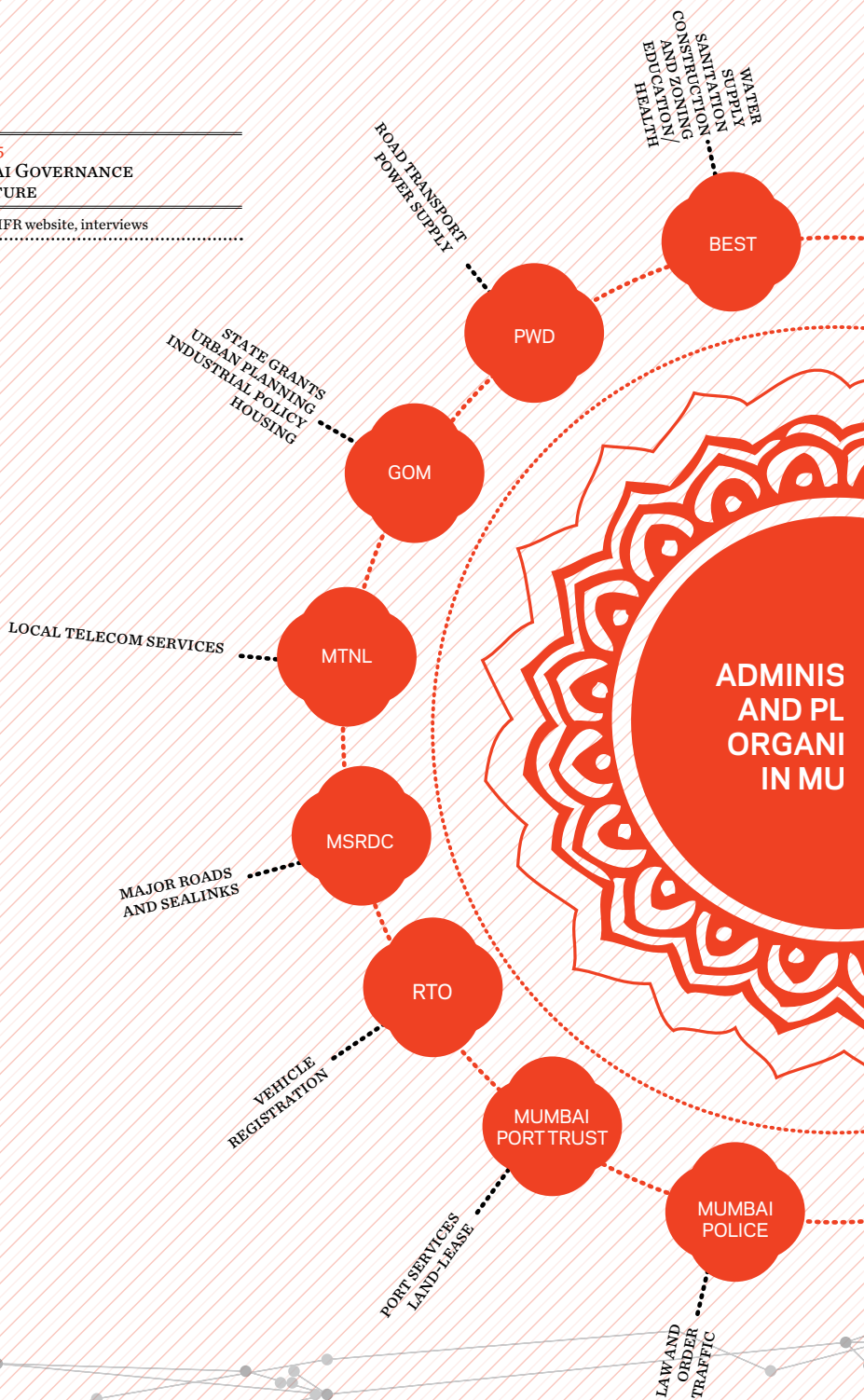
FIGURE 4
TARGETED SET OF 23 QUICK WINS TO CREATE MOMENTUM

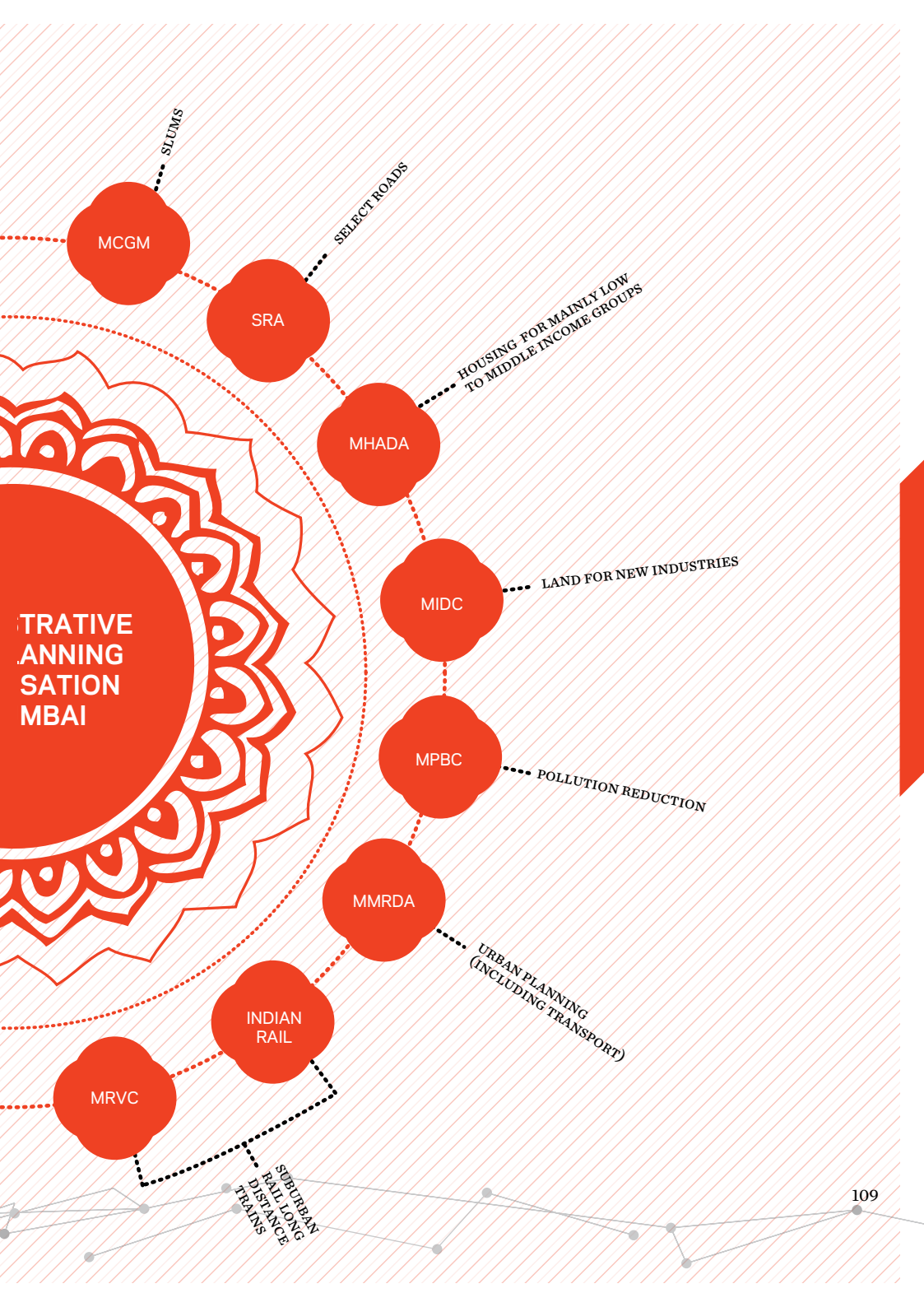
Source: Interviews, workshops, team analysis

- 1 Improve airport ambience and emigration/immigration clearance
- 2 Set up two to three healthcare 'centres of excellence' through public-private partnership
- 3 Set up modern format 'retail park' through public-private partnership and kickstart SEZs in the hinterlands
- 4 Upgrade zoo, aquarium, waterfront to world-class levels to boost tourism
- 5 Convert Bandra-Kurla into a world-class commercial district (i.e. restaurants, cafés, international building standards)
- 6 Set up a world-class multipurpose indoor stadium and convention centre
- 7 Beautify and decongest five north-south and five east-west corridors to raise them to international standard
- 8 Beautify all landing places (including removing airport slums and railway encroachments, standardise bus shelters and creating bus bays)
- 9 Promote higher utilisation of Wadala truck terminal by providing adequate financial incentives
- 10 Rehabilitate the 35,000 slum encroachments from all roads in Mumbai to Kanjun/Vadala, consequently widen all the roads and create pavements
- 11 Implement at least one world-class housing project as part of the redevelopment of the Mill lands
- 12 Build an additional 300 public toilets through private participation
- 13 Promote NGO and corporate sponsorship to clear, restore and maintain 325 open/green spaces
- 14 Facilitate the setting up of five to ten new private schools and community/NGO adoption of 10 municipal schools
- 15 Launch an investment campaign run by a special agency created to attract targeted sets of investors
- 16 Pilot 'Clean Mumbai' campaign in three to four wards by implementing a comprehensive set of initiatives (including privatisation of SWM)
- 17 Increase training for police force in riot management and law enforcement
- 18 Levy property tax on market value along with self-assessment option
- 19 Substantially redesign MCGM's purchasing/contracting procedures to save Rs 300 crore per annum
- 20 Start integrated 'Mumbai Infrastructure Fund'
- 21 Institute report card system for all wards in MCGM, potentially outsource complaints cell and establish one 'taskforce' for each of the 26 wards to review report cards on a monthly basis
- 22 Launch an 'approval drive' to dispose of all building approvals in the pipeline over one year, and provide all pending water, telephone and gas connections
- 23 Set up 10-20 e-seva kendras to provide 'one stop non-stop' services to citizens

FIGURE 5
MUMBAI GOVERNANCE
STRUCTURE

Source: TIFR website, interviews





STRATEGIC PLANNING
SATION MBI

MCGM

SLUMS

SRA

SELECT ROADS

MHADA

HOUSING FOR MAINLY LOW
TO MIDDLE INCOME GROUPS

MIDC

LAND FOR NEW INDUSTRIES

MPBC

POLLUTION REDUCTION

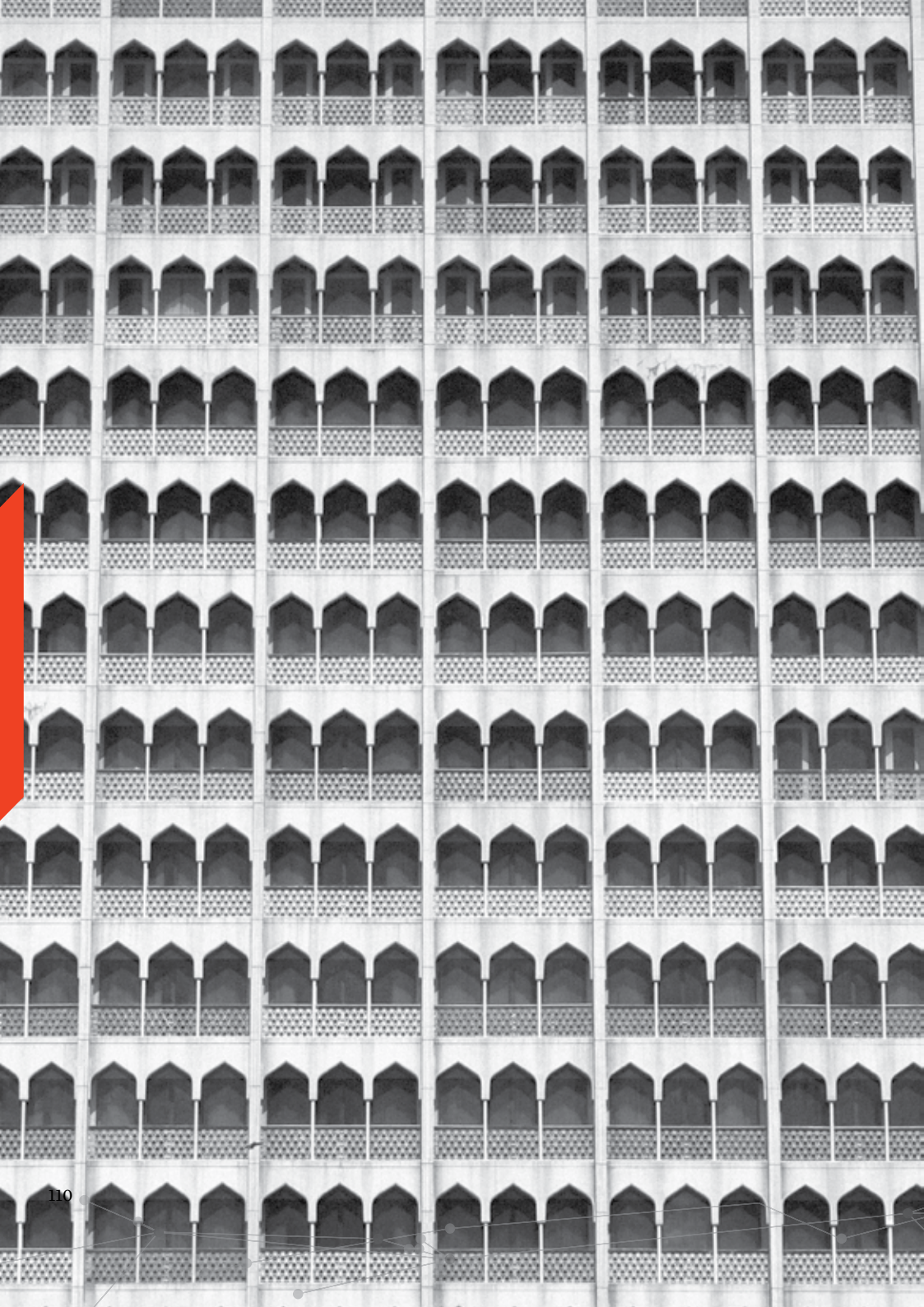
MMRDA

URBAN PLANNING
(INCLUDING TRANSPORT)

INDIAN RAIL

MRVC

SUBURBAN
RAIL LONG
DISTANCE
TRAINS



VIII. ENABLE IMPLEMENTATION THROUGH COMMITTED PUBLIC-PRIVATE RESOURCES, LED BY THE CHIEF MINISTER

There are three basic principles that must be followed while organising for implementation:

1 Create a single co-ordination body: Today, Mumbai is governed by over ten different agencies (FIGURE 5). An ‘MD’ of Mumbai is really needed. To illustrate, several cities in the US have elected mayors who have all the city’s functions under their control, including the police. Several city transformations have been led by mayors, e.g., ‘One-chop Zhu’ Rongji in Shanghai, Rudolph Guiliani in New York.

2 Make key agencies accountable for results: Key agencies like the MCGM, MMRDA, MSRDC, SRA, MHADA and BEST need to be made accountable for results. Accordingly, each agency will need to sign output and outcome MoUs with the Empowered Committee. These MoUs should be made public, and the CM should review performance on a monthly basis. This approach, if adopted, will be similar to the Bangalore Agenda Task Force (BATF) model adopted by the CM of Karnataka.

3 Encourage active corporate and NGO participation, with potential initiatives, including:

- 1 ADVOCACY**
 - Seminars on topical Mumbai-related issues
 - Reports on solutions to Mumbai’s issues
 - Press conferences to raise awareness


- 2 FUNDING**
 - Advertising: bus shelters, public toilets, roads, street lights etc
 - Donations and sponsorships for key projects

- 3 INFRASTRUCTURE CREATION**
 - Viable business models for: roads, parks and gardens, slum rehabilitation, public toilets

- 4 MANAGEMENT RESOURCES**
 - High calibre management talent on secondment to government and non-profit agencies
 - Taskforces for specific business related initiatives (such as land issues)

- 5 INDEPENDENT PROJECTS**
 - Venture capital funding
 - Image marketing for Mumbai





**MUMBAI HAS TAKEN ITS FIRST STEPS
TOWARDS BECOMING A WORLD-CLASS CITY.
MORE IMPORTANTLY, THIS WILL HELP
HARNESS THE ENERGIES OF ALL THE KEY
STAKEHOLDERS IN MUMBAI**

Note: The full version of Bombay First and McKinsey's Vision Mumbai can be found online at www.bombayfirst.org/



4





SONY

HAT/CAM



G.K. VALE

V.A.L.E.S.T.

Living
At its
Best
Platinum

A Pure Vegetarian Restaurant on M.G. Road
JOSCO
A Pure Vegetarian Restaurant on M.G. Road



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CANARA BANK



O V A N I
POWER DRESSING



THE EMERGENCE OF WORLD CITY: BANGALORE

H. S. SUDHIRA

Bangalore's remarkable transformation
from a small garden city to the home
of India's booming IT sector



**BANGALORE HAS BEEN IDENTIFIED
AS THE COUNTRY'S 'SILICON VALLEY'**

A TINY VILLAGE IN THE 12TH CENTURY, Bangalore has become one of the fastest growing cities in the world by the 21st Century and among the million-plus (in population) cities in India. Greater Bangalore, an area of 741 km² agglomerating the city, neighbouring municipal councils and outgrowths, was 'notified' or established, in December 2006 (see [FIGURE 1](#)).

The city has grown spatially by more than ten times since 1949. Its tree-lined streets, numerous parks and abundant greenery led to it being called the 'Garden City' of India. More recently, Bangalore has been identified as the country's 'Silicon Valley' and it is one of the technological innovation hubs with a score of 13 out of a maximum of 16. However, even with all the hype about growth in IT and IT related industries, Bangalore also houses numerous other leading commercial and educational institutions, and industries like textiles, aviation, space, biotechnology, etc. As an immediate consequence of this growth in the last decade, apart from creating a ripple effect in the local economy, there has also been great pressure on infrastructure and resources like public transport, water supply, energy, land, etc. The local body and other parastatal agencies responsible for delivery of basic services are facing stiff challenges in catering to this demand.




Recently, there have been serious attempts by sociologists and urban planners to characterise the city. Heitzman (2004) analysed the nature of growth that the city experienced with the emergence of the information society, while bringing out the ingredients that led to the transformation of planning methodologies and spatial planning tools for the city. Nair (2005) has exemplified Bangalore as 'the promise of the metropolis' while illustrating the urban fabric of Bangalore over the last century. In this chapter, an attempt is made to bring out the status of current infrastructure and various facets of planning and governance.

After Independence, Bangalore was made the capital of Mysore (now Karnataka) State. In 1949, the two municipalities were merged to form the Bangalore City Corporation. Subsequently, to keep up with the pace of growth and development, there have been reorganisations with respect to the zones and wards within the corporation, rising from 50 divisions in 1949 to 95 wards in 1980s, 100 wards in 1995 and now about 145 wards. With the 2006–2007 declaration, Bangalore City Corporation was reorganised as the Greater Bangalore City Corporation.



This paper is a revised version of the paper published in *Cities – International Journal of Urban Policy and Planning*: Sudhira, H S; Ramachandra, T V and Bala Subrahmanya, M H (2007) City Profile: Bangalore. *Cities*, 24(5), 379–390.

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DEVELOPMENT CHARACTERISTICS

-  **ZONE 1**
CITY CORPORATION AREA
-  **ZONE 2**
GREATER BANGALORE REGION
-  **ZONE 3**
BANGALORE METROPOLITAN AREA

KEY INDUSTRIAL AREAS

-  **INDUSTRIAL ESTATES**
-  **IT ESTABLISHMENTS**

MAJOR TRANSPORTATION NETWORKS

-  **MAJOR ROADS**
-  **OUTER RING ROAD**
-  **PERIPHERAL RING ROAD**
-  **RAILWAY LINE**

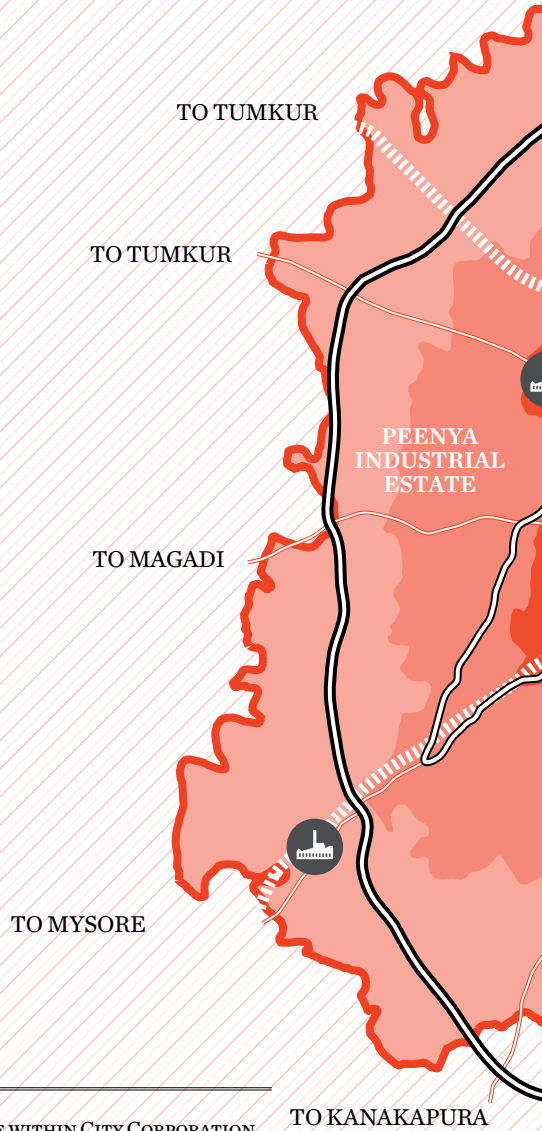
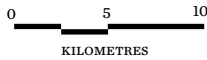


FIGURE 1
DEVELOPMENT CHARACTERISTICS OVER BANGALORE WITHIN CITY CORPORATION LIMITS, GREATER BANGALORE REGION AND BANGALORE METROPOLITAN AREA AND NOTING SOME OF THE PROMINENT INDUSTRIAL AREAS

TO DODDABALLAPURA

TO DEVANAHALLI

TO KOLAR

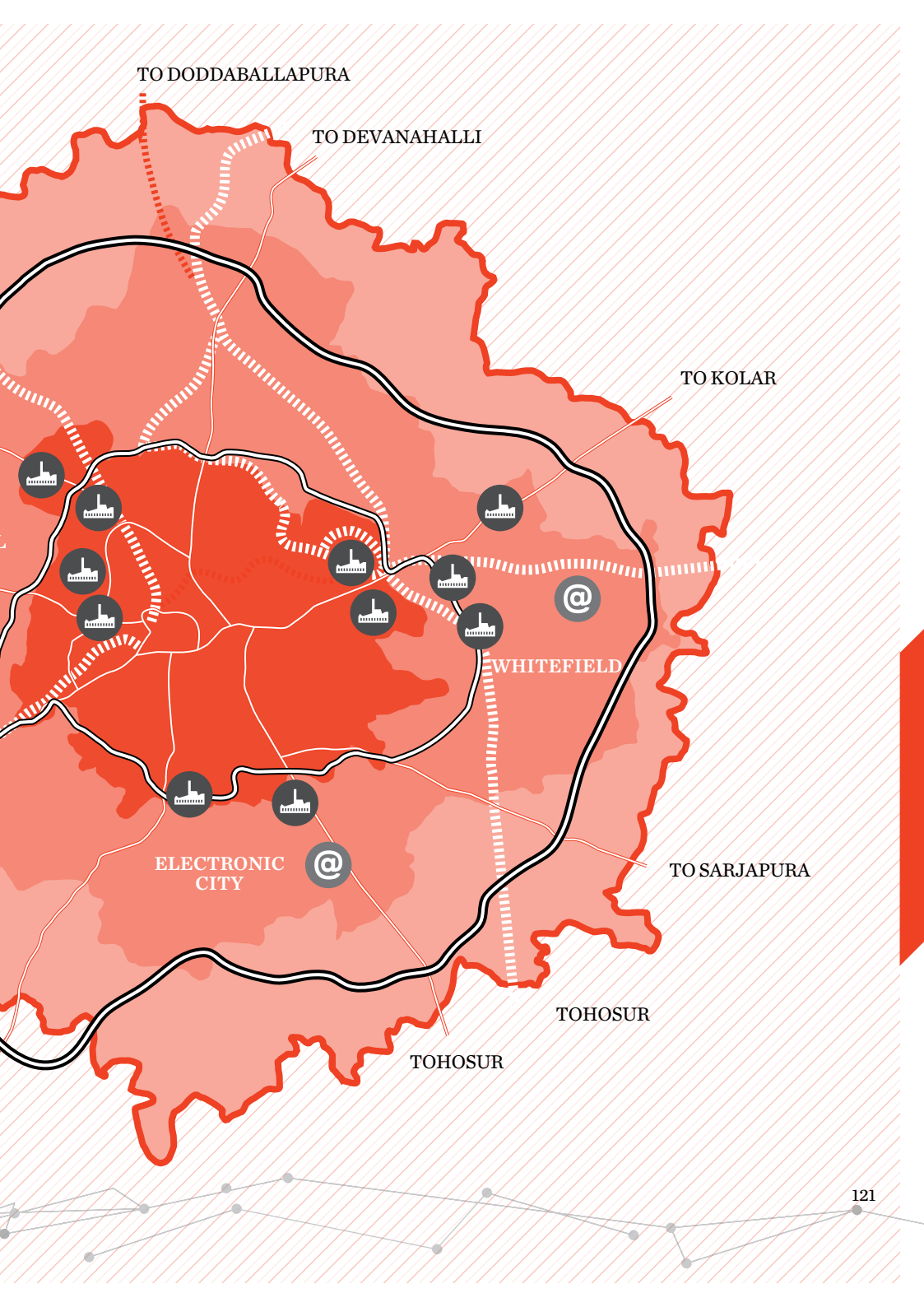
TO SARJAPURA

TOHOSUR

TOHOSUR

ELECTRONIC CITY

WHITEFIELD

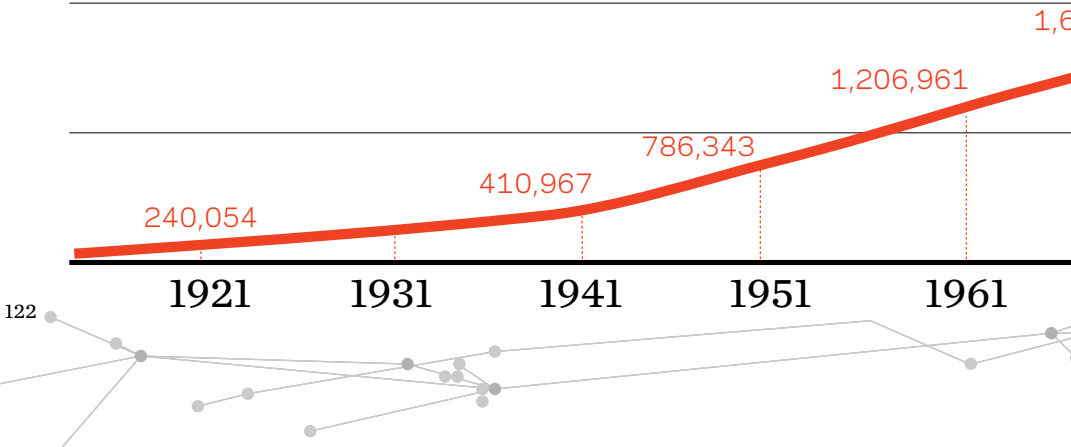


DEMOGRAPHY AND ECONOMY

THE POPULATION CENSUS IN BANGALORE HAS BEEN RECORDED IN each decade since 1871, the most recent census being undertaken in 2001. **FIGURE 2** shows the growth of population in Bangalore from 1871 to 2001 (5.7 million), along with an estimate for 2007 (7 million). This urban primacy has been retained consistently for more than a century now. After Independence, Bangalore, as a state capital, saw an influx of population through migration, although it should be noted that the steep population rise in the decade 1941–1951 was partly due to this migration but also exclusively through the amalgamation of Bangalore Civil and Military Station Municipality with the then Bangalore City Corporation.

Population growth during the 1970s could be ascribed to numerous public sector industries and other defence establishments that came up during the period and fuelled significant immigration. By this time, incidentally, Bangalore had lost its tag of 'Pensioners Paradise', gained before Independence. Although the advent of IT is attributed to the late 1980s, nevertheless, the major growth and expansion of this industry happened only during the late 1990s. Still, population growth in Bangalore in the last census decade, 1991–2001 (38%), was substantially less than between 1971–1981 (76%). Nevertheless, physical growth of the city has been phenomenal over the last few years, and the glaring evidence of this is increased travel-times and escalating real-estate prices.

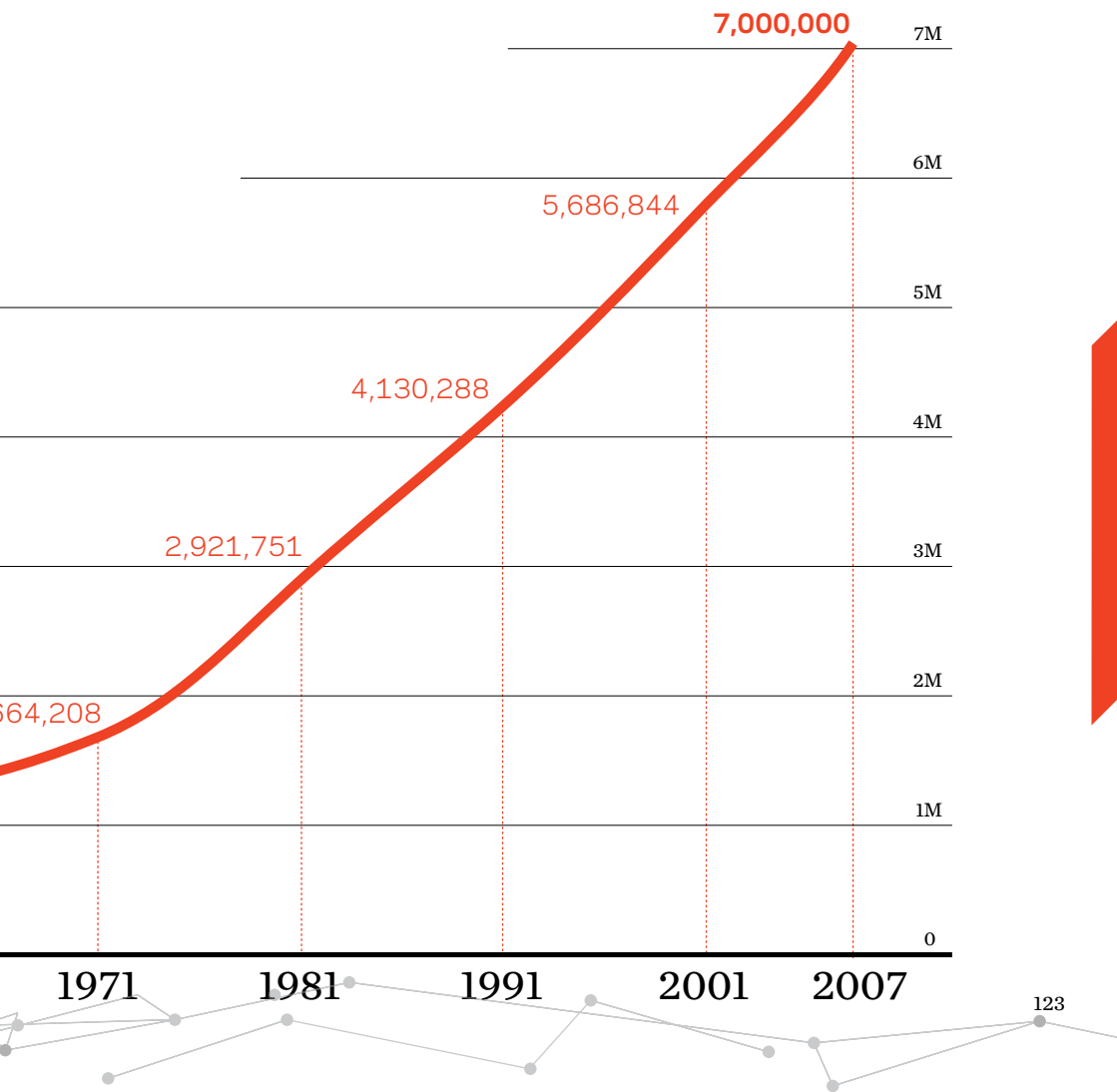
According to the latest census, the urban agglomeration had an overall population of 5.7 million within an area of 560 km² in 2001,



BANGALORE IS HOME TO ABOUT 30% OF INDIA'S TOTAL IT WORKFORCE

FIGURE 2
POPULATION GROWTH OF BANGALORE CITY DURING 1871–2007*
** The population for 2007 is an estimate, Source: Census of India (2001a)*

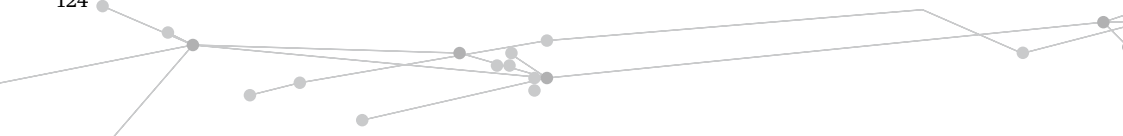
Source: TIFR website, interviews



which included a workforce of 2.2 million, and a literacy rate of 75.1%. The hype over the IT industry is attributed to the fact that Bangalore is home to about 30% of the total IT workforce in the country and a personal disposable income greater than the Indian city average. This has also resulted in a trickle-down effect within the urban economy. Further, investments in industries, infrastructure and other services, have significantly increased purchasing power among the people and have nurtured real estate with consequent land market dynamics, apart from creating numerous secondary employment in services. Interestingly enough, of the 5.7 million population in the urban agglomeration in 2001, about 2 million were migrants (Census of India, 2001b). About 1.2 million of these were from Karnataka state, mainly from the rural parts, while the remaining 0.8 million were from outside the state; the majority of these were from urban areas. It is further noted that people have migrated chiefly for employment or moved with household or for education. The large number of migrant population from other parts of India explains the multitude of languages spoken and understood in Bangalore.

Bangalore is home to numerous institutes of higher learning and research, which is evident from the establishment of premier centres like Indian Institute of Science (IISc), Indian Institute of Management (IIM), Institute for Social and Economic Change (ISEC), Indian Institute of Information Technology (IIIT), and several professional engineering and medical colleges at undergraduate and graduate levels. In tune with recent trends, Bangalore now has numerous malls and multiplexes that are swarmed during weekends. With an active nightlife and Bangaloreans penchant for fast-food, a large number of restaurants, pubs and 'eat-outs' throng the city.

The economic fabric of the city, although at times masked by the IT-based industries is varied, being also characterised by textile, automobile, machine tool, aviation, space, defence, and biotechnology based industries. In addition to these, numerous services, trade and banking activities mark the city's economic landscape. An important feature of the economic activities of Bangalore is the huge concentration of Small & Medium Enterprises (SMEs) in diversified sectors across the city. Bangalore has more than 20 industrial estates/ areas comprising large, medium and small enterprises. Of these, Peenya Industrial Estate, located in the northern part of the city comprises about 4000 SMEs and is considered the largest industrial estate in South East Asia (Peenya Industries Association, 2003). Among others, a majority of the SMEs function as ancillaries/subcontractors to large



enterprises in the field of engineering and electronics industries. Industrial estates sprung up mostly on the periphery of the city and gradually as the city grew became enveloped by its sprawl. Notable among these are the Peenya Industrial Estate, Electronic City and Whitefield (FIGURE 1). The proliferation of SMEs in residential and commercial areas, in addition to the industrial areas, has added to the chaos and congestion in the city. Thus, the thriving economy of the city has resulted in a net district income of Rs 379,700 million (approx. US \$9.5 billion) and a per capita income of Rs 55,484 more than twice the State's average per capita income of Rs 23,848 (Government of Karnataka, 2005).

Despite higher per capita income within the urban district relative to the rest of the State, and with significant migrant population, the number of urban poor has been on the rise and the slum settlements in the city have not been restrained. The escalating costs of land prices coupled with the rises in cost of living has pushed the urban poor to reside in squatter settlements with inadequate amenities and services. Some of these settlements have speckled the city's landscape gaining immediate action from civic authorities. According to Bangalore Mahanagara Palike (2006), the number of households in the urban agglomeration defined as poor was 220,000, housing approximately 1.1 million people out of a 5.7 million population (FIGURE 3). Considering the importance of the matter, the State Government has set up a special agency, Karnataka Slum Clearance Board (KSCB) specifically to address the redevelopment of slums in partnership with various stakeholders like the Housing Board, local bodies, Water Supply Boards, etc. The initiatives taken up by the local body addressing redevelopment of slums are noted in the section on Issues in Planning and Development.

FIGURE 3
DISTRIBUTION OF SLUMS ACROSS GREATER BANGALORE (BMP, 2006)

Note: Estimates are based on 2001 Census

AGENCY / AUTHORITY	NO OF SLUMS	NO OF HOUSEHOLDS	REMARKS
KARNATAKA SLUM CLEARANCE BOARD (KSCB)	218	106,266	Declared
GREATER BANGALORE CITY CORPORATION	324	110,991	310 Undeclared 14 Declared
GRAND TOTAL	542	217,257	



BANGALORE'S URBAN AGENDA: GOVERNANCE AND INFRASTRUCTURE

AN IMPORTANT ASPECT OF A CITY IS HOW WELL IT IS PLANNED, managed and administered, that are activities which form the core part of an urban agenda—governance. However, appropriate state mechanisms through organisational structures, procedures and policies are needed to enable these. Also, apart from the formal administrative structures, the presence and involvement of civil society significantly drive the urban agenda.

Organisations and Stakeholders

Greater Bangalore City Corporation (Bruhat Bangalore Mahanagara Palike) is now the key 'urban local body' (ULB), that is, the local governmental structure representing and responsible to the citizens for the city and outlying areas. Notified in December 2006, the new Corporation replaced the local bodies, Bangalore City Corporation (Bangalore Mahanagara Palike), eight neighbouring councils (seven City Municipal Councils and one Town Municipal Council) and 111 outlying villages. Independent of the Corporation, which is governed by locally elected representatives, parastatal bodies controlled by the State government is responsible for many essential services (FIGURE 4).

Planning in the form of land-use zoning and regulation is vested with Bangalore Development Authority (BDA), a parastatal agency, in spite of the *74th Constitutional Amendment Act*, passed by the National Parliament in 1993. This Act requires that the planning function be vested with the (elected) urban local body and not with any parastatal agency. But, in the case of Bangalore, the Corporation has not been granted adequate powers by the State to plan, decide and administer their city! Furthermore, the State has created numerous other organisations of its own to manage various services such as water supply, law and order, energy, etc. The result is the existence of many state-owned organisations, each acting in its own jurisdiction area, leading to complication and confusion in coordinating different activities. Apart from the issue of a common jurisdiction and the lack of coordinated effort, even basic information related to different sectors is extremely difficult to collect, collate and to correlate. For effective planning it is imperative that all the basic information is gathered across a common jurisdiction with the effect of creating a robust city information system.

FIGURE 4
ORGANISATIONS CONCERNED WITH BANGALORE

ORGANISATIONS	FUNCTIONAL AREAS (SCOPE OF WORK)
GREATER BANGALORE CITY CORPORATION [BRUHAT BANGALORE MAHANAGARA PALIKE (BBMP)]	Urban local body responsible for overall delivery of services—Roads and road maintenance including asphaltting, pavements and street lighting; solid waste management, education and health in all wards, storm water drains, construction of few Ring roads, flyovers and grade separators
BANGALORE METROPOLITAN LAND TRANSPORT AUTHORITY (BMLTA)	Coordination of all land–transport matters, prepare plans for transport infrastructure, initiate integrated land–use and transport planning, function as empowered committee on urban transport projects, evolve regulatory mechanisms for all land transport systems in the Bangalore Metropolitan Region
BANGALORE DEVELOPMENT AUTHORITY (BDA)	Land–use zoning, planning and regulation within Bangalore Metropolitan Area; Construction of few Ring roads, flyovers and grade separators
BANGALORE METROPOLITAN REGION DEVELOPMENT AUTHORITY (BRMDA)	Planning, co–ordinating and supervising the proper and orderly development of the areas within the Bangalore Metropolitan Region, which comprises Bangalore urban district and parts of Bangalore rural district. BDAs boundary is a subset of BRMDA’s boundary
BANGALORE CITY POLICE	Enforcement of overall law and order; Traffic Police: Manning of traffic islands; Enforcement of traffic laws; Regulation on Right of Ways (One–ways)
BANGALORE METROPOLITAN TRANSPORT CORPORATION (BMTC)	Public transport system: Bus–based
BANGALORE METRO RAIL CORPORATION LTD (BMRC)	Public transport system: Rail–based (Proposed)
REGIONAL TRANSPORT AUTHORITY (RTA)	Motor vehicle tax; Issue of licenses to vehicles
BANGALORE WATER SUPPLY AND SEWERAGE BOARD (BWSSB)	Drinking water—pumping and distribution, sewerage collection, water and waste water treatment and disposal
BANGALORE ELECTRICITY SUPPLY COMPANY (BESCOM)	Responsible for power distribution
LAKE DEVELOPMENT AUTHORITY (LDA)	Regeneration and conservation of lakes in Bangalore urban district

In addition to the official bodies, civil society of Bangalore is known for its vibrant community participation. The spectrum of their activities ranges from literacy and green brigades to urban governance, ensuring continuous interactions with the local administration.

Notable spheres of activity of these non-governmental organisations (NGOs) include: improving urban governance by Public Affairs Centre (PAC), Citizens Voluntary Initiative for the City (CIVIC) and Janaagraha; improving living conditions in slums by AWAS, APSA, Paraspura, etc.; addressing literacy and education by Prerana, Dream School Foundation, Pratham, India Literacy Project and Akshara Foundation; taking on environmental issues by the Environment Support Group, Hasiru Usiru, etc. Apart from the NGOs, there are numerous resident welfare associations, trade and commercial organisations, and professional organisations that have played a major role in some of the important activities of local bodies and influencing their decision-making. Civil society has contributed considerably in shaping the policies and governance structures and has always intervened whenever there has been any apathy on the part of the administration towards activities of interest to society at large. An experiment to promote public private partnership and to bring together citizens, NGOs, industry representatives and the erstwhile local bodies established the 'Bangalore Agenda Task Force (BATF)'. This experiment was about to be benchmarked as one of the 'best practices' in urban local governance, when it faced strong criticisms from several civil society groups for setting aside priorities favouring the urban poor and was accused of making a back door entry towards policy making (Ghosh, 2005). In the event, the activities of BATF came to a standstill with the change of guard at the State government a few years ago and it is currently dormant. Another instance of strong action by civil society groups, was seen when the local government started tree felling and pruning for road widening. Members of the green brigade, *Hasiru Usiru*, staged protests, held an all night vigil, stormed the Commissioner's office and also moved to the High Court and finally got the actions stayed. The High Court also ruled later that *Hasiru Usiru* members should inspect the trees along with the designated Tree Officer from the Forest Department before any tree felling and pruning of branches begun.

Challenges in Managing Urban Infrastructure

Urban activities require the support of infrastructure. Broadly, urban infrastructure can be divided into social and economic infrastructure. Social infrastructure encompasses facilities like healthcare, education, housing, commercial (shops, markets and hotels), sports, recreation and entertainment. With mixed land-use being practiced in most parts of Bangalore, shops and markets are the most commonly found amenities (approximately one shop per 100 persons) in the urban agglomeration. The provision and maintenance of primary healthcare, elementary education, sports, recreation and entertainment are administered mostly by the Corporation, while BDA also facilitates some of the social infrastructure like shopping complexes, with provisions for private participation. Economic infrastructure encompasses water supply, wastewater treatment, storm water drainage system, solid waste management, telecommunication network, and transportation network.

The Bangalore Water Supply and Sewerage Board (BWSSB) is the parastatal agency responsible for drinking water supply and wastewater collection and treatment in the city. Bangalore is on a

THE VEHICLE TO PERSON RATIO IS FAR HIGHER THAN ANY OTHER CITY IN INDIA

ridge and does not have its own year-round sources of water. Drinking water is pumped from the river Cauvery, located at a distance of about 100 km over an elevation of 500 m with an energy expenditure of 75 MW for approximately 900 million litres per day (MLD). Apart from the supply from River Cauvery, groundwater and water from the River Arkavathy are also tapped. However, while water supply distribution is 100% in the former Bangalore City Corporation limits, only about 20% of the Municipal Council households are serviced. In view of rapid growth of the city, and recent notification of Greater Bangalore, it remains a challenge to service the remaining areas.

Bangalore city is estimated to have vehicle population of about 2.6 million while the current city population is about 7 million. The vehicle to person ratio is far higher than any other city in India. This has led to increased congestion in road networks across the city and frequent traffic jams. Manning signals at traffic islands has also become unmanageable with the amount of traffic plying across junctions. Again, in this sector different components related to

mobility are vested with different parastatal bodies.

In Bangalore where the working population is around 2 million, the Bangalore Metropolitan Transport Corporation (BMTC) operates on any given day with 4,144 schedules, 4,262 buses, 60,475 trips, and carries 3.5 million passengers. It earns Rs 20.5 million per day and pays Rs 0.955 million to the government as taxes (Bangalore Metropolitan Transport Corporation, 2006). Further, according to recent estimates, there are about 1.6 million two-wheelers, 320,000 motor-cars, 80,000 auto-rickshaws, and 170,000 other vehicles totalling around 2.2 million vehicles on road (Regional Transport Authority, 2006).

The onus of maintaining and improving road networks lies with the Corporation. Although a study for the City by consultants' IDECK and RITES (2005) identified 52 high and medium traffic intensity corridors requiring various interventions by different organisations, the former City Corporation proposed only to widen some of these roads. A key aspect ignored while addressing mobility is the role of land-use in generating traffic demand. Failure by the city to acknowledge this, and in particular the implications of changes in land-use from residential to commercial or industrial, has led to stereotypical approaches in addressing mobility such as road widening, creation of new flyovers and underpasses, or conversion into 'one-ways'. Until now, the city has witnessed compartmentalised approaches to widening of roads or construction of flyovers and grade separators, thus posing as stress points for the future.

With the growing concerns on ensuring mobility and accessibility in urban areas, the Ministry of Urban Development, Government of India, approved the National Urban Transport Policy (NUTP) in June 2006. Specifically, the NUTP acknowledges the linkages of land-use planning with transportation planning. Further to this move, the Government of Karnataka has constituted the Directorate of Urban Land Transport (DULT) and Bangalore Metropolitan Land Transport Authority (BMLTA). The creation of DULT and BMLTA is perhaps the first of its kind in India. The key mandate for BMLTA is to ensure coordination and integration of all initiatives especially those related to land-transport projects apart evolving appropriate policy towards the same. Aptly, the NUTP advocates the mobility of 'people' over 'vehicles' in urban areas. It will be interesting to witness the implications of BMLTA on urban governance as this authority is entrusted as an empowered committee on urban transport projects with other parastatal agencies as members of this authority. It is to be seen whether this authority would aid in critically address the issues of mobility holistically or emerges as yet another enterprise of the State bureaucracy.

Issues in Planning and Development

To understand the development characteristics of the Bangalore metropolitan area, it may help to distinguish three concentric zones—zones, which correspond closely with previous current local authority areas. The first zone would comprise the erstwhile city corporation area of 226 km². The second zone would include the areas of the former eight neighbouring municipal councils and 111 villages, which together form the peri-urban areas and are now incorporated into the Greater Bangalore City Corporation. The third zone would include other villages extending up to the Bangalore Metropolitan Area limits as proposed by Bangalore Development Authority. The development characteristics and agencies across these zones are summarised in **FIGURE 5** and depicted in **FIGURE 1**.

FIGURE 5
DEVELOPMENT CHARACTERISTICS ACROSS BANGALORE

CHARACTERISTICS	DEVELOPMENT ZONES		
	ZONE 1	ZONE 2	ZONE 3
AUTHORITY	Greater Bangalore City Corporation (formerly Bangalore City Corporation).	Greater Bangalore City Corporation (formerly 8 municipal councils) and 111 Villages).	Development Authorities and other Town and Village Municipal Councils.
URBAN STATUS	Core city.	Outgrowth.	Potential areas for future outgrowth.
INFRASTRUCTURE SERVICES	Present, but nearly choked, needs augmenting of existing infrastructure.	Not fully present, with new growth, requires planning and augmentation of infrastructure.	Farmlands and scattered settlements with minimal to no infrastructure.
IMPACT OF GROWTH	No scope for new growth but calls for urban renewal to ease congestion, etc.	High potential for growth due to its present status of being a peri-urban area and emergence of new residential layouts and other developments.	Mostly rural, with minimal growth currently, but potential for future growth.
PLANNING, DEVELOPMENT AND REGULATION CONTROLS	Corporation operates building controls. Planning vested with BDA.	Corporation operates minimal building controls. Planning vested with BDA.	Planning vested with parastatal agencies: BDA and BMRDA and not other local bodies. No regulation on building / construction.

Traditionally, planning has been restricted to land-use planning, being vested with BDA for the region under Bangalore urban agglomeration, and with Bangalore Metropolitan Region Development Authority (BMRDA) for the larger peripheral area comprising the rest of Bangalore Urban District. BDA obtains land, develops it as residential layouts, which eventually are handed over to the city corporation, often involving the extension of city limits. Land-use plans are formalised through the Comprehensive Development Plans (CDP) prepared for every 10 years. Accordingly, the last CDP, prepared in 1995 for the period up to 2011, was revised in 2005–06 for the period up to 2015 (Bangalore Development Authority, 2007). A key aspect of these CDPs are that they indicate the amount and location of land-use allocated for various uses (like residential, commercial, industrial, etc.) as well as restricting development in specific areas demarcated as Green Belt and Valley Zones. However, another organisation similar to BDA, the Karnataka Industrial Area Development Board (KIADB), is responsible for development of industrial areas. These industrial estates are situated for the most part in the outskirts of the city and KIADB has powers under the law to take over tracts of agricultural land for the purpose.

Generally, the regulation and enforcement of land-use

BANGALORE IS ONE OF THE BENEFICIARIES UNDER THE GOVERNMENT OF INDIA'S JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM)

zoning regulations are dismal, leading to a large number of illegal developments and encroachments on public land—problems which have led Karnataka State to establish a legislative committee to investigate irregularities in and around the city. In the particular case of growth occurring around outer industrial areas, urban local bodies are generally unable to provide basic infrastructure and services, thus further aggravating inefficient utilisation of land and other natural resources. With such instances prevailing especially in the areas of the former Municipal Councils, the new Corporation faces a great challenge to deliver basic infrastructure and services.

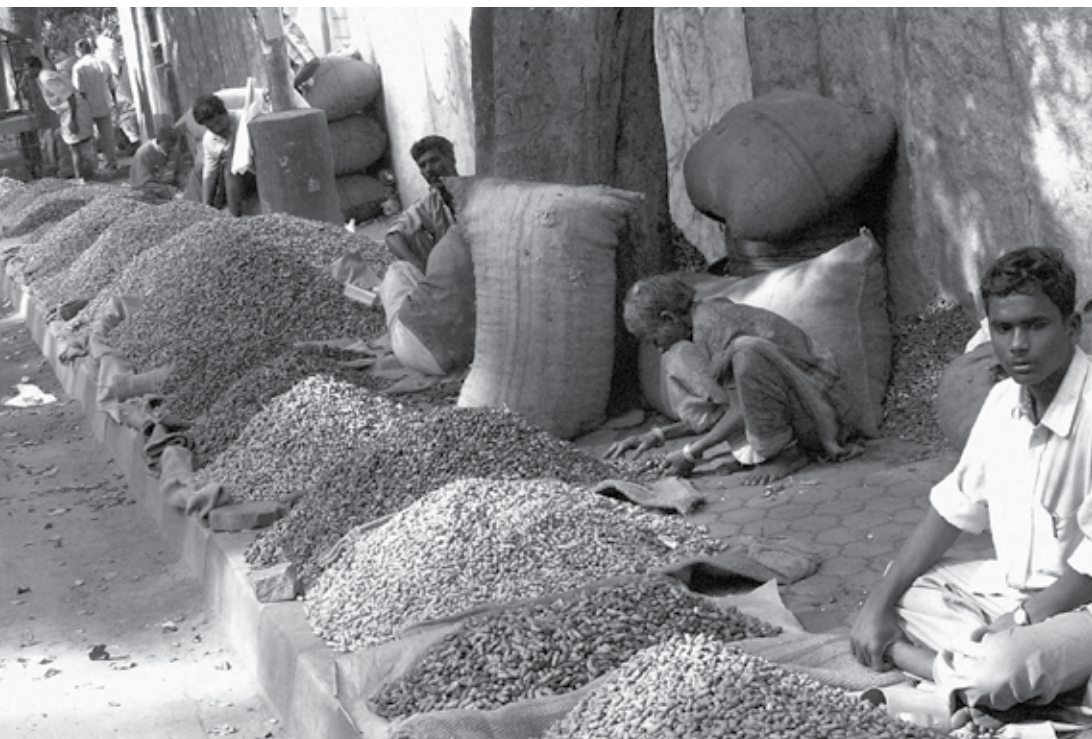
Bangalore is one of the beneficiaries under the Government of India's Jawaharlal Nehru National Urban Renewal Mission (JNNURM) with an estimated outlay of US \$ 11 billion over the next six years. In accordance with the JNNURM guidelines, the erstwhile Bangalore City Corporation prepared the City Development Strategy Plan (CDSP) for

both UIG and BSUP (Bangalore Mahanagara Palike, 2006). The CDSP outlines only an investment plan and financial strategy for taking up various initiatives envisaged in the mission. Under BSUP, 218 declared slums in the former City Corporation limits would be taken up by KSCB for redevelopment. Further, there are 169 slums under the erstwhile City Corporation jurisdiction that remain undeclared, which would be redeveloped by the new Corporation. There are, in addition, 155 slums in the neighbouring former municipal council areas that would be redeveloped by the new Corporation and KSCB. However, a draft community participation law has not been enacted and in Karnataka State, most of the infrastructure projects and redevelopment plans have been administered by ULBs and parastatal agencies and not through community participation as envisioned by the mission. The result is a continuation of top-down rather than bottom-up modes of planning and delivering infrastructure and services. This calls for introspection on the implementation and achievement of the mission objectives. However, with various initiatives under JNNURM being underway, it does offer hope, and perhaps promise in improving the essential urban infrastructure and services in the city.


With the creation of BBMP, the State government also set up an expert committee to study and suggest alternate planning and governance structures under the Chairmanship of K. Kasturirangan, a member of upper house of National Parliament, Rajya Sabha. The committee has only recently submitted the final report along with the recommendations for the same (in March 2008). One of the key contentions in the report is the breach of constitutional obligation for creating the Metropolitan Planning Committee (MPC) for Bangalore metropolitan region. Therefore, it strongly recommends setting up of MPC with the Chief Minister of the State to head this committee along with about 66% of elected representatives from the region and the remaining (including experts) members appointed by the Government to undertake holistic planning for the entire metropolitan region. The report notes several far reaching and legal changes for facilitating an empowered, responsive and accountable urban local body.

The creation of Bangalore Metropolitan Land Transport Authority (BMLTA) recently by the Government of Karnataka to address the integration of land-use planning with transportation planning is noteworthy. However, much of the success of these organisations rests in addressing key processes that emanate through the interplay


Groundnut Fair—an annual event, colloquially called 'Kadelekai Parishe', has helped Bangalore retain its cultural flavour. Photo: N.Akash



of land-use and mobility and bringing in systemic changes to address the same. However, for effective realisation of the objectives of BMLTA, the organisations should be empowered through adequate statutory support. The successful functioning of BMLTA with added regulation through legislation and functioning under MPC as envisaged could evolve as a 'best practice' in urban governance and planning.



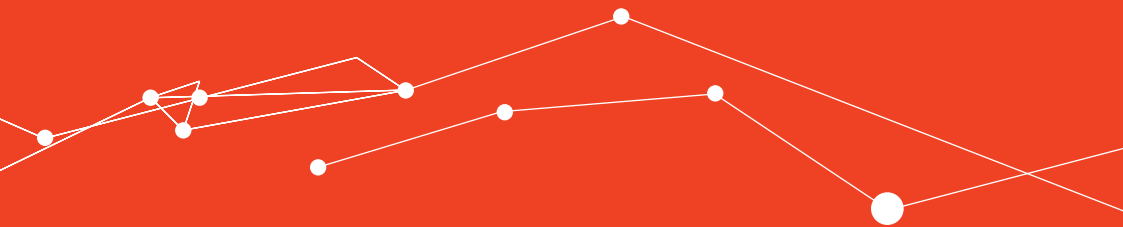
**BANGALORE STANDS OUT AS A
BEACON OF THE GLOBALISING WORLD
AND TO SUSTAIN THIS, IT NEEDS TO
SYSTEMATICALLY ADDRESS THE KEY
CHALLENGES IT IS FACING IN TERMS OF
GOVERNANCE AND INFRASTRUCTURE**



BANGALORE, WITH ALL DUE RESPECT to its status as ‘Silicon Valley’ and ‘Garden City’, faces real challenges in terms of addressing and delivery of basic infrastructure and services to all its stakeholders. In spite of numerous initiatives and activities envisaged by the urban local bodies, past and present, and by parastatal bodies, the rationalisation of jurisdictions for these activities could mark the beginning of a coordinated effort in addressing the needs of the city. In the wake of recent notification of Greater Bangalore City Corporation and initiatives under JNNURM, Bangalore is currently experiencing a remarkable transformation. Bangalore also

stands out as a beacon of the globalising world and to sustain this, it needs to systematically address the key challenges that the city is facing in terms of governance and infrastructure.





5



भारतीय रिज़र्व बैंक
RESERVE BANK OF INDIA

केन्द्रीय सरकार द्वारा प्रत्याभूत
GUARANTEED BY THE CENTRAL GOVERNMENT

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I PROMISE TO
PAY THE BEARER

भारतीय रिज़र्व बैंक
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CREATIVE FINANCING OF URBAN INFRASTRUCTURE IN INDIA: MARKET-BASED FINANCING AND PUBLIC-PRIVATE PARTNERSHIP OPTIONS

CHETAN VAIDYA & HITESH VAIDYA

The Director of India's National Institute of Urban Affairs explores the most recent and creative trends in infrastructure in India's major cities



**THE URBAN POPULATION IN
INDIA IS 285 MILLION AND IS LIKELY
TO BE DOUBLE THIS BY 2030**

THE URBAN POPULATION IN INDIA is 285 million and is likely to be twice its present level by 2030. Rapid urbanisation has increased the demand for urban services. The Steering Committee on Urban Development for the *Eleventh Five Year Plan of India* (2007–2012), has estimated that the total funding requirement for implementation of the Plan target in respect to urban water supply, sewerage and sanitation, drainage and solid waste management is Rs 12,702 billion¹. The *74th Constitutional Amendment* gave urban local bodies (ULBs) the responsibility to provide these services. The sources of revenue devolved to ULBs are, however, not sufficient and still depend on higher levels of government. Traditionally, urban infrastructure has been financed mainly through budgetary allocations. Other financing has come from financial institutions like the

Housing and Urban Development Corporation and limited investments by the ULBs themselves through their internal resources. Financial resources from all these sources, however, fall far short of the urban sector's estimated investment requirements. Since public funds for these services are inadequate, ULBs have to look for alternative sources for financing their infrastructure costs. Market-based financing and Public-Private Partnership (PPP) have emerged as viable alternatives to finance infrastructure investments. This chapter describes the development of this new market-based urban infrastructure financing system, emerging PPP options in India and draws certain conclusions.

1. 1US\$=Rs. 40

MARKET-BASED FINANCING SYSTEM

SINCE 1994, THE INDO-US FINANCIAL INSTITUTION REFORM AND Expansion (FIRE-D) project is working with national, state and local governments in India to develop a market-based bond market. Several ULBs and utility organisations have issued bonds that so far have mobilised over Rs 12,249 million through taxable bonds, tax-free bonds and pooled financing (FIGURE 1).

CREDIT RATING

RATING AGENCIES PROVIDE INVESTORS WITH AN INDEPENDENT third-party evaluation of the credit strength or weakness of a particular bond issue. In the India context, rating agencies do not rate cities or countries, rather they rate the creditworthiness of a particular debt offering, essentially addressing the ability and willingness of a government issuer to pay its debts. Ratings of local governments establish a transparent credit record, and a reference framework for current and future performance of local finances and debt management. In addition to providing an initial rating of a bond offering, agencies continue to monitor the capacity of the issuer to make timely payments of principal and interest throughout the term of a bond. This continued monitoring throughout the life of a bond issue is important to the effective operation of a secondary market in local bonds. In ranking a local government's debt offering, rating

FIGURE 1
MUNICIPAL BONDS IN INDIA

S.NO.	TYPE OF BOND	AMOUNT (RS. IN MILLIONS)
1	TAXABLE BONDS	4,450
2	TAX-FREE BONDS	6,495
3	POLLED FINANCE	1,304
	TOTAL	12,249

2. The project is funded by the United States Agency of International Development.

agencies construct a general framework for evaluation that includes legal and administrative framework, economic base of service area, municipal finances, existing operations, management capacity, project viability, financial structuring, etc. In 1995, the FIRE-D project supported the Credit Rating Information Services of India Limited (CRISIL) to develop a methodology for carrying out municipal credit ratings based on a careful study of ULBs in India and international experience. Ahmedabad was the first city where this methodology was applied in India. In February 1996, Ahmedabad received a rating from CRISIL for a bond offering. This was the first rating received by a municipal bond offering in India. The municipal credit rating system has come to be regarded by India's private financial community as a solid indicator of a city's performance and competitiveness. In the last 12 years, four rating agencies have provided ratings for municipal and municipal enterprise bond offerings. Subsequently, the process of credit rating of ULBs' has gained wide acceptance with more than forty towns and cities seeking credit rating from one of the accredited credit rating agencies in the country. The Ministry of Urban Development launched an initiative for the institutional credit rating of 47 ULBs by the Security and Exchange Board of India (SEBI) certified agencies. The credit rating initiative is envisaged to contribute towards improved financial management of ULBs and financing urban infrastructure projects.

IN THE INDIAN CONTEXT, RATING AGENCIES DO NOT RATE CITIES OR COUNTRIES, RATHER THEY RATE THE CREDITWORTHINESS OF A PARTICULAR DEBT OFFERING, ESSENTIALLY ADDRESSING THE ABILITY AND WILLINGNESS OF A GOVERNMENT ISSUER TO PAY ITS DEBTS

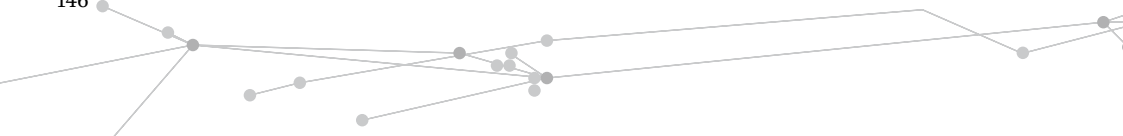
TAXABLE MUNICIPAL BONDS

THE GOVERNMENT OF INDIA (GOI), RECOGNISING INFRASTRUCTURE'S key role in the process of economic development, set up the Expert Group on the Commercialization of Infrastructure, often known as the Rakesh Mohan Committee, in 1994. The Committee recommended private sector participation in urban infrastructure development and accessing capital markets through issuing municipal bonds.

The Ahmedabad Municipal Corporation (AMC) was the first ULB to access the capital market in January 1998. It issued Rs 1,000 million in bonds to partially finance a Rs 4,390 million water supply and sewerage project. This was a remarkable achievement since it was the first municipal bond issued in India without a state guarantee and represented the first step toward a fully market-based system of local government finance. The AMC had previously instituted significant fiscal and management reforms, including improved tax collection, computerization of its accounting system, strengthening of AMC's workforce and financial management, and development of a comprehensive capital improvement program. Due to these measures, AMC was able to turn around its financial position from a cash deficit municipal corporation to achieve a closing cash surplus of Rs 2,140 million by March 1999. These reforms laid the necessary groundwork for AMC's bond issue and the successful implementation of the water supply and sewerage project.

The Indo-US FIRE-D project's partnership with AMC began in 1994 with the preparation of an urban environmental workbook and an environmental risk assessment. Information provided by these studies served as the basis for formulating an Ahmedabad Corporate Plan. In this exercise, the FIRE-D project assisted AMC to carry out financial analyses and to prepare an affordable investment plan. The plan, which was prepared in association with IL&FS, assisted AMC in the development of the Ahmedabad water supply and sewerage project. In addition, the FIRE-D project sponsored and facilitated participation of AMC staff and elected leaders in a number of training programs and study tours to build capacity to undertake and sustain reforms. Since 1994, the FIRE-D project's multifaceted assistance has played a vital role in the development of the City's water supply and sewerage system and subsequent bond issues.

The debt market in India for municipal securities has grown considerably since the issuance of Ahmedabad bonds. Since 1998, other cities that have accessed the capital markets through municipal



bonds without state government guarantee include Nashik, Nagpur, Ludhiana, and Madurai (FIGURE 2). In most cases, bond proceeds have been used to fund water and sewerage schemes or road projects. India's city governments have thus mobilized about Rs 4,450 million from the domestic capital market through taxable municipal bonds.

It is significant to note that most of the municipal bonds issued so far have been without a government guarantee. The success of these issues demonstrated that local governments can access the capital market to finance the efficient delivery of civic services. The ability of municipalities to take advantage of these opportunities, however, depends on their presenting themselves as viable financial entities. ULBs must demonstrate creditworthiness and obtain an investment grade credit rating. This forces them to improve their revenue base by introducing reforms, including improved cost recovery and financial management, as well as better management of service delivery systems. Another prerequisite for issuing municipal bonds is development of commercially viable projects, projects that can recover full costs, including the cost of debt service.

FIGURE 2
TAXABLE MUNICIPAL BONDS IN INDIA

CITY	AMOUNT (RS. MIL)	PUBLIC/ PRIVATE	GUARANTEE	ANNUAL INTEREST	ESCROW	PURPOSE	RATING
BANGALORE (1997)	1,250	Private	State Govt.	13%	State Government grants and property tax	City roads/ streetdrains	A-(SO)
AHMEDABAD (1998)	1,000	Public & Private	No	14%	Octroi from 10 octroi collection points	WS&S project	AA-(SO)
LUDHIANA (1999)	100	Private	No	13.5% to 14%	Water & Sewerage taxes and charges	WS&S project	LAA-(SO)
NAGPUR (2001)	500	Private	No	13%	Property tax and water charges	WS project	LAA-(SO)
NASHIK (1999)	1,000	Private	No	14.75%	Octroi from four collection points	WS&S project	AA-(SO)
INDORE (2000)	100	Private	State Govt.	13%	Grants/ property tax	Improvement of city roads	A(SO)
MADURAI (2001)	300	Private	No	12.25%	Toll tax collection	City road project	LA+(SO)
VISAKHAPAT NAM (2004)	200	Private	No	7.75%	Property tax	Water supply project	AA-(SO)
TOTAL	4,450						

TAX-FREE MUNICIPAL BONDS

THE INDIAN INCOME TAX ACT PROVIDES TAX PREFERENCES FOR investments in infrastructure projects. These provisions, however, have not been generally available for financing municipal infrastructure. To boost the municipal bond market, the Government of India decided to provide tax-free status to municipal bonds. The GOI issued guidelines for issue of tax-free municipal bonds in February 2001. These guidelines stipulate eligible issuers, use of funds, essential pre-conditions, maturing period, buy-back, nature of issue and tax benefits, ceiling amount for a project, compulsory credit rating, and external monitoring of the tax-free municipal bond. Creating tax incentives for municipal securities provided a national government subsidy for ULB bond offerings by substantially reducing the interest cost of financing local infrastructure projects. Tax-free status provided an incentive to local governments to improve their fiscal management sufficient to meet the demands of the investment community.

Ahmedabad was the first municipal corporation in India to issue tax-free municipal bonds for water and sewerage projects. In April 2002, AMC issued a tax-free 10-year bond with an annual interest rate of 9%. The bond issue amount was Rs 1,000 million. The Municipal Corporation of Hyderabad also issued a tax-free municipal bond in May 2002 for Rs 825 million. The MCH thus became the second city to issue tax-free municipal bonds. The money raised by MCH through municipal bonds was used for providing urban infrastructure in the city especially in slums. The tenure of the bond was seven years with a rate of interest of 8.5%. [FIGURE 3](#) presents a list of organisations, projects and amounts of tax-free municipal bonds issued to date.

POOLED FINANCING

ONLY FINANCIALLY STRONG, LARGE MUNICIPAL CORPORATIONS ARE IN a position to directly access capital markets. Most small and medium ULBs are not able to directly access capital markets on the strength of their own balance sheets. Also, the cost of the transaction is another barrier. In the United States and elsewhere, small local bodies pool their resources and jointly access the capital market. The FIRE-D project developed a similar vehicle for India's ULBs that enables capital investments to be pooled under one borrowing umbrella. Based on this model, the Governments of Tamil Nadu and Karnataka issued municipal bonds by pooling municipalities.

AHMEDABAD WAS THE FIRST MUNICIPAL CORPORATION IN INDIA TO ISSUE TAX-FREE MUNICIPAL BONDS FOR WATER AND SEWERAGE PROJECTS

FIGURE 3
TAX-FREE MUNICIPAL BONDS IN INDIA

CITY GOVERNMENT	PROJECTS	AMOUNT OF TAX-FREE MUNICIPAL BOND (RS. MILLION)
Ahmedabad Municipal Corporation (2002)	Water supply and sewerage project	1,000
Hyderabad Municipal Corporation (2003)	Road construction and widening	825
Nashik Municipal Corporation (2002)	Underground sewerage scheme and stormwater drainage system	500
Visakhapatnam Municipal Corporation (2004)	Water supply system	500
Hyderabad Metropolitan Water Supply And Sewerage Board (2003)	Drinking water project	500
Ahmedabad Municipal Corporation (2004)	Water supply project, stormwater drainage project, road project, bridges and flyovers	580
Chennai Metropolitan Water Supply & Sewerage Board (2003)	Chennai water supply augmentation project	420
Chennai Metropolitan Water Supply & Sewerage Board (2005)	Chennai water supply project	500
Chennai Municipal Corporation (2005)	Roads	458
Ahmedabad Municipal Corporation (2005)	Roads and water supply	1,000
Nagpur (2007)	Nagpur water supply and sewerage project	212
TOTAL		6,495



In 2003, the Tamil Nadu Urban Development Fund issued a bond by pooling 14 municipalities for commercially viable water and sewerage infrastructure projects. A special purpose vehicle, the Water and Sanitation Pooled Fund (WSPF), was set up to issue the municipal bonds. The FIRE-D project supported the efforts of WSPF to structure a Rs 304 million bond issue whose proceeds financed small water and sanitation projects in the 14 small ULBs. The Trust vehicle enabled the local bodies to participate in the capital market without increasing the contingent liabilities of the state and to channelize private financial resources into infrastructure investments. This was the first municipal pooled issue. It had a 15-year maturity and an annual interest rate of 9.2%. While the bonds were unsecured, a multi-layered credit enhancement mechanism was set up. The ULBs agreed to set apart monthly payments equal to one-ninth of their annual payments into escrow accounts and transfer the same during the tenth month into the WSPF's escrow account. Besides the strong escrow mechanism and government intercept, a key to the bond's success was that all the pooled projects demonstrated strong collection of user charges and/or fixed upfront contribution from citizens. USAID provided a backup guarantee of 50% of the bond's principal through the Development Credit Authority (DCA) mechanism. The issue demonstrated a successful model of pooled financing in India and threw open the possibility of enabling smaller and medium municipalities to access capital market funds at competitive rates.

Subsequently, the Government of Karnataka used the concept of pooled financing to raise debt from investors for the Greater Bangalore Water Supply and Sewerage Project. This project covers eight municipal towns around Bangalore and has a total project cost of Rs 6,000 million. A debt fund called the Karnataka Water and Sanitation Pooled Fund (KWSPF) was established under the Indian Trust Act to access the capital market by issuing a bond on behalf of the participating ULBs. The KWSPF was created as the intermediary between the local municipalities and the capital market. The KWSPF borrowed from the market and on-lends to the ULBs at terms determined by the KWSPF. During June 2005, the KWSPF successfully floated Rs 1,000 million tax-free municipal bonds at an annual interest rate of 5.95%. The tax-free status of the bonds greatly enhanced the terms on which the ULBs were to repay the loans, which in turn elevated the confidence of the investors. USAID under its DCA program provided a guarantee of up to 50% of the principal amount of

market borrowing. It is felt that the tax-free status of the bonds and the DCA guarantee lowered the interest rate by about 1.5–2.0% per year compared to similar credit enhancement structures and helped to extend the bond's tenure to 15 years. The GBWASP will provide water supply to 1.5 million people residing in about 300,000 households, including some 60,000 urban poor households in 250 wards in the eight ULBs, which as of December 2006 have been merged with the Bangalore Municipal Corporation.

The success of the pooled finance model as demonstrated in the States of Tamil Nadu and Karnataka subsequently led GOI to create a central fund that enables capital investments to be pooled under one state borrowing umbrella. The objective is to provide a cost-effective and efficient approach for smaller- and medium-sized ULBs and to reduce the cost of borrowing. MOUD formulated the Pooled Finance Development Fund (PFDF) Guidelines to help small- and medium-sized ULBs access market funds for their infrastructure projects and to encourage municipalities undertake fiscal, financial and institutional reforms required to create efficient and equitable urban centers. The PFDF Guidelines call for states to create their own pooled financing entities. The scheme is meant to provide credit enhancement grants to facilitate market borrowings through a pooled financing mechanism on behalf of identified ULBs for investment in urban infrastructure projects.

PUBLIC-PRIVATE PARTNERSHIP OPTIONS

AS A RESPONSE TO AN INSUFFICIENT PROVISION OF BASIC URBAN SERVICES and a lack of access to finance and other resources by ULBs that aim to increase access to these services, a number of PPP options have emerged. These include: service contracts; performance-based service contract; joint sector company to implement and finance the project; a management contract for operations and maintenance (O&M); and construction cum build-operate-transfer (BOT) contract.

It is pertinent to mention already at the beginning that the Government of India has designed PPP guidelines to sensitise state governments and urban local bodies to the policy and procedural issues that need to be addressed so as to reform urban water supply and sewerage issues. The new PPP guidelines advocate the changed approach and can drive and sustain comprehensive reform of urban water and sanitation services. This approach will also strengthen the role of urban organisations to provide the urban services more effectively and support the decentralisation objective of the Government. In this improved environment, public-private participation models for provisioning of various services would also become feasible. Features of the PPP options are presented below.

Service Contract The Chennai Metropolitan Water Supply and Sewerage Board have made a significant advance in use of service contracts for PPP in O&M of water supply and sewerage systems in the city. Out of the 119 city sewerage pumping stations 70 have, so far, been handed to private contractors for operation and maintenance. The system is working very well which has resulted in an increase in the contract period from one to three years. The Board has also given service contracts for O&M of two sewage treatment plants for a period of three years.

Performance-Based Service Contract In the Navi Mumbai Municipal Corporation (local body for a planned new city close to Mumbai), core municipal services are managed by the private sector on a labor contract basis. Of the forty-two contracts in operation, nineteen performance-based service (PBS) contracts were prepared for managing the water distribution system and one PBS contract for the transmission system. The basis for repackaging the contracts was to increase the efficient operation of the system, and take specific steps to: maximize the water that is billed; reduce leakages in the system; detect illegal use of water; and take similar steps to

minimize the consumption of power. The scope of work included: system operations; operations based on schedule of rates; water audit; energy audit; repairs and maintenance, and advice. The PBS contract envisaged provision of services for 3 years with annual performance reviews.

Operator Consultant As part of the World Bank funded Karnataka Urban Water Supply Improvement Project, demonstration zones have been identified in the three cities Belgaum, Gulbarga, Hubli-Dharwad and entrusted on a performance based contract to a Private Operator Consultant for carrying out water supply improvements in the zones with the prime objective of demonstrating provision of 24/7 water supply. The scope of the contract is to undertake detailed technical investigations of the present water supply in the Demo Zones and prepare a detailed investment plan and undertake the rehabilitation of the distribution zonal assets, provide operations, maintenance, and customer services at agreed levels of service.

Management Contract Jamshedpur Utilities and Services Company (JUSCO) a wholly owned subsidiary of the Tata Steels was formed in 2003 to provide and maintain urban services in the city. This private company provides very good urban services including power to its 700,000 population. It has a management contract for O&M of water supply and sewerage services for Jamshedpur city.

Joint Sector Company This option is adopted in Tiruppr water supply project. Tiruppur city in the State of Tamil Nadu had a population of 3,500,000 in 2001. The city produces more than 75% of the country's knitwear exports. Realising the need for an improved water supply to survive in a highly competitive international market, the Tiruppur Exporters Association supported by the state and local government decided to involve the private sector in meeting the water demand. As a result, a public limited company with private sector participation, the New Tiruppur Area Development Corporation, was formed to implement the project. When operational, the water project will supply 185 million liters of water per day and serve nearly 1,000 textile units and residents in Tiruppur and its surrounding areas. The project was implemented on BOT basis. The Project will recover the total project cost along with realizing reasonable returns through user charges. The estimated cost of the project is Rs 10,500 million.



Construction-cum-BOT Contract Alandur Sewerage Project had a construction contract for 120 km sewage collection system; whereas, the treatment plant of 24 MLD is with a BOT contract. The total cost of the project is Rs 340 million. The operator is expected to make capital investment for the treatment plant and recover it over a period of 14 years. The local body will recover the costs through a combination of sewerage tax, sewerage charge, connection charge, general revenues and state government support.

There are several PPP projects in solid waste management. Various ULBs are now taking help from the private sector to develop water supply projects in PPP mode and some of these initiatives in Latur, Nagpur, Mysore, Maduari, Mandovi, etc. are now at different stages of project development and implementation.

The initial focus of new investments on PPP of water supply projects was on provision of bulk supply. However, BOT projects often did not address problems of existing water supply and sanitation systems such as high unaccounted for water, high expenditure on energy and low cost recovery. The focus is slowly shifting to improved management of existing systems. It may be mentioned here that most PPP projects in the water supply sector are in pilot stages. Most of them are not citywide, water supply tariffs in India are low, base data of existing water supply systems are missing and capacity of private operators is also inadequate. Unless these issues are taken care of it will not be possible to undertake PPP projects in urban water supply and sanitation sector.


LINKAGES WITH JNNURM

ACKNOWLEDGING THE CRITICAL ROLE OF CITIES IN THE COUNTRY'S current economic context, GOI launched in December 2005 a flagship program, called Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The program aims at providing incentives to cities to undertake institutional, structural and fiscal reforms at state and local levels to improve service delivery systems, boost local economic performance and enhance quality of life.

JNNURM has two overarching goals, one relates to the provision of urban infrastructure, and the second to the reduction of poverty in cities. Through this program, GOI is providing investment follow up for cities undertaking comprehensive reform. The JNNURM will disburse a total of at least Rs 1,000 billion over a seven-year period (2005-12). Of this, Rs 500 billion will be contributed by GOI and another Rs 500 billion will be contributed by states and ULBs. States and ULBs accessing the JNNURM must complete a total of 22 reforms, some mandatory and some optional, during the seven-year period (2005-12). The mandatory and optional reforms of states/ULBs under the JNNURM include decentralization of urban governance and empowering urban local bodies, introduction of improved accounting systems, improved revenue base, reform of rent control acts, delivery of services to the poor, etc. The JNNURM encourages ULBs to access market-based financing and PPP for urban infrastructure projects that are funded by the Mission. The FIRE-D project assisted Nagpur and Thane Municipal Corporations to prepare financial and resource mobilization plans to fund their local contributions to projects identified under JNNURM. The Nagpur Municipal Corporation issued Rs 212 million municipal bonds in March 2007 to fund a WSS project under JNNURM. The Thane Municipal Corporation is expected to access the market for a Rs 1,000 million bond to fund its local contribution for a sewerage project under JNNURM. PPP options have been approved for 22 projects under JNNURM and most of them are for solid waste management in cities.



**GREAT PROGRESS HAS BEEN MADE IN
DEVELOPING THE POLICY AND LEGAL
FRAMEWORK FOR LOCAL GOVERNMENTS TO
ACCESS THE CAPITAL MARKET TO FINANCE
URBAN INFRASTRUCTURE**



GREAT PROGRESS HAS BEEN MADE in developing the policy and legal framework for local governments to access the capital market to finance urban infrastructure. However, to routinely access capital markets or invite the private sector, ULBs will have to have the capacity to develop commercially viable projects. The most critical factor for obtaining market finance will be a healthy municipal revenue base. A market-based approach to financing urban infrastructure linked with JNNURM will further strengthen ULBs and help achieve the decentralization objective of the *74th Constitutional Amendment*. Thus, market-based financing is an important innovation for urban infrastructure in the country.

As far as PPP options for urban infrastructure are concerned, the entire notion of developing and implementing projects in a commercial format is a relatively new

trend in India. These projects require considerable effort in evolving project documentation, developing institutional arrangements for project structures, securing approvals and clearances from stakeholders, financial structuring, selecting a contractor, operator or concessionaire and ensuring overall financial closure. A wide range of actors have to be involved in all these processes, and consistent coordination is necessary. In addition there is a constant need for the sponsor to pursue project related activities to mitigate and minimize risks. Both capacity and legitimacy are required to perform these roles.

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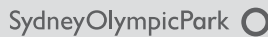
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