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Emerging Challenges in Urban Infrastructure Development

Abstract

The urban population explosion is expected to be a whopping 40% of the total population by 2030 from 29% at present. The major reason for such growth is the great rural-urban divide in terms of available earning opportunities and civic facilities, besides large growth in IT-ITES investment in the major urban locations of India. But at the same time, urban India today faces serious challenges of growth and its management also. Across geographies, the issues of urbanization manifest in the form of overcrowding, congestion, insufficient infrastructure, inadequate service provisioning – mainly in terms of drinking water, sanitation, energy, transport solid waste management, environmental degradation and pollution etc. Against this backdrop, the present paper highlights the major challenges for the development of urban infrastructure in India.

Introduction

Infrastructure development in the urban areas has a vital role in the economic transformation of a country. Urbanization is considered as a key indicator of overall development and economic prosperity. India's strong economic growth over the last decade has been accompanied by increased urbanization, which in turn has resulted in greater demand for urban infrastructure. While the overall population growth rate of India between 1991 and 2001 was only 21.3 per cent, the urban population growth rate in the same period was 31.11 per cent. India's level of urbanization increased from 17.6% in 1951 to 23% in 1981 and 29% in 2001. The urban population has grown to more than 285 million in 2001. The availability of urban infrastructure such as drinking/usage water, sewerage disposal, solid waste management and roads etc are found to be beyond the reach of 21 per cent of population according to the Tenth Plan document. It is a well recognized fact

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that the urban areas are expected to contribute about 65 percent of GDP and for making this to happen a total investment of Rs. 1,20,536 crore under the JNURM is required over a period of seven years (2005–2012).

The India Infrastructure Report 1996 on investment requirements for infrastructure had estimated an annual requirement of funds of Rs. 28,000 crore for providing infrastructure facilities (water supply and sanitation to urban population). As against this, the total allocation for the schemes pertaining to Urban Water Supply and Sanitation during the whole 9th Five Year Plan period (1997–2002) was Rs. 18,624 crore which gives an idea of the huge shortfall in urban infrastructure investments. A recent Organization for Economic Co-operation and Development (OECD) report on urban competitiveness for various regions lists out factors such as policy such as policy integration, public–private co-operation, human and capital development for the success of urban areas.

In developing countries, urbanization and economic growth go hand-in-hand. Economic development involves the transformation of a country from an agricultural based economy to an industrial–service based economy. Production of manufacturing and services is much more efficient when concentrated in dense business–industrial districts in cities. Close spatial proximity, or high density, promotes information spillovers amongst producers, more efficiently functioning labor markets, and savings in the transport costs of parts and components exchange among producers and of sales to local residents.

Causes of Urbanization

It is widely accepted that the acceleration of urbanization takes place with corresponding acceleration of economic growth. The process of Urbanization can be attributed to the followings.

- ◆ Economies of scale in production particularly in manufacturing.
- ◆ Existence of information externalities
- ◆ Technology development, particularly in building and transportation technology
- ◆ Substitution of capital for land as made possible by technological developments.

Urban Infrastructure Challenges

Urbanization is strongly linked to economic growth. Economic growth gives rise to the human and economic resources needed to deal with large-scale sectoral and demographic transformations. According to the 2001 census, India has a population of 1027 million with approximately 28 per cent or 285 million people living in urban areas. The number of towns and cities has increased to 4378. The growth of population has put urban infrastructure and services under severe strain. Smaller cities have found it particularly difficult to cope with the increasing demands on services because of inadequate financial resources. Urban areas in India, present a grim picture with regard to availability of basic infrastructure.

- ◆ About 21% of the urban population is living in squatter settlements, where access to basic services is extremely poor.
- ◆ Although 89% of the urban population is reported to have access to safe drinking water but there are severe deficiencies with regard to equitable distribution of water.
- ◆ Nearly 46% of urban households have water toilets, but only 36% of the urban households are connected to the public sewerage system.
- ◆ City roads are inadequate for traffic requirements, leading to congestion and fast deterioration in quality of roads due to excess loads.

Table - 1

State wise Growth in Urban Population 1971-2001

Sl.	State	Percentage of Urban Population				Annual growth rate(% per year)		
		1971	1981	1991	2001	1971-81	1981-91	1991-01
1	Andhra Pradesh	19.31	23.25	26.84	27.08	3.94	3.55	1.37
2	Assam	8.82	9.88	11.09	12.7	3.29	3.29	3.09
3	Bihar	10.00	12.46	13.17	10.47	4.34	2.65	2.57
4	Gujarat	28.08	31.08	34.40	37.35	3.42	2.90	2.80
5	Haryana	17.66	21.96	24.79	29.00	4.65	3.58	4.11
6	Karnataka	24.31	28.91	30.91	33.98	4.08	2.55	2.53
7	Kerala	16.24	18.78	26.44	25.97	3.19	4.76	0.74
8	Madhya Pradesh	16.29	20.31	23.21	26.67	4.45	3.71	2.71
9	Maharashtra	31.17	35.03	38.73	42.40	3.35	3.27	2.95
10	Orissa	8.41	11.82	13.43	14.97	5.21	3.08	2.61
11	Punjab	23.73	27.72	29.72	33.95	3.62	2.55	3.19
12	Rajasthan	17.63	20.93	22.88	23.38	4.52	3.31	2.71
13	Tamil Nadu	30.26	32.98	34.20	43.86	2.45	1.76	3.56
14	Uttar Pradesh	14.02	18.01	19.89	20.78	4.78	3.27	2.84
15	West Bengal	24.75	26.49	27.39	28.03	2.75	2.54	1.84
	All India	20.22	23.73	25.72	27.78	3.79	3.09	2.73

Source: Census of India 2001

Table -2
Urban Agglomerations/Towns by Class/Category: Census of India 2001

Class	Population Size	No. of UAs/Towns
Class I	1,00,000 and above	393
Class II	50,000 - 99,999	401
Class III	20,000 - 49,999	1,151
Class IV	10,000 - 19,999	1,344
Class V	5,000 - 9,999	888
Class VI	Less than 5,000	191
All classes		4378

Table -3
Urban Sector Investment Requirement

Category	Number of cities	Investment requirements (Over 7 years starting 2005-06)	Annual Funds requirement
Cities with over 4 million population	7	57,143	8163.3
Cities with 1-4 million population	28	57,143	8163.3
Selected cities with less than 1 million population	28	6,250	892.9
Total	63	1,20,536	17219.5

Development of Urban Infrastructure: Challenges of Emerging Cities

Cities are the result of social and economic growth. In the last few decades, cities have undergone enormous changes and urbanization has increased rapidly. Urban areas have gone through great economic and political changes. The world economy has grown exponentially; no longer dominated by relatively closed national economies, it is now globalized. The civic government expenditure in India is just 0.6 percent of the national GDP, compared with 5 percent in Brazil and 6 percent in South Africa. The 74th Constitutional Amendment passed in 1992 attempted a long overdue devolution of powers and responsibility to the municipality by evolving a framework for the states to transfer 18 functions which are vital for the growth of cities from urban planning to regulation of land use etc to the urban local bodies (ULBs). But till date, all the powers to legislate the provision of urban infrastructure are still vested with the States except the property tax, which

left to the municipalities but the state decides the tax base, rates and modes of assessment.

◆ *Solid Waste Management*

The Management of urban solid waste is one of the most neglected areas of urban development in India. India produces about 42 million tons of urban solid waste annually. The current municipal solid waste generation is estimated to be approximately 0.4 kg per capita per day. In most cities, nearly half the solid waste remains unattended. Lack of financial resources, inadequate manpower, fragmentation of administrative responsibility, non-involvement of community and lack of awareness are the major constraints in solid waste management.

◆ *Urban Transport*

A good network of roads and an efficient mass urban transport system make a substantial contribution. The demand for urban transport is expected to double by 2030. One of the major reasons associated with the

rapid growth in the number of personal motor vehicles is the declining reliance public transport vehicles. Thus, there is an urgent need to develop strategies which will reduce demand for public transport without constraining growth and provide a healthy environment to urban dwellers.

◆ **Socio-Economic Issues**

Urbanization will greatly promote social and economic development, but it will also create several social, economic and environmental problems.

Urbanization: Global Scenario

The urban population of the world is now growing by 60 million persons per year, about three times the increase in the rural population. In 2000, world population reached 6.1 billion, and is continuing to grow at an annual rate of 1.2 per cent, or 77 million people per year. Developing countries are urbanizing at a faster pace than what developed countries had experienced in the past. The pace of urbanization in developing countries is now expected to be more than double that of developed countries. In 1950, 17 per cent of the population in developing countries was urban, which is expected to reach at 54 per cent in 2020. Now, six of the 10 countries with the largest urban population of the world, are in Asia. By 2030, Asia alone will have about 2.7 billion urban people accounting for over 50 per cent of its total population.

National Urban Renewal Mission

Realizing the importance of accelerating urban infrastructure

development, the Govt. of India has decided to overhaul its approach to providing financial support to Municipalities to shoulder the responsibilities entrusted to them by the CAA. GoI has proposed to merge all its urban improvement schemes into three schemes: (i) Jawaharlal Nehru National Urban Renewal Mission (JNNURM); (ii) Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT); and (iii) Integrated Housing and Slum Development Programme. While JNNURM would deal with 63 cities, the other two schemes would cover the remaining Urban Local Bodies.

The Jawaharlal Nehru National Urban Renewal Mission – a centrally sponsored scheme launched by the govt. in December 2005, covering 7 mega cities, 28 million plus cities and 28 other identified important urban centers.

Overcrowding and excessive in-migration are the root of the problems of our cities, even towns. Wherever the NURM succeeds in its objectives, it will make the city even more attractive than it is now. That will fuel further commercial investments, more employment creation and, consequently, even more in-migration. Thus, the already overcrowded cities will become even more crowded, frustrating thereby the gains made by the Mission. Thus NURM will succeed only when it stimulates out-migration of excess population even as it makes living conditions better. Financing of the projects under the JNNURM is proposed in a manner, which fulfills the JNNURM objectives and promotes PPPs in the creation of urban infrastructure.

Table - 4
Structure of Project Finance under JNNURM by Source of Assistance (per cent)

Category	Grant		Loan from FIs
	Centre	State	
Cities with 4 million plus population as per 2001 census	35	15	50
Cities with million plus but less than 4 million population as per 2001 census	50	20	30
Other cities	80	10	10
For setting up de-salination plants within 20 km from sea-shore and other urban areas predominantly facing water scarcity due to brackish water and non-availability of surface	80	10	10

Private Participation in the Urban Infrastructure Development

It is becoming increasingly clear that governments cannot meet the continually growing demand for urban services acting alone. Local governments are finding that their tax revenues are not providing sufficient resources to meet these needs, and official development assistance has not been able to fill the gap. Against this backdrop it is important to think of alternate sources of finance, technical excellence and support. The need for private sector involvement in urban infrastructure development is indispensable. Private sector participation could help to bring technical and managerial expertise, improve operating efficiency, large scale injection of capital, greater efficiency in using the capital, rationalization/cost base tariffs for services, better responsiveness to consumer needs and satisfaction.

The public-private partnership (PPP) is a model which describes a spectrum of possible relationships between public and private actors for the cooperative provision of infrastructure services. Private actors may include private businesses, as well as non-governmental organizations (NGOs) and community-based organizations (CBOs). Through PPPs, the advantages of the private sector – innovation, access to finance, knowledge of technologies, managerial efficiency, and entrepreneurial spirit – are combined with the social responsibility, environmental awareness, and local knowledge of the public sector in an effort to solve problems. However, it is important to bear in mind that private involvement does not provide an automatic solution to urban infrastructure problems.

Conclusions

Urban areas in India have been the key drivers of the manufacturing and service-led economic growth. However, poor

infrastructure, including urban infrastructure, is costing 3 – 4 per cent of India's GDP. Infrastructure investment requirements until 2010–2011, which includes investments in the transport, telecommunications, energy, and urban sectors, will be \$425 billion. Of this, the private sector will finance \$123 billion by increasing the current private sector investments from 1% to 3% of India's GDP. The process of economic liberalization and associated structural reform has triggered the recent increase of rural–urban migration and in turn has given a boost to the pace of urbanization. With nearly 300 million urban residents, India ranks second in the world in terms of total urban population and it is anticipated that the urban population will grow to 405.26 million by 2011, 553.04 million by 2021 and 800 million by 2041.

India needs a holistic approach with combined efforts by the urban local bodies and citizens groups, with support from the Central and State governments. We live in a world where communications, transportation, and technology are becoming cheaper and better. Their progress drives global economic expansion, offering the world's cities new opportunities, but also threatening them. To survive, cities must now become internationally competitive by (i) constantly improving the cost and quality of inputs and infrastructure; (ii) fostering a healthy legal, institutional, and regulatory climate; and (iii) and promoting a public sector that is accountable, transparent, and upright. Though it is an uphill task to develop better infrastructure in general and urban infrastructure in particular, but it is vitally important for India to emerge as

a leading economic player in the global arena.

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