

Sustainable Cities for Sustainable Development

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ABSTRACT

By 2030, India's urban population is projected to increase to 600 million. However, the present level of urbanisation (31.1%) is lower than its peer group of developing countries like China, Indonesia and Brazil. Nevertheless, Indian cities face severe urban challenges in terms of deficits in infrastructure, governance and sustainability that cumulatively pose a challenge to India's growth trajectory. The major challenge is to create competitive and inclusive cities. The flagship programme of the Government of India, the Smart City Mission tries to address these challenges to make its cities liveable and sustainable. This paper focuses on the nature of unbalanced urbanisation in India and whether the Smart City Mission (SCM) can work towards sustainable development synchronising spatial and economic growth. Bulk of investments of this Mission is earmarked for the cities which are already contributing to increasing inequality. It is quite likely that such investments will increase migration, leading to more deprivation of smaller towns. Unless, benefits of the smart cities are spilled over to the neighbouring areas, the intended inclusive mission may result in exclusion of economically weaker sections of the cities as well as the rest of India.

Keywords: *Inclusive development, Inequality, Smart city, Affordable housing*

The 2030 Agenda for Sustainable Development, put forth at the United Nations, was adopted by 193 countries including India in September 2015. The Agenda is a Plan of Action for People, Planet and Prosperity, and 17 Sustainable Development Goals (SDGs) emanate from it and form the Results Framework. The SDG framework builds on and amalgamates the Millennium Development Goals (MDGs) adopted in 2001 for the period up to 2015, with the Rio+20 Declaration of 2012 on environment.

The SDG 11, out of 17, focuses on inclusive cities, which are

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becoming the core of development agenda of emerging economies in particular, that are rapidly being urbanised. Cities in emerging economies are largely captive of inequitable prosperity.

India is predicted to be in the midst of a major urbanisation boom. By 2030, India's urban population is projected to increase to 600 million. However, the present level of urbanisation (31.1%) is lower than its peer group of developing countries: China (45%), Indonesia (54%), Mexico (78%) and Brazil (87%). This positive trend of urbanisation is also accompanied by its own unique set of issues. Indian cities face challenges in terms of deficits in infrastructure, governance and sustainability. With rapid urbanisation, these problems are going to aggravate, and can cumulatively pose a challenge to India's growth trajectory.

The major challenge is to create competitive and inclusive cities (Chandrasekhar et al., 2014, NIUA, 2017).

India's effort to achieve inclusive urbanisation is evolving in the spirit of realising the SDGs. It is based on competitiveness, sustainability and inclusiveness with sharp focus on efficient delivery of key public goods and services like health, education, power, water supply and other infrastructure including connectivity. This will help in promoting entrepreneurship and private investment with optimum mix of public-private partnership. The framework identifies some major components of equitable development, i.e. sustainable livelihood, human capital, social development with inclusiveness, governance and environmental sustainability.

Along with the prosperity, Indian cities, especially the mega cities face very serious challenges of inequality, unplanned urbanisation, mass migration, poverty, unemployment and the like, threatening their quality of life and sustainable growth (Nandi et al, 2013). The flagship programme of the Government of India, the Smart City Mission tries to address these challenges to make its cities liveable and sustainable. This paper focuses on the nature of unbalanced urbanisation in India and whether the Smart City Mission (SCM) can work towards sustainable development synchronising spatial and economic growth.

Challenge of Urbanisation in India

The process of urbanisation is continuing but not accelerating fast in India. It took four decades (1971-2011) to increase the share of urban population in total population by 10 per cent i.e. from 21 to 31.16 per cent. Still now, with a little more than 377 million, it is about a third of India's total population, despite being the second largest urban settlement in

the world. It is estimated that the pace of urbanisation will be a lot faster in the coming decades, from 377 (31%) to 600 (41%) million by 2031 i.e. two decades (PIB 2015)). The major indicators of urbanisation are demographic and spatial. The demographic components are represented by the proportion of urban population in total population and growth rate of urban population. The proportion of urban population has increased over time as revealed in every Census. Recently it increased from 27.78 per cent in 2001 to 31.16 per cent in 2011. But the growth rate of urban population declined from 3.1 per cent in 1991 to 2.76 per cent in 2011.

The spatial components are represented by increase in number of Urban Agglomeration (UA) or increase in municipal area and increase in number of Census towns.

Census town – satisfying the three criteria of urban areas as specified in Census but without a notified urban local body;

Urban Agglomeration (UA) – continuous urban spread with a town and its outgrowth, or two or more physically contiguous towns with or without outgrowth with at least one statutory town; and

Outgrowth – Areas developed outside the limits of statutory towns but with urban amenities (Table 1).

It is clear that urban areas are increasing in space. But growth of statutory towns is much less than growth of census towns. It implies that spatial congestion is taking place outside the villages for various reasons. But urban services are not forthcoming as there is no urban local body to supply the basic services. Not only the metro cities (population more than one million), but comparatively smaller towns also have become victims of unplanned urbanisation.

The share of population has gone up in metro cities (above one million) as well as in the towns with population below 20,000 but other size classes of towns are losing population share (Table 2). Large UAs

TABLE 1: INCREASE IN UAs, TOWNS AND OUTGROWTH (OG)

<i>Dwelling Units (No.)</i>	<i>2001</i>	<i>2011</i>	<i>ACGR (%)</i>
Statutory Towns	3799	4041	0.62
Census Towns	1362	3894	11.08
Urban Agglomerations (UAs)	384	475	2.15
Outgrowth	962	981	0.19

Source: Census of India, 2011.

Note: *Statutory towns* – places with a notified urban local body.

are increasing in area while the smallest towns are increasing in number in order to take advantage of some extended infrastructure like road networking, market facilities or industrial activities.

TABLE 2: GROWTH OF URBAN POPULATION (2001-2011)

Size Class	Population Range	Per cent share in total Population	
		2001	2011
Class IA	5 million and above	21.22 (6)	22.56 (8)
Class IB	1 million to 5 million	16.93 (29)	19.76 (44)
Class IC	100,000 to 1 million	31.78 (359)	27.89 (416)
Class II	50,000 to 100,000	9.50 (404)	8.53 (474)
Class III	20,000 to 50,000	11.76 (1163)	11.09 (1374)
Class IV-VI	Below 20,000	8.80 (2417)	10.17 (3857)

Source: Census of India, 2011.

Note: The figures in brackets are number of towns in different categories.

In terms of growth rates, the cities above one million are growing annually at 3.2 per cent while Class II towns are growing at 1.8 per cent that is almost half the rate of growth of metro cities. The growth rate of census towns (2.7%) is in between these two rates. Even if the rate of growth of urban population has declined, the growth rate of metro cities is the highest among the size classes of urban settlements (Census 2011). But these are haphazard expansions, not accompanied by urban infrastructure. At the bottom of the urban structure, census towns are growing but there is no civic body to take responsibility of basic services in these towns. On the other hand, the expansion of city population is beyond the capacity of municipal corporations to supply services.

It appears that emergence of new urban centres and expansion of municipal limits largely account for spread of urbanisation.

Demographic factors are losing significance in comparison. Demographic influence has been governed by the rate of natural growth of population and growth of migration. The average rate of natural growth has declined from 1.9 per cent in 2001 to 1.6 per cent in 2011. It has declined uniformly both in urban and rural areas.

Employment induced migration rate has also reduced in the last decade and earlier. Poverty alleviation programme and employment generating programmes in smaller towns and economically weaker states have, in the long run, been able to reduce outmigration (Chandrasekhar et al 2014). Even in the national capital of Delhi with such strong pull factor, the rate of migration is lower than the rate of

natural increase; even though the natural increase is declining annually. During 2001-2011, Delhi added around 250,000 persons through natural growth and 100,000 through migration annually on average (*Economic Survey of Delhi, 2020-21*).

The data so far shows that the new Urban Agglomerations (UAs), many of which became million plus in 2011 are attributed to the growth and merger of new census towns in close proximity to a statutory town. The Census data also reveals that the cities with population of more than five million have registered the highest growth rate of seven per cent with substantial increase in the boundaries.

India, having the second largest urban population and experiencing much faster urban growth, compared to earlier decades, faces extreme challenge of developing economically productive and socially inclusive settlements and strike a balance among spread of development in different size classes of urban areas. Overcrowded cities and towns with infrastructure bursting at the seams are familiar scenes in India. This problem will only worsen without proper interventions. Cities as engines of growth will only expand in size and result in spatial concentration. The country's urban population contributes over 65 per cent of India's GDP. This will increase to 75 per cent by 2030. On the other hand, there is little incentive for people to migrate out of cities and contribute to balanced regional development. Earlier attempts at providing better urban infrastructure or at creating new townships have not been able to deal with the issue of liveability satisfactorily. Even, the creation of Special Economic Zones (SEZs) faced problems of lack of social infrastructure, which usually means access to avenues of education, health, arts, sports, and so on. Uncontrolled occupation of space in Indian cities has resulted in proliferation of slums and shortage of infrastructure in urban settlements threatening the quality of life and environmental sustainability (Coelho et al, 2011).

Slums: Threat to Inclusiveness

There has been an increase in urban population during the last two census periods, followed by an increase in slum population, though it has declined a little by percentage. In absolute numbers, 6.5 crore slum population (2011) is a huge number with implicit deprivation in medical, educational and environmental components. This can be seen in Table 3.

The state wise distribution of slum population during 2001-2011 reveals the spatial challenges of inclusiveness among the 15 major states with significant share of slum population, nine states have shown an increase in share with Andhra Pradesh having the highest increase in

TABLE 3: GROWTH OF SLUMS IN INDIA

<i>Components</i>	<i>2001</i>	<i>2011</i>
Urban Population (crore)	28.6	37.7
Slum Population (crore)	5.2	6.5
Slum Population as per cent of Urban Population	18.3	17.4

Source: Census of India 2001, 2011.

the share in 2011, compared to 2001, followed by Bihar, Chhattisgarh, Karnataka, Madhya Pradesh, Odisha, Rajasthan, Tamil Nadu and West Bengal. On the other hand, Maharashtra showed a significant decline in the share followed by the remaining five states (Gujarat, Haryana, Delhi, Punjab and UP). Inclusive urbanisation remains an illusion without achieving slum-free India. Sustainable cities need to deliver sustainable living standards (Table 4).

Initiatives for Balanced Urbanisation

India's urban experiments since Independence can broadly be divided in three phases. The first 15 years of planning era were marked by

TABLE 4: DISTRIBUTION OF SLUM POPULATION IN MAJOR STATES

<i>S. No.</i>	<i>States</i>	<i>2001</i>	<i>2011</i>
1.	Andhra Pradesh	12.0	15.6
2.	Bihar	1.6	1.9
3.	Chhattisgarh	2.1	2.9
4.	Gujarat	3.8	2.6
5.	Haryana	3.2	2.5
6.	Karnataka	4.5	5.0
7.	Madhya Pradesh	7.2	8.7
8.	Maharashtra	22.9	18.1
9.	Delhi	3.9	2.7
10.	Odisha	2.1	2.4
11.	Punjab	2.8	2.2
12.	Rajasthan	3.0	3.2
13.	Tamil Nadu	8.1	8.9
14.	Uttar Pradesh	11.0	9.5
15.	West Bengal	8.9	9.8

Source: Handbook of Urban Statistics (2016), Ministry of Housing and Urban Affairs, Government of India.

efforts towards housing provisions, slum clearance and rehabilitation. The master planning approach endorsed during this time resulted in low- density urban settlements as land-man ratio was not alarming.

The next two decades initiated a significant departure in policy; from slum clearance to slum improvement and upgradation. Emphasis was given to balanced regional development and development of small and medium towns, while containing the growth of metropolitan cities, making land available for provisioning of services, housing for the urban poor, and control of land prices.

However, these initiatives were not successful in spreading urbanisation evenly. There was no networking among smaller towns and villages or with the next size class in order to make economic activities and social services mutually complementary in space. Bigger cities continued to have strong pull factors both in terms of economic and social opportunities and attracted migration from smaller towns, thereby creating both spatial and economic imbalance.

India's economic liberalisation from 1990's, impacted the urban sector also. Some key developments during this period included the opening-up of the sector to private participation, participatory approach in city planning, strengthening the link between urban growth and economic development and employment generation. The 73rd and 74th Constitutional Amendments (1993) introduced Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs) as constitutionally accepted third tier of administration in India. This further pushed the agenda for decentralisation seeking greater accountability for the ULBs and paving the way for state transfers and subsidy-based urban infrastructure financing regime to market-based financing regime.

Preparation of master plans and regional planning have been two major exercises that have evolved out of the planning process endorsed in India since Independence. The Indian urban reforms in the last decade have led to the emergence of City Development Plans (CDPs) as a product of JNNURM and UIDSSMT. While Master Plans continue to be the spatial planning tool with a set of Development Control Regulations (DCRs) enforced by the ULB/development authorities, CDPs stand as project-investment plans for cities, with minimal spatial reference.

The simultaneous existence and functioning of multiple plans result in a complex hierarchy and overlapping of institutional mandates, making implementation and enforcement of plans difficult. The lack of effective planning and land-use controls have encouraged sprawl in all Indian cities – mega, big and small. There is a need for the plans to

align with each other in time, space, and objectives, in order to ensure tangible benefits (Bhattacharya et al, 2015).

Twelfth Five-year Plan (2013-17) of India highlighted that vision of India's growth must be aligned with the objective of inclusion and sustainability. Good urbanisation ensures that cities and towns are free from slums and offer adequate opportunities for productive employment and a decent quality of life to all their inhabitants including the poor. Two major challenges of urbanisation in India, as recognised by the Twelfth Plan, are job creation and provision of basic services to urban citizens expected to be around 600 million by 2030.

Shortage of urban services is one of the major roadblocks to productivity, as estimated and projected by several committees including erstwhile Planning Commission, Municipal Finance Commissions, National Commission of Urbanisation (1988) and various Expert Committees constituted by the Ministry of Housing and Urban Affairs. The gap in financial resources for urban infrastructure under various expenditure norms varies from 32 to 90 per cent in case of urban local bodies. The SCM is emphasising on equitable cities that will generate financial resources through competition and Public-private Partnership (PPPs).

The Smart City Mission

The Smart Cities Mission (SCM) was launched by the Government of India in June 2015 to achieve urban transformation, drive economic initiatives and improve the quality of life of people by enabling local area development and harnessing technology. The Mission aims to focus on *Area-based Development* in the form of redevelopment of existing spaces (Brownfield) or the development shortlisted on the basis of a Smart Cities Proposal prepared by every city of new areas (Greenfield) to accommodate the growing urban population and ensure comprehensive planning to improve quality of life, create employment and enhance incomes for all - especially for the poor and the disadvantaged. The smart cities identified by the Ministry included capital cities, business and industrial centres, tourism and cultural centres, port cities and education and healthcare hubs. The cities have been identified based on strong economic base, attracting significant migration and creating huge slums. The total central budget for this mission is Rs. 48,000 crore and concerned states have been asked to generate the rest Rs. 48,000 crore. The central fund has been released to Urban Local Bodies (ULBs), provided they have completed their jobs as per plans. All the 100 cities have been identified and funds are released as per the Mission activities (Hoelscher, 2016; GOI 2015; PIB 2015).

It has been estimated that around Rs four lakh crore of funds will be infused mainly through private investments and loans from multilateral institutions among other sources, which amounts to 80 per cent of the total spending on the mission.

Understanding Smart City Guidelines

Three broad goals of Smart City guidelines are:

1. Improving the quality of life;
2. Attracting people and investments to the city; and
3. Setting virtuous cycle of growth and development.

On the basis of these goals, the smart city concept contains a wish list of infrastructure and services that meet the need and aspirations of its citizens.

The purpose of smart solutions is to enable local area development and harness technology especially that orients to smart outcome leading to economic growth and improved quality of life. Reducing inequality with use of Information Technology with GIS and MIS application is core to the Mission. E-governance and citizen participation are two basic planks of implementation.

SCM is about developing cities with ICT and use it as an enabler, not the end. Its strategy is not project based. It tries to converge with other missions for better financial and input risk management and mitigation. It emphasises on organisation and management of data for preparation of evidence driven planning. The city planning should consider incremental changes through an area-based approach rather than city wide regeneration that does not allow for learning through applications. The Mission throws big challenges to the cities to programme for alternative financing other than government transfers. The city can raise resources through property taxes, transfer of development rights in land, use of municipal bonds and the like. It encourages the cities to expedite financial reforms through intermediaries and institutional and governance reforms through Special Purpose Vehicle (SPV), of which, the Municipal Commissioner is a member.

Implementation of SCP

The government selected the smart cities in various stages over a span of two years from Jan 2016 to June 2018 depending on submission of city profiles and project plans by the states. After selection, it normally takes around 12 to 18 months to set up a Special Purpose Vehicle (SPVs),

appointment of a Project Management Consultant, prepare detailed project reports and award the work after tender. All the 100 selected cities have constituted SPVs, registered under the Companies Act 2013, City Level Advisory Forum and appointed Project Management Consultants.

Total projects under SCM are 5151 so far at various stages of completion. The time line for completion of smart city projects according to the rounds in which they were selected is reflected in Table 5. It is estimated that the Mission, when completed, will impact the lives of around 10 crore persons in urban areas.

TABLE 5: TIME LINE OF PROJECT COMPLETION FOR CITIES

<i>Selection Period</i>	<i>Number of Cities</i>	<i>Completion Year</i>
January 2016	20	2020 - 21
May 2016	13	2021 - 22
September 2016	27	2021 - 22
February 2017	30	2021 - 22
January 2018	10	2022 - 23

Source: Ministry of Housing and Urban Affairs, Government of India.

The projects are largely capital - intensive with completion time ranging from one to three years. It was slow to start with initially but has gain one billion (Rs. 100 crore) every year for five years with an equal contribution from the state government and ULBs together. Management of finance is with the SPV instead of through the ULBs.

Table 6 reflects the estimated investments of the Centre, states, ULBs including private sector investment over five years. Cities have

TABLE 6: PROPOSED INVESTMENT UNDER SCM - COMBINED

<i>S. No.</i>	<i>Components</i>	<i>Amount (Rs crore)</i>
1.	Total Investment	205018.00
1A.	Area - Based Development	164204.00 (80.8%)
A(a)	Retrofitting	131003.00
A(b)	Redevelopment	33001.00
1B.	Pan City Project	38914.00 (19.2%)
1C.	Contingency	1999.9

Source: MHUA Annual Report 2018 - 19, website: www.smartcity.in

Note: Contingency costs include preparation of DPR, hiring of consultants etc.

largely preferred retrofitting (80.32%), as compared to redevelopment (19.68%) in the Area – Based projects. Expenditure on Pan City projects is around 20 per cent of total project costs. Very few cities have chosen the Greenfield option as vacant land of 250 acres or more in the municipal area is difficult to obtain. Cities like Pune have argued that Greenfield is not an option if smart city model is to be replicated. Moreover, project cost of Greenfield development is also very high. The residents would like to prefer Brownfield development with a combination of retrofitting and redevelopment as the case may be, as this would directly benefit them. Completed projects include Integrated Command and Control Centres, roads, water supply, Solar rooftop and vibrant public places (Sarkar et al, 2016).

Table 7 shows that the states depend substantially on the PPP model to finance the capital investment. They have to include financial innovation to encourage PPP, whose contribution is expected to be almost equal to convergence funding. Dependence on borrowing from external agencies like the World Bank, ADB is moderate while contributions from the beneficiaries (included in others) are expected to be more than double the loan amount.

TABLE 7: SOURCES OF FUNDING FOR SMART CITIES

<i>Sources</i>	<i>Amount (Rs. crore)</i>
Central and State Governments	93,552.00 (45%)
Convergence Funds from other Programmes	42,028.00 (21%)
Funds from PPP	41,022.00 (21%)
Loans from World Bank, ADB, etc.	9,843.00 (4%)
Other Sources	19,073.00 (9%)
Total	2,05,018.00 (100%)

Source: MoHUA Annual Report 2018-19.

Progress of Smart City Mission

The SCM is a basically capital investment project that takes long time to plan, finance and execute. The process of tendering and issuing work orders is also time consuming. Table 8 reveals that only around seven per cent of the estimated project cost has been realised in four years of launching the SCM.

There has not been satisfactory flow of funds from the PPP model also.

TABLE 8: STATE OF THE PROJECTS UNDER SCM (TILL 11.04.2019)

<i>Components</i>	<i>Value (Rs. Crore)</i>
Total Expected Project Cost	2,05,018.00 (100%)
Tendered Projects	1,31,892.00 (64.33%)
Work Order Issued	72,524.00 (35.37%)
Completed Projects	14,324.00 (6.98%)

Source: www.smartnet.in

Table 9 reveals that 60 out of 100 cities have opted for both affordable housing and large infrastructure projects. Only 19 cities have found projects with PPP funding with moderate amount. SCM put significant emphasis on use of technology and e-governance, but only 20 cities have shown interest in APP based solutions. Objectives of the SCM remain largely unachievable even after four years of launching.

TABLE 9: TYPES OF PROJECTS SUBMITTED BY THE CITIES (TILL 11.04.2019)

<i>Cities (Number)</i>	<i>Type of Projects</i>	<i>Project Cost (Rs. crore)</i>
60	Affordable Housing	17,035.95
19	PPP Project	4,207.71
20	APP based Solutions	780.60
60	Large Infrastructure Projects (> Rs. 100 crore)	1,96715.74

Source: www.smartnet.in

Among the 60 cities who submitted projects for affordable housing with total project cost of Rs. 17,035.95 (Table 9), only 15 cities have actually focused on housing for the poor at the total cost of Rs. 8438.4 (49.53%), though all these cities have significant proportion of slum population. The rest of the projects under this category are basically infrastructure projects, not necessarily for the slum area. PPP funding is available for only two cities (Gwalior and Surat), that too in very moderate amount. Thane is the only city spending substantially on affordable housing. It seems competitive, rather inclusive component is becoming more prominent in SCPs.

Challenges for the SCM

Competitiveness and inclusiveness are two major pillars of SCM. Competitiveness depends on the long-term productivity of a region. A competitive city is a city that successfully facilitates its firms and industries to create jobs, raise productivity, and increase incomes of its

TABLE 10: AFFORDABLE HOUSING (TILL 11.04.2019)

<i>City</i>	<i>Type of Project</i>	<i>Project Cost (Rs. in crore)</i>
Ujjain	Affordable Housing	478.84
Vadodara	Slum Housing	260.00
Thane	Inclusive Housing	3974.00
Gwalior (PPP)	Inclusive Housing	294.88
Hubli-Dharwad	Affordable Housing	103.32
Agra	In-situ Housing Upgradation	114.30
Dharamshala	Beneficiary-led Housing, Shelter for the Homeless	219.30
Kakinada	Affordable Housing	153.60
Indore	Slum Housing	232.76
Ahmedabad	Slum Redevelopment	576.00
Kochi	Integrated Development of Slum Housing	141.40
Surat (PPP)	Affordable Housing	700.00
Bhubaneswar	Slum Redevelopment	840.00
Rourkela	Integrated Informal Settlement	280.00
Total	Affordable Housing	8438.4

Source: www.smartnet.in

citizens over time. The Mission aims at some major factors to increase economic potentials of the city.

- (a) *Population*: It has a direct bearing on its level of competitiveness. Big Indian cities are the most competitive ones too. Population acts as an active resource (as a factor of production) and positively impacts the competitiveness of a city. Competitive cities, on the other hand, tend to be more attractive in providing different kinds of jobs and other facilities, thereby becoming a strong pull factor for the migrants. SCM emphasises on providing the residents a better quality of life for reducing inequality and increasing productivity.

However, a large population is not always a boon. It creates challenges pertaining to the movement of people and goods and in the provision of basic services. SCM tries to respond to such problems by improving service delivery and spending on infrastructure. Competitive cities have operational

metro rail networks and some of the best hospitals and airports in the country. These factors significantly impact the competitiveness of cities. Recent report of NFHS 5 (2018) has established that national population growth has come down below the reproduction level. However local challenges remain and regional imbalance cannot be ignored. Can Smart City survive without Smart village?

- (b) *Education:* This is substantially higher in competitive cities compared to the national average. This helps improve the demand conditions with better awareness, thus adding to their competitiveness levels. Presence of quality educational institutions in the big cities helps them attract the best talent from all over the country. This coupled with job opportunities they offer, help them retain such talent. The presence of such diverse talent helps in sustaining the growth, productivity, and economy of these cities. Sound financial infrastructure and relatively higher financial literacy levels further add to their competitiveness and skill development. However, increasing proportion of youth unemployment in the cities is reflection of inadequate skill development to avail decent jobs. The emphasis on physical infrastructure in the SCM is not enough to address this issue (Dev et al, 2011).
- (c) *Environmental conditions:* This factor has a strong influence on the competitiveness of a city by affecting its labour productivity. While other big cities like Mumbai, Kolkata, Chennai, and Hyderabad have managed to retain their competitiveness levels, Delhi has witnessed a drop in competitiveness mainly because of its worsening environmental landscape. SCM tries to address this issue through extensive IT applications, adopted in area based and pan city developments. But, as is evident in Delhi's case, focus on selected areas has not been helping the national capital to overcome the environmental challenges (Economic Survey of Delhi - 2020-21).
- (d) *Level of industrialisation:* The positive industrial environment improves the competitiveness of its cities. In India, most of the highly competitive cities belong to a small group of industrialised states (including Maharashtra, Tamil Nadu, Gujarat and Karnataka) while the least competitive cities belong to less industrialised states like Jharkhand, Bihar, Chhattisgarh, Jammu and Kashmir, etc. In other words, industrialisation as a policy tool is required to make cities

from less industrialised states more competitive. SCM has tried to address this issue by selecting the smart cities from less industrial states also. In fact, the number of cities chosen from less industrial states of UP and Bihar is very high. SCM tries to create several growth centres to distribute the fruits of development widely. But the linkage to regional development is still very weak.

- (e) *Water supply and sanitation*: This factor is positively correlated with competitiveness. Cities from the state of Madhya Pradesh, which have shown exceptional cleanliness performance of late, have seen a rise in their competitiveness levels. Tier 2 and Tier 3 cities like Chandigarh, Vadodara, Coimbatore, Surat, Mysore, and Rajkot have witnessed a similar fate. Big cities like Delhi, Bengaluru, and Chennai have not performed well on this front. Massive population, urban sprawl and limited public infrastructure are the possible reasons. SCM encourages to emphasise on these aspects through convergence with other urban programmes.

In the short run, some cities may witness substantial improvements in their competitiveness levels. This may be because of improvement in their factor conditions and demand conditions. But in order to sustain or further improve their competitiveness levels, they must prepare proper strategy and related and supporting economic momentum, which cannot be increased overnight. So, the policymakers in the less industrialised states should look at industrialisation as a long-term solution to make their cities more competitive. SCM provides the opportunity to create long-term capital goods to help competitiveness.

Our cities have focused only on a few parameters of development and have ignored the others. For instance, despite being the most competitive cities in the country, the performance of big cities on certain parameters (such as environment, cleanliness, administration, etc.) is not up to the mark.

This probably signifies a lack of clear vision, and an integrated development agenda. Planning and development should take place with a clear set of priorities. One of the ways to tackle the problem at hand would be to strengthen municipalities by giving them more political and financial powers. China which has some of the world's most competitive cities owes its success to such devolution of power. Participation of local population in planning and development process is another important aspect which is ignored in India. How India strengthens its cities will determine the strength of India's growth story in the future.

Creating a smart city is not just about creating the physical infrastructure – roads, clean water, power and transport that India finds difficult to deliver to its citizens seven decades after Independence. It is hoped that PPPs need to work. The big challenge will be to create self-sustaining cities, which create jobs, use resources wisely and also train people. This also means more autonomy for these cities.

Inclusiveness

It is observed that the process of urbanisation has been top – heavy in India, with metro cities gaining in population share, even though growth rate of population in the metros declined steadily since 1991. Concentration of population in metro cities has resulted in growing income differences as well. The estimated average monthly per capita income of the metropolitan cities was two times more than that of all India in 2011. The jobless growth symptom has mostly affected the smaller cities. The average WPR across metropolitan cities increased marginally while it declined in other smaller cities (population between 100,000 and 500,000). The metropolitan India offered wages higher than that of both non – metros and urban India.

Moreover, wages in non-metro cities are lower than that in urban areas. These cities also witnessed informalisation and casualisation of labour in greater proportion. Metropolitan cities witnessed a higher service sector induced income growth compared to the non-metro cities. Income inequality (measured by the ratio of average monthly per capita expenditure of the topmost and lowest docile class) is much lower in the metro cities compared to urban India as a whole (NIUA 2017).

Access to basic services is strongly correlated with size class of cities. Naturally, provision of civic services like potable drinking water, toilet facilities, drainage facilities and electricity are much better in larger cities compared to the smaller towns.

On the other hand, metro (38.9%) and non – metro (34.7%) cities account for around three – fourth of India's total slum population. About one – third residents of metro cities live in one room accommodation, thereby reflecting serious housing congestion. Environmental challenges in terms of vehicular, industrial and atmosphere pollutions are most acute in metro cities.

In this background, it is apprehended that huge investments in smart cities may increase the inequality between metro cities and urban India and consequently the rest of India with unequal distribution of basic resources. In the SCM, there are 35 metro cities, 58 non – metro cities and seven smaller towns. Bulk of investments is earmarked for

the cities which are already contributing to increasing inequality. It is quite likely that such investments will increase migration, leading to more deprivation of smaller towns. Unless, benefits of the smart cities are spilled over to the neighbouring areas, the intended inclusive mission may result in exclusion of economically weaker sections of the cities as well as the rest of India. There are other areas of exclusions as well.

Undermining Participation of the ULBs

Design of smart cities, on the line of some international models, is based on the culture of competition and institutional restructuring. It rests on three major planks: technology, private governance and efficiency. It is relevant here to mention two major urban reform programmes, JNNURM, launched in 2005 and creation of Special Economic Zones (SEZs) through an Act in 2006. Project management was operationalised in the former programme through parastatal agencies in a number of cities. As a result, ULBs were not involved in city management in any significant way and the seven-year span of JNNURM did not result in capacity building of ULBs except for large municipal corporations. SEZs also are managed by non - elected directors with no obligation to the ULBs and cutting through the financial resources of the local bodies as they do not pay any local taxes. The selection criteria of smart cities puts significant emphasis on ABD, rather than on development of a new city. Only Navi Mumbai and Rajkot have prepared the projects on Greenfield development. Economic and political realities are quite challenging especially in case of land acquisition and financing. ABDs are within the municipal limits and these problems can be avoided. The top 60 cities that are ahead in terms of project planning and preparation have placed around 80 per cent of the budgeted investment on a particular area. However, the ULBs are not responsible for development controls. Any developmental activity in the municipal areas is likely to attract migration, both floating and regular. This will create pressure on the ULBs to increase the supply of services, for which they may not be capable. The SCM is not explicit about capacity expansion of the ULBs. The 74th Constitutional Amendment (1994) empowered the local bodies to be the third tier of administration. But except for some larger corporations, the states have not devolved adequate financial and administrative powers to the local bodies to increase their capabilities. The SCM is for enriching the cities without enriching the local bodies. City development cannot be sustainable without active involvement of local bodies.

Citizen Participation

Citizen participation is a major step in shaping goals and vision for the

city. It is one important selection criterion as well. However, the Central government, very rightly, did not set any model of participation. The states could take recourse to citizen participation through digital mode or non-digital mode. The cities concerned have used this instrument in varying degrees. They have used online surveys, direct surveys, ward level meetings and through citizens representatives. But it is not very clear to what extent, slum population was directly contacted. The Mission aims at alleviating poverty, but the ABDs are not chosen on the criteria of deprivation as per demographic and socio-economic data. Only a few cities like Pune selected the areas for development depending on population density. Others depended more on expert groups and other stakeholders to identify areas for development (Sarkar et al, 2016). Economic potentiality was one important criterion for choice as keeping resource generation in mind. Online participation is not necessarily inclusive as there is a possibility of digital divide. Disseminating information via digital technology does not reach all owing to a number of hurdles including lack of digital education and inadequate digital infrastructure, despite a relatively high penetration rate. Cities are trying to be competitive. They try to create infrastructure that will increase land values to make the projects viable. This stands in the way of in-situ developments of slums despite clear court order in favour of such development. For example, NDMC wants to relocate the encroachers outside the municipal boundary. It has selected the New Delhi City Centre with area of approximately 550 acres for undertaking retrofitting model of development based on stakeholder consultation and desk research to transform the area as a World Class Urban Area. But it has no plan to estimate the job prospects of the poor encroachers or their inclusion in the municipal area converging with the development plan. It is also not clear whether the massive financial resources generated from this redevelopment programme will be diverted to alleviate local poverty. Evidently, citizen participation is not all inclusive as economic development is not aligned with human development.

External Consultants and Local Concerns

External consultants often represent ideas generated in the international models and act as advocates of foreign technologies. SCM is a gateway for internationally and nationally reputed firms and some local companies who offer their services at very cheap rate. Some of these associations with cities are continuing for long. DFID, JICA and GIS have invested heavily in urban infrastructure in India and supporting many cities. SCM has accelerated this process and is encouraging adoption of international PPP model (SCM website, 2019). Sometimes, it hurts the local participatory process and leads to social tension (Cardullo

et al, 2018). In Dharamshala, the residents raised serious objections about lack of information related to ABD and said the selected zone will lead to environmental hazards. In Bhopal, the launch of an urban renewal programme led to eviction of residents and they complained that there was no real public consultation. The cities like Pune, which are able to develop their own vision with effective local participation and better qualified municipal service professionals, have been able to go for project implementation without social tension.

Smart City Mission relies heavily on ICT application as smart solutions to urban issues. The cities have shown significant variations in proportion of IT solutions in sectors like water (40%), energy (35%), transport (25%) and sanitation (15%). Investments are majorly directed towards road construction, parking areas and multimodal transport hubs in the transport sector, even though SCM puts emphasis on integrated traffic management system based on ICT. Evidently, there is a deviation between the policy objective and way of implementation by the cities. The complexity of technical issues may be quite challenging with the existing human resources and skill gaps at the local level. The cities have classified this as one of the risk factors in project implementation. This calls for widespread training for the local staff to handle ICT but the cities have allocated very low (0.2% of total project budget) for their training. This explains why relatively much lower percentage of project budgets is allocated to ICT as compared to physical infrastructure. This situation provokes the cities to rely on outside experts through PPP with adequate funding available on one hand. On the other hand, the gap in local capacity building increases thereby excluding local human resources to be effectively involved in city development. Extensive ICT application that aims at reducing inequality in service delivery, itself has become a source of inequality in absence of adequate local skill and necessary ICT infrastructure. Recent experience in online education during pandemic is a glaring example of such inequality. This is a formidable challenge towards success of the SCM.

CONCLUSION

Sustainable cities need to create a balance between environment and development. On the one hand, infrastructure like road, power, transport, healthcare, education and the like are imperative for pan city development to reduce spatial inequality and improve quality of life in general. On the other hand, environment and ecological concerns need to be part of conscious economic and spatial planning so that development does not go out of control. The Central government has enacted several environmental legislations that need to be incorporated in the basic

planning framework itself. The regulations like the EIA Notification 2006 and its Amendments, the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Noise Pollution (Regulation and Control) Rules, 2000, Solid Waste Management Rules, 2016, E-Waste (Management and Handling) Rules, 2016 and its Amendments, Plastic Waste Management Rules 2016 and its Amendments, Waste Management Rules, 2016 should be followed at every stage of city planning and no project should be approved without clearance from the concerned regulatory authorities.

Energy efficiency with Green building and Green transport norms have become a major area of concern. There are examples of Solar City projects as models of sustainable development. India has committed zero net greenhouse gas emissions by 2070 in CoP26 Climate Summit in Glasgow. Sustainable city planning should keep this objective in mind in order to achieve the goals of sustainable development.

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