

Chapter 2

Towards Sustainable Cities in India

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2.1 Introduction

As India becomes increasingly urban, sustainability issues will become more and more important in determining the quality of life of urban residents, the economic productivity of its cities and the state of its natural environment. Between 2001 and 2011, 92 million people were added to the urban population, the largest decadal increase in the last one hundred years, and for the first time, the net addition to urban population exceeded that of the rural population heralding a demographic turning point towards an increasingly urban future. The economic costs of the urban transition will be considerable with India requiring around US\$1.2 trillion over the next 20 years or USD 134 per capita per annum to match the anticipated urban population growth with basic services for urban residents (McKinsey, 2010). With a total urban population of 377 million in 2011, the second largest in the world after China and expected to increase to 590 million by 2031, there is an urgent need to make sustainability a central issue in planning and managing India's urban environment, both now and in the future.

But what constitutes sustainability and how it should be pursued as a policy goal is contested and shows considerable variation both in theory and practice. In the first part of this paper, different conceptual perspectives on urban sustainability are examined, namely, sustainability as understood from the Brundtland Commission's report, sustainable urban form as defined by planners, and the political economy approach of structuralist and post-structuralist scholars such as David Harvey. In the second part of the paper, urban sustainability is examined as policy in the Indian context, from the period before economic liberalization to the present and changes in policy are discussed. The current thrust on smart cities and gigantic urban-industrial corridors indicate that the scale of thinking about the urban has

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changed. The final section turns to the implications of the proposed policies in the context of land availability and sustainability.

2.2 Conceptual Perspectives on Urban Sustainability

The meaning of sustainability and how it can be achieved in the urban context must be the starting point for any deeper understanding of national policy on sustainability. Three conceptual approaches to sustainability are now discussed to show the different meanings it has and how policy prescriptions emanating from them would vary.

2.2.1 *Brundtland Commission's Report of 1987*

Officially known as the U.N. Report *Our Common Future* brought out by the World Commission on Environment and Development (UN, 1987) which was headed by Brundtland, this report has enabled some of the earliest global discussions and policy making on sustainability with both developed and developing countries sitting across the table. The report is considered foundational in sustainability studies as it was among the first to attempt to define sustainability which it did as follows: “*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”. There are two concepts in this definition as given in this chapter of the report: “the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs”. The report also recognized that “environmental stresses and patterns of economic development are linked to one another” on the one hand and on the other, that “environmental and economic problems are linked to many social and political factors”. Thus economy, ecology and social goals are equally relevant for improving the human condition. Together they constitute sustainable development.

Defining sustainability in such a broad way and laying emphasis to local level definitions of ‘needs’ appealed to a large cross section of countries and the definition was widely accepted and its scope extended. The concepts of ‘sustainable city’ and ‘sustainable human settlement’ followed from the report’s concept of sustainable development and were endorsed in several global forums such as the Rio Summit of 1992 (UN Conference on Environment and Development) and Habitat 2 (UN Conference on Human Settlements) in Istanbul 1996 where all government delegations seemed to support the idea of ‘sustainable human settlements’ or ‘sustainable urban development’. At the regional scale, Europe took the lead with the European Sustainable Cities and Towns Campaign, launched in Aalborg, Denmark in 1994.

An important outcome of the Brundtland Report’s definition of sustainability was the development of urban sustainability assessment based on the three

dimensions of economic, social and environmental. Applied at the city level, its objective (Newman, 2006: 286) was to “achieve a simultaneous consideration of social, economic and environmental issues and to achieve a ‘net benefit’ outcome in each area, with minimal tradeoffs”. Urban sustainability assessment in practice has influenced the choice of city development goals and the criteria by which the achievement of these goals can be assessed. The city of Sydney’s Plan of 2005, for instance, used eight criteria from the social, economic and environmental areas (Newman, 2006). In a study of nine cities covering both developed and developing countries, city development plans showed a mix of measures with priorities varying from city to city (Shen, Ochoa, Shah, & Zhang, 2011). Sustainable development plans for the nine cities had different goals—simultaneous compliance on all the dimensions (social, economic, environmental, governance) was not possible. The authors concluded that cities should keep their own short run and long run needs in mind and cross-city sharing of experiences is important.

Satterthwaite (2004) has suggested prioritizing on the basis of the most basic and foundational needs and then moving on to other goals. In his framework for assessing the environmental sustainability of cities, the provision of adequate water, sanitation, drainage and garbage collection come first followed by the goal to reduce chemical and physical hazards within the home, workplace and wider city. Thereafter the goal of achieving a high quality city environment for all city inhabitants becomes important followed by the goals to minimize the transfer of environment costs to inhabitants and ecosystems surrounding the city, and to minimize the transfer of environment costs to people and ecosystems beyond the city region and the future. The latter two goals take care of the ecological footprint of the city (Rees & Wackernagel, 1996) and its impact on future generations, while the former three ensure that the city is livable for the present residents.

While the Brundtland Report’s definition of sustainability continues to be widely used certain practical problems related to its application on the ground have been noted. One of the major ones is the difficulty of balancing the three dimensions of economic, social and environmental in meeting the needs of the present generation. As pointed out by Allen (2009) “The most pressing problem with this model is that it offers relatively little understanding of the inherent trade-offs found in the simultaneous pursuit of these goals. Coupled with this, the picture it provides is too abstract to appreciate how sustainable development unfolds at the urban level, but also to acknowledge the political dimension of the process”. Satterthwaite (2004: 81) observes that “achievement in one sector or location implies a move away from the achievement of sustainable development goals in another sector or location”.

2.2.2 Sustainability of the Built Environment

A key component to the livability of the earth is the way urban areas are being built as this can be done in a business as usual way or it can be done in a way that reduces environmental impact by minimizing carbon emissions and conserving

natural resources such as water. A very significant percentage of the earth's GHG emissions come from buildings and urban transport. Sustainability as defined by the Brundtland Report leaves out the way the urban area is being built unless it is explicitly mentioned as Newman (2006: 286) does in his definition of sustainability which he defines as "reducing ecological footprint (energy, water, land materials, waste) while simultaneously improving quality of life (health, housing, employment, community) within the capacity constraints of the city". The impact of the building of urban areas is increasingly being recognized as a central component affecting the livability of the earth and some experts have suggested its inclusion as a separate dimension to that of the social, economic and environmental aspects already considered as constituting sustainability (Allen, 2009). Since the late 1980s, it has been highlighted in the work of urban planners and architects (Register, 1987, 2006; Farr, 2007) aiming to reduce the negative impact of the built environment through environment sensitive planning and design of individual buildings as well as entire settlements or towns. In the case of buildings, site selection, materials used, energy type and intensity, water use and waste output management can be planned so as to minimize environmental impacts and make the building 'green'. The green building movement which started in the USA in the 1990s began to develop in parallel to the sustainability goals as defined by the Brundtland Report. The idea of a 'sustainable urbanism' or a way of life in cities that is in harmony with nature reinforces the above by considering the totality of urban living and how sustainability can be practiced in the daily routines of urban living.

At the level of the city, there has been increasing interest in what characteristics made a city sustainable and to what extent they could be transferred to other cities. In the last two decades, there is emerging consensus that the traits associated with sustainable urban form/eco city cover broadly the following: compactness, sustainable transport, density, mixed land uses, diversity, passive solar design, greening and closed loop systems for water use, energy and waste management (Jabareen, 2006; Brown, 2006; Pinderhuges, 2004). To these Kenworthy (2006) adds the need for a 'debate and decide' planning process rather than a 'predict and provide' one.

However, while both the above two conceptual perspectives on sustainability have been put to practical use in city planning and design, their effectiveness is constrained by the underlying political nature of planning, values and biases of planners themselves, and the conflicting interests of different sections of society (Versteeg & Hajer, 2010). In developing countries, with an emerging middle class, the conflicts are often seen as a tussle between the brown agendas of the poor who still lack basic services and the green agendas of the better off who dream of parks and leisure places (Marcotullio & McGranahan, 2007). These perspectives have less to say about the larger process of urbanization and its drivers. Sustainability at the level of the individual building or settlement can hardly be seen in isolation of the larger processes at work. For this we need to turn to the third perspective.

2.2.3 *Political Economy Approach*

Alongside the dominant views of sustainability and what is needed at the policy level to achieve it, there has also been recognition that, at the global level, sustainable development is not possible without changing overarching structures of power in the global system of countries. This has been acknowledged by institutions working within the United Nations itself. For instance, in the Brundtland Report (1987), it has been observed that “A world in which poverty and inequity are endemic will always be prone to ecological and other crises”. According to the UN Habitat (2003: 43) “The main single cause of increases in poverty and inequality during the 1980s and 1990s was the retreat of the state”. Such views echo the observations of independent scholars who have pointed to “Poverty as a fundamental cause of environmental degradation” (Neumann 2006: 85).

This approach of delving into the causes of environmental degradation and the approaching environmental crisis (should there be no global consensus on reducing GHG emissions) rather than defining what sustainability is has also been the characteristic of a number of structuralist and post-structuralist scholars whose work has been gaining prominence, particularly since the global economic slowdown of 2007–08. But the latter go much further with some such as Davis (2006) holding the view that sustainable development is not possible under neoliberal capitalism as it is increasing poverty and inequality. Others such as David Harvey believe that sustainable development is not possible per se under the capitalist mode of production.

According to Davis (2006: 17) “rapid urban growth in the context of structural adjustment, currency devaluation, and state retrenchment has been an inevitable recipe for the mass production of slums”. That a shift towards market based solutions to development problems and the lessening of state involvement has been a significant factor deterring advances in sustainability is seen in the growing numbers of slums in the poorer countries. On the other hand, rapid increase in numbers of the super-rich and high net worth individuals has meant a jump in demand for luxurious homes and a life style that is much more demanding of natural resources. Thus Davis (2006: 134) notes that “Sustainable urbanism presupposes the preservation of surrounding wetlands and agriculture. Unfortunately, Third World cities—with few exceptions—are systematically polluting, urbanizing, and destroying their crucial environmental support systems”.

Harvey (2008) points to an ‘intimate connection’ between capitalism and urbanization. According to him, the surplus product of the capitalist mode of production has to be reinvested to generate more surplus value—otherwise capitalism will be in crisis. Taking examples from the modern history of the West, he explains how urbanization has played a particularly active role as a stabilizer of the capitalist system, for instance, in France under Louis-Napoleon Bonaparte in 1845 when Paris was modernized and in the USA after 1945 when the post-war boom was led by the construction of highways and rapid suburbanization. His last example is of China’s urbanization since the 1990s when over 100 cities with a population of above 1 million have been building housing and other infrastructure

to meet their growing population. In fact, he views the urbanization of China as the prime stabilizer of global capitalism in the last two decades, via its demand for various goods and services which have kept many industries in the West afloat. Likewise, its demand for minerals and natural resources have benefitted the prices of these commodities and helped exporting countries to boost their economies.

According to Harvey (2008), the other side of the urbanization process under capitalism has ‘an even darker aspect’ as it involves “repeated bouts of urban restructuring through ‘creative destruction’”. It is driven by existing land uses becoming less profitable on land the value of which keeps increasing, an example being slum housing in the centre of the city. Such uses must change for the land to yield its highest return but the process of urban renewal affects the poor and powerless the most resulting in their displacement (Harvey, 2008). This process of displacement Harvey calls ‘accumulation by dispossession’ and it lies at the core of the urban process under capitalism. Such a process is now unfolding in the developing countries as they make the transition from predominantly rural to urban societies.

Harvey’s concept of ‘accumulation by dispossession’ is somewhat similar to Sanyal’s (2007) ‘accumulation as development’ but with significant differences. According to Sanyal (2007: 226), postcolonial capitalism not only destroys other modes in the process of its ‘arising’ but also creates a space outside of capital for the dispossessed to eke out a living. The creation of this space is a reversal of the process of dispossession but is a constitutive part of the dynamics of postcolonial capitalism. By sheltering the dispossessed, it “prevents them from banging on the doors of the glittering world of capital”. The space Sanyal is referring to is the urban informal sector which houses the city’s poor in its slums and provides livelihoods that enable them to subsist in postcolonial capitalism’s other which he calls ‘the need economy’. Both the accumulation economy and the need economy coexist and this very coexistence differentiates postcolonial capitalism from capitalism in the advanced economies.

By focusing on the larger forces that are framing the context of development, the political economy approach provides an alternate way of viewing the framing of policy on urban sustainability in India and its subsequent changes.

2.3 Urban Sustainability as Policy in the Indian Context

In this section, I turn to the way urban sustainability has been understood in the government of India’s urban policy and its implementation. As mentioned at the start of the paper, the meaning of urban sustainability becomes important in the policy context as well as in the practices such policy supports at the ground level. Although the term ‘sustainability’ and its use in official policy documents is present only post 1987, that is, after the Brundtland Report, a focus on human needs as advocated in the report has been present in the government’s policy on urban basic services, going back to the early 1980s. For instance, in 1981 when the UN declared the 1980s to be the UN’s International Water Supply and Sanitation Decade, the

Indian government set a goal of 100% coverage of urban households by piped water supply by 1991, 100% coverage of Class I towns with sewerage facilities and toilets, and in other towns, 80% of the population to be covered by low cost sanitation facilities. This goal was not achieved and remains to be achieved even today as, for instance, indicated by the data on water supply. As revealed by the census of 2011, piped water is now available to 70.6% of urban households, a latrine to 81.4% (72.6% with a water closet) and electricity to 92.7% of households. While the target set in the 1980s remains unmet, what should be noted is the goal of universal coverage, at least of piped water supply. In more recent times, the government has not mentioned universal coverage but has been more targeted in its focus regarding the improvement of basic services. Thus, for instance, JNNURM funds released by the central government during the period 2005–2014 have gone primarily for the upgradation of water and sewerage facilities in 64 selected cities. The Modi government's counterpart to JNNURM is AMRUT (Atal Mission for Rejuvenation and Urban Transformation), launched in 2015, which will be covering 500 cities and attempting to ensure that every household in the selected cities has access to a tap with assured supply of water and a sewerage connection. Although the coverage is more extensive than that under JNNURM, it will still leave a balance of 7000 urban places in the country without the financial support of an overarching central program.

Apart from water supply and sewerage, a focus on human needs is also seen in the early piecemeal and individual city efforts to improve slums through community development projects, the earliest of which date back to 1958–60 when Ford Foundation provided aid (NCU, 1988). They were continued and extended with aid from UNICEF and resulted in the Urban Basic Services program of 1981–1984, a partnership between the government of India and UNICEF, and extended to 42 towns. In the Seventh Plan (1985–89) this program was extended to 168 towns. Post economic liberalization, during the Eighth Plan (1991–1997), it was modified and implemented as UBSP (Urban Basic Services for the Poor). In the last 9 years, from 2005 to March 2014, under JNNURM, the program continued as BUSP (Basic Urban Services for the Poor) which was to provide shelter, basic services and related civic amenities to those living below the poverty line. On the employment front, since 1997 and continuing to the present time, there is SJSRY (Swarna Jayanti Shahari Rozgar Yojana) for wage and self-employment creation among the poor. Targeting below the poverty line households, this program has focused on women as Resident Community Workers and as leaders of Neighbourhood Groups to decide on micro level infrastructure building (Shaw, 2006). It has also provided training to women in various crafts and skills.

While the human needs aspect of sustainability has been present in urban policy from the early plans and has been targeted, particularly, at below poverty line households, sustainability in terms of the built environment and its ecological footprint became a policy concern much later, only in the Eleventh Five Year Plan (2007–2012). With policy recommendations made by TERI (The Energy and Resources Institute) the built environment dimension was included, for the first time, since the national planning exercise started in 1951. TERI's suggestions

included an environmental rating system for urban services provided by the local bodies: Urban Services Environmental Rating System (USERS) and a national green building rating system called GRIHA which was launched in November 1, 2007. Thereafter, there was the creation of a National Action Plan on Climate Change in 2008 under which the National Mission on Sustainable Habitat was launched in June 2010. Its objectives included enhancing the energy efficiency of buildings, urban waste recycling and a shift towards public transport. It stressed the need for integrating climate change objectives into the planning process.

Since 2010, in keeping with developments in the West, there has been growing interest in the Smart City and smart growth. One of the earliest official references to this is in the October 2011 document of the Twelfth Plan's Working Group on Urban Strategic Planning which defined smart growth as follows: compact, transit-oriented, walk to work, bicycle friendly land use; neighbourhood schools; mixed use development; public transport and IT enabled governance. The linking of environmental sustainability and information technology driven governance and services forms the basis of the smart city or smart growth idea which appears to be increasingly attractive to India's administrative and political elite as a way to leapfrog the difficulties of building and maintaining ordinary towns and cities. During the last years of UPA (United Progressive Alliance 2004, 2014) rule, the Indian government was planning to develop at least two smart cities in each state with features like intelligent transport, e-services and carbon neutral status. The testing ground was to be medium sized cities like Ujjain or Jabalpur—with half a million to one million people. The UPA sought the expertise of the Austrian Institute of Technology (AIT). The AIT was to assist in the planning and development of the roughly 70 smart cities. The current government under Narendra Modi and the BJP (Bharatiya Janata Party) plans to build 100 smart cities. Budget 2014 set aside 70,600 millions, enhanced to Rs. 4,80,000 millions in 2015, to be spread over 5 years and 20 cities in the first phase. The smart city idea presents great opportunities for technology vendors like IBM, Cisco, ABB, Siemens, Alstom and Schneider to establish a significant presence in the Indian market through large scale deployments of IT related infrastructure and the Smart Cities Council, a US based association of real estate interests, has recently opened a regional chapter in India. Private sector enthusiasm in smart cities is seen in a 2013 report (CII, 2013: 1) where the Confederation of Indian Industry in partnership with Cisco has urged a 'fresh approach' to urban planning and the need to add another layer to it, 'the layer of ICT planning'. This will enable the achievement of 'a better and sustainable urban India' and should encompass Smart Buildings, Smart Utilities, Smart Healthcare, Smart Education, Smart Governance and Smart Transportation.

The private sector's interest in smart cities has been matched by that of the popular press and in the last few years, there has been much hype about them in leading newspapers and magazines (Indian Express, 2014) and unofficial discourse. Official documents on the smart city have started to become publicly available since 2014 with the revised manual for planning and plan implementation framed by the Ministry of Urban Development, uploaded in its website in February 2014

(Government of India, 2014a, b: 152–157). In August 2014, after the present government announced its intention to build 100 smart cities in the Budget Speech of the Finance Minister, a ‘Draft Concept Note on Smart City Scheme’ was made available in the Ministry of Urban Development’s (MUD) website. As a first step, the MUD convened a National Conclave of States and Union Territories on September 12, 2014 for suggestions. The note has since been revised and, in June 2015, replaced by a formal mission statement on smart cities that provides a framework within which the context, aims, operational procedures and guidelines to obtain central funding are given. An important clarification it provides is regarding what type of urban place can be selected to be a smart city. According to the mission statement (2015: 8), these can either be parts of existing cities with little change in the existing built-up area (retrofitting), or parts of existing cities with replacement of existing built environment and creation of a new layout (redevelopment), or creating new cities from scratch (greenfield). In addition, every smart city proposal must have a pan-city feature which means the application of a smart city solution to the entire city-wise infrastructure. These proposed strategies are a contrast to the few smart cities that are already in the process of being built, for instance, Kochi Smart City, Lavasa (Maharashtra), Wave City (Ghaziabad), Gujarat International Finance Tec-City (GIFT), the seven smart cities of the Delhi-Mumbai Industrial Corridor Project and Solar City (Bhubaneswar, Odisha), all of which are greenfield projects. Several of them have faced land acquisition problems which have slowed their progress.

The Smart City Mission statement, however, does not elaborate on an issue that has been missing or understated in the discussion of smart cities in the Indian context, namely, who will be the persons living in these cities, an affluent elite or a cross section of people, including the poor. This aspect has remained vague and the Finance Minister’s statement that the 100 smart cities could be the potential destination of the ‘neo middle class’ has added to the lack of clarity. The early concept note had attempted to address the issue of social inclusiveness via the requirement of a process of seeking community opinion in creating the city development plan. Through its Citizen’s Reference Framework (CRF), a “structured document which captures aspirations and expectation of residents/citizens of the town/city (p. 25)” feedback from urban residents would be incorporated in planning. The agencies preparing the CRF thus needed “to talk to housewives, students, artisans, traders, employees, entrepreneurs, senior citizens, NGOs, Government agencies, scientists, artists and opinion-makers etc.,” (p. 25) though there was no specific mention of reaching out to the poor. However, even this partial attempt at inclusiveness has been removed from the current mission document which mentions ‘sustainable and inclusive development’ (p. 5) and ‘affordable housing, especially for the poor’ (p. 6) as being one of the core infrastructure elements in a smart city without detailing how they would be ensured.

The smart cities mission is to be implemented at the city level by a new entity, a Special Purpose Vehicle (SPV) which will be headed by a full time CEO and have nominees of the central government, state government and the local urban body on its board of directors. One of its purposes is “to ensure operational independence

and autonomy in decision making” and “delegating the rights and obligations of the municipal council” to the SPV in areas selected for smart city upgradation is encouraged. Clearly, the intention of the mission is to bypass the existing elected local government bodies to speed up decision-making and plan implementation.

Given the huge requirement of funds to enable smart city projects, Budget 2014 provided for easier entry of foreign investment to finance the development of smart cities. The requirement of built-up area and capital conditions for FDI was reduced from 50,000 to 20,000 m², and USD 10 to USD 5 million respectively with a 3 year post completion lock in. Moreover, projects which commit at least 30% of the total project cost for low cost affordable housing will be exempted from minimum built-up area and capitalization requirements, with the condition of 3 year lock in. These were announced in the Finance Minister’s Budget Speech in April 2014 (Jaitley, 2014).

Budget 2014 has also promoted the growth of industrial corridors. The Finance Minister announced that the development of industrial corridors, with smart cities linked to transport connectivity will now be the cornerstone of the strategy to drive India’s growth in manufacturing and urbanization. As a first step, a National Corridor Authority will be set up with 1,000 millions and master planning for the following corridors will be undertaken: Amritsar Kolkata Industrial Corridor with 7 smart cities, Chennai-Bengaluru Industrial Corridor region with three smart cities, Bengaluru Mumbai Economic Corridor and Vizag-Chennai Corridor. This strategy of future urban and industrialization along corridors is based on the fact that the pattern of urban growth has roughly followed linear development along major highways from the seven largest metropolitan areas of the country (Shaw, 1999). However, the availability of land for planned development of infrastructure along these routes and its impact on local populations remains an issue of concern, not openly discussed or addressed in official policy documents.

2.4 Implications of the Proposed Policies

While the growing interest, both from government and outside agencies, in making Indian cities sustainable is a welcome trend given India’s increasing urbanization, social and economic inequality, and environmental pressure on scarce resources, are the above policies focusing on smart cities and massive industrial corridors, the best way to go about it? How far they will contribute to overall urban sustainability is already being questioned.

Some have raised the issue of the relevance of smart cities in the existing urban situation where basic services to the existing urban households are not yet available on a universal basis and questioned whether the smart cities project is the ultimate great escape (Desai, 2012; Dutta, 2014; Nair, 2014a). Unable to fulfil basic services in the existing cities, the government seeks to create utopian enclaves of order and exclusivity. A second issue is its limited coverage, a point also raised by critics of UPA’s JNNURM which focused primarily on 65 mission cities. If successfully

built, the hundred smart cities will create another layer of inequality to India's urban system for as compared to the non-smart cities, they will enjoy many more conveniences (Burte, 2014). As models to be emulated, a hundred smart cities will have little impact in an urban system of over 7200 urban places most of which are financially strapped.

Another point is whether the real costs—financial, social and environmental—have been factored in both with regard to building smart cities and creating industrial corridors. For instance, critics point out that the building of the gigantic Delhi-Mumbai Industrial Corridor (DMIC), 1483 km long and covering six states, in one of the most arid regions of the country has commenced without a satisfactory accounting of water availability and its costs in terms of the continuance of pre-existing livelihoods, mostly agricultural and pastoral, in the area (Khosla & Soni, 2012). With little scope for water supply augmentation, the currently available water supply in the region will have be diverted to new industrial and urban uses and so, the livelihoods of the local population that depended on this water will no longer be available. This raises the issue of livelihood rehabilitation of the existing population of which there is no discussion in official reports. And of course, the most glaring issue, that of land acquisition has not been factored in at all. The DMIC experience already indicates plan changes that have occurred because of this. For instance, at the southern end of the DMIC corridor, work has started in Dighi in Maharashtra and Dholera in Gujarat. The size of Dighi port node has been cut down from 25,000 ha to a mere 3,600 ha and there have been protests in Dholera over land acquisition (Nair, 2014b; Kumar, 2015). It is estimated that the DMIC by creating new jobs in its industrial nodes and associated smart cities will attract new migrants and around 94 million new migrants are expected into the region of the corridor by 2039. Will there be adequate housing and related infrastructure for this massive influx?

With the first two rounds of the selection of cities for the mission over by May 2016, a major point of friction has emerged in the way the SPV board of the smart city is structured and its powers vis-à-vis pre-existing elected local bodies. It is being seen as an attempt to take away the powers of these bodies by both the central government and the state government. Greater representation of elected local government members in the SPV board has been demanded by the Solapur Municipal Corporation in Maharashtra recently selected to be a smart city (Phadke, 2016).

2.5 Conclusion

Since the last decade, the central government's interest in managing urban growth has deepened with the passage of several regulations that have been adopted by the states (Shaw, 2012). While attempting to streamline key urban processes in the states, the central government is also encouraging a rapid scaling up of activities, for instance, in the case of land with the removal of the Urban Land (Ceiling and Regulation) Act as a central act in 1999 to enable larger plot size transactions.

Concurrently with economic growth in China declining and global fears of its 'hard landing', India with its large and growing market is being regarded as one of the future drivers of global growth (Sharma, 2016). The huge sizes of the planned industrial corridors clearly indicate that the scale of thinking about India's urbanization process has changed. Stretching from one end of the country to another, when operational, these planned linear developments are likely to dominate the economic space of the country and change migration flows towards them. The smart cities being built within the corridors will further reinforce this. The goal of planned urbanization is now more than just settlement planning. As in the case of China, India's future urban growth offers an immense opportunity for investment from both domestic and external sources. The Japan government has invested in the Delhi-Mumbai corridor and is also financing a high-speed rail line of more than 1 trillion yen (\$8.11 billion) in loans to construct India's Rs. 9,80,000 millions fast train (Roche, 2015). The government hopes that such investment will be the driver reviving the national economy and ensure a high rate of growth of GDP.

This would explain the scale of the corridor projects and the massive size of individual planned cities such as Dholera which with an area of over 900 km² will be more than twice the size of Brihan Mumbai Municipal Corporation, India's largest city. However, the larger the sizes of the corridors and cities, the greater will be the need for land, and the possibility of loss of homes and livelihood disruption of the pre-existing population. If the latter cannot be absorbed in the dynamic new economy of the emerging corridors, they will be relegated to subsisting in a 'need economy' of minimal living standards and left out of the benefits of the expected upturn in economic growth. Focusing on the upgrading of pre-existing towns and cities along with creating new smart cities from scratch could minimize some of the adverse effects.

Even if all goes well, the new cities will take 20–30 years to reach their full potential and converting pre-existing cities or sections of them into fully IT enabled ones will also take time. What will be happening to the rest of the urban system during this time period? As mentioned earlier, the present government has come up with a program called AMRUT (Atal Mission for Rejuvenation and Urban Transformation) for the upgradation of 500 urban places. This is in the pattern of JNNURM which ended in March 2014 and like JNNURM, its coverage will be selective. What will happen to the hundreds of ordinary/non-smart cities and those not covered under AMRUT? It is critical that they are not neglected. They too must continue to be improved with infrastructure investment and sustainability plans and practices. In particular, the focus must be on smaller cities and emerging towns where so much new construction is going on and where there is still scope to implement sustainable land uses, sustainable building activity and public transport.

A key aspect that needs to be highlighted and planned for is the way India's urbanization process has unique elements and these should be leveraged to achieve sustainability rather than blindly following a model based on the experiences of Western countries or even China. The uniqueness has to do with the way urbanization is spreading in the country, particularly in the last decade, with the emergence of thousands of small, new towns (Denis, Mukhopadhyay, & Zerah, 2012;

Pradhan, 2013) on the one hand, and on the other, through the movement of people from rural to urban areas and then back again while maintaining both rural and urban links (Echanove & Srivastava, 2015). Such circularity in migration along with long distance commuting from rural areas to nearby towns and cities is leading to a blurring of rural–urban differences with villages becoming a part of larger urban systems and calling into question the relevance of the very categories ‘rural’ and ‘urban’. Responding to these demographic dynamics by focusing infrastructure upgradation in smaller urban places while simultaneously providing affordable rental housing in the larger cities and improving transport links between urban places and their hinterlands would be a cheaper and less traumatic way of integrating diverse parts of the country into a common market without the pain of forcibly converting agricultural lands into planned cities and industrial corridors.

Finally, given the huge challenges of providing India’s growing urban population access to basic services and housing, adding an IT layer to the planning process and service delivery can be a potentially useful tool to better the quality of life and make Indian cities more livable. But such policies must be grounded in the political will to follow through and implement sustainability practices across the urban system and not just in a handful of selected cities. Moreover, it must be inclusionary drawing into its ambit all residents and not just the middle and upper middle classes.

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