

Chapter 1

Indian Urban Trajectories: Addressing ‘Sustainability’ across Micro-political Settings

Jenia Mukherjee

1.1 Introduction

“A few skipped chapters never hurt anyone!” the civil engineer proclaimed.

The dismembered bodies lying under the collapsed bridge begged to differ.

Though extremely touchy, this couplet that I found in Facebook,¹ eloquently capturing the terrible event of bridge collapse in Kolkata recently, however, fails to excavate what actually went wrong.² The dialectical tensions between Indian cities’ insane rush towards achieving the status of ‘world class’ or ‘global’ and numerous local processes and ‘stubborn realities’ (Tiwari et al., 2015) might offer some deeper explanations. Global cities are strategic sites where transnational processes materialize in national territories and international dynamics run through national, regional and local institutional arrangements (Sassen, 2001), manifesting similar (yet locally divergent) set of characteristics including urban restructuring and gentrification, privatization of city services, attempts to attract global capital, investments in monumental events and buildings, speculative housing developments, etc. (Bose, 2015). In today’s so-called age of the ‘urban imperative’ (Glaesar & Ghani, 2015), (global) cities are recognized as seedbeds of solutions; flurry of recommendations, designs and innovations are being thought upon with ‘sustainability’ as the nucleus.

¹Retrieved April 8, 2016, from Facebook Website: <https://www.facebook.com/TheScribbledStories/photos/a.1157506880929759.1073741828.1156243537722760/1356124417734670/?type=3&theater>.

²More than 100 people were killed and injured as two parts of an under-construction 2.2-km-long Vivekananda Flyover collapsed in a congested market area in Burra Bazar, north Kolkata on March 31, 2016. A 100-m (330-ft) section came crashing down suddenly, crushing pedestrians, cars and other vehicles under huge concrete slabs and metal.

J. Mukherjee (✉)

Department of Humanities and Social Sciences, Indian Institute of Technology Kharagpur, Kharagpur, India

e-mail: jenia@hss.iitkgp.ernet.in

‘Sustainable Urbanization’ is the post-2015 development agenda of the United Nations that unfurls such optimistic designs and consider cities as the axes for the new global change, economic forces to entire nations, and central players on the world stage (UN Habitat, 2012). The city is contemplated as the major platform for transformation, the locus for change and the venue where human agency might be mobilized.

Cities make countries more prosperous. Countries that are highly urbanized have higher incomes, more stable economies, stronger institutions and are better able to withstand the volatility of the global economy than those with less urbanized populations ... Cities around the world are playing an ever-increasing role in creating wealth, enhancing social development, attracting investment and harnessing both human and technical resources for achieving unprecedented gains in productivity and competitiveness (UN Habitat, 2012: 7).

The first-ever Integration Segment of the United Nations Economic and Social Council (UNECOSOC) focused on ‘sustainable urbanization’, demonstrating how urbanization can be an effective tool for the integration of economic, social and environmental dimensions of sustainable development (UNECOSOC, 2014a). Like the 2012 UN report, the 2014 background note for the Integration Segment also looks into opportunities and potentials offered by contemporary patterns of urbanization. It considers urban areas as a source of growth, development and jobs, which if well managed and adequately planned, could offer opportunities for economies of scale and scope in development efforts, in particular in addressing poverty, health and education issues. It points out that “urbanization has been, and continues to be, a source rather than simply an outcome of development ... Governments can use urbanization as a powerful tool for transforming production capacities, income levels and living standards, especially in developing countries” (UNECOSOC, 2014b: 3–4).

Keeping in tune to the gospel of ‘sustainable urbanization’ and the rise and growth of ‘smart’ city, high-density city, etc., in the west, the Indian National Democratic Alliance (NDA) government has made an official announcement of creating 100 smart cities in the country for which it laid out an amount of Rs. 480 billion³ to be disbursed to the urban local bodies at frequent intervals in the 5 years between 2015 and 2020 (Jeelani, 2015). “The purpose of the ‘smart city’ agenda and plan is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes”.⁴ A stormy upsurge has swept the Indian academic circle and experts are rigorously questioning the relevance, feasibility and sustainability of this laudable project, critically debating on the issue of ‘inclusion’. At this critical juncture, contextualizing the emergence of the project across longer

³The current conversion rate is 1 USD = INR 65 (approx.).

⁴Retrieved April 8, 2016, from Smart Cities Mission, Ministry of Urban Development, Government of India Website: <http://smartcities.gov.in/writereaddata/What.%20is%20Smart%20City.pdf>.

spatio-temporal trajectory that initiated the concept of 'sustainable' and interpolated it in the development (and urbanization) discourse remains crucial.

The concept of 'sustainable cities' derived from that of 'sustainable development', popularized in the Brundtland Report (1987) of the World Commission on Environment and Development (WCED), United Nations (UN) and Agenda 21 (1992), the agreement that came out of the Earth Summit held in Rio de Janeiro, Brazil, in 1992 (UNCED, 1992; WCED, 1987). The shifting geography of urbanization to the global South provided justification for the implementation of 'sustainable cities', an amalgamation of various independent processes like Agenda 21 followed by Habitat II in 1996, urban environmental movements, decentralization of local governance structures, etc. (Mahadevia, 2001). In the early 1980s, the United Nations Centre on Human Settlements (UNCHS) and the United Nations Environment Programme (UNEP) decided to prepare joint environmental guidelines for environmental planning and management (EPM) of cities. In the early 1990s, this initiative was converted to the joint Sustainable City Programme (SCP) in the global South. SCP was launched as a vehicle for implementing Agenda 21 at the city level, to incorporate environmental management into urban development decision making (Mahadevia, 2001) where economic and environmental costs of urbanization and urban development were to be taken into account and cities were to be designed as compact and energy efficient, self-reliant in terms of resource production and waste absorption (Haughton, 1997). The country regained its perspectives on regional disparities of cities and inclusive urbanization was made a priority since the Eleventh Five Year Plan, which had inclusive growth as its agenda. It was in this phase that Indian smart cities started taking shape. The Delhi Mumbai Industrial Corridor had smart cities planned along the stretch since 2011. In 2012, it was announced that smart cities shall be a part of the (Jawaharlal Nehru National Urban Renewal Mission) JNNURM Phase II.⁵ However, with the JNNURM taking a backseat, the recently elected NDA government officially launched the 'Smart City' Mission and the 70.6 bn set in budget 2014 was dramatically enhanced to 480 bn in budget 2015, to be spread over 5 years and 20 cities in the first phase (Shaw, Chap. 2).

There is an overarching criticism of 'sustainable cities' programme which proclaims that "The pursuit of sustainable development and 'Sustainable Cities' is set against the backdrop of an increasingly globalised world in which the North dominates the South in economic terms" (Mahadevia, 2001: 243). Most southern countries became part of the global economy through conditionalities and a development model imposed by the multilateral funding agencies under the general regime of Structural Adjustment Programmes (SAPs) (Mahadevia, 2001; Davis, 2006) which had adverse impacts on social sectors (Cornia, Jolly, & Stewart, 1987) and on the environment (Reed, 1995). In the urban context, SAPs implied

⁵For details relating to the JNNURM mission, objective, scope, strategy, duration and expected outcomes, please refer to Jawaharlal Nehru National Urban Renewal Mission Overview, Ministry of Urban Employment & Poverty Alleviation, Ministry of Urban Development. Retrieved April 15, 2016, from <http://jnnurm.nic.in/wp-content/uploads/2011/01/PMSpeechOverviewE.pdf>.

privatization and commercialization of infrastructure including social sectors, deregulation and retreat of the welfare-based approach of the state under the guise of decentralization and popular participation (Stubbs & Clarke, 1996; World Bank, 1990; WRI, UNEP, UNDP, & World Bank, 1996). In quite similar fashion, the thinking behind the growth and development of cities and spread of urbanization embedded in the gospel of ‘sustainable urbanization’ fails critically to examine complex problems associated with the nature, scale, pace and pattern of urbanization in the south, both currently and in the coming decades (Mukherjee, 2015a). It is expected that most of the urban population will be absorbed by the cities and towns of low-income countries, likely to rise from 1.9 billion in 2000 to 3.9 billion by 2030 (Allen, 2009). Rapid urbanization in the south is marked by numerous problems and challenges including the burgeoning slums and squatter settlements; lack of citywide infrastructure such as housing, health, sanitation, privatization and commercialization of infrastructure; conversion of ecosystem resources affecting the livelihood opportunities of ecologically dependent marginal communities; and the changing nature of the rural–urban divide (Mukherjee, 2015a, b). Satterthwaite rightly pointed out days back in 1998 that along with emphasis on the reduction of resource consumption, local waste absorption, and the use of renewable resources, urban environmental issues have to effectively insist upon the critical issue of meeting basic human needs. “...the ‘sustainable’ part of sustainable development be considered as avoiding the depletion of environmental capital (or concentrating on ecological sustainability) while the ‘development’ part of sustainable development be considered the meeting of human needs” (Satterthwaite, 1997).

Series of researches have been conducted since then on the distinctness of southern urbanization processes and southern urbanisms; and today global south is eloquently critiquing the concept of modernity, asserting the presence of the postcolonial narrative and giving voices to the subaltern in urban studies (Fatima, Chap. 6). It is developing its own idiom (Roy, 2009), giving birth to quiet rebels (Bayat, 2000) often as an act of democracy ‘from below’ (Appadurai, 2001) or as ‘occupancy urbanism’ (Benjamin, 2009); it is reflective of the diversity and intricacy of the city itself which in spite of apparently being similar through the manifestation of global urban attributes, is never uniform and single (Fatima, Chap. 6). With greater understanding and exposure of chronic neo-liberal urban problems, time and again promises are being made and provisions kept in official legislations like the passage of the 74th Amendment Act (1992) and urban renewal projects like JNNURM to ensure ‘sustainability’ across governance of civic infrastructures and amenities, management of wastes and understanding of urban ecological issues (including ‘ecological footprints’ of cities), the three most significant and connected components of urban development for southern countries like India through democratic governance, efficient management and protective legislations; yet not much has been achieved and challenges seem to outgrow benefits at much faster pace. While so much remains undone and incomplete, the sudden escalation of budget for the ‘Smart City Mission’ not really confirms Indian urban journey to be ‘reluctant’ (Tiwari et al., 2015), but with real estate and urban

infrastructure offering a great opportunity to global capital, it seems to be a card waiting to be played right in India (Burte, 2014).

While industry, especially corporate giants have identified smart cities as a promising new line, and invested in intra-industry advocacy by building platforms like Smart Cities Council and spun new slogans like 'smart is the new green' i.e. smart is sustainable (Burte, 2014; Smart Cities Council, 2014), wide spread criticisms in the scholarly circle and among urban action groups and experts have flooded the scene since the official proclamation of the agenda in the union budget for 2014–15. Opponents warn that with the implementation of this '21st century utopian urban experiment' (Datta, 2014) of India, the competition it would entail among cities would be severe in economic terms and social polarization across Indian cities would accentuate in far greater intensity than being estimated. "Smart cities are proposed as isolated satellite cities of the 'neo-middle class'" which implies clearly "a class-based spatial categorisation of populations: world class urbanism of smart cities for the upper classes and the creaky old urbanism of existing cities for the creaky old middle and lower classes" (Burte, 2014: 24). Many experts also fear that these smart cities would not only prove dystopic and inequitable, but may turn into social apartheid. Having islands of well-serviced smart cities amidst a vast sea of poorly services and impoverished villages would lead to the juxtaposition of the citadel and ghetto, and these visible forms of spatial inequalities would engender social mistrust and violence (Ravindran, 2015).

These denunciations and disapprovals clearly demonstrate that what is missing in this grand mission and agenda is any sense of the various conflicts, contestations, contradictions and negotiations that smartening up would imply in the larger sociopolitical context of cities (Burte, 2014). There are also questions regarding the sheer feasibility of the programme, given the current urban information, infrastructures and governance systems (Burte, 2014). The current context appeals and makes us aware to move beyond the binary analysis surrounding urbanization challenges and opportunities across north and south towards a more poly-centric approach, accommodating the three major and connected components of urban sustainability including governance of infrastructures and investments, management of wastes and wetlands and a thorough and in-depth understanding of urban ecology and environmentalisms. The case studies across the three parts of the book identify contemporary challenges and opportunities across north, south, east and west Indian cities through nuanced readings and explorations of micro politico-economic and micro politico-ecological contexts and realities. Through previously unexplored complex details of local politics and social realities of specific (also including unexplored) contexts, the chapters attempt to add and develop another narrative of looking and reading the vast and varied processes of urban transformation by bringing to the forefront 'epistemology of the particulars' (Castree, 2005) that hopes to unpack the embeddedness of the global and the local processes.

1.2 Structure of the Book

The book is divided into 3 parts and 15 chapters. Part I is preceded by an introductory chapter by Annapurna Shaw (Chap. 2). It is built upon conceptual premises, making way towards an easy transition to the case specific descriptions and analyses.

1.2.1 *Setting the Context*

In Chap. 2, Shaw explores different conceptual perspectives on urban sustainability: 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. The second section of the chapter examines urban sustainability as policy in the Indian context from immediate pre-economic liberalization era to the present indicating how urban sustainability policies have evolved, traveled and transformed since the pre-1990s to the recent times with the current thrust on 'Smart City' Programme and gigantic urban-industrial corridors. The chapter ends with a broad and comprehensive understanding of the implications of the proposed Smart City Programme and raises the most vital question at this critical juncture that "What will happen to the hundreds of ordinary/non-smart cities and those not covered under AMRUT (Atal Mission for Rejuvenation and Urban Transformation)?" Shaw makes us aware about the distinct characteristics of contemporary patterns and processes of Indian urbanization mainly in the form of the way urbanization is spreading in the country, particularly in the last decade, with the emergence of thousands of small, new towns on the one hand, and on the other circularity migration of people from rural to urban areas and then back again while maintaining both rural and urban links 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'. Hence, "a key aspect that needs to be highlighted and planned for", Shaw argues "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".

1.2.2 *Governing Investments and Infrastructures*

Part I consists of four case studies across the three cities of south (Visakhapatnam), west (Ahmedabad) and east (Patna) and one urban fringe area (Ghitorni), located at the periphery of the National Capital Territory (NCT). These cases are preceded by a conceptual chapter by Chakraborty that inquires deep into the structural limits to

equitable urbanization (Chap. 3). By critically conceptualizing the normative consequences of urbanization against the so-called supposedly bidirectional causality of planned urban development and economic growth, it deals with problems associated with the Twelfth Plan's perception and promotion of small and medium size towns with locational and natural resource advantages for future socio-economic growth. Raising the efficiency versus equity debate, the chapter provokes us to think that by sheer focus and through investments on infrastructures on the units with 'potential', others which have less potential are ignored, which in turn increases the gap between the two. The chapter enters the complex terrain that emerges out of the confluence of three normative goals of urbanization—growth or efficiency, sustainability and social justice and proclaims that although the imperatives of economic growth in the modern globalized world have an apparent ring of inevitability around them, an articulated view on social justice and appropriate conceptualization of equity through community engagement is of immense help to make us understand alternative possibilities with their associated trade-offs.

Researches focusing on numerical and technical analysis of availability of funds or access to infrastructures (Ahluwalia, Kanbur, & Mohanty, 2014) do not seem to be sufficient exercise to identify challenges, potentials and the way forward for the contemporary complex Indian urban scene. "These cities are not so much fracturing as they are being strategically divided by governance practices informed by local histories and political contestation, and refracted through or infused by market-based approaches to urban development" (Samara et al., 2013, introduction, 2). There is an emerging literature focusing on exclusionary aspects of urban governance in the global south (Banerjee-Guha, 2010; Davis, 2006; Gugler, 2004; Harvey, 2000), nakedly exposing the deleterious effects of neo-liberal urbanization on marginalized quarters and pockets of Indian cities like slums and squatters (Roy, 2009), small cities (Véron, 2010) and also the peri-urbanizing interfaces (Mukherjee, 2015a, b; Mukherjee & Ghosh, 2015). Again, slums in Indian cities have characteristics that are far more complex, the explanation of which cuts across economic, social, urban and development disciplines far away from the simple segregation-based notions of ghettos or enclaves used in the context of western cities (Nijman, 2010). Slums cannot be classified as single category, it range from high-density squalid central city tenements to spontaneous squatter settlements without legal recognition or rights, sprawling at the edge of cities (Tiwari et al., 2015). In Chap. 4, Chatterjee identifies the prevalence of multiple tenure systems including various 'intermediate tenure systems' ranging from informal, customary, religious, to formal in contemporary Ahmedabad and explores the degree of security of tenure and the rights enjoyed by the households in each of the tenure systems based on the primary insights obtained from the field. Questioning the rhetoric of the housing policies driven by the state-led ideology, the study concludes with the practical observation that as the poor in the informal settlements acquires perceived tenure security over the years, along with basic rights or the incremental approach to tenure provision (which the Slum Networking Programme has partially succeeded in provisioning), infrastructure programmes should be planned to reduce urban poverty and upgrade the living conditions of these households.

While Chap. 4 drills down deep to collect empirical facts and findings to evolve a theoretical proposition, Chap. 5 attempts to capture and understand neo-liberal 'accumulation by dispossession' in the context of urban India within the framework of statehood, governance strategies and the people by invoking both primary and secondary sources of data, in the context of a fast growing urban centre of South India, i.e. Visakhapatnam in the state of Andhra Pradesh. Borrowing from Kohli (1987), Holston and Appadurai (1996), Chatterjee (2004) and Gupta (2012), Ganguly sidelines governance for the time being and makes a smooth entry into the terrain of 'governmentality' to offer in-depth explanation and analysis of the exclusionary strategies deployed by the state. Both the quantitative and qualitative findings on slums of Ahmedabad and Visakhapatnam, respectively, expose how 'competitive populism' (Gupta, 2012) advocated by the state ultimately makes real estate and private developers thrive at the cost of further vulnerability of urban slums. Both the cases sharply bring out the problems associated with state-led rehabilitation programmes, appropriately testifying that a superficial approach to fix the 'space and infrastructure' of these settlements rather than providing opportunities to enhance their dynamism (Tiwari et al., 2015: 15), i.e. entering the city through the housing and the bathroom rather than through the place of work and the market has created fault lines between the most discussions on urban policy and issues of inequities and inequalities (Cohen, 2008).

In Chap. 6, Fatima captures yet another important aspect of failure of urban governance mechanisms for cities like Patna and portrays how local politics hinder the effective functioning of democratic decentralization. It attempts to explore and excavate 'new geographies of Global South' and develop another narrative of looking at the vast and varied processes of urban transformation, bringing to the forefront 'epistemology of the particulars' (Fatima, Chap. 6). Ransacking through the pages of both English and local Hindi newspapers and using other qualitative research methods, the case study of Patna Municipal Corporations and its functioning under the new reform period opens up accounts of the unceasing everyday struggles of municipal functioning and the vested political manoeuvres among the elected ward councillors themselves, leaving much to be desired in respect to actual implementation of civic work and city development.

The part ends with Chap. 7 where the empirical findings from the detailed case study of Ghitorni settlement, the urban fringe area, located at the periphery of NCT by Nallathiga et al. confirms lack of policy-driven initiatives in the peri-urban regions, concretizing the argument that these areas are manifestations of 'urbanization without infrastructure' (Allen, 2009), i.e. being developed without appropriate urban planning and management (Allen, 2010). The case consolidates the uneven development of the settlement area and its impact on the wider ecological infrastructures of the city. Lack of water supply and sanitation, systematic collection of garbage, environmental pollution, etc., are some of the severe challenges that are increasing with population pressure. The chapter recommends a sharp balance between rising share of suburban fringe areas in the overall population and a corresponding rise in civic infrastructure services in terms of resources, institutions, planning and governance systems.

1.2.3 Managing Wastes and Wetlands

Part II consists of four chapters on one of the crucial components of sustainability, i.e. waste management. This part provides a wide coverage ranging from physical and technical aspects of waste (municipal solid waste; Chap. 8) to sociological dynamics (surrounding waste disposal ground of a metropolitan city; Chap. 11). It also includes a chapter (Chap. 9) on one of the least explored areas in waste management, i.e. E-waste trajectory in urban India. Encapsulating technical and socio-economic details of waste management practices and estimating opportunity cost for Kolkata, the city which has no separate sewage treatment plant and in turn depends on the wetlands located to her eastern periphery for waste disposal, Chap. 10 incorporates significant dimensions of ecological infrastructures of sprawling cities.

Though every nations and cities had plunged into 'the search for the ultimate sink' (Tarr, 1996) since historical times, yet a particular city's capacity to tackle sewage and solid waste and performance depends on wide spectrum of variables both internal and external. Again, a city might perform at higher efficiency in one activity, for example, collection of waste from the primary source, while lagging behind in another, for example, treatment. The efficiency in the entire municipal solid waste management (MSWM) system of a city can be achieved through identifying performance gaps in the system and introducing improvements, thus facilitating a higher level of performance. Following the principles of performance measurement in the service delivery of MSWM across the three south Indian cities of comparable size, i.e. Chennai, Bengaluru and Hyderabad, the fourth, fifth and sixth biggest metropolitan cities of India, in Chap. 8, Sajith and Kumar attempt to identify the challenges and also explore the best practices that have enhanced performance in service delivery. Based on rigorous use of mixed methods including analysis of indices from Urban Service Level Benchmark indicators, CPHEEO (Central Public Health and Environmental Engineering Organization) norms and other formal performance assessment parameters, complemented with field data collected through interaction with municipal officials, local NGOs and sector experts, the study concludes that Bengaluru's dry waste collection centres, Hyderabad's 'unique unit area method' (i.e. outsourcing street sweeping service contracts to a group of sanitary workers for a share of land) for unserved areas, and Chennai's collaboration with the private sector could be considered as some of the best practices that could be adopted across local specific contexts.

Today, any discussion and debate on sustainable waste management remain incomplete without some reflections on the E-waste scenario in urban India. "Thus, the already existent solid waste management problem in India has been aggravated manifolds with the advent of domestically generated and illegal imported E-waste" (Borthakur, Chap. 9). Increasing penetration of electrical and electronic equipment into the country due to unprecedented growth of India's consumer electronics market (including the IT sector) is contributing significantly to the country's toxic waste stream. In Chap. 9, Borthakur evaluates the current E-waste scenario in urban

India, attempting to document and forecast India's E-waste generation. Taking into account the current E-waste disposal practices and preferences, dominance of the informal recycling sector and stakeholders' involvement and awareness, the chapter assesses existing E-waste management challenges in urban India and generates the warning note that although substantial quantum of E-waste is generated in India, its management practices and policy initiatives are still inadequate in the country. Though Borthakur informs on a positive note that unlike several developed countries, electrical and electronic equipments often find second-hand and even third-hand users farther down the income chain and there has been rapid growth of E-waste recycling industries, yet, the recycling areas act as sites for uncontrolled emission of hazardous pollutants and have significant human health and environmental implications, especially for large number of unskilled or semi-skilled male workers and also large number of women and children who are involved in it. Is India's 'Smart City' Mission and drive towards digital empowerment conscious of the already existing E-waste challenges?

"No city or urban region can achieve sustainability on its own"; the path-breaking research by Rees and Wackernagel (1996) on 'ecological footprint' of cities provides a universal and holistic framework of analysis relating to generation and disposal of waste, grounded in urban metabolism, i.e. the interaction and the connect between urban infrastructures and the wider ecosystem of the city. By providing the formal definition of ecological footprint as "the total area of productive land and water required continuously to produce all the resources consumed and to assimilate all the wastes produced, a defined population, wherever on Earth that land is located" and identifying it as a land-based surrogate measure of the population's demands on natural capital, Rees and Wackernagel (1996) exposed that waste generation and disposal is not confined to mere technical aspects related to the 'hardware' of cities (Mukherjee, 2015a, b) but also hugely includes ecological infrastructure of cities which involves their wider ecosystems (Sukhdev, 2013). Using this framework and also making significant contribution to it, studies exploring sustainable flows between Kolkata and its peri-urban interface consisting of the East Kolkata Wetlands (EKW), the 'natural kidney' of the city which recycles solid waste and effluents of the city and in turn generates fish, crops and vegetables through waste recovery practices, have been conducted recently (Mukherjee, 2015a, b; Mukherjee & Ghosh, 2015). Existing literature also shed light on how real estate development engulfing wetlands and arable lands on the east of the city has transformed the mutually reinforcing relationship between the city and its surroundings into a truncated one (Bose, 2013, 2015; Dey, Samaddar, & Sen 2013; Mukherjee, 2015a). In Chap. 10, Dey and Banerjee move another step forward to calculate opportunity cost for such transformation. Pointing out about the significant change in the pattern of land use in the wetland area, and observing a tendency towards vocation switching all over the place, the authors argue that if this propensity continues and especially, if fisheries stop dominating the livelihood option of the local residents, then that will not only affect the low-cost supply chain available to the city dwellers, will challenge continuity of the waste management practice as well. Collating data from available official documents and

complementing those with field findings, Dey and Banerjee estimate that EKW provides an annual ecological subsidy of Rs. 4680.06 million to Kolkata city by extending opportunities of natural sewage treatment! The global vision of the city resulting into unchecked sprawl and real estate speculation in the eastern part of the city directly clashes with the existence and proper functioning of the low-cost sustainable local service in the near future.

There is rich literature on sociology and political economy of waste (Gidwani & Maringanti, 2016; Gidwani & Reddy, 2015; Gidwani, 2013; Murray, 1999; O'Brien, 1999; Yearley, 1995). The last chapter of this part (Chap. 11), located at the crossroad of urban governance, waste management and environmentalism, unveils sociological dimensions surrounding waste in the Kanjur Marg dumping ground in Mumbai. It narrates the sociological story of how and why (mixed) waste is dumped in a site that has been deliberately chosen by the Mumbai Metropolitan Corporation, reflecting traditional (orthodox) attitudes towards waste in India and the contestations among different actors or stakeholders for effective bargains and negotiations. At this critical juncture when cities, urbanization processes and urban lives are glorified, entering into the contested terrain of waste by documenting and analysing the viewpoints of contesting parties and selection of waste dumping ground and waste dumping being perceived within the larger sociopolitical processes of construction of binaries: pure/impure, clean/dirt that enters into discourse of municipal governance is an interesting and important intervention.

1.2.4 Exploring Urban Ecologies and Environmentalisms

It is only recently that urban studies and environmental studies have begun to intersect. Urban ecology has emerged as a sub-discipline of ecology and gained prominence against urban crises including population spurt in urban areas and resource depletion, and its impact on urban settings (Mukherjee, 2015a). An important development occurred as early as the 1920s when drawing upon the works of Malthus, Darwin and Spencer, the Chicago School conducted researches on urban sociology, combining ecological concept in a social matrix (Grove & Burch, 1997). Urban environmentalism perceived from the ambit of urban planning and the incorporation of the 'environment' in it, flourishing amidst global environmental despondency within the neo-liberal context (Brand, 2005). Through the construction of new attitudes and expectations with regard to urban space, it appears as an ideological form, a legitimation strategy of city governments, being realized through neo-liberal institutional reforms (Brand, 2005).

In the Indian context, literature on urban ecology and urban environmentalism (both as an ideology and action) is very much in its nascent stage though the Indian variety of environmentalism in the rural context has been studied in detail (Guha & Alier, 1998) using the political ecology framework that argues for the consideration of environmental degradation within its historical, political, economic and ecological contexts (Blaikie & Brookfield, 1987). Much of the political ecological

thinking is confined to a rural, third world context (Roy, 2011) giving rise to the emergence of ‘Third World Political Ecology’ (TWPE) as a new research field in the 1980s against the pressing need for ‘an analytical approach integrating environmental and political understanding’ in a context of intensifying environmental problems in the Third World (Bryant, 1992: 12). Studies on the role of politics in shaping ecology in the Third World is greater today as it is widely understood that the development of Third World environmental problems is linked to political processes (Bryant & Bailey, 1997).

Recently, to understand the environmental dynamics of the more complex urban space, the basic notion of underlying interconnectedness of human and natural processes has been extended to the foreground of ‘urban’ through urban political ecology (UPE) (Keil, 2003) that makes investigation into the complex issues of how particular urban environment is produced and who gains and who loses due to particular power relations influencing changes within the urban environment and in the coproduction of urban society and environment (Braun & Castree, 1998; Kaika, 2005; Heynen, Kaika, & Swyngedouw, 2006; Swyngedouw, 1996, 1997; Swyngedouw & Heynen, 2003).

Studies with an explicit UPE perspective in the Indian context has gained prominence since the last one and half decade against the time and again expensive promises of transforming Indian cities into sustainable environments (Rademacher & Sivaramakrishnan, 2013) and as the ecological traditions of local self-sufficiency offer little solutions for the city dwellers and political action is unlikely to be found in an idealized, colonial and rural past. These include case studies on urban planning, tenure security, water provision, beautification schemes, slum improvement and eradication, air pollution, waste in Delhi (Baviskar, 2003, 2011; Bhan, 2009, Chakrabarti, 2008; Dupont, 2008; Dutta, Chander, & Srivastava, 2005; Ghertner, 2013; Gidwani, 2013; Kundu, 2004; Mistelbacher, 2005; Overdorf, 2003; Sharan, 2013; Véron, 2006); urban planning, environmental hazards, water provision, parks, slum sanitation, redevelopment, resettlement and housing in Mumbai (Bhagat, Guha, & Chattopadhyay, 2006; Chatterji, 2005; Gandy, 2008; Mcfarlane, 2008; Pacione, 2006; Vedula, 2007; Zerah, 2007); planning, water extraction, environmental health and solid waste management in Chennai (Arabindoo, 2009; Baud & Dhanalakshmi, 2007; Brisset, 2006; Forsyth, 2005; Ruët, Gambiez, & Lacour, 2007); urban planning and neo-liberal restructuring in Kolkata (Bose, 2013, 2015; Mukherjee & Ray, 2014; Mukherjee, 2015a, b; Pal, 2006; Shaw & Satish, 2007; Sudhira, Ramachandra, & Subrahmanya, 2007); urban development in Bangalore (Benjamin, 2000; Shaw & Satish, 2007; Sudhira, Ramachandra, & Subrahmanya, 2007), etc.⁶ Paying heed to Moore’s (1993) proposition on ‘micro politics’, i.e. to consider the internal complexity or differentiated concerns of the state and other actors, more studies are coming up to document the micro-level ‘politicised environment’ (Schroeder & Neumann, 1995) and the complex interests and actions of place and non-place based actors in environmental conflict in the Third World (Bryant

⁶The editor would like to thank Prof. René Véron, University of Lausanne for providing her guidance and introducing her to the emerging literature on urban political ecology.

& Bailey, 1997). The five chapters in Part III are such contributions to the budding literature of urban political ecology that inform (and also counter) the emerging theoretical framework with conceptual and analytical lenses through detailed empirical findings from the field and addresses the tricky issue of urban sustainability in the complex and dynamic context of the Indian cities.

Chapter 12 by Jain is an ethnographic study of the implications of the recent demolition/displacement drive in Delhi on a low-income neighbourhood of the bank of Yamuna, i.e. Kudasiya Ghat. It teases through the numerous ways in which a multitude of actors navigate their way through urban life, especially in settings like that of the informal spaces in the Global South. In her path-breaking researches on contemporary Delhi since the 1990s, Baviskar (2004, 2007, 2008) has argued that the bourgeoisie aesthetic requirements of 'clean and green Delhi' have been fulfilled by the state and its policies. Baviskar (2003) irrevocably brings out the encounter between urban environment that includes capital-intensive beautification schemes and other projects securing resources for capitalist restructuring within the neo-liberal regime and the poor, the inhabitants of the 'illegal' *jhuggis* (squatters) that mushroomed in Delhi, existed by a series of ongoing transactions such as the periodic payment of bribes to municipal officials and the intervention of local politicians, and became a symbol of unplanned Delhi since the days of her independence. Moreover, this vision of 'authoritarian environmentalism', formulated and perpetuated by the Delhi Development Authority, suited to the broader neo-liberal politico-economic interests appealed to the middle class, eager to distance itself from their own environmental footprints and from the poor (Baviskar, 2003) leading to the emergence of 'bourgeois environmentalism' as the dominant discourse (and also action by displacing huge numbers of poor *jhuggi* inhabitants) in the urban context of Delhi. In another study on the transformation of the Yamuna riverbed in Delhi from an 'urban commons' into a prized real estate commodity for private and public corporations, Baviskar (2011) explains this catastrophic environmental change not only within the wider pattern of 'accumulation by dispossession' in an age of 'new imperialism' (Harvey, 2009) in contemporary India, but also anchored in a long-standing set of aesthetic values associated with modernity. However, Jain argues, "Such an understanding of power operation represents the poor as hapless victims and misses out the ways in which power is often negotiated in an everyday life". Through the qualitative study on Kudasiya Ghat, Jain explores the ways in which the discourse of 'bourgeois environmentalism' effectuated through the Delhi Master Plan 2021, is circumvented by an ensemble of actors—traditional elites, bureaucratic class and political agents—within their respective micro-settings. It captures how the current judicial discourse on the cleansing of slums and the neo-liberal agenda of 'World Class' city marketing strategies colluded through a repertoire of new modes of silent resistance. It unveils the growing resilience of the Foucauldian idea of 'heterotopia' as a key theoretical analytic which in turn unpacks the urban form and its constituents. Finally, the chapter ends by raising further questions about the ways in which one tends to conceptualize emergent forms of citizenship in the Global South, through the prism of, what scholars like Arjun Appadurai term as 'deep democracy'.

Studying the urban scape and its power dynamics using multilineal prisms seems to be even more meaningful when Chatterjee attempts to explore rising aspirations of different population along with the state in the gentrifying textile mill lands of Mumbai fascinatingly unlocking the multiple layers of the city space, and the ongoing processes within and across these layers (Chap. 13). It eloquently captures that the emergence of the new landscape with service sectors, firms, IT industries, creative sectors, cheek by jowl shopping malls, high end restaurants, pubs, night clubs, fashion houses and gated communities juxtaposed with long rows of *chawls* (shanties/houses for the working class) in the old working class neighbourhood resulted in an exorbitant land values and reproduced the space as a landscape of contrast, contestation, negotiation and aspirations. Challenging classical theories, where one class is replaced by another in the process of competition, invasion, succession and replacement (Betancur, 2011) as theorized by the Chicago school or the process of ‘revanchism’ that Smith (1996) speaks about where the white middle class population influxes into the city centre displacing the poor, and also ‘bourgeoisie revanchism’ (Banerjee-Guha, 2010) in the city core where corporate capitalism plays a significant role, the study establishes that it is rather the interplay of multiple strings attached with one another or the interdependence of one stratum with the other that holds good and inhibits complete displacement or replacement of one class by another.

Chapter 14 by Sen and Pattanaik also elucidates Mumbai’s inner city (core) urbanism but within a different context of politics of conservation in a protected urban space, i.e. Sanjay Gandhi National Park and contributes to the emerging literature on urban commons in India (D’Souza & Nagendra, 2011; Gidwani & Baviskar, 2011; Narain & Nischal, 2007; Parthasarathy, 2011).⁷ Through an ethnographic study, the chapter reveals conditions under which politics of conservation in a Protected Area (PA) operates in metropolitan cities like Mumbai in highly inequitable and fabricated ways. Sen and Pattanaik examine how in the absence of any prior rights to the inhabited lands in the cities, due to lack of any particular generational roots of cultural identity, the marginalized population structure within the PAs constitute and establish themselves as ‘community’ not to get confined or trapped within discourses of indigenous novelty and cultural belongingness.

The next chapter (Chap. 15) by Chouhan, Parthasarthy and Pattanaik moves from the inner city core to study nature at the edges exemplifying Mumbai’s coastline urbanism which is markedly different from the dominant urbanisms in the

⁷An panel on ‘Smart Cities, but for Whom? The Loss of the Commons and Urban Vulnerability’ was organized at the recently held eighth biennial conference of the Indian Society for Ecological Economics (INSEE) on *Urbanization and the Environment*, held between 4 and 6 January 2016 at the Department of Management Science (IISc), Bengaluru, India. The papers presented in the panel generated a wider debate on alternatives to the current model of urbanization and urban common property resource (CPR) utilization; scholars argued for and emphasized a different envisioning of the environment and planning process that prioritizes ecosystem services of urban commons to meet the dual goals of ecological sustainability and social justice.

city centre. It accounts how the effects of CRZ (coastal regulation zone) rules and their violations in the MMR have reconstituted the urban in the seashores, with huge impacts on the traditional fishing communities. The paper focuses on the transformation of spaces and activities related to the lives of fishing community and expounds that these spaces are seemingly worst affected by the encroachment on coastal areas and rampant CRZ violations. The broader issues related to the contradictions and complementarities involved in Integrated Coastal Zone Management (ICZM) plans vis-à-vis management of biodiversity are scrutinized in the study, within the larger context of evolving urbanisms in the coastal areas of Mumbai.

In the last chapter of this part (Chap. 16), Singh, Parthasarathy and Narayanan traverse the contested urban waterscape of the much unexplored context of Udaipur, Rajasthan, mapping the trajectory of water resources from rural to urban and also within urban contours, questioning the very premise of publicly initiated schemes which overtly depend on water extraction from rural hinterland. It examines contestations that have engulfed access and allocation of water within the city, a popular tourist destination with its sprawling lakes, beautiful palaces and *havelis* (large private homes) and its wider region. Building upon the emerging framework of political ecology of water (Bakker, 2003; Loftus, 2009; Loftus & McDonald, 2001; Swyngedouw, Kaika, & Castro, 2002), the authors assert that the contemporary urban waterscape in Udaipur "has evolved over a long period and is constituted of fractures along which water flows mediating within various regimes which govern and give access to it. This urban waterscape is being made and remade through the circulation of water". And thus, within this urban space, "flows of water are embedded in the larger political economy where it is contested and governed" (Singh et al., Chap. 16).

1.3 Towards a Sustainable, Just and Democratic Urban Transition

Concepts and terms like 'sustainable', 'green', 'smart' splurge some kind of definitional ambiguity that has provoked deep cynicism surrounding these concepts since the formulation of 'sustainable development' almost two-and-half decades back. "...there is little consensus as to what has to be sustained, and how this is to be done" (Mahadevia, 2001: 243). Some even suggest that the very ambiguity of the term attracts a wide range of political and intellectual currents across fragmented environmental movements (Stren, 1992). Again, the term 'sustainable' (meaning 'long-term') also seems to be contradictory as long-term environmental considerations cannot be accomplished as an afterthought to a short-term profit economy. There are significant structural and post-structural criticisms to the concept where critics denounce the approach for skirting round the issue of existing power structures at global, national and local levels and for seeking to achieve sustainable development within structures that in themselves prevent true bottom-up,

participatory, holistic and process-based development initiatives (Castro, 2004; Mahadevia, 2001; Nicholls, 1996).

On a similar note, the pro-metropolis ‘sustainable urbanization’ document has been criticized for manifesting unilinear mainstream perspective of a positive correlation between urbanization and development and not taking into account nonlinearities and critical approaches especially pertaining to socio-economic and political contexts of developing countries (Mukherjee, 2015a). Within this context, the formulation of the ‘Smart City’ discourse and the proposed migration of this concept to Indian cities (Burte, 2014) has also generated hot bed of controversy among experts and academicians who are even sceptical about the sheer feasibility of the project. In general, Hollands (2008) observes three characteristics of a discourse organized around terms like creative, intelligent, wired, digital and smart in relation to cities. First, the way these terms are used suggests some linkages between or even conflation of technological and social transformations. Second, the relation between the hype of claimed smartness and the real effectiveness and benefits in a range of real cases remains to be validated. Third, the use of these terms implies a positive and rather uncritical stance towards urban development (Burte, 2014: 24).

Policies seem to be mere political agenda in India especially within the context of its huge, complex and diverse urban scene. These are loaded with political goals, suited to politico-economic interests of its times rather than incorporating social humanitarian outlook. The Indian neo-liberal urbanization experience is studded with new policies at regular interventions paving the way for huge investments, pulling foreign funds and attracting and involving private stakeholders with their market-based approach. Series of technical analyses are also conducted on project and policy outcomes sometimes vividly unmasking the wide gap between pre-project implementation phase and post-project actuality. Projects are also suspended and called off in the middle and then again, other laudable projects are launched, injecting convictions among citizens that the new ones are better equipped to tackle problems. The ‘Smart City’ plan is not an exception; it is a feature of the proposed second phase of the now buried JNNURM.

Sustainability is dependent on the way we collectively organize ourselves in growing urban centres. Doing so depends on the ways in which we conduct our analysis of urban systems, design and engineer them, and manage their multiple and complex interactions: economic, social and environmental. Global sustainability is not dependent on the technological characteristics of global systems, but rather on the technology and design of local urban systems (Ferrao & Fernandez, 2013). Again, Ehrenfeld (2008) argues that sustainability is a mere possibility that human and other life will flourish on the Earth forever. The notion of flourishing connotes not only mere survival but declaration of life as meaningful in terms of justice, freedom and dignity. These are the attributes that an urban system should provide to their citizens, coupled with respect for and responsibility towards the environment.

Transition towards urban sustainability where ‘sustainability’ is embedded with ‘justice’, ‘freedom’ and ‘dignity’ claims pertinent information and data on the challenges, opportunities and ‘numerous possibilities’ (Fatima, Chap. 6) within the

dynamic Indian urban scenario which can be generated and articulated through scientifically based framework of indicators and in-depth historical and ethnographic works across micro politico-economic and politico-ecological trajectories and conjectures.

“In the long run we are all dead” (Keynes, 1923: 80). The very recent bridge collapse incident in Kolkata signifies that the intensity of risks in Indian cities today is massive, affecting not only the marginal heterogeneous multitude, but all. Given the vulnerable scenario, it is doubtful if smart cities would be able to cater to the needs and interests of even the rich and ‘skilled’. This is a watershed moment in Indian urban history, generating warning bells and irresistibly calling for concerted action through more and more scientific information and understanding of the numerous and granular possibilities towards a sustainable, just and democratic urban transition in India. The empirically rich and theoretically informed chapters in the book find relevance against this transformative context.

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