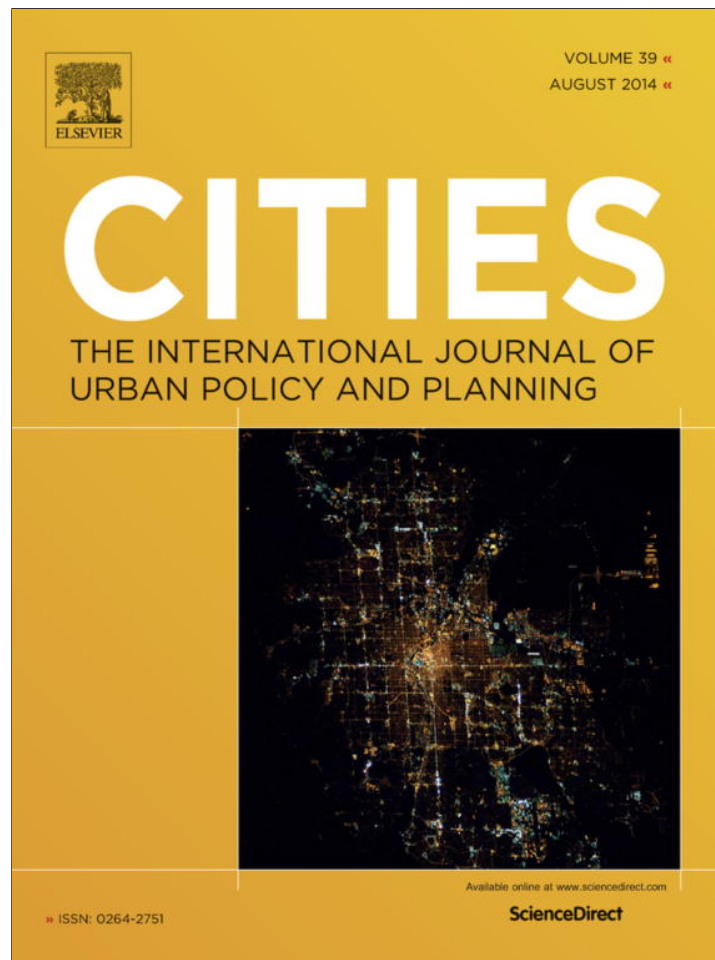


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## Re-thinking urban planning in India: Learning from the wedge between the *de jure* and *de facto* development in Mumbai



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### ABSTRACT

Cities in the global south are undergoing changes in the production structure brought about by globalization and liberalization. These cities also witness significant informalities in terms of shelter and livelihoods. These phenomena are reflected in the urban land use patterns. Planning in these cities is under pressure to adapt to the dynamic urban condition but is constrained by the technical and bureaucratic process of master/development plan making. Through an empirical study of an area in the suburbs of Mumbai (India), this paper shows the wedge between planned and actual land use and discusses the reasons for this dichotomy. The paper argues that master/development plans based on technical principles with micro-level detailing are unable to foresee and hence or otherwise adapt to the economic dynamics and spatial restructuring in Mumbai; they are partly undermined by “occupancy urbanism” (Benjamin, 2008). We discuss how these factors are accommodated within and outside the scope of the development plans. The paper calls for a re-thinking of urban planning in India so that plans are better able to reflect the requirements and needs of the citizens.

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### Introduction

Indian metropolises, pursuant to economic liberalization and globalization, have been nurturing the aspirations of becoming world-class or global cities (Dupont, 2011; Nijman, 2012). These cities essay an important role in their states' economy (Narayana, 2011; Pethe, 2013). There has been considerable scholarship illustrating how these metros are attracting enormous capital and are executing ambitious city, regional, and global level projects (Benjamin, 2007; Goldman, 2011; Keivani & Mattingly, 2007; Sami, 2013; Siemiatycki, 2006) in a bid to attract even more capital. This literature also highlights the ‘exclusionary subplot’ underlying the transition in Indian cities. The process of capital accumulation has resulted in corporate capital having a stronghold on these cities by locating at the core (Chatterjee, 2008) and pushing the labor-intensive manufacturing to the periphery (Kundu, 2011). Besides the elite and the burgeoning upper middle classes, the real estate

interest groups appear to have benefited significantly from this transition.<sup>1</sup> As the real estate interest groups cater to the housing demands of only certain sections of the society e.g., the multinational companies, Indian elite business groups, and the high income population, the urban poor have been crowded out from formal housing (Annez, Bertaud, Patel, & Phatak, 2010; Gandhi, 2012). Yet, the urban poor have successfully engaged with the state through political negotiations (Chatterjee, 2008) or “vote bank politics” (Benjamin, 2008), claiming their right to the city. This is evident from the rather high proportion of informal settlements, or slums, in Indian cities; in 2011 the proportion of slum households to total urban households was 41.3% in Mumbai, and 29.6% in Kolkata (Chandramouli, 2013).<sup>2</sup> These developments in Indian cities have brought to the fore contestations largely revolving around urban land – its ownership and ‘best’ use. The spatial development plan plays a critical role in determining best use in Indian metropolises. In India, as per the 74th Constitutional Amendment Act, 1992, plans

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<sup>1</sup> It has been documented that this group has considerable influence in key policy decisions, as it makes substantial contributions to election funding and also facilitates money laundering (see Kapur & Vaishnav, 2011).

<sup>2</sup> However, it is true that the urban poor are often persecuted and face the risk of eviction and slum demolition carried out by the state (Bhan & Shivanand, 2013; Weinstein, 2013).

for urban areas are to be prepared at city, metropolitan, and district levels.<sup>3</sup> Master plans or development plans are prepared by the urban local bodies.<sup>4,5</sup> The experience of Indian cities has shown that planning suffers from several conceptual, methodological, and implementation problems (see [Ansari, 2004](#); [Nallathiga, 2012](#)).

Why do not Indian cities look like their spatial plans? How does planning respond to informal development? What should be the nature of planning in the cities of the global south? These are the key questions this paper attempts to address based on an empirical study of land use planning for Mumbai – an aspiring global city ([Fernandes, 2004, p. 2417](#); [Bombay First, 2003](#); [Zérah, 2010, p. 152](#)). It compares actual land use to planned use of the area of study in the K East Ward located in the western suburbs of Mumbai,<sup>6</sup> which has witnessed substantial increase in capital flow post the economic liberalization of 1991.

Scholars are increasingly taking cognizance of the rapid urbanization of the global south and the challenges it would present in terms of growth management and inclusive development ([Watson, 2009a](#); [Wu, 2000](#)). This changing situation has precipitated a crisis in planning for third world cities. As a result, the current discourse calls for a break away from the “EuroAmerican” ([Roy, 2009b](#)) models of urban planning and advocates alternative urban theories (see [Robinson, 2002](#); [Roy, 2009b](#)) with the perspective of “seeing from the south” ([Watson, 2009b](#)). This paper also contributes toward building on the literature on planning for cities in the global south by providing empirical evidence on the implementation of a land use plan in a city undergoing transition.

The structure of the paper is as follows. Section “Urban Planning in Developing Countries” discusses the nature of plans and plan making in developing countries. Section “Development Plan for Mumbai” explains the development planning process for Mumbai and presents the planned land use of the study area as per the Development Plan (DP). Section “Mumbai During the Tenure of the DP” shows the changes in production structure by examining the changes in sectoral composition of production (that is, the Gross District Domestic Product (GDDP)),<sup>7</sup> population, property prices, and spatial configuration of the city during the period of the DP. Section “Actual Land Use in Study Area” shows the land use pattern prevalent in the study area. Section “Conformity of Land Use”, compares the actual with the planned land use. Section “Re-thinking Urban Land Use Planning” presents some ways in which urban planning in India needs to be reformed. Section “Conclusion” summarizes the findings of the paper.

### Urban planning in developing countries

In the global south, economic and political institutions are still evolving ([Chang, 2000](#)), many transactions have no formal market, and the judicial machinery is not efficient. These conditions give

rise to tremendous informalities. In the global south cities, exogenous factors like globalization and technological innovation have resulted in structural changes in the economy, such as rise in commercial and service-oriented activities. Owing to the absence of resilient formal institutions, these changes have led to increasing informalization of processes, shelter, and livelihoods. [Ansari \(2009\)](#), for example, reports a rising demand for new commercial spaces such as malls, or high-end offices, along with growth of slums and informal labor in South Asian cities due to globalization and liberalization policies adopted by countries. Planning for such a duality in global south cities poses a considerable challenge. Further, disjoint and uncoordinated governance institutions create obstacles for implementing plans ([Qian, 2013](#)).<sup>8</sup>

There has been renewed interest in urban planning in global south cities ([UN Habitat, 2009](#)). Planning in these cities is considerably influenced by the traditional planning systems of cities in developed countries; this is partly because of the fact that they are legacies of a colonial past. Whereas the regime of urban planning in the cities of developed countries has evolved to go beyond mere land-use planning and zoning, many global south cities continue to rely on master plans. These are “spatial or physical plans which depict on a map the state and form of an urban area at a future point in time when the plan is ‘realized’” ([Watson, 2008](#) as cited in [Todes, Karam, Klug, & Malaza, 2010, p. 415](#)). Thus such planning is detailed and locale specific, effectively freezing the land use for a period of 20 years. This renders plans ill-equipped to adapt to the changes in the structure of the economy that affect land use patterns in the city. The incompatibility of master plans with new economic realities is also articulated by some of the researchers working on the master planning system of China (see [Xu & Ng, 1998](#); [Yeh & Wu, 1999](#)). While the fundamental friction between planning and market may also exist in developed economies, they result in planning reform that takes account of market trends and plans respond to economic forces ([Healey, 1992](#)).

It is also believed that not only are such plans ill-suited for the dynamic urban condition, but they are also positively malevolent given their modernist origins which emphasized “demolishing slums, narrow streets and mixed use areas” ([UN Habitat, 2009, p. 50](#)) contributing to “spatial and social exclusion, and inequality” in cities in developing countries ([Watson, 2009a, p. 175](#)). For instance, during the Apartheid era in South Africa, master plans were used to create spatial segregations along racial lines ([Todes et al., 2010](#)). In China, the Shenzhen master plan did not provide for the floating or temporary populations, thereby denying them the right to the city ([Watson, 2009a, p. 177](#)). In fact, master planning in China has come under criticism from several researchers for not being able to come to terms with the changing economic realities on one hand and promoting exclusive urban development on the other (see [Qian, 2013](#); [Tang, 2000](#); [Tang & Ng, 2004](#)).

Similarly, Indian metropolises, too, have become sites of transformation and exclusionary practices. These cities have been witnessing grandiose infrastructure projects in a bid to propel them toward becoming global cities whilst continuing to be sites of contestation by the urban poor. As a result, the real estate development in the cities traverses the spectrum of formal and informal, planned and unplanned, and legal and illegal. [Fig. 1](#) illustrates the typology of land use development. We define all development that adheres to certain prescribed structural norms and standards as formal and, if not, as informal. Planned and unplanned pertains to the conformity of real estate development to plans and development or building rules of the city. Whether a real estate development is legal or illegal depends on both the type of its structure

<sup>3</sup> In Maharashtra, the local governments prepare plans as per guidelines in the Maharashtra Regional and Town Planning (MR&TP) Act, 1966. The local governments and town planning have been in existence prior to the 74th Constitutional Amendment Act. The 74th Constitutional Amendment Act was passed in order to formally recognize their existence and ensure them certain autonomy.

<sup>4</sup> The terms development plan and master plan have been used interchangeably throughout the article.

<sup>5</sup> Metropolitan development plans are to be prepared by the metropolitan planning committees but are actually prepared by Development Authorities (see [Sivarama-krishnan, 2011](#)) and district development plans are prepared by the district planning committees.

<sup>6</sup> Mumbai is divided into 24 administrative wards (see [Appendix A](#)).

<sup>7</sup> The GDDP comprises three sectors: primary, secondary, and tertiary and by looking at their trends, it is possible to discern the changes in the production structure. The primary sector comprises agriculture and allied activities, mining, forestry, and fisheries, the secondary sector consists of manufacturing, construction, and electricity, gas and water supply, and the tertiary sector is made up of financial services, transportation, communication, hospitality and other services.

<sup>8</sup> For the case of Mumbai, see [Pethe, Tandel, and Gandhi \(2012b\)](#) and [Weinstein \(2014\)](#).

Type of development \ Conformity	Planned	Unplanned
	Formal	<b>Legal</b> <i>eg. Buildings conforming to all planned land use and accompanying development rules.</i>
Informal	<b>Illegal</b> <i>eg. Slums on residential land use.</i>	<b>Illegal</b> <i>eg. Slums not conforming to planned land use.</i>

Source: Authors' own creation.

Fig. 1. Typology of land use development.

(whether formal or informal) and its conformity to plans and rules. All formal development that is planned and conforms to the accompanying rules or ordinances of plans is 'legal' in nature. All unplanned, formal development is 'illegal'. All informal development, whether or not it conforms to planned land use, is illegal.

Through exceptions and exemptions it is possible to make certain illegal development, legal in nature. Ghertner (2011) illustrates this in the case of Delhi, wherein courts declared structures that were of high quality and aligned to "the visions of a world-class city" to be "planned and thus legal", even though they were in violation of the Delhi master plan. On the other hand, slums that conformed to planned land use were demolished for being "unplanned and illegal" (Ghertner, 2011, p. 280). Bhan (2013) further elaborates that the tremendous shortfalls in housing and the poor response (or, failure) of the governance institutions have created tremendous illegalities of housing and land development in Delhi (through concentration and spread of the informal settlements across the capital city) and therefore these can be termed as "planned illegalities". In Mumbai, slums are being regularized through policies like the Slum Rehabilitation Schemes (SRS), which provide free housing to slum dwellers living in slums that existed prior to 1st January 1995. This policy has also been subject to exceptions. For instance, the cut-off date for slums under the Airport Rehabilitation and the Dharavi Redevelopment Project has been extended to 1st January 2000. Thus, there exist discriminating treatments and perceptions toward the different forms of illegality in Indian cities.

The determination of what development is planned or legal is the product of political manipulation by various groups. Benjamin (2008, p. 724) contends that "planners' are duty bound and cajoled", by various groups such as political parties, large real estate developers, and others, into demarcating land that has been occupied by slum settlements, as illegal. The slum dwellers also actively engage with the state machinery in order to stake their claim on land (Benjamin, 2004, 2008; Mahadevia & Joshi, 2009). Policies of de-notification, which declare slums existing prior to an arbitrary date as being legal, entitling them to basic services and immunity from demolitions, are proof of the successful negotiations between slum dwellers and politicians. The high incidences of arbitrariness and exemptions, as evidenced from the above examples, make categorizations of planned and legal ambiguous in nature. Roy (2009a) argues that the very idiom of planning in Indian cities, and, by extension, all third world mega-cities, by being in a state of unmapping, deregulation, and exceptionalism, is in itself, informal. Deviation of current land use from the planned land use in the planned management units approach is taken by the researchers to show the level or extent of divergence and therefore serve as an

evaluation of planning to achieve the planned land use development (see Tian & Shen, 2011). Through an empirical study in Mumbai, this paper argues that the divergence between the actual and planned land use is attributed to the inability of plans to adapt to changing urban conditions as well as to accommodate informal settlements.

### Development plan for Mumbai

The metropolis of Mumbai, located on the western coast of India in the state of Maharashtra, is the commercial and financial capital of India. Over the years, it has witnessed high population growth rates. Further, Mumbai's natural scarcity of land, owing to its peninsular nature, has given rise to very high population densities. The city is governed by Municipal Corporation of Greater Mumbai (MCGM), which is also responsible for the preparation of DP for the city for every 20 years.

The DP and its accompanying Development Control Regulations (DCRs) are the tools deployed for spatial planning in Mumbai. Together they determine land use in urban areas, and regulate development intensities and the change of land use. The preparation of the DP is a technical exercise of estimating future land and infrastructure requirements (20 years ahead) of the projected population and socio-economic activity mix. It is undertaken as per the Maharashtra Regional and Town Planning (MR&TP) Act, 1966.<sup>9</sup> As per the Act, urban local bodies in the state of Maharashtra are statutory authorities to prepare and implement the DP. The urban local bodies have to prepare a DP for the municipal area under their jurisdiction, while having regard to the regional plan.

The first Development Plan for Greater Mumbai (DPGM) was sanctioned in parts between 1965 and 1967. The second (or the revised first) DPGM, was supposed to be for the period 1981–2001. It made provisions for residential land and amenities based on its population forecast of 9.87 million. D'Souza (1991, 1992) provides an understanding of the planning process involved in drafting this plan. According to him, the plan was drafted at first by the Planning Cell of the MCGM comprising civil engineers and architects, and later, by a Planning Group of elected Municipal Councilors. He further opined that the planning process suffered from many serious flaws. For instance, the plan had no clearly defined objectives. It drastically underestimated the target population for the year 2001 because the resources to provide amenities to a realistic population estimate were not available with the MCGM (D'Souza, 1991, 1992). Further, the sanctioning of the plan was delayed

<sup>9</sup> While the legal foundation for DP and DCRs is laid down in the MR&TP Act, the provisions of other Acts also apply to land use development planning and regulation.

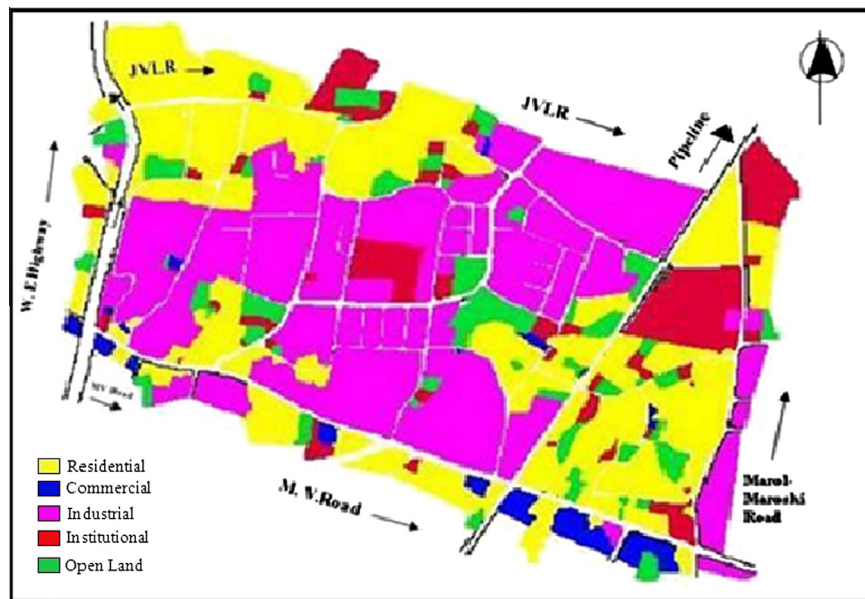


Fig. 2. Planned land use of study area (parts of Andheri East – K East Ward). Source: Based on second DPGM.

considerably. It was passed in parts starting from 1991 with the final part being sanctioned in the year 1994 (D'Souza, 1991, 1992). This DP still stands for the city and will need to be revised by 2014 as per the MR&TP Act. The DCRs, which were prepared in 1991, lay down the terms and conditions of development allowed, but they became the subject of frequent visitation through amendments and modifications by local and state governments.<sup>10</sup> Any development has to abide by the land use provisions as well as undergo the process of obtaining necessary permission to proceed from the MCGM.

#### Land use under development plan in K East Ward

To empirically find out if cities looked like their spatial plan, a study area from the K East Ward was selected. The ward has been undergoing significant change; what was once predominantly a residential suburb on the outskirts of Mumbai is now in the heart of the city and witnessing substantial commercial development. The study area is located in Andheri East, bordered by the Mathuradas VasANJI (M.V.) Road in the South, the Western Express (W.E.) Highway in the West, the Jogeshwari Vikhroli Link Road (JVLR) in the North, and the Marol-Maroshi Road in the East. The area lies adjacent to an upcoming metro rail corridor. The geographical area of study zone is 7.19 km<sup>2</sup>. The area had been a hub of industrial activity, with a variety of manufacturing as well as service industries located on its land. Similar rise in office construction due to increasing demand for commercial spaces is being witnessed in other parts of the city and suburbs such as Dadar, Worli, Lower Parel, Bandra, Goregaon, and Malad areas (see Banerjee-Guha, 2002; Harris, 2008; Mukhopadhyay, 2005). Thus the selected study area is representative of the undergoing changes in different parts of Mumbai.

The proposed land use for the study area, as per the Second DPGM is depicted on the map shown in Fig. 2.

The figure shows that the DP provided 43% of the land for industrial use. Land allotted for residential use is 36%, and is largely

demarcated to be around the industrial area. It also provided 18% of land for institutional (charitable trusts, religious structures, educational institutes, etc.) uses and open spaces. Only 3% of land was demarcated for commercial use. The rationale for having residences around the industrial area was that it would house the industrial workers; thus the residents of the area would largely be the working class population possessing a certain level of skill sets. A large chunk of land designated for industrial uses is either owned or regulated by the Maharashtra Industrial Development Corporation, which is a Special Planning Authority.

When the existing DPGM was being prepared, slums were already prominent in the cityscape; in 1991 more than 50% of Mumbai's population was residing in slums (Mukhija, 2000). Whether the DPGM addresses or even acknowledges them while delineating land uses cannot be determined from this planned land use figure.

#### Mumbai during the tenure of the DP

In 1991, India undertook wide-ranging economic reforms that ushered in an era of liberalization, globalization, and privatization. These economic reforms opened the gates for capital inflows as well as investments for production of goods and services. This led to a growth regime (both rate and pattern), which decisively broke away from the earlier rather sluggish growth regime. Mumbai, as a commercial capital of the country, benefitted from these economic policy changes and, in the post-reform period, Mumbai underwent considerable changes in the production structure and spatial transformation which was accelerated by private and global capital flows and accompanied by burgeoning commercial and financial activities. There began a concerted effort to transform Mumbai into a "World Class City" (Bombay First, 2003), which would require many big-ticket infrastructure projects (Anand, 2006).

#### Sectoral composition of the GDDP

Prior to the sanctioning of the existing DPGM, Mumbai was a manufacturing and textile center (Pacione, 2006; Patel, 2007, p. 73). Numerous textile mills were ubiquitous to the cityscape, and they provided employment to the working class, which formed the core of Mumbai's social fabric. Mumbai's engagement with

<sup>10</sup> The focus of DP underwent change from development planning to development regulation; the regulatory character of planning therein brought changes in the way development is achieved through fueling of land prices due to restrictive land development policies for normal development (Nallathiga, 2007) and then raising the development density for achieving other fiscal objectives (Phatak, 2000).

**Table 1**  
Sectoral composition of Mumbai's GDDP (in %).

Years	Primary sector	Secondary sector	Tertiary Sector	GDDP in Currents (million \$ <sup>a</sup> )
1993–1994	1.26	39.10	59.64	5750.47
1998–1999	1.78	36.66	61.56	11776.13
2004–2005	1.37	30.88	67.75	18291.20
2009–2010	1.02	25.04	73.94	39176.60

Source: Directorate of Economics and Statistics, Maharashtra.

<sup>a</sup> Estimated with conversion rate 1\$ is equal to 50 INR.

textile mills underwent rapid changes in the post-reform period. Economic reforms, together with a decline in manufacturing that had set in following the unsuccessful strikes of textile mill workers in the 1980s (Adarkar & Phatak, 2005; D'Monte, 1998), marked the end of Mumbai's industrial era. The post-reform period saw a rise in service economy in Mumbai (Appadurai, 2000) and a concomitant decline in industries. This is reflected in the changes in Mumbai's GDDP and its sectoral composition that are presented in Table 1.

It is evident from Table 1 that the share of secondary sector in Mumbai's total GDDP has been declining consistently over the years whereas that of the tertiary sector has been on the rise. This trend has led to restructuring of land use and employment in Mumbai's business districts (Shaw, 1999, p. 969). In the last two decades of the twentieth century, the percentage of workers employed in manufacturing fell while that of those employed in financial and related services has increased (D'Monte, 1998, p. 284; Banerjee-Guha, 2002, p. 124).

#### Demographic transition

Along with the changes in the production structure, the distribution of Mumbai's population also underwent considerable changes over time. Table 2 depicts the decadal population since 1961 for a better understanding of the demographic shifts that have taken place during the tenure of the DP.

Table 2 shows a decline in the proportion of the island city's population vis-à-vis suburban population. The share of island city's population in total population of Mumbai declined from 67% in 1961 to 25% in 2011. The growth rate of the island city's population was negative during 1981–1991 and 2001–2011. This pattern accompanied by the decline in the growth rates of the suburban population indicates that the overall population of Mumbai is stabilizing.<sup>11</sup>

As mentioned earlier, slums have been prevalent in Mumbai. However, the Census 2011 figures show that slum population has fallen. This could be because of the numerous policies (see O'Hare, Abbot, & Barke, 1998; Das, 2003; Mukhija, 2001; Nijman, 2008; Pethe, 2013) adopted by the government to address the issue, or under reporting by the Census (Bhan & Jana, 2013). What is undisputed is that slums continue to remain a prominent part of the cityscape.

#### Real estate price trends

Mumbai is known for having some of the most expensive real estate in the world (Knight Frank, 2013). In fact, real estate in Mumbai is increasingly viewed as a safe bet for investing the profits made from the cyclical stock markets. A sharp increase in real estate prices (both residential and commercial), especially in South Mumbai, came about in the 1990s. Table 3 shows the movement of real estate prices in some areas in Mumbai.

It is seen from Table 3 that areas in South Mumbai have continued to be the most expensive. The prices reduce as we go northward and prices in the western suburbs are greater than prices on the eastern suburbs. Appendix A maps the ward-wise location of these areas. While prices have been increasing in all areas without exception, what is remarkable is the extent of the price rise. The soaring property prices have had many adverse consequences such as increased speculative activities (Nijman, 2000, 2002; Whitehead & More, 2007), rent seeking and land related scams (Mahadevia, 2011; Pethe, 2010; Pethe, Gandhi, Tandel, & Libeiro, 2012a), criminalization (Weinstein, 2008), and gentrification in South Mumbai (Harris, 2008; Smith, 2002).

The high real estate prices imply a high price of the underlying input, which is land.<sup>12</sup> One can gauge by looking at Table 3 that the price of land unit on which commercial activity is allowed is greater than the price of land unit on which residential activity is allowed. Moreover, the prices of land for both residential and commercial uses are greater than the price of land on which industrial activity is allowed. These prices are reflective of the returns that accrue to these land uses. Such price differentials, in the wake of demand pressures due to economic activities, create opportunities for profit making, which incentivizes land use change.

#### Spatial configuration of Mumbai's land and real estate

It is vital to understand the movement of residential and commercial activity in Mumbai since the sanctioning of the DPGM in order to gauge the extent of spatial reconfiguration that has taken place during the tenure of the DPGM.<sup>13</sup> Spatial reconfiguration is driven by the changes in the production structure and property markets. The spatial reconfiguration is indicative of pressures on land use changes in Mumbai. The trends in residential and commercial activity have been derived by using a data set on properties<sup>14</sup> collected by the property tax cell of the MCGM. This data set accounts for approximately 70% of the total number of properties in Mumbai.<sup>15</sup> The data is collected at a unit level and provides information on several aspects such as the year of completion, type of use, carpet area, floor location, and type of construction. The data comprises 2.039 million units of which 73.14% are residences and 4.07% are offices.<sup>16</sup>

For the interest of this study, we consider only the units used as office and residence.<sup>17</sup> We categorize these units over three time cohorts depending upon the year of completion: before (as of 1991), between 1992 and 2010, and the resultant current situation (as of 2010), in order to study the trends in real estate in Mumbai

<sup>12</sup> The rise in land prices is not a new phenomenon (see Dowall, 1992, p. 416).

<sup>13</sup> See Nijman (2002) for land use and real estate price trends in Mumbai.

<sup>14</sup> The properties are made up of different units.

<sup>15</sup> Out of the remaining 30%, 80–90% is data on slum settlements.

<sup>16</sup> The data for offices is representative of only formal commercial activity in the city. We are aware of the vibrant informal sector in Mumbai, but, for want of reliable data, it has not been considered.

<sup>17</sup> Although we use number of units, this analysis can also be undertaken using the carpet area of residential and office space. The average carpet area of a residential and office unit in Mumbai as of 2010 was 43 m<sup>2</sup> and 116 m<sup>2</sup> respectively.

<sup>11</sup> This trend has also been exhibited by a good number of cities in India during 1991–2001 (Sivaramkrishnan & Kundu, 2007).

**Table 2**  
Population in greater Mumbai (in thousands).

Years	Mumbai island city	Mumbai suburban	Ratio of island city/suburban region	Total population	Of which in slums	Slums/total (%)
1961	2772	1380	2.01	4152	NA	NA
1971	3070.38 (10.76)	2900.2 (110.16)	1.06	5970.58 (43.8)	2800 <sup>a</sup> –	46.9
1981	3285.04 (6.99)	4958.39 (70.97)	0.66	8243.43 (38.07)	4300 <sup>a</sup> (53.57)	52.16
1991	3174.91 (–3.35)	6751.02 (36.15)	0.47	9925.93 (20.41)	5100 (18.6)	51.38
2001	3338.03 (5.14)	8640.43 (27.99)	0.39	11978.46 (20.68)	6475.56 (26.97)	54.06
2011	3145.97 <sup>b</sup> (–5.75)	9332.48 <sup>b</sup> (8.01)	0.34	12478.45 <sup>b</sup> (4.17)	5206.47 (–19.59)	41.72

NA – not available.

Figures in parentheses are decadal growth rates.

Source: Census of India.

<sup>a</sup> Mukhija (2000, p. 47).

<sup>b</sup> Provisional.

**Table 3**  
Trends in real estate prices in Mumbai in currents (figures in Rs./ft<sup>2</sup>).

Area	Residential				Commercial			
	1990 <sup>a</sup>	1998 <sup>a</sup>	2009 <sup>b</sup>	2011 <sup>b</sup>	1990 <sup>a</sup>	1998 <sup>a</sup>	2009 <sup>b</sup>	2011 <sup>b</sup>
<i>South Mumbai</i>								
Cuffe Parade	2750	8750	17,250	23,000	4250	11,000	28,250	27,000
Malabar Hill	3500	10,500	16,500	25,500	4500	14,000	26,000	32,000
<i>Western Suburbs</i>								
Bandra (W)	2250	5750	10,600	18,500	2750	7000	19,100	20,000
Andheri (W)	1150	3150	8000	12,500	2500	5000	17,000	14,500
Andheri (E)	NA	NA	6100	9650	NA	NA	10,100	10,100
Borivali (W)	1200	3000	5050	8500	2750	5250	7700	17,500
<i>Eastern Suburbs</i>								
Chembur	1000	3850	6250	11,000	1750	4750	7500	16,000
Ghatkopar	1000	4250	7650	12,000	2000	6750	13,150	14,000

NA: not available.

<sup>a</sup> Accommodation times as cited in Mukhija (2000, p. 56).

<sup>b</sup> Accommodation Times (2011).

in the periods prior to, and following the DPGM and provide the overall picture of the city in the present time.

#### Commercial (office) activity

The construction of offices in Mumbai over time has been mapped in Fig. 3. Fig. 3a demonstrates that in the years prior to and in the year 1991, Wards A and B had the most number of offices, affirming the position of this area as the Central Business District (CBD). This was followed by Wards C, D, G South, and K East. In Fig. 3b we see the number of offices that have come up in the period 1992–2010. The number of offices coming up in the CBD was among the least in the city and many of the offices in this period came up in K East and K West Wards. This period bears witness to a rise in other hubs of commerce and business located in the northern parts of the city in K, H, and P South.

In the overall picture (as of 2010) of Mumbai represented by Fig. 3c, we see clearly that while South Mumbai continues to be an important part of the city's commercial activity, many offices have moved northwards and a new major commercial center is being formed in K Wards.<sup>18</sup>

#### Residential activity

Fig. 4 maps the development of residences in Mumbai. Residential development has largely been in the suburbs of Mumbai.

<sup>18</sup> The reason why H East is not showing as a major commercial centre is because the Bandra Kurla Complex in H East – which has attracted commercial activity recently – is small relative to the size of the ward.

Up to 1991, as shown in Fig. 4a, most residential units were in Wards K West, K East, R Central, and P North. Fig. 4b reveals that between 1992 and 2010 there was little deviation from the pattern in the earlier period, with very few residences coming up in the southern wards of Mumbai. However, the overall picture (as of 2010) as shown in Fig. 4c demonstrates the dominance of residential activity in the northern part vis-à-vis southern part of the city and more residential concentration in western vis-à-vis eastern suburbs.

#### Comparing the land-use (commercial and residential) mix

Given the trends in residential and commercial activity, it would be pertinent to see how they fare in relation to each other. Appendix B provides the ratio of residential units to office units in each ward. It is seen that overall, the number of residences per office have increased in Mumbai albeit with several ward level variations. Moreover, this ratio has fallen in most wards that have seen high commercial activity (predominantly in Wards H East, H West, K East, and K West). These Wards – especially K East and K West – were planned to be suburban residential areas; but they have witnessed a drastic fall in the residential units as compared to commercial units. It implies that the residential development has not kept pace with the construction of offices in these areas, resulting in residential space giving up to commercial use – a change in land-use mix. This has implications for the social make-up of the ward, apart from influencing the re-organization of space for support activities (including the consequential activities like traffic/parking).

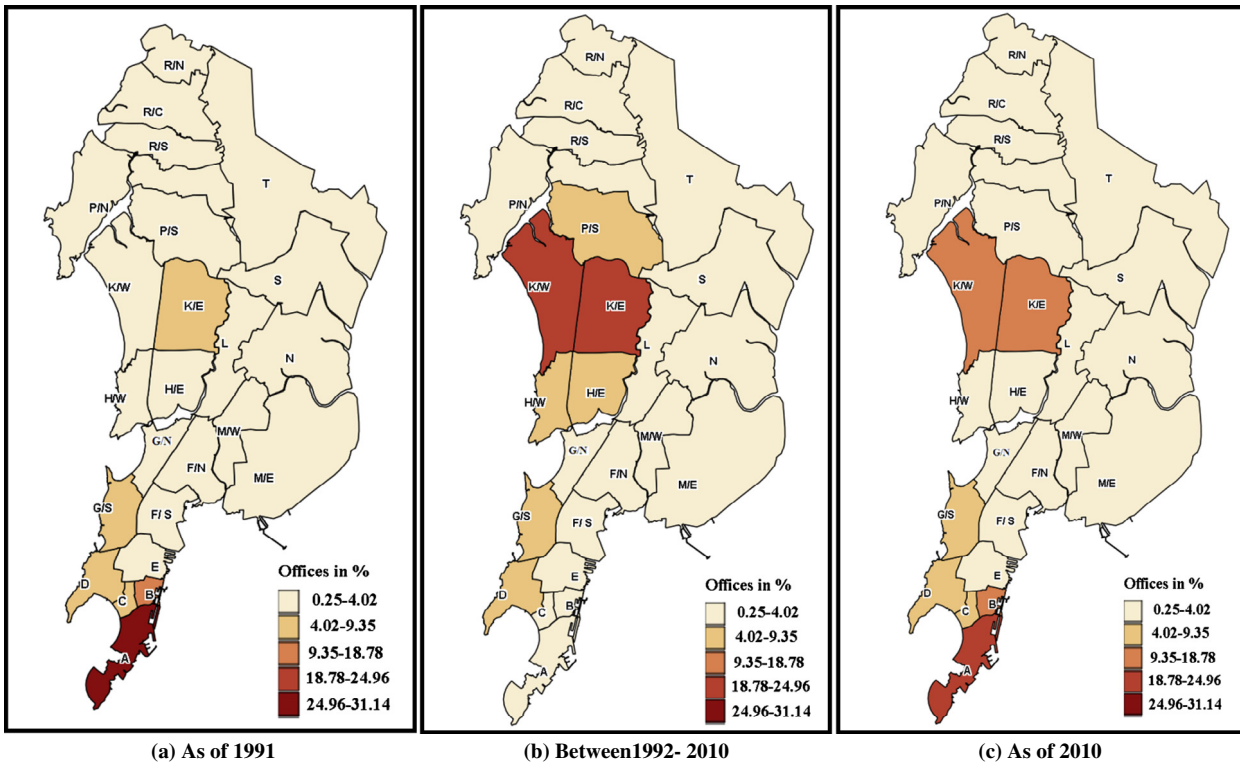


Fig. 3. Spatial distribution of offices in Mumbai. Source: Based on authors' calculations.

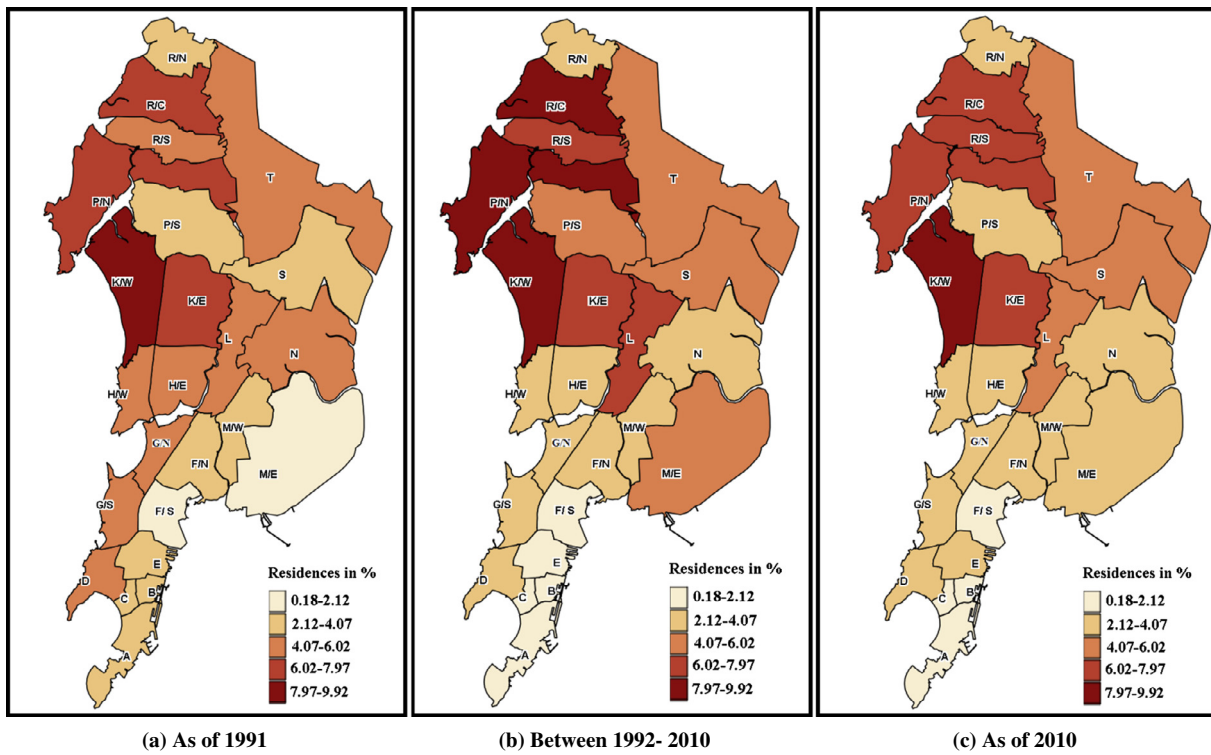


Fig. 4. Spatial distribution of residences in Mumbai. Source: Based on authors' calculations.



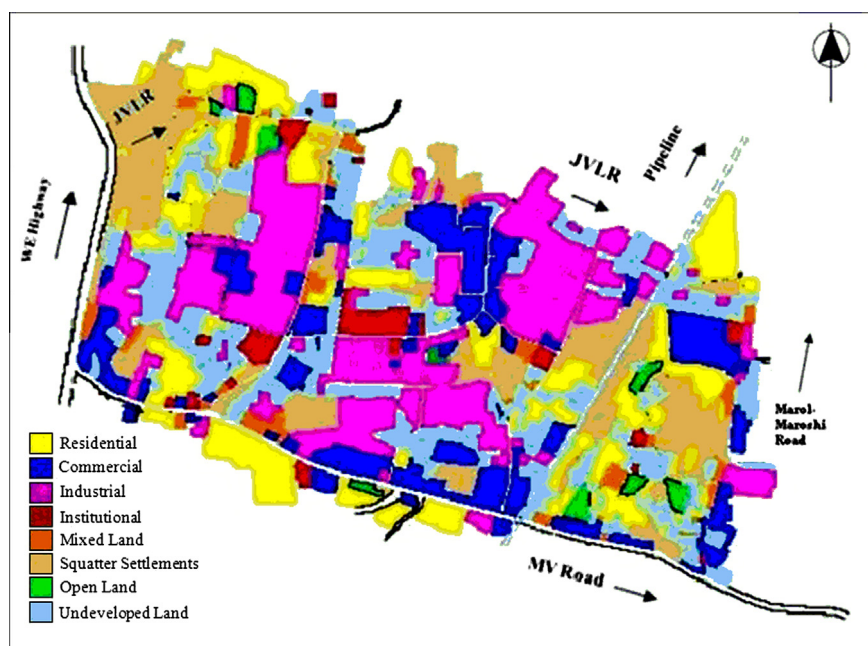


Fig. 5. Actual land use of study area (parts of Andheri East – K East Ward). Source: Based on authors' field survey.

### Actual land use in study area (K East Ward)

The post-reform period witnessed a fall in manufacturing and a spurt in service related activities. The existing population is much more than what was forecasted and planned for by the DPGM. Further, the population in the island city has been declining whereas the population in the suburbs has increased putting pressures in these areas. Moreover, land price gradient has dictated the movement of the offices to the suburbs. Thus our study area –located in the western suburbs – has been witnessing significant changes. Between 1992 and 2010, 19.55% of all offices constructed in Mumbai were located in K East Ward. This was a sharp change from having only 8.6% of offices in the region before 1992. The figure for residences was 6.2% between 1992 and 2010 as compared to 6.98% before 1992. Thus, the residential to commercial ratio has been declining in this ward. In terms of population, in K East Ward it grew from 692,586 in 1991 to 810,002 in 2001 – a decadal growth of 16.95%. The population thereafter stabilized. Provisional figures for 2011 reveal that the population was 817,684. Thus, the decadal growth rate from 2001 to 2011 of K East Ward was only 0.94%. The slum population of K East Ward in 2001 was 58% of the total ward population.<sup>19</sup> Clearly, the changes in the production structure, spatial reconfiguration, and population have transformed the K East Ward from a residential and industrial suburb to a thriving commercial center with the majority of the population living in slums.

The actual land use in the study area, as recorded in 2010, is shown in Fig. 5. The actual land use prevalent was determined through a combination of the use of satellite images and field surveys. In the first step, satellite images from Google Earth were used to ascertain the possible prevalent land uses for every parcel and in the second step, the land uses were verified through field survey of the sites covering entire study area.

The actual land use prevalent clearly presents a different type of land use pattern prevailing now. There are three additional

categories that were not present in the DPGM, viz. mixed land, slum settlements, and undeveloped land. Industrial use comprised 26% whereas commercial use comprised 14% of the total study area. Undeveloped land forms 17% of the total study area. Table 4 presents a comparison of the land use allocation in the planned land use (shown in Fig. 2) and the actual land use (in Fig. 5).

Considering Fig. 5 and Table 4, we find that the significant commercialization and existence of slum settlements in the study area are the two most striking deviations from the planned land use. Fig. 5 shows that the commercial use is concentrated in the fringe area of industrial use. Also, in spatial terms, much of the change from industrial to commercial use has been along the Western Express Highway as well as M. V. Road taking advantage of the transport corridors. The increasing commercialization may be attributed to higher returns that accrue from commercial activity as compared to industrial activity. Some amount of interior industrial land has undergone a change to residential use, perhaps in response to a housing demand from the services sector. The residential to commercial conversion is swayed by the transport corridor and the upcoming metro rail connectivity built on it.

The slum settlements constitute 17% of the total land in the study area. Slums have mushroomed along the highway and the water pipeline as they are convenient locations in terms of proximity to transport location and water supply. The prevalence of slum settlements in the areas designated for residential use of land is illegal even though it is not a deviation from the planned land use (see Fig. 1). How is it that a majority of the slums are located on land meant for residential use? Based on interviews with experts, there are two reasons that can be inferred for this phenomenon. First, since 40–50% of Mumbai's population has been living in slums since the 1980s, it is possible that the slums in the area had been in existence prior to the DPGM. Over time, newer slum population was accommodated on the same land by building one or two stories above the existing settlements. The land on which slums existed was delineated as residential land use, thus implying that the spatial plan took cognizance of existing informalities. Second, the land demarcated for residential use was poorly monitored and hence encroached by slum settlements. It is important to note

<sup>19</sup> The ward-wise slum population for 1991 is not available and the 2011 figures for ward-level slum population have not yet been released.

**Table 4**  
Break-up of land uses in the study area (in %).

Categories	Planned land use	Actual land use
Residential	36	18
Commercial	3	14
Industrial	43	26
Institutional	10	3
Open land	8	2
Mixed land	–	3
Slum settlements	–	17
Undeveloped land	–	17
Total	100	100

Source: Based on authors' calculations.

Note: Overall there could be a 3–5% margin of error in the above calculations.

that the conformity of land use, does not guarantee slum settlements any security of tenure. The slum dwellers in these settlements have to negotiate with the state actors, through vote-bank politics in order to have security of tenure. This has resulted in amendments to the DCRs in order to de-notify slums existing prior to 1st January 1995, and SRS, which provide free tenements to eligible slum dwellers. Such phenomena of the urban poor laying a claim on land and seeking some security of tenure through complex alliances with lower level state actors is part of what Benjamin (2008) terms “occupancy urbanism”.

The significant divergence between the planned and actual land use has both positive and negative consequences. On the one hand, the actual land use pattern is organic and reflective of the present demands of the city. In this sense, therefore, the actual land use realizes the economic and political dynamics of Mumbai within the operational constraints. On the other hand, the haphazard development of land and increased densities<sup>20</sup> lead to inadequate provision of infrastructure amenities and also put pressure on the city's transport systems.

### Conformity of land use

The draft DPGM that was prepared around the mid-1980s did not visualize the decline of manufacturing industries in Mumbai. By the time DCRs were being finalized in 1991, the decline in manufacturing became imminent. At that time instead of revising the plan, an easier way of amending the use provisions of the industrial zone was adopted. It made provision for the change of land use from industrial to commercial or residential use that gives an option to change land use suited to current development requirements in accordance with the procedures established for the same under the DPGM and DCRs. While some of the land use changes were allowed by default, many of them required permissions.

The land use changes that have taken place since the sanctioning of DPGM can be classified in three categories. Category I is the land use change permitted (automatically) under DCR, Category II is the change that requires land use change permission and development permission from the concerned authorities. It is stipulated that the formal process of acquiring the permission for land use change takes approximately 30 days, while the formal process for development permission takes around 70 days. The process includes obtaining No Objection Certificates (NOCs) from all concerned authorities. NOCs are also required from Special Planning Authorities, if the land parcel falls under the jurisdiction of such authorities. Category III is the change, which cannot be formalized

as per DCR. Thus, Categories I and II are related to land use changes that are legal in nature whereas category III comprises all the land use changes that are illegal.

Fig. 6 provides the land use changes that have taken place in the study area with respect to these three categories. However, it is important to note that the figure does not depict all the deviations that have taken place, as some deviations from the planned land use are not a change in land use *per se* (for instance, as discussed, slum settlements on residential land as well as increasing incremental commercial activities on residential properties).

From Fig. 6, one clearly notices that only very few land use changes are allowed automatically (they deal with changes from or to institutional land use). Table 5 shows the proportion of land use change from one category to another.

Category I forms only 9% of the total changes, while Category II accounts for the largest of the total changes. Table 5 shows that 57% of the changes have taken place from other land uses to commercial use, with change from industrial to commercial use being 44%. There have been land use changes from commercial and residential use to industrial uses, albeit to a lesser extent. It is important to note that although land use changes under category II are legally permissible, several illegalities exist in the actual process of acquiring the land use change and development permissions. Since obtaining the NOCs from different service providers is a lengthy and tardy process for even well established developers, the use of ‘agents’ or ‘paid liaison officers’ to deal with it and payment of heavy ‘speed money/rents for processing’<sup>21</sup> is routine. Here, (blatant) corruption is institutionalized at every stage of the process. Ultimately, legal changes are often made through unlawful means by developers. Thus, the need for land use change opened up opportunities of rent seeking for bureaucrats.

Category III comprises slum settlements and development on open green land. It is possible that the slum settlements predate the DPGM but were not accounted for while the lands on which they existed were marked as ‘open areas’. These slums are likely to be or already are legalized through de-notification or granting exemption (quasi-permission), thereby making them eligible for the SRS.

### Re-thinking urban land use planning

The case study – which is representative of what is happening in many other parts of Mumbai – helps understand some of the salient aspects of urban planning in Mumbai. Although the size of the study area is small, it is not unique but fairly representative of the ongoing change processes in the city. Further, the choice of the study area is because of the neat logic of why the DP in the area was the way it was; and how the logic was supplanted by the logic of the emergent processes. It is evident from the study that development planning in Mumbai is rigid. It is neither able to come to terms with the changes in the production structure nor is it responsive to the needs of the urban poor. Some amount of flexibility for changing land use is granted through the DCRs, but the spatial plan itself remains untouched. Due to the several lacunae in formulation and implementation, plans lose credibility. These characteristics are not limited to planning in Mumbai; they are prevalent in several Indian cities in different degrees and scale (Bhan, 2013; Nallathiga, 2012). Thus, the paper presents a strong case for ‘re-thinking planning’ in India.<sup>22</sup> We discuss a few aspects of planning that need to be addressed.

<sup>21</sup> The net of these rents constitutes around 2% of the project cost.

<sup>22</sup> Farmer et al. (2006) outlines certain principles which need to form the basis for “New Urban Planning”, which include, among other things, market responsiveness and inclusiveness.

<sup>20</sup> Areas with slums have a higher population density than those with formal residential dwellings and commercial activities leading to an inflow of the working population during the day.

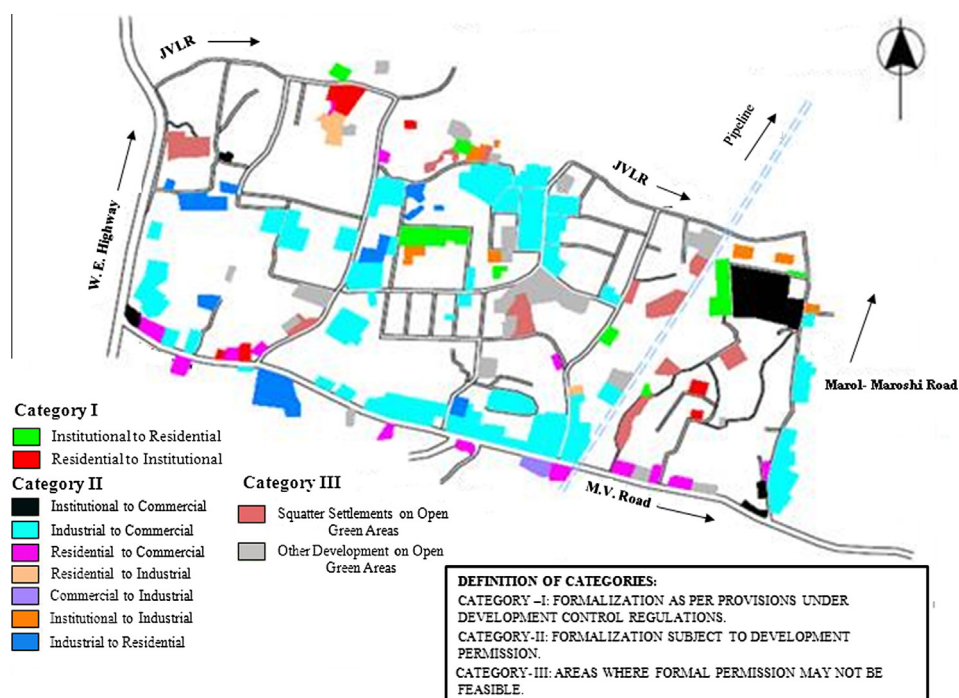


Fig. 6. Conformity of current land use to the development plan. Source: Based on authors' calculations.

Table 5

Relative extent of land use change in Andheri (in %).

Type of land use change	Proportion to total change (%)
<b>CATEGORY I</b>	
Institutional to residential	6
Residential to institutional	3
Total	9
<b>CATEGORY II</b>	
Commercial to industrial	1
Industrial to commercial	44
Industrial to residential	8
Residential to commercial	5
Residential to industrial	1
Institutional to industrial	2
Institutional to commercial	8
Total	69
<b>CATEGORY III</b>	
Slum settlements on open green areas	9
Other development to open green areas	13
Total	22

Source: Based on authors' calculations.

(1) We find in the section “Actual Land Use in Study Area (K East Ward)”, that there is considerable divergence from what was planned as per the DP. This is because the existing process of planning is concerned with micro-management wherein the use for each parcel of land is specified and remains unchanged for a period of 20 years. The appropriate level of disaggregation for which plans should be formulated must be determined. Plans should stop short of micro-management and allow for some flexibility of land use. Structure plans that give a broader spatial arrangement of land uses may have to be used as a guiding plan in such circumstances and the development of land use has to broadly fall in line

with the composition of land use brought out by structure plan. The ward authorities may be given responsibility to align the development plans to fall in line with the structure plan and the coordination of this may be done periodically by the local government.

- (2) As we saw in the section “Mumbai During the Tenure of the DP”, the broader national economic reforms led to a change in the production structure, which affected the actual land use in the city. Thus any plans prepared need to be in congruence with the broader macro-economic national and state policies and the ongoing reforms. This can be brought forth to some extent in the form of ‘Strategic Plans’ which identify the areas suitable for the strategic development of various economic sectors. China has rolled down this approach so that the development of such areas does not suffer from the rigid land use decisions of master plan and its allocations (Wu & Zhang, 2007).
- (3) In the section “Development Plan for Mumbai”, we see that the second DPGM lacked objectives. Certain broad objectives (measurable outcomes) in terms of delivery of public goods and services for the city must be articulated in the plans, keeping in mind the exogenous policies. The focus of the development plan should be on meeting these predetermined objectives – such as mixed land use, low income housing for the poor, among others – through appropriate policies or reforms thereof. The objectives and their prioritization should be determined by a dialogue between the various stakeholders, such as politicians, bureaucrats, NGOs and civil society representatives in a participatory mode. DPs have to go beyond the traditional techno-bureaucratic visions of the state and be further developed as an effective tool of urban governance mediating the heterogeneous interests (Qian, 2013).
- (4) In the section “Mumbai During the Tenure of the DP”, we find that changes in the city's economy, population, and real estate prices, affect the spatial configuration of the city. In

order to accommodate these dynamics, the planning process could adopt model-based planning which utilize quantitative methods to estimate planning outputs. Such planning has been undertaken in developed countries and could be done for cities in developing countries despite the serious constraints regarding availability of data. For instance, Adhvaryu (2010) demonstrates in the case of Ahmadabad, how model-based planning could be successfully used for preparation of development plans notwithstanding the data limitations.

- (5) It is important to recognize that planning – in all its form – by its very nature is bound to be incomplete since it is impossible to correctly predict future populations, economy, and requirements of the city. Thus, it becomes necessary to allow for mid-course corrections of plans to accommodate any significant changes that may take place. The questions of when, by whom, and how much become crucial for such corrections. Population growth, production structure of the economy, and real estate prices are a few of the parameters which indicate the dynamics of a city.<sup>23</sup> When these parameters diverge from what was projected in the plan, it should trigger a mid-course correction. It is almost always true that the actual trends would never be exactly the same as the projected trends, and therefore, some divergence is always expected. In light of this, there should be predetermined threshold levels below which divergence can be tolerated. The planning authority should continuously monitor the trends in these parameters, and if it finds a divergence beyond the tolerable levels, it should form a committee, which will recommend whether corrections are needed or not, and if yes, by how much. The committee could recommend corrections such as changes in amenity provision locally or broader changes including changes in the vision or the objectives of the plan. The changes have to be justified and supported by the data pertaining to trends in the parameters.
- (6) We see in the section “Development Plan for Mumbai”, that the second DPGM was drafted primarily by planners and involved, to a certain extent, municipal councilors. However, it had no participation from the citizens. The process of planning cannot be confined to being a bureaucratic and administrative exercise of planners, but requires inputs from the people. This would give plans a democratic character and they would better reflect the requirements and aspirations of citizens. Citizen participation could be enabled through consultation workshops held at the local level with communities and various citizens’ groups.
- (7) We see in the section “Development Plan for Mumbai”, that there was a considerable delay on the part of the state government in accepting the second DPGM. Once plans have been prepared by local governments, they should be accepted by the state government without much delay, so that they do not lose relevance. The approval process requires rules that set a time limit and principles for the acceptance of development plans.

## Conclusion

Planning is an important means of addressing the myriad needs of global south cities like Mumbai. This paper examined whether spatial plans are useful and effective in predicting and meeting

<sup>23</sup> Population figures in India are made available on a decadal basis by the Census of India. Real estate prices and data on sectoral aspects of the economy are available on an annual basis. However, sectoral aspects of the economy are available not at the city level but at a district level.

the future demands of the city through an empirical study of an area in the suburbs of Mumbai. The paper finds that there is considerable divergence between the actual land use pattern in the study area and the planned land use. The decline of industrial activity, rise in demand for commercial properties by the corporate sector, and relocation of offices to the suburbs in response to the high commercial property prices in the city puts pressures on land delineated for industrial uses by the DP in the study area. This dis-juncture arises out of the failure of the spatial plan to foresee the changes in the city’s production structure and property markets. While the land use plan remains static, DCRs allow for certain permissible land use changes. Although the formal process of land use change has been laid down in the DCRs, the *de facto* process often involves informal means such as paying bribes to bureaucrats or politicians and, sometimes, the use of coercive tactics (D’Monte, 2002; Weinstein, 2008). Although these rent seeking opportunities arose out of the need for land use change, such rent seeking was not a motive for the DP to be disjoint from present realities. The failure of the DP in taking into account the drastic changes in the economy and production structure of the city was because of technical deficiencies and long delay in the process of plan making and approval.

The prevalence of slums on residential land in the study area is a deviation from the plan, but is not a change in land use, as slums provide informal housing solutions to the citizens. Conformity to land use does not guarantee security of tenure to the slums. All slum settlements have to rely on policies of de-notification and SRS, which have been the result of political tactics of negotiation or vote-bank politics between slum dwellers, slumlords, and local politicians in order to gain a -legal status and thereby escape eviction.

Thus, the distribution of land and its use is subject to intense political negotiations among slum dwellers, corporate capitalist class, politicians, and bureaucrats. The actual land use shows how the evolving political institutions in Mumbai have, in a way, accommodated the needs of the corporate capital class through exceptions and amendments to DCRs, and the demands of the slums through the process of “occupancy urbanism” (Benjamin, 2008). On the other hand, the haphazard and unplanned nature of the actual land use could be detrimental to the living conditions of local citizens, since it could lead to inefficient provision, and could lead to increased pressure on existing amenities. However, the paper does not comment on the ultimate impact of the actual land use, but confines itself to highlighting the lacunae in terms of divergence of the reality and land use plans, which make them noncredible.

The paper is essentially a critique of the extant practices and processes involved in urban planning in India and calls for a re-think. The paper uses the learnings from the case study to outline some of the possible ways by which urban planning could be made market responsive, adaptive, and inclusive. It recommends that plans move away from micro-management, be in congruence with the broader national and state-level reforms and policies, have clear, broad and democratically determined objectives, be prepared, using methods such as model-based planning to incorporate city dynamics, allow for mid-course corrections, be participatory in nature, and be accepted by the state government without much delay.

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**Appendix A. Ward-wise and area-wise map of Mumbai**



Source: [http://www.praja.org/know\\_your\\_ward.php](http://www.praja.org/know_your_ward.php).

**Appendix B. Number of residential units per office unit**

Wards	As of 1991	1992–2010	As of 2010
A	1.06	3.36	1.14
B	2.44	14.05	2.56
C	7.05	4.25	6.80
D	9.46	12.29	10.16
E	31.21	169.36	43.89
F North	28.01	82.37	40.75
F South	24.41	57.21	32.60
G North	35.10	43.22	37.53
G South	17.82	16.27	17.30
H East	49.92	11.99	27.54
H West	23.15	14.39	19.15
K East	12.37	7.39	9.70
K West	39.55	10.38	16.67
L	57.43	47.09	51.11
M East	27.52	124.46	60.69
M West	31.23	27.06	29.20
N	27.74	14.81	21.96
P North	115.06	61.78	79.20
P South	59.80	18.68	25.99
R Central	65.49	81.64	73.30
R North	216.44	115.57	154.17
R South	152.70	72.23	95.02
S	55.48	32.83	41.34
T	54.31	39.35	46.79
Mumbai	15.26	23.31	17.98

Source: Based on authors' calculations.

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