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PERI-URBAN DYNAMICS :

Case studies in Chennai, Hyderabad and Mumbai

Edited by

Véronique Dupont & N. Sridharan

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PREFACE

Earlier versions of the contributions constituting this Occasional Paper as well as two previous volumes in the same series on *Peri-urban Dynamics* were presented and discussed, among fifteen other papers, in an International Workshop on 'Peri-urban Dynamics: Population, Habitat and Environment on the Peripheries of Large Indian Metropolises', organised by the *Centre de Sciences Humaines* in collaboration with the India International Centre in New Delhi, on 25-26-27 August 2004.

The papers have greatly benefited from the comments of the discussants and other participants to the workshop. The financial support of the institutions that made this scientific meetings possible needs to be acknowledged here: the French Ministry of Research, as part of its incentive programme 'Space and Territory: Society, Economy, Culture, Languages, Representations', 2003-04; the *Centre de Sciences Humaines* of New Delhi (French Ministry of Foreign Affairs); the Centre Population and Development (CePeD, Paris); the Institute of Research for Development (IRD, Paris).

The first collective volume of this series on *Peri-urban Dynamics,* edited by Véronique Dupont, highlighted the forces that govern peri-urbanisation and reflected upon the main issues at stake. It also attempted to refine the concepts related to the 'peri-urban' spatial category, and to better define and delimit this research 'object'. The authors examined not only the literature related to the Indian and Asian metropolises as well as other developing countries, but also explored the concepts and models elaborated to analyse the evolution of the western metropolis, drawing in particular on the North American case, and the French case.

[1] Dupont, Véronique (ed.) (2005) *Peri-urban Dynamics: Population, Habitat and Environment on the Peripheries of Large Indian Metropolises. A review of Concepts and General Issues.* CSH Occasional Paper No. 14, New Delhi, Centre de Sciences Humaines, 144 p.

The second volume, by Sébastien Oliveau[2] attempted to measure the extent of peri-ubanisation that has taken place in the state of Tamil Nadu, on the basis of the 1991 census data. The author undertook a systematic exploration of the relation between the 225 urban areas and the 16,085 villages of Tamil Nadu in order to assess the influence of the urban areas on the surrounding villages. After re-examining the definition of urban areas, this paper underlined the diversity of peri-urbanisation, according to the type of town and the degree of accessibility of theses towns.

In the present volume, selected case studies of peri-urban dynamics are detailed, drawing from the experiences of Chennai (Pushpa Arabindoo), Hyderabad (Eric Leclerc and Camille Bourguignon) and Mumbai (Himanshu Burte and Malini Krishnankutty). The broader context of metropolitan growth and the case studies are further introduced by N. Sridharan.

Véronique Dupont

[2] Oliveau, Sébastien (2005) *Peri-urbanisation in Tamil Nadu: a quantitative approach*, CSH Occasional Paper No. 15, New Delhi, Centre de Sciences Humaines, 90 p.

I

INTRODUCTION

N. SRIDHARAN

India is experiencing the impact of economic liberalization and globalization processes in the area of urbanisation since the 1990s. Many metropolitan cities have sprung up in the post-economic reform period, in addition to the outward growth of existing cities. This spatial spread has always been a problem for planners and infrastructure providers. The workshop on 'Peri-Urban Dynamics' organised by the *Centre de Sciences Humaines* in August 2004 in New Delhi gave us the opportunity to get an insight into this issue through the series of papers that were presented. This volume, which is one of the outcomes of this workshop, concentrates on special case studies, by examining peri-urban development in selected cities of India.

In India, a slow rate of urbanization[1] and heavy concentration of urban population in higher order settlements has been occurring since 1951. This is especially so in class size I[2] urban centres (that

[1] As compared to China or other developing countries, India's rate of urbanisation has been slow over a period of time. Moreover, as observed by Sridharan and Razak (2003), 'forceful urbanisation' - that is urbanisation taking place without a proper settlement strategy by the government, enables the local players, to push forward the population to peripheral areas of the city that triggers infrastructure demand, land demand, etc.

[2] The Census of India differentiates several categories of urban centres and urban areas. There is a first classification of urban centers as per population size into six categories: Class I – More than 100,000, Class II – 50,000 – 99,999, Class III – 20,000 – 49,999, Class IV – 10,000 – 19,999, Class V – 5,000 – 9,999 and Class VI – Less than 5000 population.
Another differentiation is made between "cities and urban agglomerations" of more than a million inhabitants - called "metropolises" or "metropolitan urban agglomerations and cities" - and cities with more than five million inhabitants classified as "megacities". The concept of Urban Agglomeration refers to a continuous urban spread constituted of a town and its adjoining urban outgrowths or two or more physically contiguous towns together and any adjoining urban outgrowths of such towns.

is more than 100,000 population). As per the 2001 population census, a little more than 68.7% of the total urban population lives in class I urban centres. Within this class size, moreover, metropolitan urban agglomerations (with more than one million population) account for more than 55% of class I urban centres' population and 38% of the country's urban population. In fact, the top ten metropolitan urban agglomerations contributed for 68% of the total population of the 35 metropolitan urban agglomerations. Though the number of metropolitan urban agglomerations and the total population have increased, the average population of the metropolitan agglomeration almost remained constant around three million over a decade (Sridharan & Yadav 2001).

There is a spatial competition that is emerging between metropolitan cities to attract investment in the post-reform era, following economic liberalization and the induction of international trade and foreign capital (initiated in the 1990s). This has resulted in the changing ranks and position of the metropolitan urban agglomerations since 1981. Kolkata was top most in terms of population in 1981, and lost this position to Mumbai in 1991.[3] Similarly between Hyderabad and Bangalore, the ranking has changed. Bangalore lost its ranking in 1991 from number five position in terms of population size to Hyderabad, only to regain it in 2001.[4] However, this competition for ranks in no way stops the urban population concentration towards the metropolitan urban agglomerations in their respective states or in the country. Moreover many authors have pointed out conurbation of the metropolitan centres (Sivaramakrishanan *et al* 2006, Sridharan 2006) due to their proximity to each other and because of the development of transport corridors. Thus one comes across Delhi, a megacity on its own, surrounded by million plus cities and Class I size cities, such as Faridabad, Meerut, et al., while Mumbai is surrounded by Pune, Nashik, et al.

[3] As per the last census, in 2001, the population of the Greater Mumbai urban agglomeration was 16.3 million, and that of Kolkata 13.2 million.

[4] Thus, as per the 2001 Census, the population of Hyderabad urban agglomeration was 5.5 million and that of Bangalore 5.7 million.

The movement of the urban population towards metropolitan agglomeration has two kinds of effects. First, the convergence of population towards metropolitan centres, and, second, the divergence of population to the periphery of metropolitan centres (Sridharan 2003). From the convergence point of view, it is evident from the population census that the percentage of urban population in metropolitan urban agglomerations (as stated in the previous paragraph) has been increasing over the decades. The interesting trend about the growth of metropolitan agglomerations in India is a strong propensity to move out of the core area, in terms of population, space and functional diffusion. Some authors (Sridharan & Yadav 2001, Sivaramakrishanan *et al* 2005) classify the core-periphery growth pattern into various categories. For example, Sivaramakrishanan et al (*ibid.*, p. 40) classify the core-periphery growth pattern into: a) declining core – growing periphery, b) growing core – declining periphery, c) growing core – growing periphery, and, d) declining core – declining periphery. According to Sivaramakrishanan's study (*ibid.*, p.40), four metropolitan agglomerations exhibited a declining core and growing periphery trend (Ahmedabad, Delhi, Coimbatore, and Asansol). Eleven metropolises displayed a growing core and growing periphery trend (all of them are million plus cities but were not megacities) and sixteen of the million plus urban agglomerations showed a declining core and declining periphery trend (*ibid*, p.42).

The concentration of population towards metropolitan centres and its diffusion to their peripheries has resulted in many complex problems (Kundu *et al* 2002) such as land scarcity, inward and outward mobility of labour, economic, social and spatial segregation of population between the core and periphery. As the phenomenon of peripheral development is recent in India as compared to western countries, less research is available in this field to explore and explain the complexities of this process at the national or regional or city level. Thus, the publication of three case studies in this Occasional Paper as well as the study of peri-

urbanisation in Tamil Nadu in a previous volume[5] will enrich this less researched area of peri-urban development in India.

While the contributions of Sébastien Oliveau (2005) and Pushpa Arabindoo (chapter 2 in this volume) analyse the macro and micro aspects of urban peripheral growth in Tamil Nadu State, Eric Leclerc and Camille Bourgignon's paper (chapter 3) deals with Hyderabad's outgrowth that has been triggered by the growth of information technology and the population flows between the core and the periphery of Hyderabad. Himanshu Burte and Malini Krishnankutty's essay (chapter 4) adopts a different perspective of the urban edge and conceptualizes it in the form of ecological footprints and how the city invades and expands over natural landscapes on the western coast of Mumbai. Again it shows the pressures of urbanisation for this outwardly growth of the city encroaching upon the natural landscape. We contextualize these contributions below by giving the background of the urbanisation pattern that is occurring in the states where these cities are located.

Tamil Nadu state has experienced some unique changes in its urban scenario during the last census decade of 1991-2001 (363 towns have been added to the existing urban settlements at the 2001 census). Thus, this state recorded the highest percentage of urban population in 2001 (44% as compared to 28% at the national level). The number of towns in Tamil Nadu increased by 220% between 1991 and 2001, that is from 469 in 1991 to 832 in 2001, which is unprecedented in any state. Due to this development, the lower order settlements (that is Class IV to Class VI) experienced a spurt in their contribution to total urban population. Together, this class (that is class IV to VI) contributed only 7.64% in 1991, which increased to 19.8% of the total population in 2001. Though this has been triggered by political and administrative decisions of upgrading the civic status of many village *panchayats* to town

[5] Oliveau, Sébastien (2005) *Peri-urbanisation in Tamil Nadu. A quantitative approach.* CSH Occasional Paper 15, New Delhi, CSH-IFP, 90 p.

panchayats[6] and municipalities (especially after the post-74th Constitutional Amendment Act period), it has serious spatial, functional, financial and social implications. Some of these issues have been captured by Oliveau in his paper.

Starting with 'distance from the urban centre' as an important variable, Oliveau attempts to identify the influence zone of the various population size class urban centres on their periphery. By using multiple factors such as size, economic base, the extent of modernization, civic status, and distance from road and rail head, Oliveau concludes that the larger population size, service sector base, municipal status and nearness to road and rail head makes the urban centre influence its surrounding villages more than settlements with less population, and, settlements with purely agriculture or industrial base. These findings will have substantial implications for Tamil Nadu as far as the settlement structure is concerned.

In Tamil Nadu, the three metropolitan centres of Chennai, Madurai and Coimbatore together accommodated 33.3% of the total urban population of the State in 2001. Of this Chennai urban agglomeration alone (with 6.4 million inhabitants) accounted for 23.6% of the total urban population of the state. This polarization of population has its spillover effect and changes the morphology of the surrounding urban space. The urban agglomeration of Chennai experienced significant differentials in the growth of its core area as compared to its periphery.[7] The Chennai city registered a growth rate of 11.1% as compared to 19.8% for the urban agglomeration area as a whole during 1991-2001 census decade. The rest of the metropolitan area (urban agglomeration area minus the city area) experienced a decadal growth rate of 41%. The

[6] i.e. from Village Councils to Town Councils.

[7] This is revealed by the highest growth rates of the whole urban agglomeration as compared to those of the Municipal Corporation area (the core area) alone: 2.23% per year as against 1.59% during the 1981-91 decade, and 1.70% per year as against 0.93% during the 1991-2001 decade.

dynamism of the peripheral areas has been captured by Arabindoo by comparing the changes that have occurred over a period of time in terms of socio-spatial transformations in two peri-urban neighbourhoods – Valmiki Nagar and Neelangarai. She emphatically proves that global capitalism in association with local authorities has dictated the changes in these two neighbourhoods that are characterized by the post-modern features of pluralism, segmentation and multiplicity. By embarking on a comparative analysis of pre- and post-1978 periods, Arabindoo has evidenced two kinds of peripheral developments: one in which posh peripheral settlements gave way to heterogeneous periphery neighbourhoods; and in the second, where the lower middle class and migrant housing gave way to the show of global capitalistic features, such as seaside resorts, expatriate housing, et al. Arabindoo emphasizes that these spatial and social changes have made the peri-urban areas 'pawns', in the hands of the predatory metropolitan planning authorities who like to gamble this space for real estate ventures in partnership with privatized and globalized agents/actors leaving behind the lower middle class and also the *Panchayat* unions as silent spectators for this new form of invasion.

Hyderabad, the capital city of Andhra Pradesh State, is a classic example of political commitment to urbanisation and growth in the recent past. The urban agglomeration of Hyderabad experienced a particularly fast growth rate of its population during the 1981-1991 decade (5.2% per year), the highest amongst the 12 metropolitan cities/urban agglomerations of 1981, and reached 5.5 million in 2001. Likewise in Chennai, what is also remarkable is the significantly faster growth of the periphery as compared to the core area, a trend that persists in the 1991-2001 decade[8] (Sivaramakrishanan *et al* 2005, Sridharan 2006a). This outward growth pushed by the development of HITEC City –examined by Leclerc and Bourgignon through the case study of the urbanized village of Madhapur–, is the political commitment of the former

[8] This is revealed by a rate of growth for the whole urban agglomeration higher than for the Municipal Corporation (the core area) alone: 5.2% per year as against 3.31% during the 1981-1991decade, and 2.42% per year as against 1.58% during the 1991-2001 decade.

Chief Minister of Andhra Pradesh. Once the momentum of growth picked up, it could not be sustained for a long period because of the lack of other supportive infrastructure in the periphery (DUP 2005a). The observations made by Leclerc and Bourgignon reveal the significance of commuting for work towards HITEC city, in the periphery of the urban agglomeration. A similar phenomenon of outward commuting is also observed in other Indian metropolitan centres such as Chennai (Deepa 2006), Pune (DUP 2005b), Ahmedabad (Darshini 2002), Kolkata (Bhattacharya 1999), etc, where office location is preferred in the periphery because of low land prices and space availability (DUP 2005a). Once this political support was withdrawn or weakened, the growth rate of the economy and population also suffers. As compared to a decadal growth rate of 44% in 1981-91, the growth rate of the core city's population of Hyderabad was just 14.8% during the 1991-2001 decade. A similar development has been observed in the growth rate of Hyderabad Urban Agglomeration, which showed a growth of 104% during the 1981-1991 decade as compared to just 29% in the decade 1991-2001 (Census of India 2001).

From this political commitment for peripheral development of urban area, we move on to natural growth and the pressures of migration and its effect on the city's edge. Burte and Malini Krishnankutty capture the pressures of population growth of Mumbai on its edge, defined in terms of ecological spaces. Mumbai, the economic capital of India, has been growing in terms of population as well as space. In 2001, the urban agglomeration of Greater Mumbai reached 16.4 million. In spatial terms it is expanding on reclaimed land from the sea and eastward expansion in the mainland. The population growth rate in the Municipal Corporation area has been declining during the past two census decades (from 44% during the 1981-91 decade to 15% during the 1991-2001 decade). However, its periphery has been witnessing dramatic population increase (2012% during the 1981-91 decade) and is still growing at a faster rate (63% during 1991-2001) as compared to the core area. This impressive growth is due to the development of new areas and projects by the City and Industrial

Development Corporation of Maharashtra (CIDCO) in the east, and the inclusion of peripheral towns such as Thane (with a population of more than one million) into the Greater Mumbai Urban Agglomeration area. This had special impact in terms of pressure on ecologically sensitive land, encroachment of open spaces, conversion of agricultural land, et al. The new areas often came up on reclaimed land, wetlands and mangroves affecting the flora and fauna of Mumbai. Burte and Malini Krishnankutty render this invasion and degeneration of natural spaces by the process of urbanisation in a vivid way.

All these papers capture varying conditions of development of the periphery, and how these affect the urban core and periphery's spatial, economic and other linkages. Though there are authors who opine that the urban periphery of the metropolitan agglomerations are degenerating (Kundu 2003, Ramachandraiah 2004, Shaw 2005, Baliga 2005, Deepa 2006, Sridharan 2006), the case studies in this volume prove that not all the peripheries are the same. There is a hope in developing and integrating these peri-urban spaces in India. High levels of infrastructure investments, especially in the transport sector prove to be a boom in many metropolitan cities in India. Starting from Delhi, several metropolitan centres are now opting for investment in Mass Rapid Transport System connecting the core to the periphery. Similarly, with the emergence of new methods of financing infrastructure like pooled finance, which is made available to local self-governments in the periphery, the provision of infrastructure is made available to the residents of the periphery. Many innovative methods such as involving people in infrastructure provision (as in the case of Alandur in Chennai) have been making the periphery liveable. The hopes, triggered by the 74th Constitution Amendment Act and its decentralization measures, by the various grass-root movements, by the judicial activism that has checked environmental degradation, by the new avenues of financing infrastructure and the emerging transparent urban governance system, all these hopes will ensure that the peri-urban space is a liveable space with a better quality of life. A prerequisite for this

optimism is empirical research as a fodder for action. We are positive that this volume on peri-urban dynamics, as well as the two previous volumes in the same series, will throw new insights into this less researched field and enable the spatial planners and decision makers in India to chart out innovative ways of development.

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II

NEIGHBOURHOOD TRANSFORMATIONS IN PERI-URBAN CHENNAI

Pushpa Arabindoo

> *It is a double colonialism: rural lands are colonized by the city, in the interests of what remains a colonial economic system, so that wealth is drained from the periphery to the centre; and while Bombay is a major concentration of wealth in India, it is also a conduit for the export of the country's wealth to the rest of the world, on terms that certainly do not favour the Indian people. (Seabrook 1996, pp. 48-49)*

2.1. Introduction

In his anecdotal portrayal of scenes from a developing world, Seabrook (1996) had located the transformations of the cities of the South in its fringes and peripheries, wherein he questioned as to whether 'the intensive industrialization of agriculture and the spread of mass-produced artefacts into the countryside, the penetration of the hinterland by television', had 'rendered the frontier between urban and rural almost meaningless' (p. 11). Although, for some, such a statement could be viewed as tethering on the hyperbolic, the peri-urban interface has now set up a condition where it is no longer possible to slip into the slotted dichotomies of the urban and the rural with little consideration of interaction or overlap between the two. Thus, Potter and Unwin (1995) argued for focussing on urban and rural concerns not as separate processes in themselves, but to stress on the connections between these two loci of change which are seen as the products of deeper structural transformations in society. By 2000, when the term peri-urban interface was popularised by Brook and Davila (2000), it was clear that in the peri-urban areas, 'there is

no characterisation of who is buying land and for what purposes, whether it is urban dwellers buying land for investment or speculative purposes, farmers from other villages or new industries buying agricultural land for industrial purposes' (p. 16). What is also relevant is the acknowledgement that the complexity and heterogeneity that marks the peri-urban spaces have been underlined increasingly by globalising imperatives, creating a 'superinduced development', that is, growth brought about largely from outside forces (Thong 1995).

It is in this context that our previous paper[1] (published in the first volume of this series on *Peri-urban dynamics*) argued for the examination of the peri-urban interface as a constructed primordialism, where the dynamics of transformation of peripheral areas are seen to be not independent of the dynamics of the more central areas of the metropolis. Moreover, in the present era of liberalisation and globalisation, the urban peripheries are indicative of processes involving a political and societal vision of the city, displaying the need to envision the city as a world-class centre for global capital and transnationalised investment. In this condition, the complexity created by the presence of the various social groupings in the peripheral areas is rendered chaotic and problematic as global capital displays a marked preference for the peri-urban spaces in the Third World metropolis. Thus, the hypothesis regarding the social and cultural overlap evident in the settlement patterns of the metropolitan peripheries gains even more significance, as such areas are presented as complex structures that are characterised by heterogeneity and segmentation, creating new forms of segregation, polarisation, and socio-spatial fragmentation between the original village clusters and the new settlements catering to both the rich and the poor. What is important to stress

[1] Arabinddo, Pushpa (2005) Examining the peri-urban interface as a constructed primordialism. In : Dupont, V. ed. *Peri-urban Dynamics: Population, Habitat and Environment on the Peripheries of Large Indian Metropolises. A review of concepts and general issues*. CSH Occasional Paper No. 14, New Delhi, Centre de Sciences Humaines, pp. 39-74.

here is that the mosaic of diversity that is created and perpetuated should not be seen merely in polarised binaries of the rich versus the poor, but in a richer mix of varied elements that oscillate between their desires and compulsions of homogeneity and heterogeneity.

These arguments are illustrated using fieldwork evidence compiled in the southern periphery of the city of Chennai, constructing a qualitative analysis of the transformations of borderland neighbourhoods over a period of five decades starting from the 1950s to the current first half-decade of the twenty-first century[2]. For a better understanding of the influence of the metropolitan planning authorities and their abetment in the transgressions of capital (both local and global), empirical analysis is organised in time around the milestone year of 1978, as pre- and post-1978 periods. 1978 serves as an apt time-marker for several purposes. This was the year when the Corporation extended its boundary considerably in the southern part of the city, triggering a wave of developmental changes in the following decades. It also helps to categorise the whims of metropolitan fetishism pursued in developing cities rather cleanly, if only on a simpler frame of modern and post-modern periods. It cannot be contested that the planning agendas pursued using the modernisation and development debates of the 1960s and 1970s are different from the ones that developed in the liberalised era of the 1980s and 1990s. Our previous paper (Arabindoo 2005) has already established this. The evolution of the role and

[2] Fieldwork was conducted over an eight-month period from October 2003-April 2004 in Chennai. Primary material was gathered from qualitative semi-structured interviews with the residents of the two neighbourhoods located in the southern periphery of the city, in addition to the analysis and interpretation of written discourse including the official planning documents held in the Chennai Metropolitan Development Authority and the print media (primarily the local neighbourhood weekly *The Adayar Times*).

objectives of planning authorities[3] during these two phases has also been detailed in that paper. The objective of this paper will remain limited to the description and analysis of the transformations of two neighbourhoods, namely Valmiki Nagar and Neelangarai.

2.2. Background to Chennai

When in 1996, Madras was renamed as Chennai, it seemed as if this decision was not only a culmination of a series of social, economic and political events that had marked the fortunes of the city, but also served as a means of giving a name and face to the physical turn that the city was taking as a result. Originally founded in 1639 by the British traders of East India Company as a colonial port city (in fact, Madras was the first of the three major port cities to be established by the British, the other two being Bombay and Calcutta), Madras had grown in the colonial period as the administrative capital of the larger Madras Presidency. In the post-colonial era, following the reorganisation of the states on linguistic lines in the 1950s, Madras was redefined at two levels – as a major metropolis at the national level, and as a regional capital of a Tamil state, Tamil Nadu. Like any other postcolonial city, post-independent development planning has had the onerous task of managing the massive waves of immigration from the countryside to the city, the infrastructure pressures of which left room for little else. By the 1970s, the Corporation of Madras, a British established form of municipal government found itself inadequate to meet the demands of a growing population in an unregulated development of the city.

[3] Here, the reference is made mainly to the Chennai Metropolitan Development Authority (CMDA), which plays an overbearingly dominant role in the determining the developmental aspirations of the city. In the past thirty years, the CMDA has been a witness to its own transformation from that of a mere planning body to a major overseer of global investment in the metropolitan spaces of the city. There is also the Corporation of Chennai which is responsible for the management of a more limited area—the city of Chennai—within the metropolitan boundary, but whose powers and means are considerably diluted and often overruled by the decisions of both the Metropolitan Development Authority and the State Government under whose purview the CMDA functions.

Thus, when in 1973, a corruption scandal rocked the Corporation, the State government of Tamil Nadu deemed it appropriate to step in, disband the municipal government and appoint a para-statal body— the Madras Metropolitan Development Authority or the MMDA (now called as the Chennai Metropolitan Development Authority or the CMDA following the name change of the city)— to deal with the larger metropolitan area of the city. An Interim Plan had been prepared in 1967 for the Madras Metropolitan Area and was followed by a more elaborate Madras Metropolitan Plan for 1971-91 published by the Tamil Nadu government. The MMDA was established by statute in 1973 to interpret and implement this plan. Some of the major tasks undertaken by the MMDA during this period included the expansion of the Corporation boundary in 1978, proposals for satellite towns and the plotting of housing developments in the peripheral areas of the city to cater to the housing demands of the lower- and middle-income groups[4]. In 1980 a structure plan[5] for the Madras Metropolitan Area was prepared with recommendations for priority infrastructure investment in housing and employment generation in the existing city area and its immediate periphery. There was a clear calling for steering the expansion of the city away from the periphery in the long-term by preserving land for agriculture, rural development, and urban open space needs. Development of the outer nodes and the new towns would be deferred until after 1991. But implementation was slow, proving to be a hard task.

In 1991, with the launch of liberalisation-oriented economic reforms at the national level, the MMDA decided to launch a Master

[4] The Tamil Nadu Housing Board (TNHB) and the Tamil Nadu Slum Clearance Board (TNSCB) are actually the major para-statal bodies that cater to the housing demands of the population, the latter concentrating only on slum improvement and resettlement schemes. An analysis of their role and impact is beyond the scope of this paper, but it must be noted here that besides the proposal to develop satellite towns outside of the metropolitan boundaries of the city that would decant the population, the MMDA (CMDA) did venture on a considerable level into the promotion of plotted developments in the peripheries of the city.

[5] This was prepared by a British planning consultant, Alan Turner and Associates with funding assistance by the Overseas Development Agency, UK.

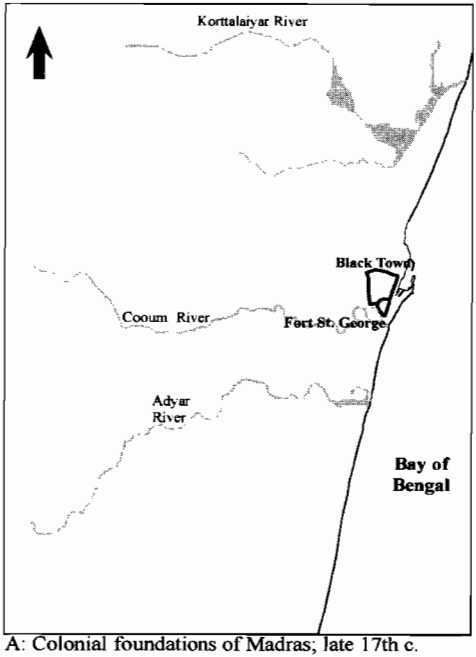
Plan for the Madras Metropolitan Area – 2011, despite the fact that many of the recommendations of the earlier plan remained unimplemented. Various controversies surround this one too, and till date it hasn't been adopted for implementation and execution either. While the role of the MMDA/CMDA diversified in due course, today it serves as a prominent partner to many of the private initiatives often led by developers, multinational corporations, and even international governments (notably Singapore and Malaysia). It is in this context of developmental politics that the fieldwork evidence must be considered.

2.3. View from the ground: fieldwork evidence

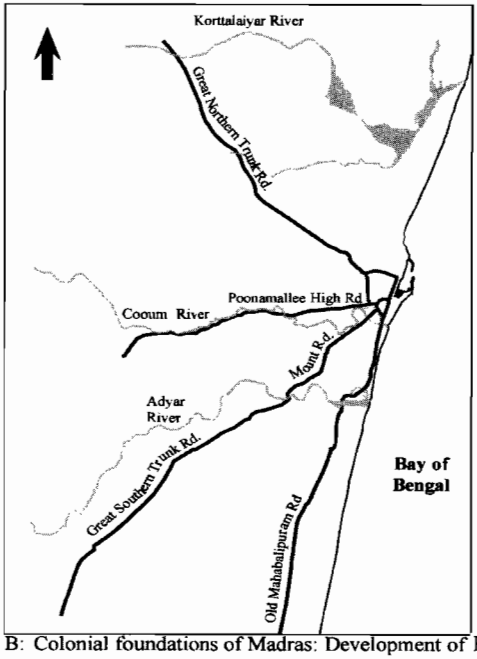
The choice of locating the fieldwork in the southern periphery of Chennai is, if anything, deliberate. Since its colonial foundation, the growth of the city has been endlessly marked by repeated references to its tendency of gravitating towards the south. Murphey (1996) in drawing a history of the city notes that after the establishment of the Fort and the "Black Town" to the north of it, the tendency of the Europeans was to move across the tidal creek (the Cooum River) southward into what was then a relatively open country (p. 28). The city from its inception north of the Cooum River had begun to sprawl outwards (or southwards to be more accurate). Ellefsen (1966) in summarising the observations of historians such as Love and Dupuis[6] distinguishes the suburban desires of the "Anglo-Madrasis" to retreat into their garden estates. The problem that this pattern produced was that of the efficiency of servicing an extremely low density development spread over a large area of the city (taking place largely in the Choultry plain between the Cooum and Adayar rivers). The situation was best described in the following description that appeared in the 1908 Gazetteer: 'though large parts are strictly urban the city as a whole is in fact, rather more of a fortuitous collection of villages separated from the surrounding country by an arbitrary boundary line, than

[6] See Love, H. (1913) *Vestiges of Old Madras.* London, John Murray; Dupuis, J. (1960) *Madras et le Nord du Coromande.* Paris Adrien-Maisonneuve.

Figure 1a : Evolution of the city

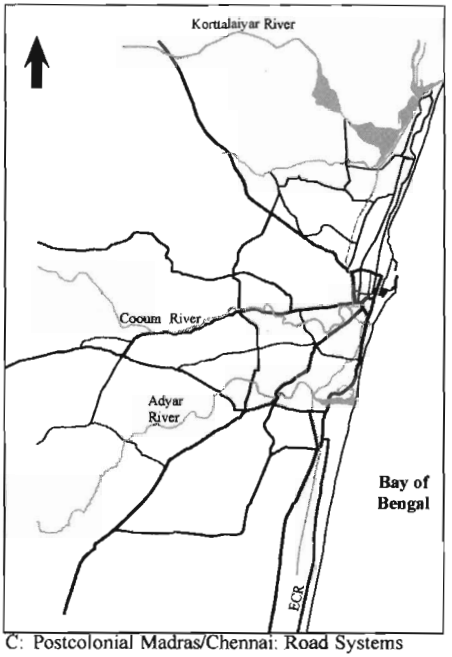


A: Colonial foundations of Madras; late 17th c.

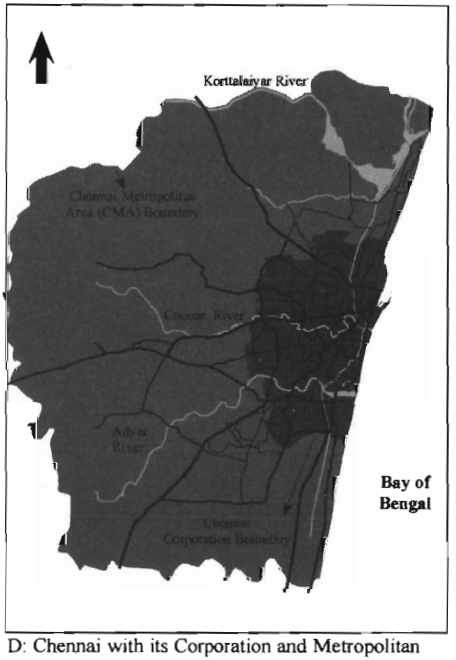


B: Colonial foundations of Madras: Development of Road System

Figure 1b : Evolution of the city



C: Postcolonial Madras/Chennai: Road Systems



D: Chennai with its Corporation and Metropolitan

a town in the usual sense of the word' (cited in Ellefsen 1966, n.p.). Thus, in contrast to the tightly-knit, high-density development of the northern George Town (as Black Town was eventually renamed), the southern part of the city was marked by a wide area of low-density suburbs. Both Lewandowski (1975) and Neild (1979) have remarked on the inefficiency of this south-bound growth, and the imbalance in city management that was inherently trapped in it. The former' s focus is on the fact that by virtue of its spread over a large area, 'the peripheral villages of Madras were frequently neglected in the period from 1870 to 1900, although at the same time particular attention was given to those outlying sectors where the elite lived' (p. 359). Declaring this spread as lacking in spatial cohesion, her argument is also that 'the growth of garden estate suburbs resulted in a large portion of the tax payers' money being used for the construction of roads and other facilities to cater to the needs of the city's colonial rulers' (p. 360). Neild analyses the transformation from a slightly different perspective, noting that the new fashion of suburban estates led to the decrease in cultivable land – the amount of cultivable land within the 27 square miles of city area in 1798 had reduced from 3,600 acres to a mere 565 acres.

Despite being dubbed as being unsustainable and unfair, in the post-colonial period while the city did expand in all directions, a powerful growth corridor was forming in the south and west. The city is precariously close to the northern state border with little room for expansion in that direction, and the Bay of Bengal on the east meant that the city had to naturally expand in the other two cardinal directions, namely the south and the west. This natural physiography has resulted in a radial peripheral development, concentrating particularly along the transport corridors which constitute the radial arteries of the city. But the spatial growth of the city hasn't been proportional to its population growth. From 1871 to 1971, over a century, while the geographical limits of the city hadn't even doubled (expanding from 27 square miles to 51 square miles), the population grew six-fold from 400,000 to 2,500,000 inhabitants. As the city grew, slums also grew side-by-

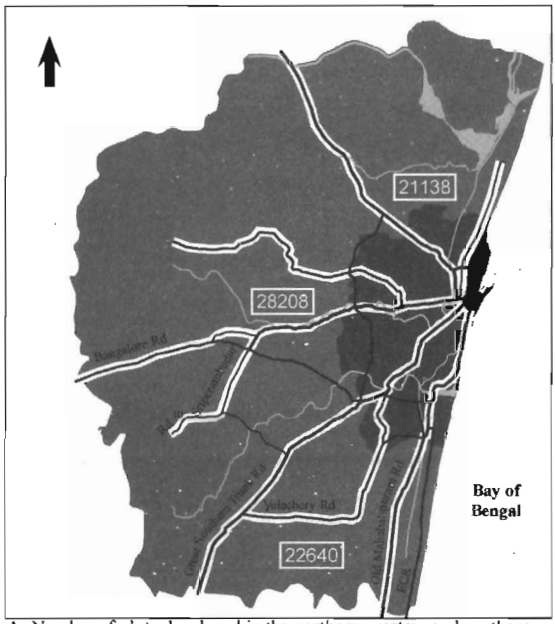
side, particularly in the new residential zones which was described as 'a crescent shaped girdle which sprawls from Elliots beach in the south-east to the eastern boundary of Villivakkam, a class I Panchayat in the north-west' (Ramani 1985, p. 231). Thangavel and Sachithanandan's study on the land sub-division patterns in the city in the 1980s reveals a marked preference for the southern and western parts of the metropolitan areas. They put forward the oft-repeated argument that North Chennai is perceived as being unsuitable for residential development with its large-scale polluting industries and water-logged areas (1998). This insistence on the preferred growth of South Chennai is followed up by Thangavel later (2000) when he says that between 1975 and 1995 smaller supply of housing plots have come up in North Chennai as compared to the southern part. This statement must be absorbed with some amount of caution. It cannot be ignored that the city has grown in all directions, particularly as much to the west, as to the south. What is rather important to note is where the powerful actors of the city prefer to locate, and here one can easily delineate a strong preference for the southern corridors of the city.[7]

It is against these claims in the argument above of a distinct preference for a south-bound development, that the southern periphery of the city has been selected. More accurately, two neighbourhoods namely, Valmiki Nagar and Neelangarai, located along the East Coast Road[8] have been selected. The intention is to examine the significance of the boundary condition (here the

[7] An Indo-Dutch Project for Alternative Development (IDPAD) sponsored study on *Envisioning the City and Politics of Development* by Pandian and Srivatsan is ongoing at the moment. The purpose of the study is to examine the role of south Chennai in the process of re-branding and re-imaging Chennai as a destination for foreign capital and international business traveller.

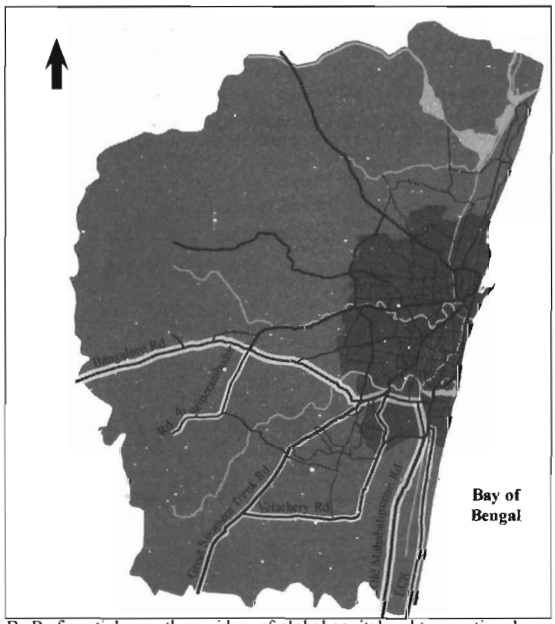
[8] The East Coast Road runs parallel to the Old Mahabalipuram Road and is also known as the New Mahabalipuram Road. Located further east, it typifies its peripheral location, running from Thiruvanmiyur southwards. Part of the Coastal Road Way project it is proposed to connect all the way up to Kanya Kumari (the southern tip of the state). Partly funded by the Asian Development Bank, it has become the entertainment corridor in the south of the city with drive-in theatres, a huge entertainment/cinema complex, amusement parks, beach clubs, etc.

Figure 2 : Patterns of subdivisions and growth corridors



A: Number of plots developed in the northern, western and southern

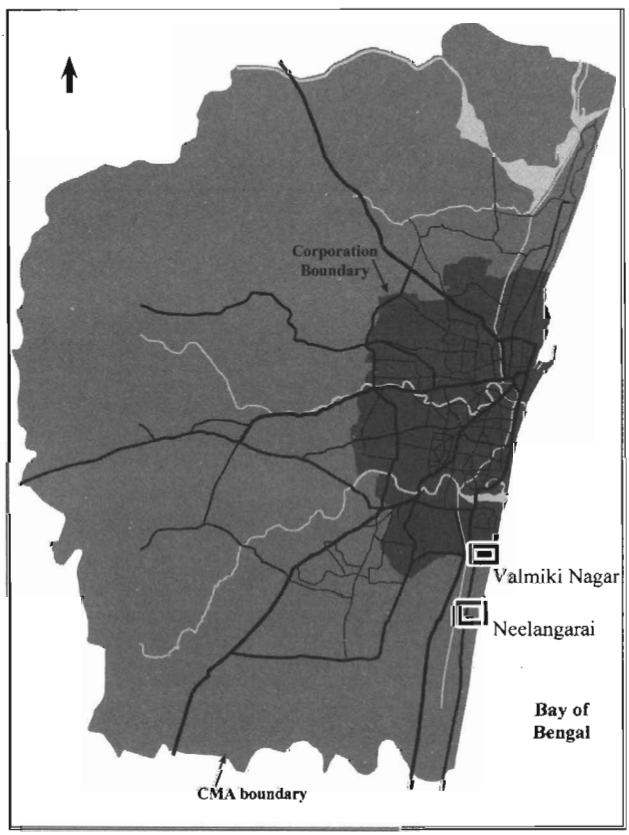
Source: Compiled from Thangavel and Sachithanandan study on



B: Preferential growth corridors of global capital and transnational

Corporation line) within the metropolitan area in the resulting development transformations. In this sense both the areas are appropriate selections. Until 1978, they were both outside of the Corporation boundary, the former belonging to the Thiruvanmiyur Town Panchayat and the latter constituting the Neelangarai Panchayat Union. In 1978, the Corporation line was stretched out to incorporate Thiruvanmiyur as its two last ward divisions (154 and 155). In the next paragraphs, a metamorphosis of both neighbourhoods will be evaluated for the times before and after 1978.

Figure 3 : Case study areas



2.3.1. Pre-1978: Sitting on the same side of the fence

Valmiki Nagar[9]

In the 1950s (the first decade after independence), Chennai hadn't quite warmed up to the idea of shoreline residential development, an aspect that Ellefsen (1966) in quoting Love (1913) attributes to the desire of the Anglo-Madrasis to reside in the interiors and along the riverfronts where good quality water could be assured for their gardens and also as they were tired of sand and water in their daily life at the Fort. The northern shore was already densely developed and thus it was not until the late 1950s that the southern shoreline began to display traces of outward urban growth. The heart of the city still offered some spaciously plotted residential developments, a prominent one being Theagaraya Nagar (T. Nagar). But the parallel growth of slums in the city proved to be a point of concern for many of the better-off residents and they began to look for alternative residential locations away from the congestion and pollution of the city. It was in such a pursuit that in 1958[10], a judge of the Madras High Court, Justice Balakrishna Iyer purchased a piece of land along the coast south of the village of Thiruvanmiyur. This land belonged to the Archdiocese of Mylapore-Madras, was completely undeveloped and was even referred to as a "sandy wasteland"[11]. His intention was to eventually build his retirement home here (which he did in 1961).

Iyer was an ardent walker and he preferred the unspoilt nature of the beachside property with its cool sea breeze and clear drinking water to the still polluted denser landscape of interior T. Nagar. Soon his bureaucratic circle of friends followed his lead, and

[9] Most of the fieldwork notes have been compiled from both primary and secondary material sources. The contribution to the former came from in-depth interviews with both the older and newer residents in the area. The archives of *Adayar Times*, a local neighbourhood weekly formed a prominent secondary source for material information.

[10] Resident interviewee 040301; resident interviewee 040315; *Adayar Times*, December 3, 1995 – January 6, 1996.

[11] As quoted in *Adayar Times*, December 10-16, 1995.

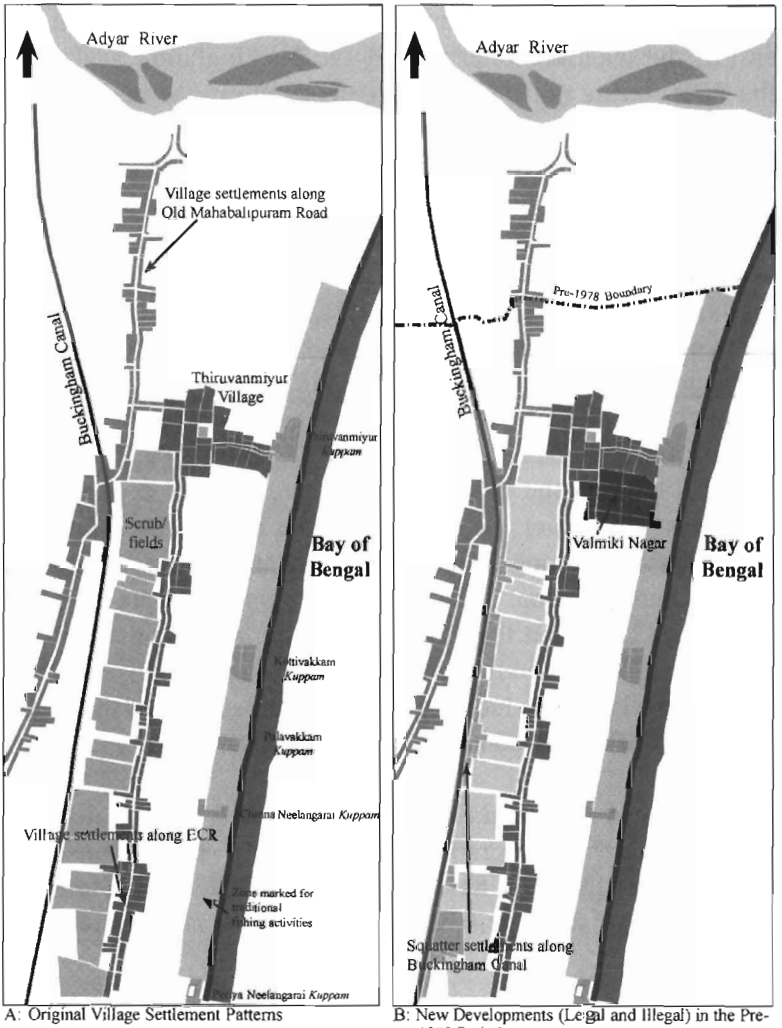
envisioning a potential for further development, the area was eventually plotted out in the early-1960s as half-acre to one-acre parcels with wide 40 feet roads in-between. A north-south road (named as Balakrishna Iyer Road) with four seaward roads running east-west constituted the basic layout. This little planning was enough to do the trick. Within a year, prices shot up from Rs. 3,500/- per acre to Rs. 6,000/-. Over the next twenty years, development remained sparse and few residences were constructed. Most of the plot owners were absent as they had bought it as a long-term investment or owned more than one plot while choosing to develop only one. Moreover, the presence of the definitely upper class crowd imparted an air of exclusivity to the area. This is very much evident in the way the colony was named, not so surprisingly, as Judges' Colony. Although a resident association called as the Thiruvanmiyur Colonists' Association was formed, older residents recall a distinct reluctance to mix with the Thiruvanmiyur village community. As one of them explained:

> ... coming from the bureaucratic circles, we could obtain at ease amenities and facilities such as telephone and electricity connections, get the bus routes extended, arrange for daily groceries such as milk to be supplied..... the villagers never had them...we never felt as if we were part of Thiruvanmiyur. It was a village and we were urbanised people.... but we needed a postal address and needed to identify with what was there. There was some confusion between what constituted Thiruvanmiyur and what was new development.[12]

Valmiki Nagar remained a tranquil little colony, and a metamorphosis occurs only after the extension of the Corporation boundary in 1978. But before turning to placing this change under the microscope, it would be useful to analyse the development of the settlement in Neelangarai during the same time period.

[12] Resident interviewee, 040301.

Figure 4 : Evolution of development along the southern shoreline



A: Original Village Settlement Patterns

B: New Developments (Legal and Illegal) in the Pre-1978 Period

Neelangarai

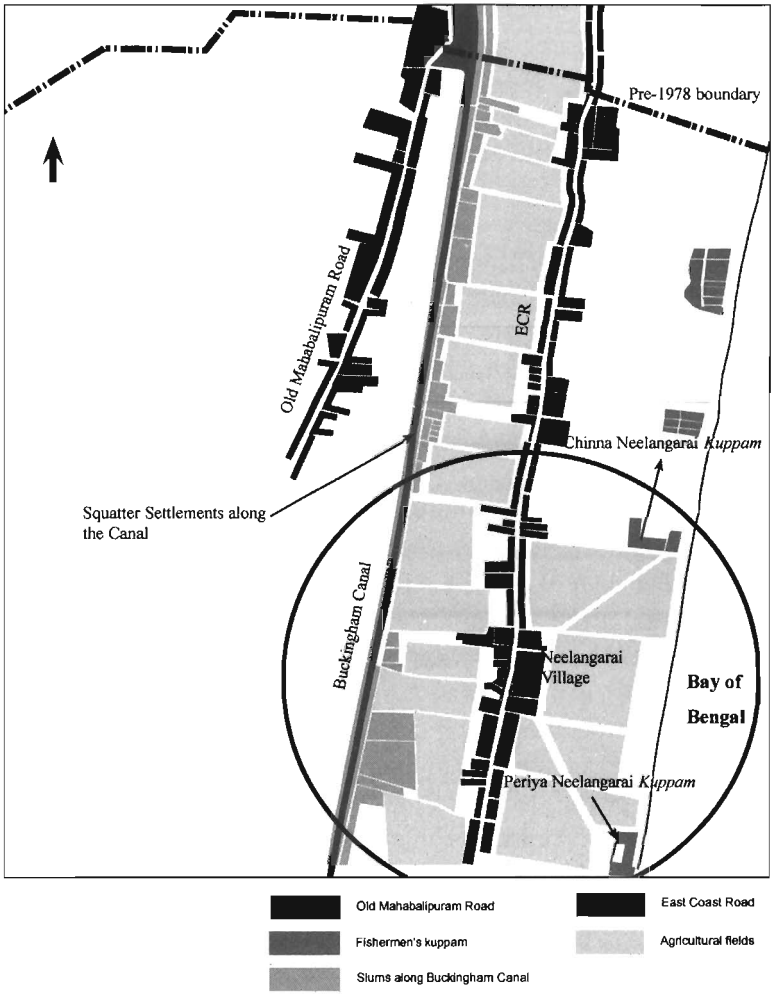
Neelangarai is one of the 10 Panchayat Unions within the Chennai Metropolitan Area, located approximately 5 km south of the village of Thiruvanmiyur. Marked by a mixed presence comprising of the fishermen located in their *kuppams* (as such

settlements are called) and a village along the main road (what is now the East Coast Road or the ECR[13]) exhibiting typical caste divisions found in any rural settlement, the morphology of the area exhibited some tight differentiations. It is bounded on the east by the sea and on the west by the Buckingham Canal, with the ECR cutting north-south along its length in the middle. The fisherman *kuppams* are generally separated by distances varying from 0.5 km to 2 km according to the traditionally established rights of fishing zone in the sea. Thus, the village was marked on its northern and southern frontiers by two *kuppams* – Chinna and Periya Neelangarai *Kuppams* (literally meaning the little and the big). There was hardly any contact with the fishermen, and some of the older fishermen recall walking along the criss-cross paths in open areas and fields to the village for occasional trade or purchase. The area to the west of the main road was either open scrub or used for some form of cultivation by the villagers. In the 1960s as the city started expanding and encroaching outwards, the newer, poorer immigrants to the city found the low-lying areas along the Buckingham Canal an easy stretch of land to encroach upon. Thus, squatter settlements began to appear along the Canal, but they hardly made an impact on either the existing village or the fisherman *kuppams*. But in between these clusters, the land remained barren and unharnessed, and thus there were no conflicts or contests.

As mentioned earlier, the landscape began to change after the expansion of the Corporation boundary in 1978. The impact on both the settlements has been similar and dissimilar, the examination of which will be undertaken in the next section.

[13] Before the East Coast Road was upgraded in the 1990s, it existed in a degraded earlier version that was called as the Muthukadu Road.

Figure 5 : Neelangarai village in the pre-1978 years



2.3.2. Post-1978: Caught on the opposite sides of the fence

One of the facts that remains sidelined in regards to Chennai is its rate of spatial expansion. Muthiah notes (2003, p. 24) that in 1939, with the city celebrating its tercentenary, the only major change in its extent from the earlier 1798 limit (comprising 27 square miles)

was the municipal inclusion of Mambalam. In 1978, nearly 16 square miles were added to increase the area to a manageable 67 square miles, an expansion of 2.5 times in eight decades. Again the metropolitan area seems to have remained around 450 square miles since at least 1964[14]. It is against this static character of the city's boundary that the 'volatile geographies' (Roy 2002) of the peripheries need to be evaluated.

Valmiki Nagar

Valmiki Nagar and Thiruvanmiyur were engulfed within the city limits in its 1978 expansion[15]. Unwittingly, the CMDA through its planning regulations triggered a transformation that was slow to sink in for comprehension but too rapid for placing any controls. Starting with its own name, everything began to change for this new colony. Initially called as the Judges' Colony in a self-confessed display of its exclusivity, the corporation renamed the settlement ironically as Valmiki Nagar to tie its identity better with the village of Thiruvanmiyur[16]. Note that the older residents had expressed a clear desire to be disassociated from the village. The change was at the spatial and social level, both a result of the conscious and unconscious tampering of development.

After the incorporation, nothing went per the desires of the existing residents. The very entities of their well-planned and well-plotted settlements proved to be a bane for them. From the mid-1980s onwards, private builders started entering the housing market to supply housing for an increasing middle class population. Earlier on, housing provision was under the sole monopoly of the Tamil Nadu Housing Board (TNHB, set up in 1961), or independently

[14] See MMDA (1995) Chennai Metropolitan Development Authority, Chennai, p. 128.

[15] The Thiruvanmiyur Town Panchayat was one of the 12 Panchayats abutting Chennai and which were incorporated into the Corporation in June 1978.

[16] One of the ancient manuscripts, the Sthalapuranam mentions that the great sage Valmiki, the author of the famed Indian epic, the Ramayanam worshipped Lord Shiva here as Vanmikanathar, and therefore the village was named as Thiruvanmiyur. It only seemed appropriate to not only bring forth this history but also to make the new colony a part of it.

taken care of by individuals. The entry of the builders was encouraged on two counts. First of all, the tone of liberalisation became a registered mantra in the government circles, encouraging all government bodies to work in close partnership with their private counterparts (this has been covered briefly in section 2 on the background to Chennai). Secondly, year after year, the TNHB was beginning to falter in meeting both quality standards as well as the target demands. The current annual housing shortage in the metropolitan area is a staggering 50,000 units, of which around 19,000 units are required in the city[17]. As the purchasing power of the growing middle class increased, they began to rely on the private suppliers for their consumption needs. A 1993 local newspaper article notes as to how and why the private builders are flocking to this neighbourhood:

> In place of the bungalows of yesteryear have risen a number of apartment blocks of different sizes and specifications to suit different tastes and pockets. Many of the city's major real estate firms including Premier, Parsns, Ramaniyams, Alacrity, Rams and Alsa planning [sic] projects here.... Apart from the ready availability of water which is the main bait, Valmiki Nagar offers other attractions too... The apartment complexes have varied and pleasing architecture. Most buildings have parking facilities, dish antenna, and gardens maintained by the promoters.[18]

It was clear from the beginning that the builders struck gold in Valmiki Nagar. The large parcels that ranged from half- to one-acre absolved them of the problem of land assembly, and the wide roads allowed taller structures extending up to five storeys – a rarity then within the city. Thus, in the mid-1980s, land value had skyrocketed to Rs. 20,000/- per ground (or Rs. 360,000/- per acre), hundred times its first selling rate, only two decades before. Also aiding them in this process was the fact that most of the parcels were in the hands

[17] See MMDA (1995) Chennai Metropolitan Development Authority, Chennai, p. 76.

[18] See *Adayar Times*, October 10-16, 1993, p. 8.

of absentee-owners who chose to cash in on the development bubble. As they were often the joint developers with the builders, they used the opportunity of multiple dwelling units to cater to their increased housing needs as larger joint families were breaking up into smaller nuclear families. Thus, in the beginning, the social ecology of the development managed to remain intact as the flats were occupied by members of the immediate or distant family, as well as friends. But slowly as the colony began to transform into a mini metropolis, the residents began to diversify and anonymity started creeping in. Besides the non-resident Indians (NRIs) who find the residential sector a safe investment zone, families from other cities in India have as well moved here, imparting a cosmopolitan character to the area. Households still remained predominantly upper middle class with an increasing percentage of tenants, and flats being rented particularly by foreign expatriates and employees of multinational corporations. But even as the older residents bemoaned the development of flats and the culture of indifference it ushered in, the harmony and homogeneity of the existing social structure was challenged the most by the construction of more than 500 flats by TNHB.

Social metamorphosis [19]

After the landmark neighbourhoods of Anna Nagar and K.K. Nagar that the TNHB developed and constructed in the 1960s and 1970s, Thiruvanmiyur has the next highest number of dwelling units and completed schemes undertaken by the TNHB within the city limits of Chennai[20]. Although, TNHB was often criticised for the locational disadvantages of its projects, its large-scale development programmes required the sites to be located at places where land assembly could be easy and practical. It was in this view, that during the year 1982-83, 11.68 acres were acquired by the TNHB in Valmiki Nagar through the Land Acquisition Act. 512 High Income Group (HIG) flats were

[19] This entire section has been based on a reading of the writ petition, the counter affidavits and the response to counter affidavits that were filed in 1995-96, and the final court judgement that was passed in 1997; resident interviewee 040325.

[20] TNHB interviewee 031119.

proposed in this parcel with the layout approved by the CMDA. In 1994, tenders were called for and construction began shortly. In 1995, the Valmiki Nagar Residents' Welfare Association[21] filed a writ petition in the Madras High Court against the construction, basing their argument on the Coastal Regulation Zone Act (CRZ)[22]. While the petitioners claimed an honest concern for the environment including the depletion of groundwater, some were quick to detect a subtle class bias in their resistance. *Adayar Times*[23] in writing about the interim injunction that they had obtained hints the same by adding that, 'Valmiki Nagar has become a posh and exclusive residential area over the years, more so for the seaside location of plots here. So much so, that in recent times, a lot of high-rise, prestigious flats have also come up and these maintain high prices too'. The injunction was eventually removed and the case awarded in favour of the TNHB[24]. In 1996, a year later, when 320 flats were nearing completion, another resident filed a writ petition against a further 48 flats proposed in a land to the south east of his plot, again basing his arguments on the violation of the CRZ. In vacating the petition in 1997, the court decreed that the development scheme was proposed to alleviate the growing stress on accommodation requirements in the Metropolitan limits. Declaring that vacant lands near already developed areas ran the risk of unauthorised occupation, they averred that the attempt of the applicant seemed to be more of a prestigious fight of an offending nature sans practicalities of the situation. The petitioner when interviewed about his recollections of this case recalled that one day

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[21] The Thiruvanmiyur Colonists' Association had gone dormant after the death of the initial settlers. In the 1980s, in an attempt to revive the association, a new one was formed by the older residents in the area and called as the Valmiki Nagar Residents' Welfare Association.

[22] The CRZ act passed by the Central Ministry of Environment and Forests in 1991 has trumped all other acts in terms of its ambiguity, and thus enhanced exposure to free-wheeling interpretations. With four categories of classification from CRZ-I to CRZ-IV to control the development of land within 500 metres of High Tide Line of the landward side, and many allowances for exceptions, the CRZ has been least effective in controlling development, let alone fighting legal cases with.

[23] *Adayar Times*, April 23-29, 1995, p. 1.

[24] *Adayar Times*, December 17-23, 1995, p. 3.

he was approached and asked by a resident from the TNHB development, 'why is it that you have so much aversion to lower-middle class people living here? Do you think Valmiki Nagar belongs only to the upper classes?' A clear evidence of a class bias-based resistance comes out in another resident interview[25]:

> As land prices increased from Rs. 3,000/- per acre to Rs. 4,000/- per ground and to Rs. 50,000/- per ground, Valmiki Nagar became unaffordable to a large mass of people. We [the residents] were often in fear of invasion from the outside. For example, a 200 dwelling unit development was proposed by the Tamil Nadu Housing Board in Thiruvalluvar Nagar, a site adjoining Fourth Seaward Road to its south. It was going to be EWG [economically weaker group]. It is basically a proposal to build a slum. We feared their invasion and protested against it. Eventually it was completed as a more upscale LIG [lower income group] and MIG [middle income group]. We are now relieved. A compound wall was also constructed to define our boundary. We don't worry now.

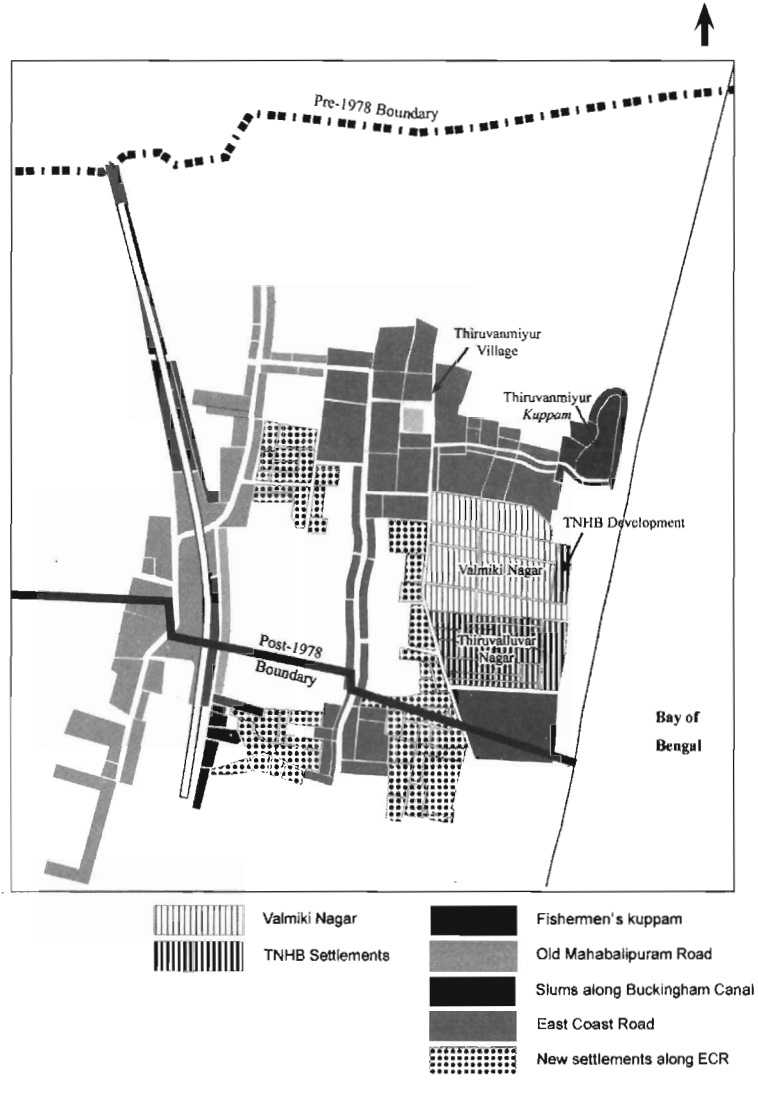
Today, baring the northern side, the TNHB development is completed but not fully occupied. The variety of housing types that differ in luxury features has created discontent amongst its residents and at least three residents' associations are functioning. There is very little contact or mingling with the other residents of the neighbourhood[26]. Private builders and beach clubs have been extending their presence further and further out to the beach, so much that they ridicule the alleged encroachment of TNHB. Valmiki Nagar Residents' Welfare Association has become a dormant body with the older residents its most active members and very few enrolment from the recent residents. With the IT Corridor close by, the incoming residents are marked by their itinerant nature, tenancy being a common feature in many apartment blocks. Fragmentation of interests is also visible in

[25] Resident interviewee 040301.

[26] TNHB resident interviewee 040315.

the fact that Valmiki Nagar in itself doesn't have a walkable beachfront (the one reason for which the area first developed), and ironically rely on the beach path of the neighbouring Thiruvalluvar Nagar (the one they had feared as being lower class and invasive) for their morning and evening walks.

Figure 6 : Developments in the Valmiki Nagar in the post-1978 period



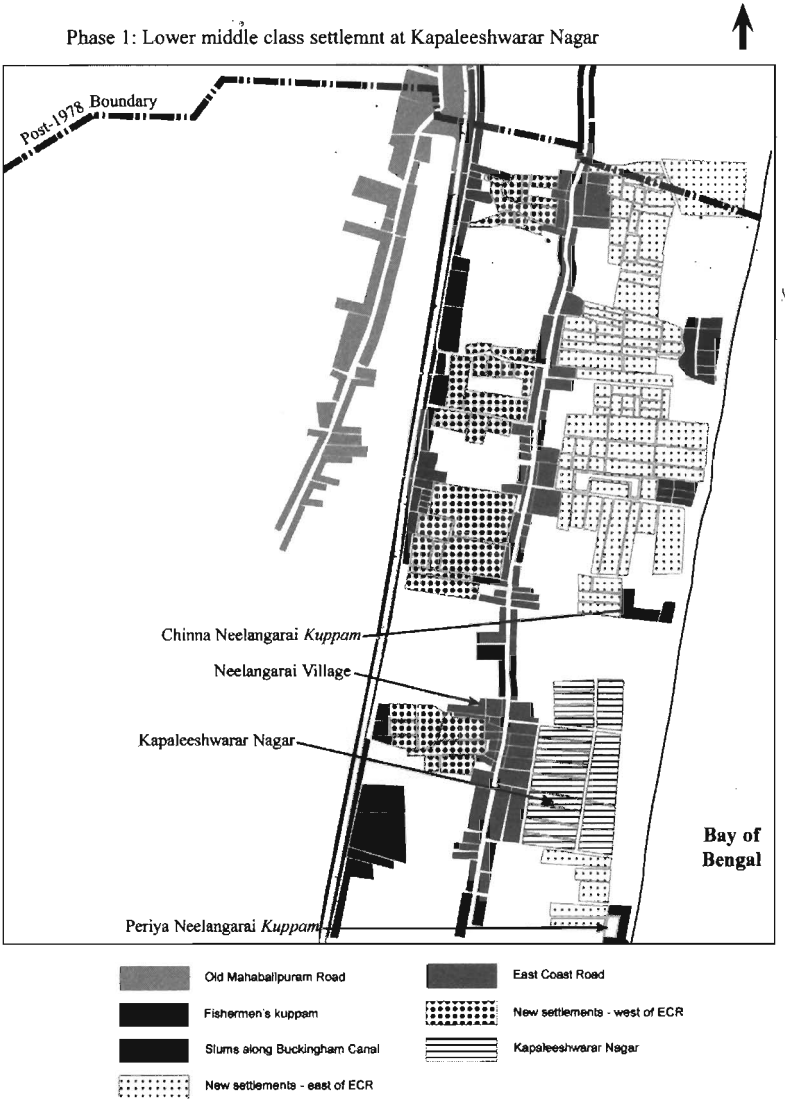
Neelangarai

With the extension of the Corporation boundary, the CMDA hoped that the services will also eventually be extended. According to the 1981 census, 68% of Chennai's households were renters and only 32% were owners. The Metropolitan Urban Area evinced a similar statistic – 62.5% in rental accommodation and only 37.5% in ownership[27]. It was this high percentage of tenancy that created the craze for plot layouts in the urban fringes. In this context, the CMDA undertook the task of plotting out some layouts in the peripheral areas outside of the city. These areas were previously considered inaccessible and their population had remained local in nature. It was with this view that in 1981 the CMDA plotted Sri Kapaleeswarar Nagar – a layout comprising of 507 plots of differing sizes (from one to three grounds[28]) developed around the village of Neelangarai on East Coast Road. As a development that was relying on services coming off the main road, there seemed to be no need to extend up to the beach. Moreover, the beach was still perceived very much as the territory of the fishermen community, and therefore a need to avoid their hostility was recognised. The layout was soon lapped up by the working middle class who in their keenness to own their shelter preferred relocating to this distant development and constructing their own homes. The smaller plots were sold quite immediately, mostly to employees from Southern Petrochemicals Industrial Corporation (SPIC). The larger plots remained either unsold or were under absentee-ownerships as they were purchased as a long-term investment. Unlike most peripheral layouts that are undertaken by local private bodies and are often unauthorised, the fact that this was a model development by the CMDA with areas set aside for common areas, playgrounds, community centres, etc., was very reassuring to the purchasers.

[27] The attempts of the planning authorities to enlarge the ownership base in the city and the metropolitan area seems to have paid off, as per the indications of the 2001 census. Within the Corporation area, 47% of the households are now owners.

[28] Compare and contrast this with the gigantic plot sizes in Valmiki Nagar that ranged from 9 to 18 grounds.

Figure 7 : Development in the Neelangarai in the post-1978 period



Conflicts nevertheless rose with the fishermen community, as the layout superimposed itself on the criss-cross paths that they used to access the village from their beach settlements. It did remain

contained, as the development was long short of their traditional territories along the beach, and the new middle class communities tended to rely more on the immigrant poor squatting along the Buckingham Canal for the provision of domestic services. Also, through their organised collective action (an association named as Sri Kapaleeswarar Nagar Welfare Association was formed in 1981) they were able to procure for the area many services that were missing before. Although, the builders did not swarm this area during the building boom (the farther one was from the city, the more the preference for plots and less for flats), the neighbourhood soon faced an onslaught from a new patron group – the upper classes and the rich.

In the 1980s, in the early era of liberalisation, some of the upper classes cut a neat profit in the privatisation drive geared by the government. With more floating capital than ever before, and seeking a lifestyle that aped the luxurious West, they were looking for some comfortable options to channel their desires and their capital. The concept of second/weekend homes was just then beginning to catch up. This was in reality no revolution. It was merely a matter of going back to old habits already set by the colonial predecessors. Often, during the colonial era, the richer Anglo-Madrasis were in possession of two houses – one in the George Town area from where they conducted businesses during the week, and one in the countryside where they could retire to during the weekends. There were no peripheral industrial units along the southern shoreline, and the beachfront was unspoilt. Thus, further east of the middle class Kapaleeswarar Nagar, an upper class stretch developed. With huge mansions facing the beach, Casuarina Drive became the address for the fashionable rich. The fact that this was unapproved and unauthorised was of slight significance to them. There is a lot of controversy over how this stretch of land came to be assembled and developed. Here comes to the fore, yet again, the complete uselessness of the CRZ Act. The eastern edge of the original CMDA development was a road called as the 4th South Main Road. This was 200m away from the High Tide Line in conformity with CRZ-II. Casuarina Drive further

east of the 4th South Main Road is clearly within the 200m zone, which is traditionally claimed by the fishermen[29]. It is even alleged that the fishermen in wanting to cash on the craze for beachfront properties created pseudo land-ownership records (known locally as *pattas*) for this length of land and sold them to the upper classes. This allegation often came across in the interviews with the middle class residents of both Kapaleeswarar Nagar and Valmiki Nagar[30]. The fishermen deny these allegations, laying the blame on the Panchayat for tagging along with the aspirations of the newer better-off communities of Neelangarai. What ever may be the manner in which the highly desirable beachfront properties were procured, the ground reality today is that posh beach villas occupy this stretch, and whether their construction is approved or not, they do pay house tax to the local Panchayat, thereby legitimising their presence to a large extent.

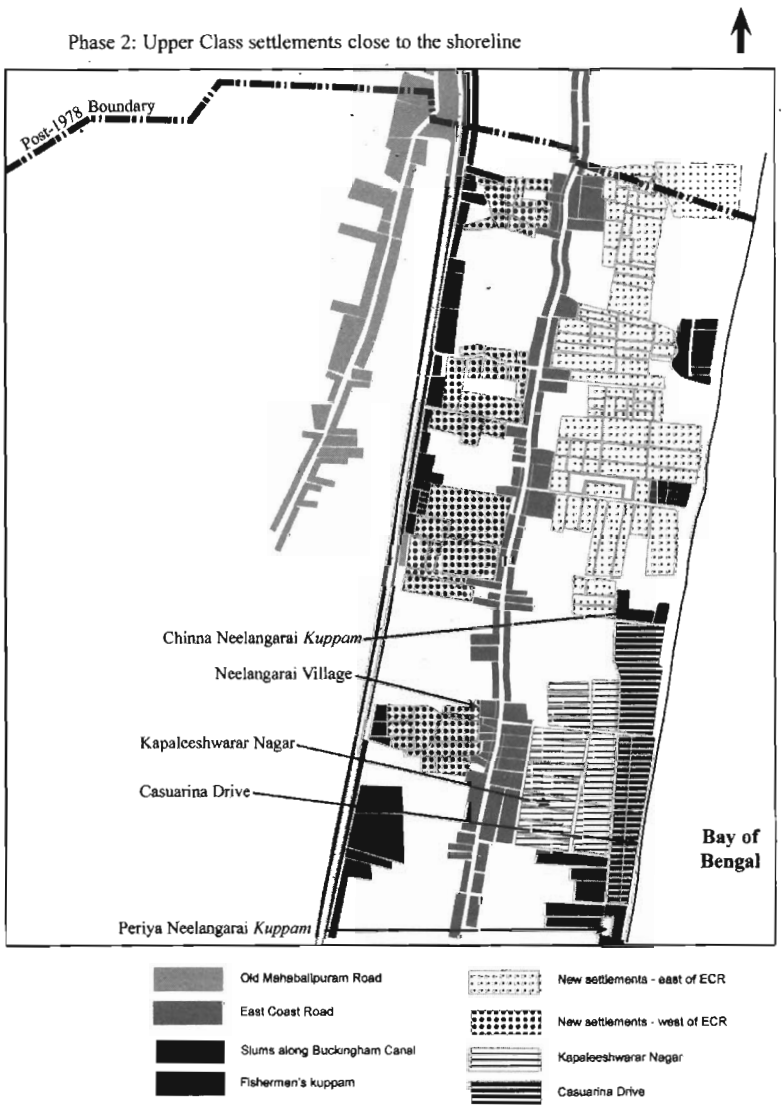
In recent times, the conflict of interests between the middle class, the upper class, and the fishermen has accentuated. It is worthwhile here to pause for a moment and refer back to the 'enclave, citadel, and ghetto' theory of Marcuse (1997, pp. 228-264). He defines the ghetto as a form of involuntary spatial segregation where the inhabitants are first subordinated and then excluded, the enclave as a more voluntary form where the inhabitants seek to promote their own welfare through their collectivism, and the citadel as a space created by a dominant group to protect or enhance its superior position. He also warns that neither are pure or rigid, with conflicts often arising out of one wanting to transcend into the other, this mostly being unidirectional and upwards. The other relevant criteria he talks about is the manner in which within the ghettos as internal

[29] Some of the fishermen in their interviews claimed that the 200m regulation traces back to their occupational requirements – it being the distance required pulling their catamarans to the beach and stretching their nets out fully to dry.

[30] In Valmiki Nagar the allegations are stronger as the middle class community watches the new developments encroaching further and further towards the beach with absolutely no embargo on their construction. They are clueless as to how the beach, which is supposed to be a public property came to be so ruthlessly parcelled up and claimed by private development interests.

cohesion is weakened and eroded, the importance of place is strengthened, and the way enclaves are exclusionary due to vulnerability while the citadels are merely imperial and intended to protect bastions of power and influence.

Figure 8 : Developments of Neelangarai in the post-1978 period



If the above analytic template were to be superimposed on the existing social mosaic of Neelangarai, then it offers a neat fit to view the situation. The fishermen community has been facing a continued economic decline. The ones on the southern shorelines are small-scale, their fishing habits are hardly industrialised, relying on their traditional catamarans and fishing close to the shore. Their catch and income have been affected by the mechanisation of fishing activities north of the Chennai Harbour, where trawlers are used to drain up all the available catch. Most of them have sought alternative occupations, often being engaged as security guards in the new developments coming up along the beach, be it the beach clubs or the private mansions. The women continue to sell fish in the market, and in really lean times work as domestic servants to supplement the income. This condition is pretty much akin to what Seabrook (1996) paints for Penang in Malaysia where the local people have been 'submerged by a "development" that has passed them by, caught up in the process of becoming urban without even moving' (p. 16). He describes the way the shoreline is reworked and land reclaimed to meet the newer demands of tourism, destroying the livelihood of the native fishing villages in the process. The men are left lost without an occupation, the women are forced to seek employment in the free trade zone factories, and their families are relocated in a concretised urban wasteland that has replaced the fishing village (p. 18).

Frustration with economic deprivation has indeed made the fishermen aggressive and hostile. This is felt by both the residents from the middle and the upper classes. The original middle class layout of Kapaleeswarar Nagar still has many undeveloped plots (around 300 of the 507 plots have residents living there), which are often encroached upon by men from the fishing village to conduct their trade – here mostly being karate classes. In Chennai, akin to what Caldeira has portrayed for Sao Paulo, the fear of the inferior and supposedly violent other has created a craze for security. Karate classes are quite popular in the city amongst the youngsters (mostly from the low and lower-middle classes). The

irony of the situation is caricatural yet real – poor men encroach upon plots of the middle class to teach the youth from the lower classes the art of self-defence, who then render their services as qualified and well-trained security guards to the middle and upper classes of the same neighbourhood. Caldeira explains this situation in Sao Paulo:

> The middle and upper classes are creating their dream of independence and freedom—both from the city and its mixture of classes, and from everyday domestic tasks—on the basis of services from working-class people..... In a context of increased fear of crime in which the poor are often associated with criminality, the upper classes fear contact and contamination, but they continue to depend on their servants. (Caldeira 1999, p. 122)

The upper classes along Casuarina Drive also allege similar misconduct on the part of the fishermen. Of late, these residences have found favour amongst the transnational elites as their preferred choice of residence during their limited presence in the city. Rented to the foreign expatriates at whopping rates corresponding to the western prices, the owners of these mansions are also required to comply with the provision of a similar environment. Thus, when the fishermen continue to use the beachfront as an open toilet, it is considered as a blot on the pristine environment, and sought to be immediately controlled. This is of course resented, resulting in unruly confrontations. The situation has been fuelled as well by the recent development of a resort along the beachfront— the Buena Vista Beach Resort and Bella Vista Corporate Enclave—by a long time resident of the area. Touted as being ideal for the multinationals and the corporates, the setting of the beach is part of the pitch. There is therefore a compulsion that the backdrop of the beach adheres to the clean and pristine picture painted by the promoters. Local fishermen defecating on the beach are definitely not part of the landscape and their action is considered instantly as a blemish. While the resort management wish to ensure the complete comfort

of their customers who could without any hesitation venture out to the sea for a bath or a stroll, the fishermen resent strongly this control of their daily habits and their behaviour in public spaces. There was an attempt to build a toilet for use by the fishermen but in the absence of a proper dialogue between the two groups, the location of the toilet became a bone of contention and was demolished even before its construction could be completed.

If the relationship between the local community and the settlers has tapered off into hostile contentions, then the one between the settlers themselves hasn't been rosy either. The middle class residents by virtue of their being there from the beginning have had to struggle with the establishment of basic services and provision of amenities in the area. Through the collective action of their association and after hard pursuits, they have managed to secure for themselves facilities that weren't there at the start. What is interesting however is their insistence on making these facilities exclusive to their enclave, and their unwillingness to share or extend them to the areas occupied by the upper classes. The latter have thus made their own private arrangements to service their citadels, things that are easily obtained through their influence and power. Duplication of services is rampant, as different groups service different stretches, and a strong fragmentation of territoriality emerges amidst the heterogeneity and segmentation of social classes.

2.4. Conclusions

Unlike the glaring presence of global capital along the IT Corridor (Old Mahabalipuram Road or OMR, which runs parallel to the ECR, about a km further west) or even in the heart of the city in the form of corporate curtain-walled towers that speak the language of international architecture, the heterogeneity and fragmentation of the socio-spatial morphology of the case study areas reveal machinations that are more subtle and discreet. While examining the traits of post-fordist flexible capital on the landscape of Third World cities, it cannot be ignored that

globalisation is just one stage of developmental planning in the postcolonial era. This paper has illustrated with fieldwork evidence the transformation of the peripheral areas from the earlier periods of modernisation and development to the current liberalised era of transnationalised pursuits.

The metropolitanisation of developing cities has clearly created a condition of inter-relativity between the core and the periphery. This is well revealed in the transformations that affect the peripheral neighbourhoods with the expansion of the city boundaries as they are brought within the developmental planning of the city. The evolution of Valmiki Nagar from a posh peripheral settlement outside the city to a heterogeneous peripheral neighbourhood within the city proves this aspect well. What is also evident is the growing need to retain a regulatory fuzziness in the peripheries in light of the spatial preferences of global capital. This is clearly seen in the changes happening in Neelangarai, as it evolves from a settlement catering to the housing desires of lower middle classes and the immigrants (both legal and illegal) to a desirable location for resorts, expatriate housing, seaside clubs, and international conference enclaves. But sadly, what is also engulfed by this air of ambiguity is the notion of local governance. Even after its resurrection in 1996 as an elected body, the Corporation remains considerably limited in the role it can play in determining the spatial development of the areas within its remit. Worse is the condition of the Panchayat unions, which remains ridiculously minuscule and prey to the predatory desires of metropolitan planning authorities. With the latter openly declaring their intentions of partnering with the privatised and globalised actors, peri-urban areas become key pawns in the real-estate gamble. Paralleling the IT Corridor along the OMR, neighbourhoods along ECR are strategically placed for manipulation by the development authorities. But what is ignored is the risk of the condition of heterogeneity petering out into a meaningless pattern of fragmentation and segmentation wherein the emerging politics of governmentality is unable to provide a counter-balance to the newer forms of invasion,

encourage the development of grass-roots movement, or take a middle-stand and try to mediate and negotiate the conflict that ensues. In moments when they are not actively partnering the capitalist insurgencies, they remain silent spectators to the deluge of speculation and investment.

Author's notes:

- Given the fact that the government schemes tend to classify the residents into income groups, namely the low-, middle-, and high-income groups (LIGs, MIGs and HIGs), and identify the poor as the economically weaker groups (EWGs), the use of class here to identify the different strata between the poor and the rich (the lower classes, the lower-middle, middle, upper-middle and the upper classes) may seem a bit loose and inappropriate. It needs to be clarified that class here is applied neither simply objectively (occupation or income-based) nor subjectively (identity, belief and loyalty), but at the interstices of both. In the Indian scenario this of course presents a rather tricky and sticky interface of class and caste. While it is not the intention of this paper to embark on a theoretical discourse on this problematic interface, it needs to be emphasised that class remains relevant to capture the social heterogeneity of the Indian society, particularly in the urban condition.
- Fieldwork was undertaken from October 2003 till April 2004, and was made possible through funding assistance from the Central Research Fund, University of London, Rajiv Gandhi Foundation Travelling Scholarship, and the Douglas Stamp Memorial Fund from The Royal Society.
- All maps are not to scale and for illustrative purposes only. They are only indicative and not accurate in terms of real features such as property lines, boundaries, lots, parcels, etc.

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III

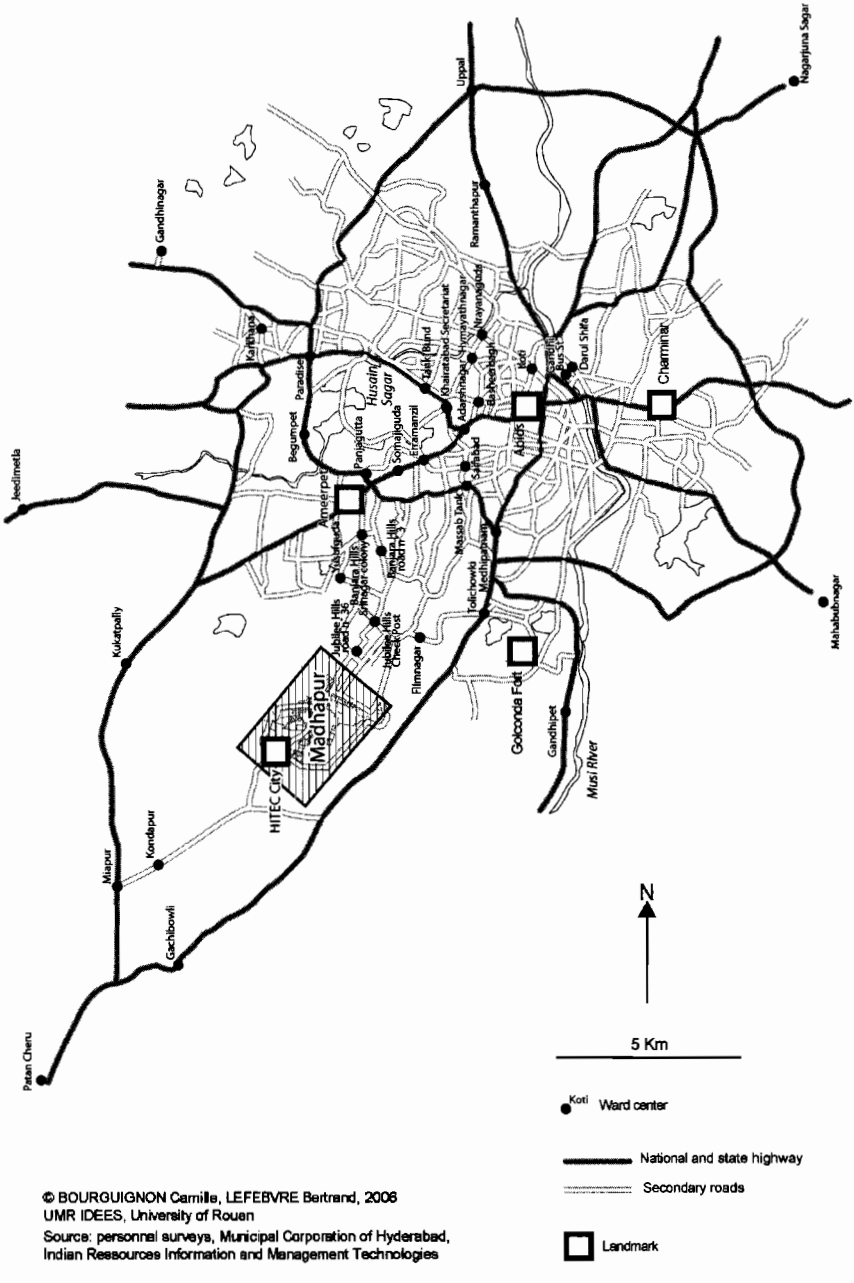
DEFINING THE URBAN FRINGE THROUGH POPULATION MOBILITY: THE CASE OF MADHAPUR AND ITS INFORMATION TECHNOLOGY PARK (HITEC CITY – HYDERABAD)

Eric LECLERC
&
Camille BOURGUIGNON

3.1. Introduction

Among the various patterns of peri-urbanisation in the Indian metropolises at present, the development of Information Technology (IT) clusters has been observed in many southern Indian cities. The development strategies implemented by the Southern state governments during the last decade is an important reason for this pattern of IT growth (Leclerc 2003). At least for Bangalore, the growth of Information Technology clusters ranks this metropolis among the quintessential 'global cities' of the urban world (Sassen 1991). These new IT hubs are located in the periphery of these cities, as for example, the International Technology Park and the Electronic City for Bangalore. This sort of peri-urban location has since been followed in Chennai, Hyderabad and Pune. Through the case study of one of these IT clusters, HITEC-City in Hyderabad, we propose to analyse a type of the new peri-urban dynamics occurring in the Indian metropolises.

Figure 1 : Location of Madhapur in Hyderabad Urban Agglomeration



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UMR IDEES, University of Rouen
Source: personnal surveys, Municipal Corporation of Hyderabad, Indian Ressources Information and Management Technologies

Towards this purpose, we will rely on the population mobility to assess the integration of this IT cluster within the city of Hyderabad. We will not analyse the changing settlements pattern or land use. Our focus is more on the processes of growth rather than on the identification of the specificities of these peri-urban spaces. Are these IT parks an 'island' in the urban landscape? Do they participate in the social fabric of their city? To answer these questions, valuable for every kind of peri-urban dynamics, we will use a new methodological approach to assess the level of urbanity of these IT clusters. Based on results produced by Camille Bourguignon (2002) in his case study of Madhapur where the HITEC City project has been implemented in Hyderabad, this paper explores and analyses population mobility as a key indicator of the level of integration of an IT cluster within its city.

Starting with a brief presentation of the theoretical framework of this approach, we will focus on the methodology and findings of the survey. Through a critical appraisal of these results, we will develop some proposals for an analysis of these new networked urban territories.

3.2. Theoretical framework

Initiated in 1996, the HITEC City project was inaugurated towards the end of 1998 by the government of Chandrababu Naidu (the then Chief Minister of Andhra Pradesh) to serve as a landmark of his Vision 2020 programme. Built up in order to cope with the development of IT industries in Bangalore, this project has been financed through an original private public partnership. The state of Andhra Pradesh provided the land (64 ha), and Larsen & Toubro limited provided 90% of the capital in a joint venture with AP Industrial Infrastructure Corporation the public partner. Resorting to the strategy of the 1970s when heavy industries were located outside the city, HITEC City was set up on the periphery of the existing city limits along the lines of the new Science Park model used in Taïwan for the Hsinchu

project (1980).[1] In contrast to the earlier development of research bodies along the periphery of Hyderabad such as the ICRISAT (International Crops Research Institute for the Semi-Arid Tropics), HITEC City was not conceived as an isolated campus. It has been planned in the Vision 2020 programme as an area dedicated to Information Technology (IT) companies and various other educational institutions, a space that would facilitate links between research laboratories and industries. To implement this new IT hub in the periphery was a departure from the previous location policy, when the Software Technology Park of Hyderabad was located at Ameerpet (HUDA Maitrivanam, cf. Fig. 1), much closer to the centre (historical and modern) of the twin cities.[2]

Less than a decade after the first stone was laid by the Andhra Pradesh government, Madhapur village where HITEC City is located, is now in spatial continuity with Jubilee Hills, a posh suburb which was previously the urban frontier of Hyderabad. Madhapur has been quickly integrated into the urban landscape of the metropolis but beyond that material fact, what has been the degree of integration of Madhapur into the city? That is the focus of our study.

From 2000 to 2002, three Master degree studies have been completed at the University of Rouen (Department of Geography) to assess this model of peri-urban development:

- 2000: Analysis of the IT Park (by Stéphanie Morel),

- 2001: Socio-spatial impact of the IT Park on Madhapur village (by Benoît Loquet),

[1] The Hsinchu Science Park was established in December 1980 by the Taiwanese government and is an hour's drive from the Taiwanese capital, Taïpeï (*Vision 2020*, exhibit 24.2, p. 288). This Science Park is primarily focused on research and the production of electronic hardware (semiconductors).

[2] Cf. Figure 24 in Vaguet Alain and Vaguet Odette (1993).

- 2002: Integration of Madhapur within the urban agglomeration of Hyderabad (by Camille Bourguignon).

Based upon the definition of the city by Lévy (1999) – a societal configuration based on co-presence[3] – we attempted to evaluate whether Madhapur possessed the two fundamental criteria of a city: diversity and density, or to put it in another way, the level of urbanity[4] that has been reached so far. J. Lévy has defined different urban geotypes at different levels of diversity and density starting with the city geotype, which has higher values for both. With less density we are talking of the suburban and the peri-urban geotype (mostly residential with low density). With less diversity we think of the para-urban (specialised area with mono-industry or tourism) and the meta-urban geotype (low diversity and fragmented urban space due to the network expansion).

In the study of Indian peri-urbanisation, these IT clusters are particularly interesting because they bring up at least two paradoxes:

- Firstly, they are built on the telecommunication paradigm for their economic activity as they are an offshore location of foreign companies or local companies exporting their production through telecommunication networks. Telecommunications does not imply co-presence, and so differ from the actual model of

[3] For societies, space is a constraint, which has to be managed in order to decrease the distance between its different members. If you have any distance between these members, you do not have any interaction. This is the spatial dimension that any social group has to face, ranging from isolated communities (infinite distance) to society (disappearance of distance). To solve the problem of distance, societies can use three different modalities:
- Co-presence: to bring together people (or entities) in contiguity to enable their relations,
- Circulation: another solution to reduce distance between social entities is to move from one location to the other,
- Ubiquity: telecommunications create co-presence through real time communication.

[4] Urbanity is the level of organisation of the societal objects in a peculiar urban situation. That is why the non-neutrality of 'location', the spatial pattern, is as important as the level of density and of diversity.

the city whereby economic agents have face-to-face contacts. So these IT clusters are not an extension of the actual city but they are conceived as another kind of city (Cyberabad[5]), the third step in the history of Hyderabad[6].

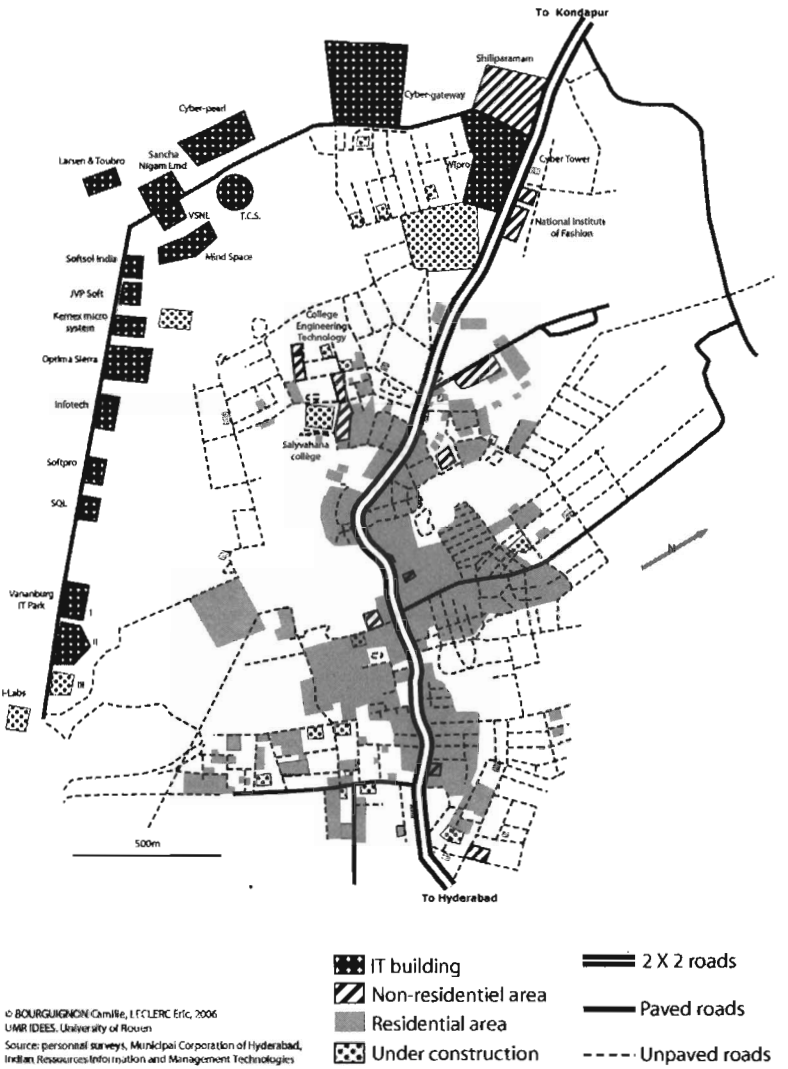
- Second paradox: the Science Park model is an attempt to build an innovative milieu outside the main city, in the peri-urban space. Now the city geotype (see above) draws a large diversity of social groups, economic activities and reduces the distance between them. The multiplicity of interactions (formal or informal) manifested in this co-presence is an essential prerequisite of innovation, as observed in the Silicon Valley. Therefore, these IT clusters have to face the social challenge of innovation beyond the infrastructure-related achievements.

The study by Camille Bourguignon was an attempt to measure the level of urbanity of HITEC City using the example of the Knowledge Corridor planned by the Andhra Pradesh government (cf. Fig. 2). How will such an urban model evolve? Will it become a specialised cluster area with less economic diversity by pursuing the classical industrial model? Will it become the preserve of a particular social category, for example middle-class people with the disappearance of the previous inhabitants of the village, leading to less social diversity? Taking a pan-Indian perspective, it is important to ask which kind of societal space is forming in the new urban settlements that are growing in the periphery of the main metropolis of Southern India (Bangalore and Chennai) and Western India (Pune and Mumbai).

[5] The Andhra Pradesh government has designated 5,000 acres (20 sq km) around HITEC City as 'Cyberabad' in order to give a boost to the development of IT infrastructure.

[6] The first step of Hyderabad was the old Muslim city (1591) with the *Charminar*, and the second step, the colonial city (1798) with its cantonment, Secunderabad (Vaguet A. and Vaguet O. 1993, pp. 6-15).

Figure 2 : Land use of Madhapur (April 2004)



3.3. Methodology of the study

In order to measure the level of urbanity in Madhapur-HITEC City, we relied on Camille Bourguignon's study of population mobility.

It was not possible in the limited duration of a Master in Geography to assess the total urbanity index of Hyderabad (sum of the interactions in the city), and thereafter to isolate a part of this space, Madhapur, in order to assess its contribution. Thus, we decided to focus on the intensity of the urban links of the citizenry in order to assess the relative urbanity.[7] This measure could have been done through the assessment of the accessibility of Madhapur (sum of the potential moves from and to Madhapur). In this case, it would have been necessary to collect data about the infrastructure of transport (bus lines, railway, road among other factors). But, as our aim was to assess the participation of the inhabitants of Madhapur in the social fabric of the city, we opted to study their effective mobility (i.e. which kind and how often do they really use these different means of transport?).

Our analysis of the role of Madhapur inhabitants in the making of the city is devised along three axes:

- analysis of the distance factor through the study of their moves from Madhapur to Hyderabad (but not the reverse),

- analysis of the main places visited to identify the reason for their mobility,

- identification of the factors of the day-to-day mobility to underline the differences among the population.

Due to the lack of data on the effective mobility of the inhabitants of Madhapur, we had to build our own database through a direct questionnaire. We used the methodology of geo-marketing studies (Orhan 1999) in order to identify all the real moves of the citizenry. The enquiry is based upon all the moves done by the person the

[7] The absolute urbanity is related to the size of the city but also to the kind of objects and actors who could interact. The growth of a city through peri-urbanisation should enhance its absolute urbanity, but if these new settlements are poorly connected and with a low level of social diversity, this gain could be small. For this reason, the relative urbanity (intensity of urban links) should be assessed separately.

previous day as well as the previous Sunday, in order to study the variation of the mobility in time. For every move outside the residence, the interviewee was requested to provide answers to the following daily actions:

- Purpose of the move,
- Time of departure (variation of the mobility during the day),
- Place visited,
- Means of transport,
- Number of persons accompanying the interviewee,
- The exact track of the journey with the list of all the roads used.

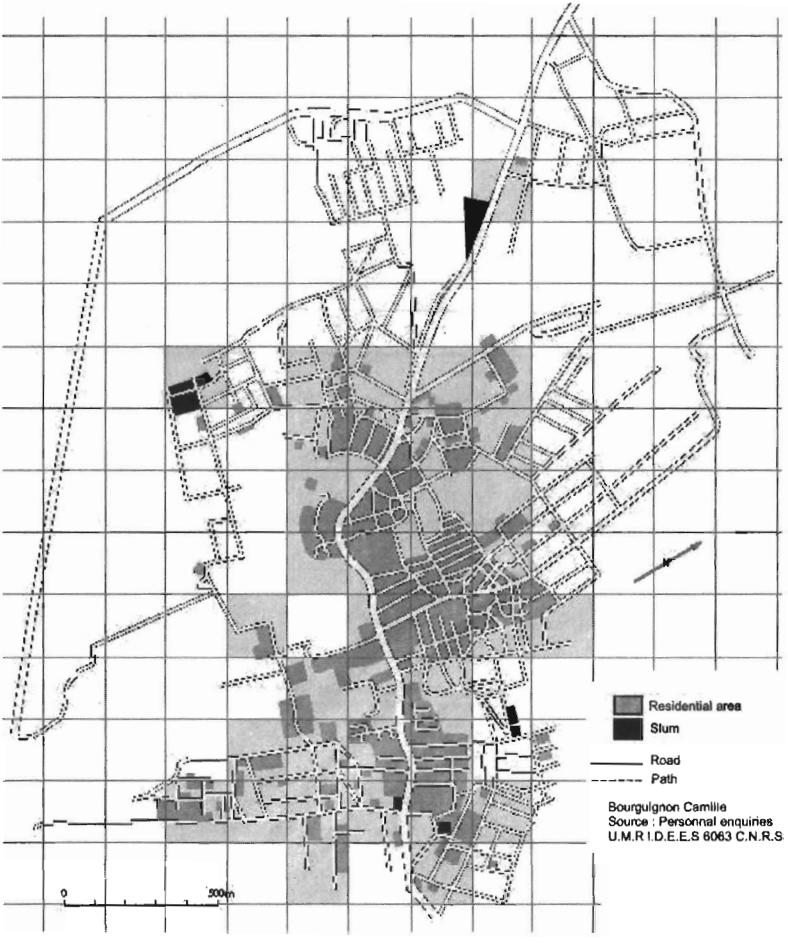
Through these various elements, we were able to analyse the factors required to start a move from Madhapur: time, knowledge of the transport network and the individual decision making process.

Since we could not use the last census data for Madhapur[8], we had to build a sample covering all the inhabitants. An area sample covering all the residential areas within the administrative boundaries of Madhapur was conducted. On the map of Madhapur, we drew two grids. The first grid of large squares (4 hectares in light yellow on the map, cf. Fig. 3) takes into account only the residential areas, as a large part of Madhapur is not built or under other land use (commercial, industrial). For the second grid, we divided each large square by 100. We selected all the large squares (39 in all) for the study and randomly extracted the small squares to conduct the survey. During fieldwork, we interviewed the family residing in the house located in the small selected square. If the

[8] The fieldwork was conducted in 2001 before the census of that year, while the 1991 census data were not appropriate, given the rapid urban growth that occurred during this decade.

head of the family of the house refused to answer (10 cases), we selected the first house on the right in a systematic manner.

Figure 3 : Area sample



The sample is as below:

- 118 persons were surveyed with an equal representation on a gender basis, the first strata of the sample. The second strata referred to the age group. The population was divided into

four age groups (less than 20, 20 to 30, 30 to 40, more than 40) with an equal representation in the sample (25%). This sample did not reflect the exact demographic structure of Madhapur, but our aim was to assess the mobility of the inhabitant in relative rather than absolute figures.

- The sample reflects the gender bias for employment with a low rate of labour force participation - for women (13.3% against 87.2% for men); but 27.3% of the employed women had qualified jobs. This is an indicator of the duality of Madhapur with HITEC City on the outskirts.

- We also found wide inequalities for the individual transport facilities: 56 % of highly qualified people own a car, and only 15% for those in intermediate professions use two-wheelers. Usually there is only one vehicle per family and it is generally the husband who uses it. These usual features give rise to differential mobility because they are using different metric (pedestrian, public transport, car).

In order to process the data we used a Geographical Information System (GIS) by taking into account all the roads used by the inhabitants. In order to follow the exact journey for every move, we had to go through all the roads used by people and divide them into small coded segments. There were 538 moves identified for the 118 interviewed persons. At the end, we were able to aggregate how many people used one segment and to map the population mobility. When this quantitative information (number of persons using a particular segment) is crossed with other variables such as gender, age, purpose of the visit, this allows us to draw different types of maps and then compare the various patterns of mobility. Incidentally, we are able to understand why people move, how they make their moves, where they go and with which place they are able to interact.

3.4. Results of the study

3.4.1. An atlas of the mobility

The first outcome of the study is an atlas based on a series of maps drawn along the subsequent methodology. In order to analyse the pattern of collective mobility built from the individual moves, each collection has a common scale to map the number of moves per segment, so that it is possible to compare these quantities visually. It enables us to highlight two main phenomena:

- the significance of the place of destination with a point proportionate to the number of persons visiting it.

- the intensity of use of each segment of the transport network from Madhapur to Hyderabad, with a line proportionate to the number of person going through this particular segment.

This series enables us to visualise the links built by the daily mobility of the inhabitants of Madhapur, and to analyse the differences based on the qualitative attributes (sex, age, mean of transport, et. al.). Each map shows the aggregation of moves along the roads of the city between Hyderabad and Madhapur. The maps at the metropolis scale, such as that of Hyderabad, have been drawn at a smaller scale to understand the relations between this periphery and the rest of the city. But on these maps it was difficult (cf. Fig. 9, the two maps related to the computer scientist) to analyse the moves within Madhapur. So we added a set of maps with a large scale restricted to the local moves, which represent 45% of the total mobility. We also drew maps showing the moves occurring during the week-days, for two periods; i.e. an ordinary day (from Mondays to Saturdays) and for Sundays. These maps provide us with a glimpse of the real mobility of Madhapur inhabitants.

3.4.2. Mobility patterns

Figure 4 : Total mobility of inhabitants of Madhapur on Sundays and weekdays

If we take the map of total mobility (cf. Fig. 4), we observe that the mobility during Sundays is less important (– 13%) than the circulation that occurs during the week. Through the collection of the reason for the move, we know that access to work is the main purpose, and the job opportunities are outside Madhapur for 63% of them. From the maps we can conclude that the peri-urban village is now fully integrated into the city through the professional moves. Even if the interviewees were the inhabitants of Madhapur, we could gauge from traffic jams at peak hours on the main road leading to HITEC City that many IT employees reside outside Madhapur. The quantitative balance remains unknown. Nevertheless, there is a daily exchange of manpower between Madhapur and Hyderabad.

Using the thematic variables we are able to study the principal determinants of mobility. If we compare the purpose of the moves (cf. Fig. 5), work is the main reason for moving not only during the week (40%) but (that it is less obvious), also on Sundays (35%). It means that in all the seven days there is a movement of population to and from Madhapur, which is never isolated from the rest of the city. We observed that the workplace is far more distant than any other place of visit. This induces unnecessary mobility that a careful town planner has to challenge. Obviously, if the movement to reach the workplace is so important, it is because, people usually add other purposes to their trip. They could do shopping or have leisure time along with this move.

Figure 5a : Commuting by purpose (on weekdays)

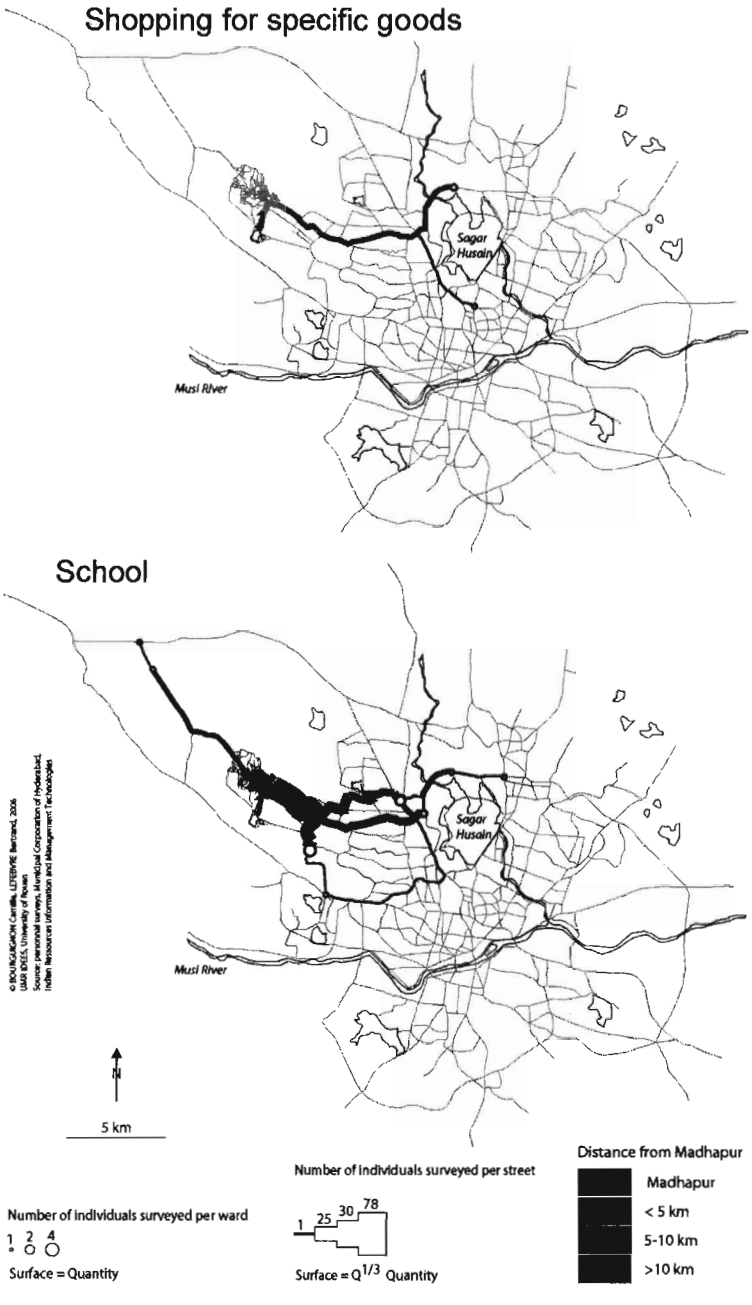


Figure 5b : Commuting by purpose (on weekdays)

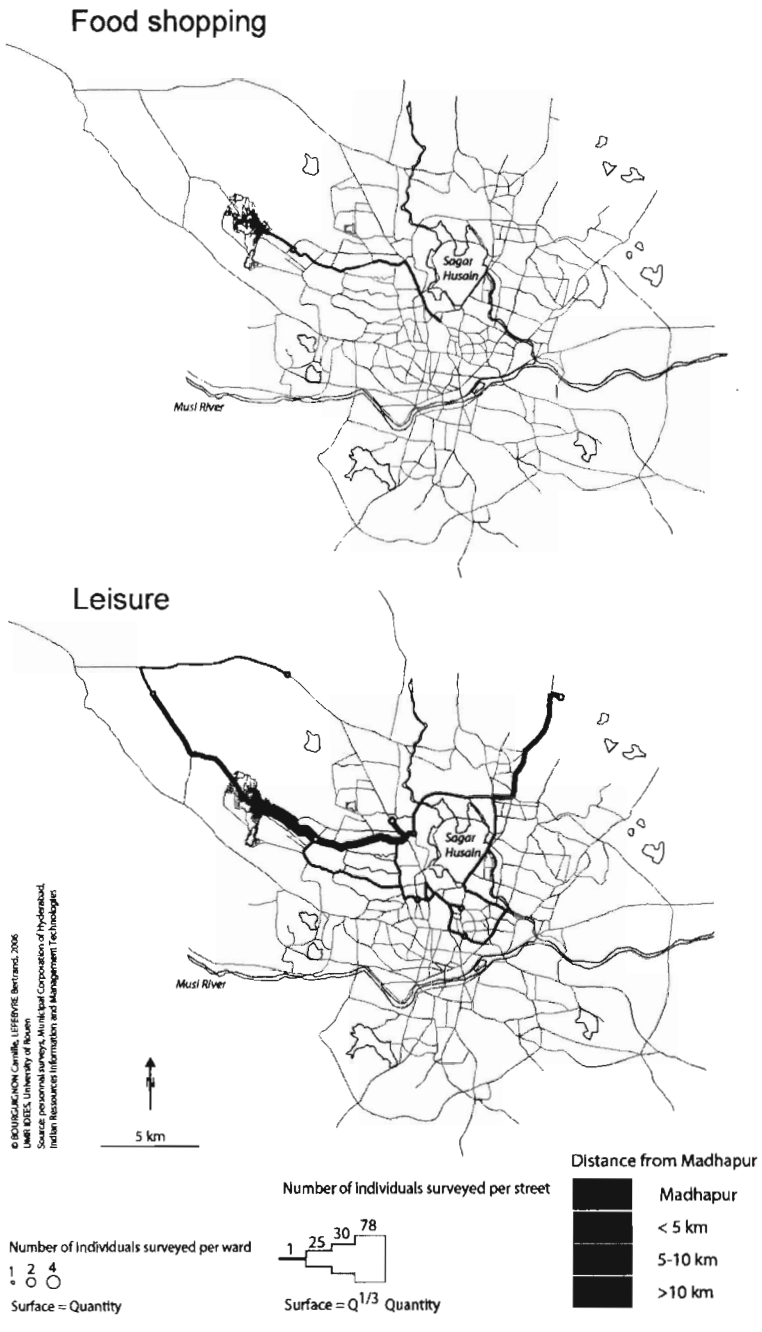
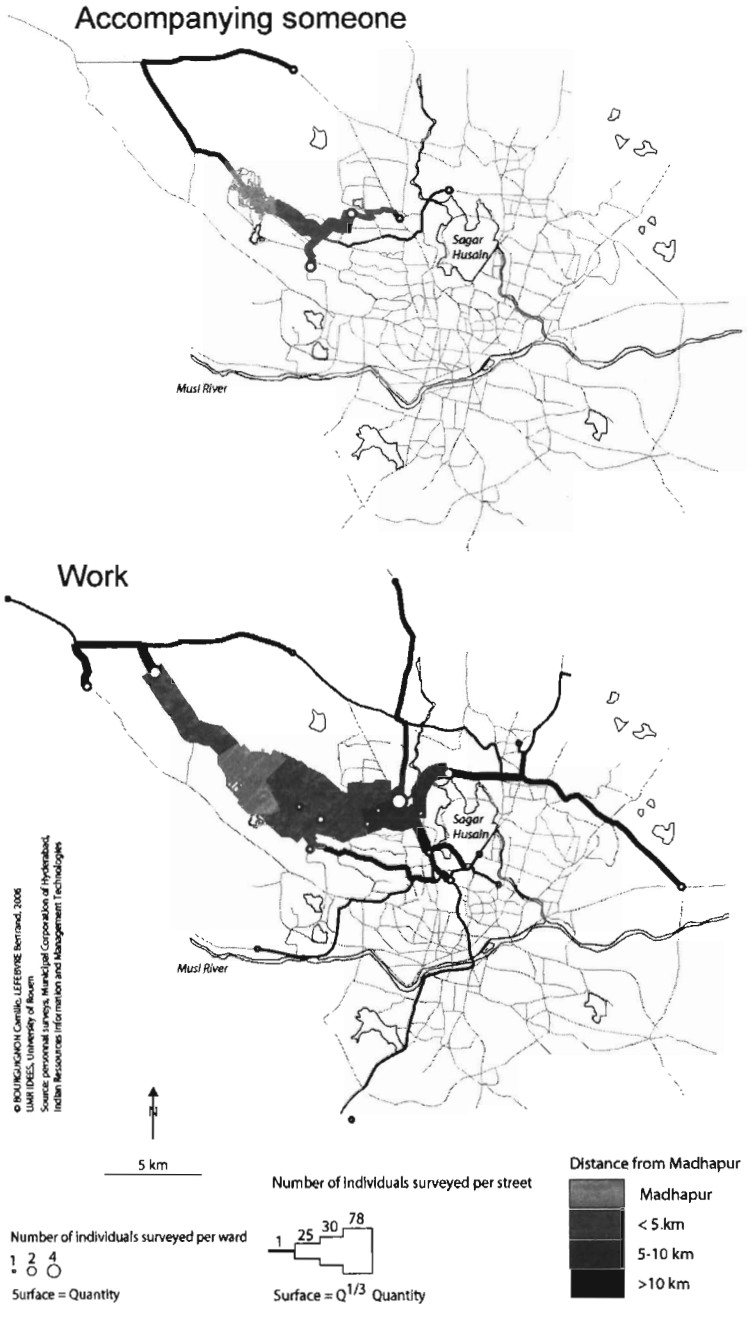


Figure 5c : Commuting by purpose (on weekdays)



The second reason for the long distance mobility is education. It is compulsory like the journeys to work and in the same manner also unplanned. But the responsibility is shared by the inhabitants of Madhapur and the municipality.

- 30% of the children go to primary and secondary schools outside Madhapur because their parents choose to send them to private schools. In this case, the demand does not match the supply.

- For older students it is the reverse. They make long distance trips because the offer does not match the demand. Of course, for higher education it is far more difficult to plan the infrastructure in order to match the residence of the student.

A lot of features of the real mobility of the people were presented in this study, but let us focus on some of the relevant variables of the present analysis, the differential mobility. All the studies based on the potential mobility underscores this dimension, as they are relying upon a common user of the transport system.

Our study demonstrates that there are a lot of inequalities in the mobility of the inhabitants of Madhapur. It is only through the study of the real mobility that these inequalities surfaced, and we could extend these results to other parts of the metropolis. Gender inequality is one of the most obvious, and is directly related to the job situation. Even if the pattern of mobility is not very different from the men, the women comprise only 37% of all the moves during the week (cf. Fig. 6) and less on Sundays. The reason is that the women of Madhapur have a low level of labour force participation. Their mobility is indirect, because they move to bring their children to school. As a result, they have less mobility on Sundays. Their lived space is also smaller, as the distance of their daily trips is for two-third of them less than two kilometres. It is exactly the reverse for men, so women circulate mainly within Madhapur. Their affiliation to the city of Hyderabad is weak, except on Sundays, when they travel with their family for leisure activities. The gender perspective is very important if we want to assess the

level of urbanity of these peri-urban spaces. The connectivity might exist only for a portion of the inhabitants.

Figure 6 : Commuting by gender on Sundays

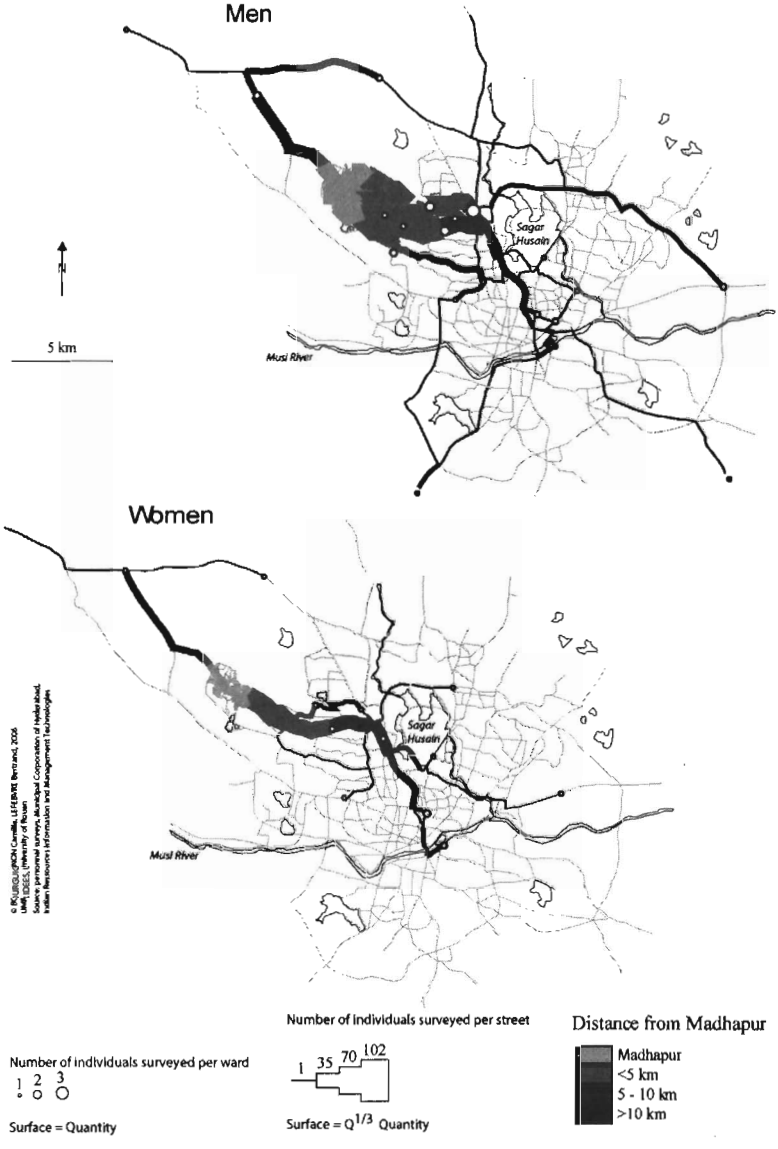


Figure 7a : Commuting by age (on weekdays)

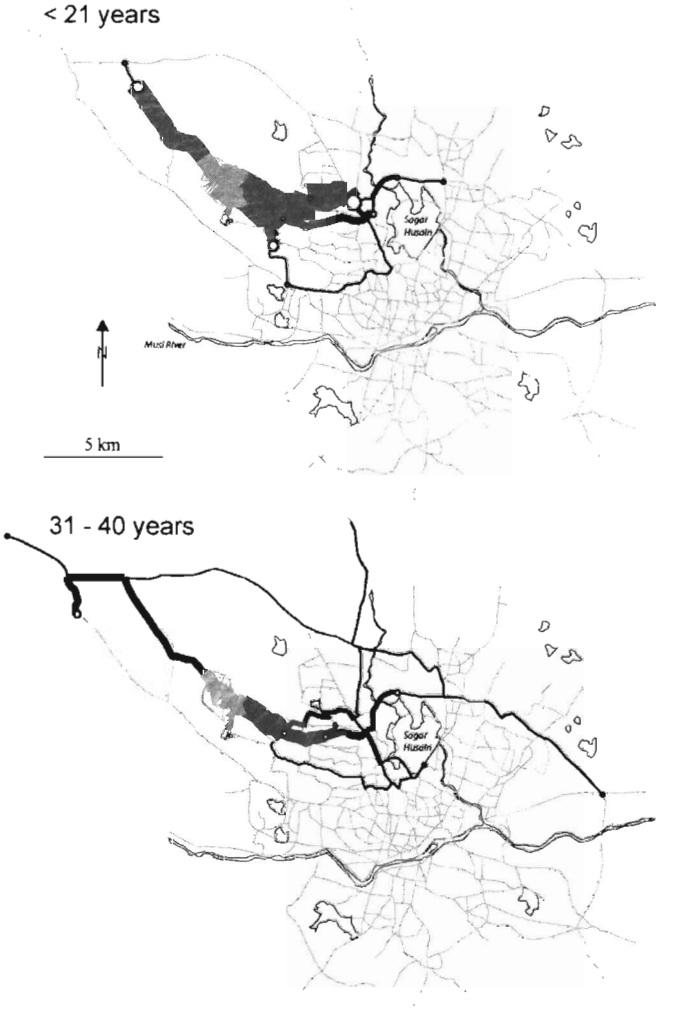


Figure 7b : Commuting by age (on weekdays)

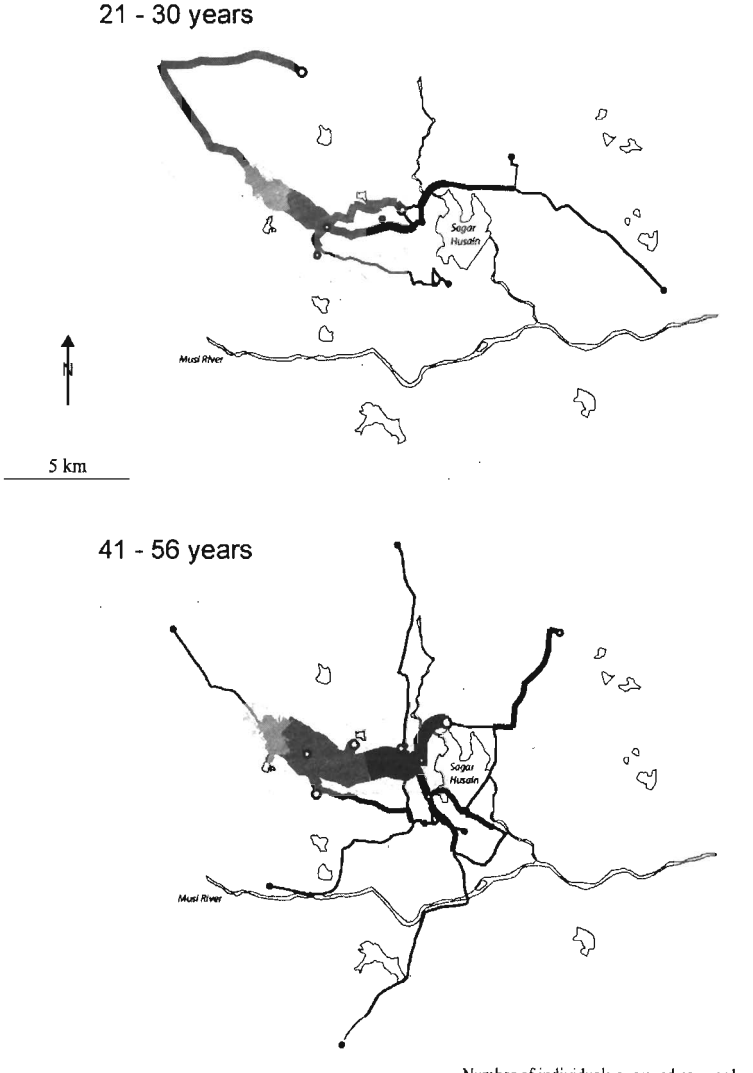
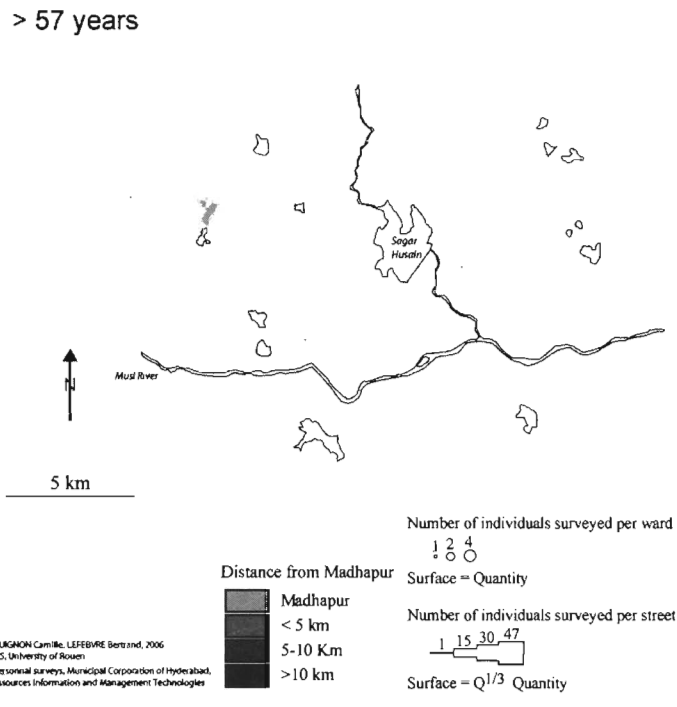


Figure 7c : Commuting by age (on weekdays)



The age inequality is the second element of differentiation. The age is a major factor of inequality, as the distance of commuting is the highest below 21 years old and between 41 to 56 years old (cf. Fig. 7). But after the age of 56 the mobility disappears abruptly. As we have seen in the sample, the senior citizens are less numerous, but this is not enough to explain this sudden fall. After the mid-fifties, people move only for day-to-day shopping and for leisure (morning walk).

3.4.3. Mobility behaviour

Through this thematic lens, we can analyse, not only the intensity of mobility for various parameters, but also how people move the mobility behaviour. One of the questions of our survey was about the number of persons moving along with the interviewee. This question was introduced to disaggregate the sum of moves per road segment and retrieve the real mobility pattern either

individually or collectively. For the journeys to work, people move alone, but for trips to schools, mothers go with their children (cf. Fig. 8). These collective moves account for no less than one-third of the total amount during the week.

Figure 8: Commuting by purpose (in Madhapur on weekdays)

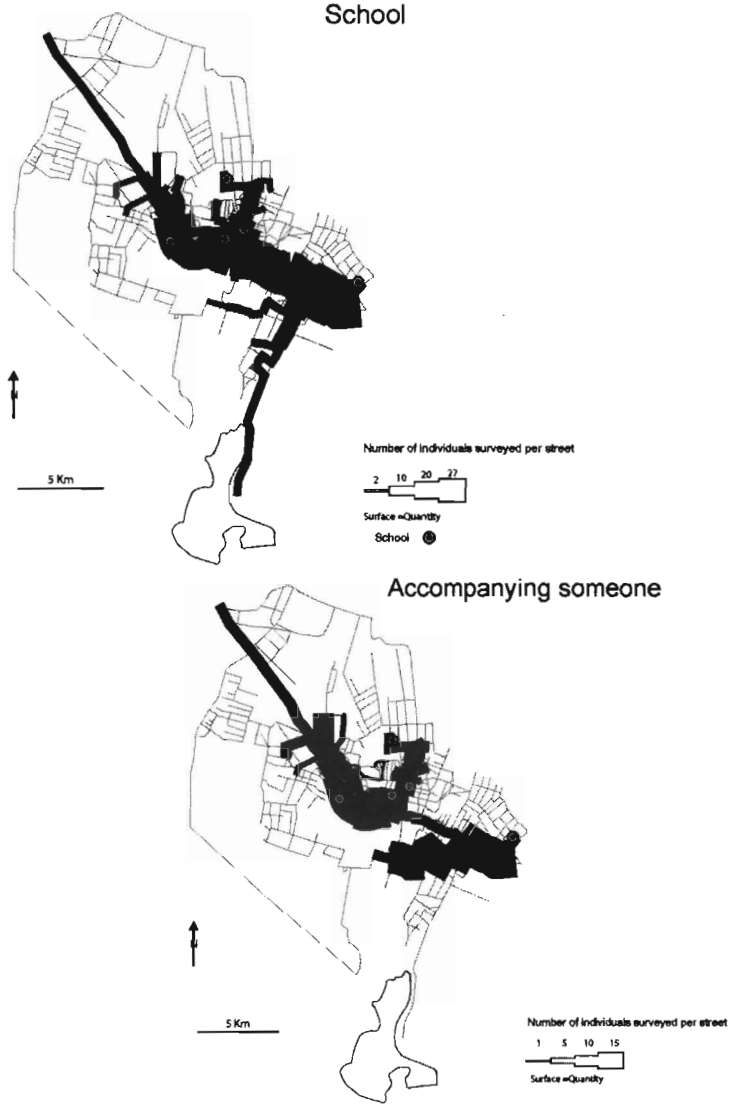


Figure 9a: Individual routes

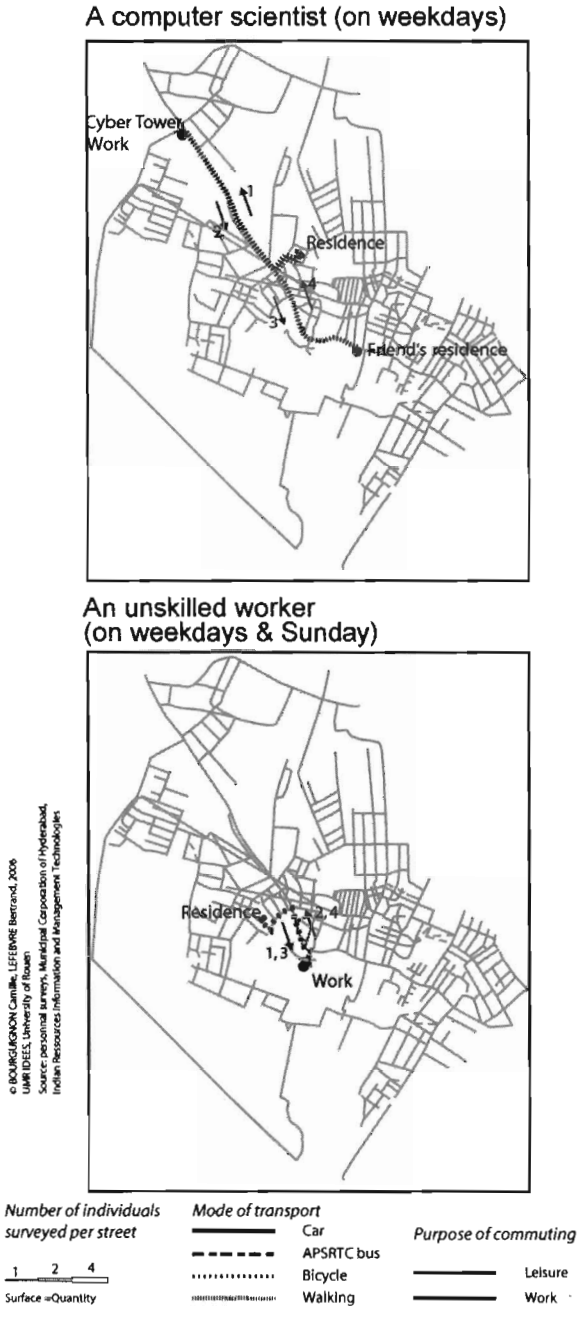
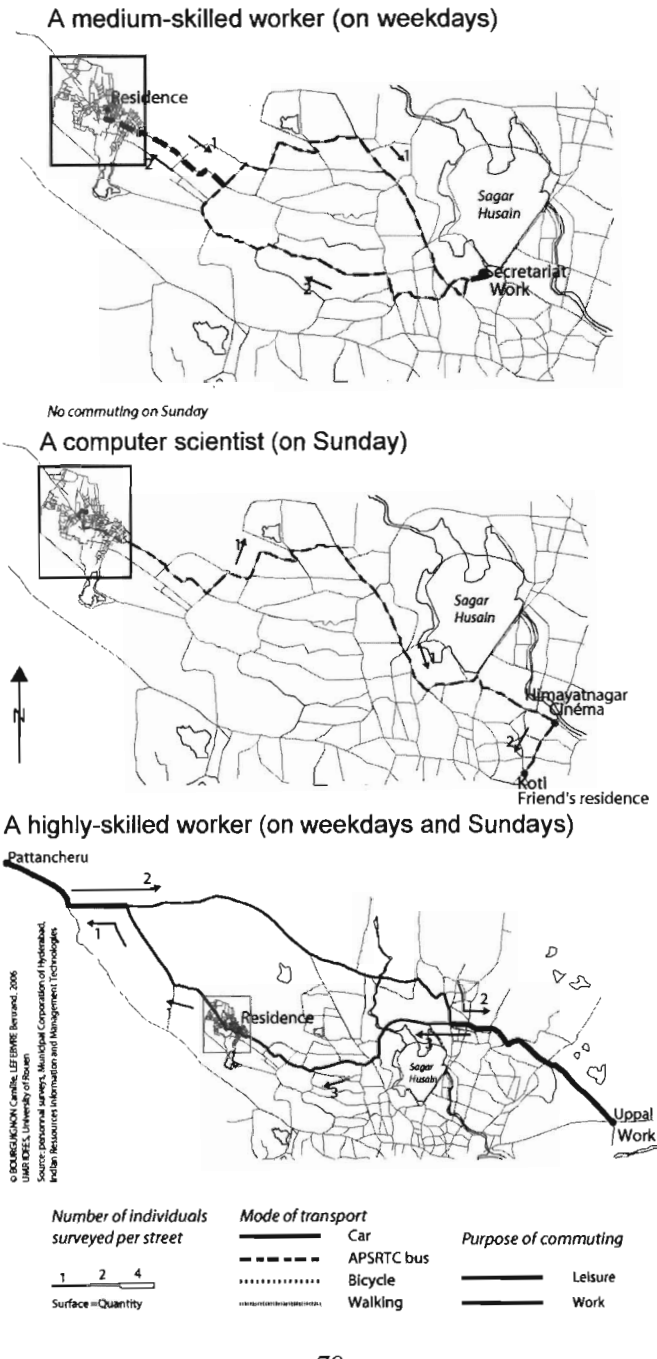


Figure 9b: Individual routes



Another dimension of the behavioural mobility is the sum of the moves accomplished by one person during the whole day, in order to have a diachronic perspective on mobility. In this case the question is not about 'who is doing what?' but 'what is the next step after a move?' For this purpose, all the moves of one software professional have been collected and mapped (cf. fig. 9). A colour marker provides the type of move and a variation of the shape of the line informs us on the means of transport. At this scale, we have been able to add the direction of every move. One can see on the map the link between each successive move (leave and return), for example the visit to a friend linked with a trip to a cinema hall (Himayatnagar Cinema). Even for highly qualified people, mobility is different. For example, IT employees who work in Madhapur-HITEC City go to Hyderabad city for shopping and leisure time. The other highly qualified people always travel long distances to reach their work-place and for their day-to-day life. From this map, the scale problem is obvious, as it is difficult to combine on the same figure the short and long range moves.

The study provides interesting theoretical results to understand how a peri-urban space is integrated into the city:

- The dominant factor for the integration of these peri-urban spaces is the profession. We saw that workplaces of Madhapur inhabitants are spread all over the northern part of the city, and obviously Madhapur is the workplace of many people in the IT field, but also for those living in other areas. Indeed, this two-way integration is not complete because there is a gender bias. This integration is not true for the women who moved mainly inside Madhapur,

- Another important result is the diversity of practice of the city in terms of the revenue, the sex, the age. The real mobility that we have assessed during this study is quite far from the homogenous potential mobility usually used. For the elders there is an age bias that reminds us of the risk to create a spatial entity called for example 'Madhapur', and to use this object as a homogenous entity.

- This type of study may be very interesting to apply in more areas of Hyderadad or to compare different peri-urban spaces. Then, we may be able to map moves from different places in order to verify where people with different characteristics interact (or not) in the city.

3.5. Limitations of the study and future improvement

This exploratory study has obviously some limitations. The most important may be the fact that it was very difficult to assess the level of urbanity of Madhapur. Some methodological issues have to be finalised. Another limitation in these series of maps is that it demonstrates more the quantitative level of moves within the city, rather than focussing on the places of exchange where the urban fabric is working. In light of our own research and the perceived limitations, we would like to make some proposals for future research on this subject.

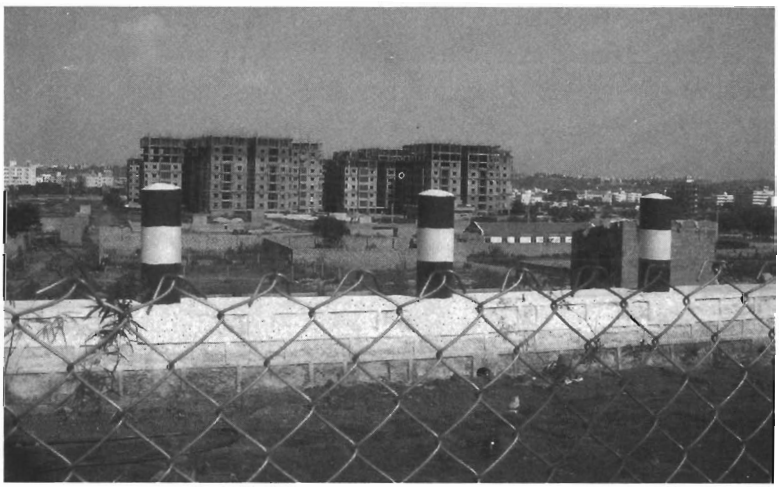
The first constraint occurs in the tools used to process the network data: a G.I.S. To proceed from individual to collective information, we have disaggregated each journey into all its links (a segment of the road network separated by two nodes) in the first instance. Later we aggregated all the moves on a specific segment according to a particular set of data (sex, age, *et al.*). The geographical unit of the G.I.S. is the segment of the transport network, which indeed is a very restrictive approach because the variables have to be processed one by one. It becomes very difficult to compare individuals according to different characteristics. In order to compare data, for example to combine age/profession/time, first of all it is necessary to provide a statistical or graphical analysis, and then aggregate the results, before mapping them. It is impossible to proceed from the level of each person to the level of a group identified by a specific variable.

The second difficulty was the data collection for this study. We have collected data only from the inhabitants of Madhapur. Indeed, this is the main obstacle that hinders the complete analysis of this peri-urban space and to assess its level of urbanity. We must study

the links in the two directions: from Madhapur to Hyderabad (or elsewhere) and the flux entering Madhapur.

The third problem was the assessment of the level of urbanity. In this case study, we have focused on the effective mobility, but for a complete analysis, we must measure the potential mobility (i.e. accessibility of Madhapur). One could adopt the methodology defined for the VillEurope project (VillEurope 1995), and mark the accessible population by using the limit of one hour to the city centre along different metrics. We could assess the absolute level of urbanity by comparing for instance the total number of people in an area and the number of people accessible from this area. To achieve this goal, it would be necessary to include a larger number of settlements to reveal some variation in the accessibility since Madhapur is too small.

Figure 10 : New residential colonies



This study was exploratory by nature, but it is already possible to conclude that the effective population mobility is a good indicator of the level of urbanity of an area. This analysis offers both theoretical and practical perspectives. In the previous paragraphs, we made some proposals to overcome the difficulties raised by

this study. Although the level of urbanity has not been assessed, we can already observe that the new HITEC City project shows signs of integration within the city. The inhabitants of Madhapur commute daily to the city to their workplace. But they also go for leisure and shopping time. On the reverse there is a huge flow of people coming from the city to work in the Information Technology companies located in HITEC City and its vicinity. It is perhaps at the scale of Madhapur that the integration of the IT cluster is the less obvious. The software workers do not live in Madhapur, and the inhabitants of Madhapur do not work in HITEC City. But this situation might change with the development of accommodation opportunities in Madhapur. During our last fieldwork in April and May 2004, new apartments and residential colonies were under completion (cf. Fig. 10). From a policy point of view, this study indicates the problems that the planners have to resolve in order to integrate these peri-urban areas into the main fold of the city. From the point of view of the transport infrastructure or amenities offered, the question of the accessibility should focus on every segment of the population by taking into consideration the different bias: sex, age or else of their real mobility.

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IV

ON THE EDGE: PLANNING, DESCRIBING AND IMAGINING THE SEASIDE EDGE OF MUMBAI

Himanshu BURTE
&
Malini KRISHNANKUTTY

4.1. Introduction

As we find it today, Mumbai is a city literally poised on the edge. The capital of the state of Maharashtra, and informally, the financial capital of India, it is a city of about 12 million people occupying 437 square kilometres[1] on a long and narrow piece of land that juts out of the western coast of India into the Arabian Sea. It is separated from the mainland on the east for most of its length by the Thane creek. It is also the rare big city with a natural forest within its city limits. The Sanjay Gandhi National Park, a protected forest, drives a large wedge into the land mass in the northern part of the city and creates a V-shaped natural edge along it. Add to that the Mithi river, which connects to the Mahim creek as well as the region along Malad creek, and the edge with nature is revealed as a preponderant aspect of the physical reality of the city (Fig. 1).

A map of the city from 1843 reveals that much of Mumbai's central landmass was itself either an edge or was part of the crossover zone of wilderness and land (Edney 1997 and Tindall 1982). Mumbai's development has basically been a negotiation with the edges of each of the seven islands as well as of the larger island of Salsette which, housing the extended suburbs, is

[1] These figures pertain to the population and area of the Municipal Corporation of Greater Mumbai as per the 2001 Census, and not to the entire urban agglomeration.

the major part of Mumbai's footprint today. The edge condition is a huge part of the experience of the city, also due to a variety of human interventions like the urban rail and road transport corridors. For instance, the linearity of the city's geographical base is further heightened by the manner in which the two railway lines and two major interstate highways break it up into thinner strips on plan (Fig. 2). Thus, Mumbai's basic urban form, from one perspective, is that of an array of slivers with edge experiences and situations on either side of each sliver. This sliver form is merely a distorted projection into the present of an earlier centrality of the edge condition for Mumbai.

Figure 1 : Mumbai Metropolitan Region

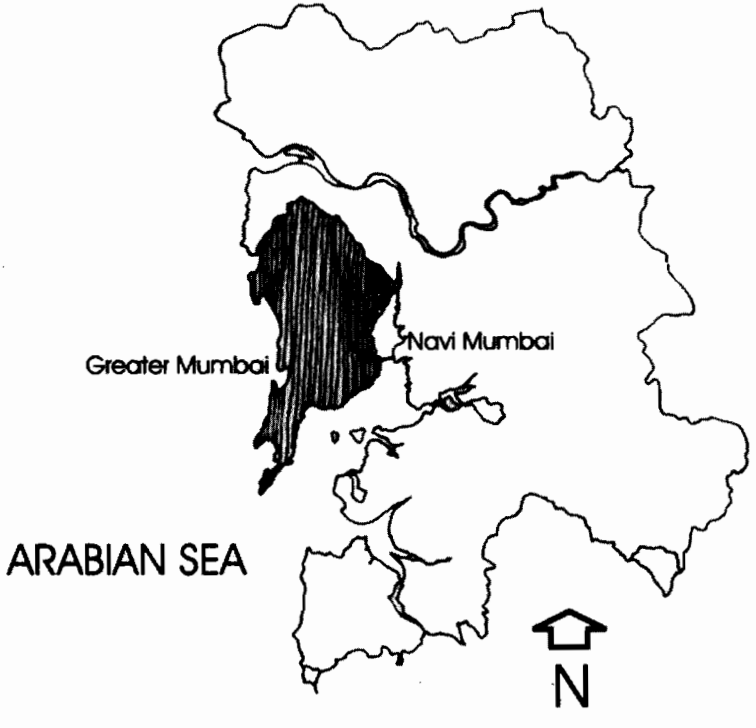
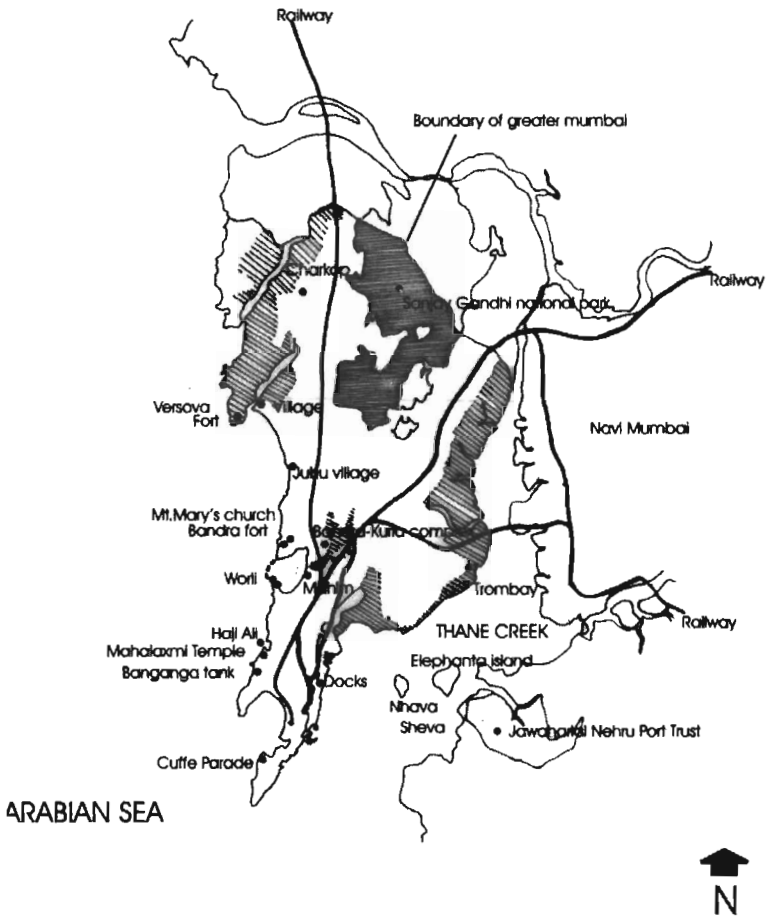


Figure 2 : Greater Mumbai



4.2. Significance of the edge with water

Against this background, we would like to make a preliminary exploration into the manner in which the city has taken cognizance of this preponderance of natural edges in its expanse, especially through the process of planning. Because of its preponderance as well as of the implications of the sea and a forest adjacent to it, the study of edge conditions of the city as a whole is critical for places like Mumbai. It is also important in general, given that coasts the

world over are urbanizing fairly rapidly. In India too, riversides and sea-sides are the sites of many important cities. For instance, every one of the four major cities of the country, Delhi, Mumbai, Kolkata (formerly Calcutta) and Chennai (formerly Madras) is fronted either by a river or a sea. Three of these cities – Mumbai, Kolkata and Chennai – were created by the British as trading centers connected to the international maritime trade routes. They therefore owe their very existence to the peculiarities of geography that enabled them to become important ports. Many other economically and politically important cities like Ahmedabad, Pune, and Patna too have significant length and location of riverfronts within the city limits, though of course the case of riverfront cities requires separate consideration[2].

Through this preliminary overview of issues relating to the conceptualization of the region at the edge between land and water, we hope to argue that it is a very special condition, especially when it is shared with the sea, and that this specialness includes but also extends beyond the ecological dimension. In many ways the ecological dimension is the most important, as the recent tsunami demonstrated all over south and Southeast Asia. The very existence of Mumbai, moreover, is owed to the natural resources that are concentrated in its footprint and surroundings in the form of a natural harbour, the availability of fish off the coast, and healthy reserves of ground water. It therefore becomes important to enquire into the attitudes of the planning establishment (which we shall take to include both professional planning bodies as well as the state which ultimately controls them) towards and understanding of the natural edge and towards the purported wilderness beyond. In doing this, we shall also suggest that at least part of the problem is the absence of an adequately rich description of the edge with nature as a multi-dimensional entity. The absence of description is

[2] The cultural dimension is of much greater significance in any approach to the Indian riverfront city, given the rich traditions of ritual mediation between communities and the rivers from which they have derived physical and spiritual sustenance. The most famous example of this would be Varanasi in north India, which has the Ganges passing through it.

naturally accompanied by shallow understanding, which is reflected in the largely instrumental official view of this zone.

4.3. Narratives of the edge

At the moment, it appears that the main narratives informing urban development in Mumbai so far have been the following:

a) The narrative of urban *development* which seeks always to occupy and push the natural edge 'out', and to expand the city's footprint and zone of impact

b) The narrative of the edge as a space for the experience, and thence the *consumption* of nature, that needs to be opened up more extensively for private and public use.

The first narrative is of course the dominant one and continues to be so, given that it has always had the support of the business elite of Mumbai, and a grip on the developmental imagination of the political class (Guha 1996).

It has overseen the various policies and practices of expansion and emission into the sea and the creeks that the city authorities have mobilized over the last century and more. The second narrative, which appears to be the 'softer' aesthetic side-theme in the progress of Mumbai's development has actually been given some strength by the economic value attached to the aesthetics of the seaside view and breeze in the hot and humid modern city. This narrative has recently achieved greater prominence with the emergence of a middle and upper class citizens' movement to convert many seaside edges into policed but public promenades[3]. In this focus on public space, as well as through its operation in

[3] In Bandra, an affluent seaside suburb in the northern part of Mumbai, after an unusually successful upper middle class citizens 'campaign two underdeveloped but popular seaside streets were handed over by the civic authorities to local citizens' groups who designed, constructed and continue to maintain a promenade each. These spaces are extremely popular but also insidiously exclusive public spaces.

the market for private property, this narrative has marched in step with the first one.

In the light of many problems that the unrestricted run of these two narratives has unleashed upon Mumbai, a couple of counter-narratives have emerged, which lack any serious popular or political support, as yet:

c) The *ecological* narrative of the edge as a special ecological zone (which is also critical to the survival of the city), which needs to be preserved and protected against ecologically destructive development, and

d) The narrative of the *human rights* of the original dwellers of the edge, the fishing communities, whose economic and cultural survival have been mortally affected by the city's tinkering with the seaside edge.

Finally, an as yet inadequately formulated narrative, is

e) The narrative of heritage which focuses on the cultural and historical resources that are gathered together along the edge as we find it today

What is striking is that there is no evidence of an integrated developmental narrative having been formed by any of the planning authorities (or by responsive actors from civil society), which engages with the different concerns that each of the above narratives focuses on in a coordinated manner. Part of the problem is that an integrated *description* of the edge as it is found today does not exist. We shall develop a brief description of the seaside edge on the western coast of Mumbai that interweaves the core concerns of some of the narratives above. We hope that this will give a sense of the essential interrelatedness of these diverse concerns. Such a description, we further hope, will foreshadow the possibilities for an integrated narrative.

4.4. Describing the edge

Mumbai's seaside edges on the east and the west have a very different relationship to the rest of the city. Broadly, the eastern edge is currently occupied by the port, oil refineries and related activities of storage and manufacture, which virtually cuts the city off from the sea. This seaside edge is thus a 'barrier' to the sea with most residents of the city not having direct experience of this edge at all, except for occasional dramatic glimpses of cranes and masts of ships one gets from vantage points like the elevated Dockyard Road local railway station. Much of the land along this edge is owned by the Mumbai Port Trust, a state body, and is currently the object of a tug of war between this agency and civic activists in the city who believe that with the greater success of Nhava Sheva port across the water on the mainland much of the land here should be handed over to the city for its developmental needs. Thus a very important tussle is on with regard to approximately 400 hectares of high-value land in the island city, which could possibly be handed over to the city without disturbing the port activity. Meanwhile on the north-eastern extremity of this seaside edge is the large and sensitive installation of the Bhabha Atomic Research Centre at Trombay, from within whose campus one can glimpse the Elephanta Island in the distance. In many ways then, the eastern edge is a zone of restricted access, which has been off limits to the public.

The southern tip of the city where the eastern and western edges meet is again largely inaccessible to the city, being under the control of the Indian Navy. The space of the city as a whole truly begins to connect with the Arabian Sea from Cuffe Parade northwards, the connection being consolidated truly for the first time at Marine Drive. However, even along the west coast, the adjacency of public space to the sea is a much-interrupted affair as one goes up the coast right to the tip of Versova, famous as the suburb of showbiz, especially of the television world. The experience of the sea as one travels the edge is thus of an intermittently revealed wilderness. By and large, the city is oriented inward and away from the sea, like most other Indian cities and towns along water (Ramachandran

1989). In addition, Mumbai is entirely focused upon commercial activity that is essentially land-based. Land continues to be both site and object of commerce in the city, in spite of the severe real estate crash in the late 1990s. Possibly, the obsession with land reduces the perceived value of the uninhabitable edge, whether mangroves or inhospitable rocky formations. Such an attitude may have been the foundational framework for the developmental negotiations with the sea, its bays and creeks from early on in the three centuries old career of the city as an important trading centre[4]. The ecological discourse emphasizing the value of the special environmental conditions at the junction of land and sea are of more recent origin and have found it difficult to alter the already existing developmental attitude towards the sea and the forest that the city is intimately connected with.

Much like the city, the many fishing settlements that dot the coast, and whose very survival is today under threat, also have a complex spatial relationship with the sea. Fishing villages occupy specific nodes in the corrugated western coastline of the city all along the coast from Versova southwards, at Juhu, Khar, Mahim, and Bandra, and Cuffe Parade. In many ways, the city and these villages have grown with backs turned towards each other on the one hand, even as on the other, the process of urban development has ensured that the city has effectively encircled and put pressure on the spatial survival of these villages. Spatially, the fishing villages are emphatically introverted, with the edge to the sea being often occupied by the paraphernalia of work- boats, sheds, piers as at Versova fishing village, as well as at the Mahim Bay (Fig. 3). This presence of 'work' at the edge is an important marker of the cultural differences in the attitude towards the wilderness between the village and the city that it predates, and is an important contributor to the contemporary conflict between the two imaginations of the edge with the sea. This contradiction is expressed most clearly at the newly renovated promenade for recreation at Carter Road,

[4] Reclamations have been a persistent dream in the imagination of Mumbai's development. See Guha (1996) for an account of the Backbay reclamation scheme that spanned over a century.

Bandra at whose northern end the fishing community nearby continues to dry its fish and carry out other productive tasks even as upper middle class joggers turn about for the return jog (Fig. 4).

Figure 3 : 'Work' at the edge : near the jetty at Versova village

Figure 4 : The promenade at Bandra

Along with the villages an important feature of the history of the city are the forts that once guarded this stretch of coast (Gaitonde 2004). The most significant of the surviving forts along the western coastline of the city are those at Versova, Bandra, Mahim and Worli. The fort at Mahim is supposed to have been built before 1673 while the Portuguese built the one at Bandra in 1640. There are other forts in the city, which looked out at the creeks and bays on the eastern side, like the ones at Sion and Sewri. Some of these forts predate Mumbai's career as a British built city. They are thus older than the history of Mumbai as a 'produced' city, which really begins, with the handover of the city by the Portuguese to the British in the 1660s as part of the marriage contract between Catherine of Braganza, the Portuguese princess and Charles II of Britain. Interestingly, however, these forts almost never figure in the discourse of the heritage movement in the city, which has tended to conflate Mumbai with South Mumbai's colonial built environment, in terms of the idea of heritage at the very least[5]. A similar relegation, in the discussion of heritage, affects the many religious sites that dot the edge, including among others, the Mahalakshmi Temple, the mosque of Haji Ali nearby, Mount Mary's Church at Bandra and the Ban-ganga Tank at Walkeshwar (Jamkhedkar 1997)[6]. The Ban-ganga Tank, in particular is probably the most important heritage site in the city, purely in terms of its antiquity, since it was probably first constructed in the 13th Century A.D, and rebuilt in 1715 (Fig. 5).

[5] Mumbai's heritage movement has been among the most successful in the country. In 1995, Mumbai became the first city in India to have developed building byelaws that protected heritage structures in its southern precincts. It should be noted here that a research project documenting the forts in the Mumbai Metropolitan Region is currently underway at Rachana Sansad's Academy of Architecture, Mumbai, with the support of the Mumbai Metropolitan Regional Development Authority, the government agency responsible for planning for Mumbai.

[6] It must be admitted that out of the lot, the Ban-ganga complex has had a significant presence in the consciousness of the heritage movement of the city, but has been difficult to protect and restore possibly because of the intricate interplay of cultural practices, local politics and real estate interests which resists any durable 'outside' intervention.

Figure 5 : Ban-ganga tank

4.5. Traditions of engaging the sea

These symbols of older traditions of inhabiting the coast reveal an engagement with the sea that is remarkably different from that of the more modern Mumbai. The figure of the sea as a live (almost socialized) agency hovers over fort and temple, church and mosque, as well as on the fishing village gathered together for protection against the elements. The special places of this coastal landscape- the forts and the religious spaces- are marked by their unusual and dramatic confrontation with the sea. Such a confrontation is not viable for the village and therefore a very complex relationship between the edge dweller and the wilderness is mediated by these places (as well as by spaces of work), through ritual-intention in the case of the religious spaces and through accident by the forts. Of course, the direct confrontation the forts offer with the sea is accidental only in terms of its offer of a unique recreational experience, and is founded upon the capacity of the sea to be the bearer of human threat.

This sense of the agency of the wilderness is markedly absent in the attitude of the modern city towards the wilderness, and it

shows in the way the city has treated its edges with the wilderness. Whereas the sea is a very live presence for the fishing village- as the site of a resource that must be obtained with work sometimes at the cost of death, and as the direction from which come storms and flood- the modern city on its shores appears to have a very different understanding of it. The modern western gesture of opening the city to the sea, as at Marine Drive, contrasts with Versova village which turns its back to the sea and creates a social environment 'within', almost like any other landlocked village (Fig. 6). The village turns its back to the sea possibly in self-defence, fully alive to the agency of the wilderness. On the contrary, the modern embracing gestures of the city is ultimately founded upon the confidence that the wilderness poses no threat, and is, on the other hand, an object of human contemplation and, in one sense, of consumption.

The sense of connection and of the agency of the wilderness that the fishing villages have towards the sea is directly reflected in their celebration of Narali Pournima ('Naral' means coconut, and 'Pournima' full moon day) the full moon day in the month of Shravan by the Hindu calendar. On this day, the sea is appeased with offerings of coconuts in the hope that it will remain calm enough for fishing operations to begin after the hiatus in the heart of the monsoon[7]. This integration of the sea into the social life of the village is not mirrored in modern Mumbai's everyday life. Only a residual sense of the connectedness of the city on land and the immense sea at its edge is sustained in continuing rituals like the public immersion of clay idols of Ganesha, the god of beginnings, at the end of the festival associated with him.

[7] The monsoon in Mumbai lasts from June to September every year.

Figure 6 : Festival celebration at Versova village

4.6. Spreading out

The defining characteristic of Mumbai's growth over the last two centuries and a half must surely be the great impatience the city has shown with its natural limits, especially along its once numerous waterside edges. From being literally a sheaf of slivers, the city on the map has in-filled away to form a single consolidated strip of land as its footprint. Reclamation, in different guises and at different scales and with different degrees of success, appears

to be the theme of this development, as result of which creeks have often turned into built-up neighbourhoods. For instance, the Bandra Kurla Complex- a shining new business district in the rough geographical centre of the length of Mumbai- was an already polluted creek less than thirty years ago (Fig. 7). Today it stands on the banks of the remnants of the Mithi river –now a large open gutter for industrial effluents– looking out towards the Maharashtra Nature Park which, in itself, was converted from a garbage refuse transfer centre into a mangrove sanctuary.

Figure 7 : Bandra-Kurla complex

The process of urban expansion into the sea has changed the edge condition significantly. However, there doesn't appear to be any record of the extent of damage caused in this process to various shoreline phenomena like mangroves or sandy and rocky beaches. While the major extensions of the footprint of the city beyond the existing edge have tended to be undertaken by the state through reclamation schemes, currently most of the land and mangrove area along the coast in the entire Mumbai Metropolitan Region is under threat. There are reports every week in the newspapers about the illegal destruction of mangroves by

private developers presumably with the tacit support of corrupt civic officials. Of course, being the leading edge of the developmental narrative the government itself is rarely far from initiating its own schemes that imply the destruction of significant areas under mangroves [8].

The paradigm of expansion operates also where there is no direct expansion of the physical footprint of the city into the sea. The city may encroach into the sea physically through bridges that fly over bays as with the Bandra-Worli Sea Link that is under construction. Equally, the sea may be used as a recipient of all kinds of waste that the city generates, especially the sewage of the city, which finally finds its way into the sea through more than a hundred marine outfalls. In both cases, the emergent ecological and human rights narratives have been approached in oppositional terms by the developmental imagination of the state. As elsewhere, moreover, the ecological and the human rights narratives have not been able to align together consistently in countering the developmental imagination of the state. Sometimes, as in the case of the opposition to the Bandra-Worli Sea Link, both narratives have countered the developmental narrative without standing in opposition to each other. The fishing community at the Mahim fishing village has developed a significant movement of protest against this project deriving from the ecological and human rights narratives, with the participation of a variety of activists from civil society from the city beyond the village[9]. Independently of the community protests at Mahim, environmentalists and ecological watchdog groups from civil society have also protested against the ecological heedlessness of the project, effectively strengthening the argument of the fishing community (Goenka 2000). Elsewhere,

[8] See Indian Express April 14, 2005, which carries a report about a proposal to complete the 'missing link road' between Juhu and Versova which would involve the destruction of almost 20 acres of mangroves.

[9] Girish Raut, personal conversations over mid 2004. Raut is a civil society activist involved in organizing the protest by the Mahim fishing village against the Bandra-Worli Sea Link.

however, the two narratives can stand in direct opposition. The alarm over the depletion of mangroves along most of the waterside edges of the city has generated a narrative, clearly evident in media reportage, in which the real estate developers as well as a variety of slum settlements are cast as being equally culpable. The dimension of human rights in the case of the slum settlements along mangroves (as well as at the periphery of the Sanjay Gandhi National Park) often appears to be completely irrelevant to the exclusively ecological narrative propagated by many civil society environmentalists. This parallels, in a strange way, the heedlessness of the developmental narrative of the state and the business elite, which sees the destruction caused to fishing communities as a small cost to pay for the benefits that can accrue to the city at large (or more realistically, to its elite)

As with other aspects of Mumbai's development, the real estate market has had a significant say in the manner in which the seaside edge of the city has developed. The interactions of land laws and development rules with the real estate market in Mumbai are complex enough to merit more than one independent study, especially if we take into account the impact of these interactions upon the city's urban form. As it happens, the nature of urban environmental form along the seaside edge in Mumbai is a contingently evolving patchwork of mangroves, rocky shore, older existing settlements, modern private residential and commercial development, and a smattering of public promenades like those at Marine Drive, Worli Sea face, and Bandra.

Mumbai confirms the suspicion that the edge with a particular form of wilderness (river, sea or forest, for instance) is capable of being attractive in the market, unlike other more ordinary peripheries of cities, which are often man-made wildernesses of a kind. The lens of leisure or recreation mediates the relationship between the modern urban dweller and the natural wilderness at his feet, whether he is on the promenade or in his apartment, ten stories above ground. This has implications for the development of private spaces as well as that of public spaces along the seaside edge, both being related in different ways.

The market is very likely to evince great interest in a 'special' edge when the conditions are favourable. The almost sudden growth of real estate development in Juhu near the beach (and at Versova further north along the coast) after the 1970s is an example of this interest. At the same time, that edge with the wilderness is also prone to suffer from the reduced value afforded to peripheries in general, if it is not inherently hospitable and more specifically, if it does not have special aesthetic appeal understood in terms of the modern expectations of visual reward from nature. Then, as at Charkop, a recently 'developed' suburb in north Mumbai, low cost housing schemes as well as middle class cooperative housing societies are more likely to be the agents of stabilizing the land for habitation and the speculation that may follow. In the 1990s when Charkop was a newly emergent planned neighbourhood, its western edge was covered with mangroves, which did not yield a pretty sight (or smell). In such cases, the peripheral location (and not the proximity to the sea) is the determining factor in deciding land prices, which can be among the lowest in the city. The discomfort of the periphery is also reflected in the market prices in the eastern parts of Malad and Goregaon, which are nearer the buffer zone separating the city from the Sanjay Gandhi National Park, without great views and with the usual inconveniences of developing urban peripheries.

4.7. The passive wilderness

The aesthetic appeal of the wilderness, especially the sea (but also the forest) is quite obviously, a significant factor in the logic of the seaside real estate market, mainly in the 'modern' and 'planned' parts of the edge. That appeal has underpinned the popularity of some seaside localities like Bandra, Juhu and Versova for instance, and has put the fragile coastal environment as well as the economic and cultural survival of the original inhabitants into jeopardy. The value put by the modern middle and upper classes of the city on the romanticised wilderness appears to depend to a large extent upon it being a passive wilderness (Fig. 8).

Figure 8 : Expensive seaside real estate at Bandra: Extravagant cantilevered terraces for enjoying the sea

In fact much of the popular contemporary imagination of Mumbai's environmental situation appears to rest upon an assumption that the wilderness on either side is an acquiescent non-presence. It is only this assumption that explains the responses of extreme shock towards the many leopard attacks from the direction of the Sanjay Gandhi National Park, that suddenly clustered together in the month of June 2004 or through the recent threat of erosion that the seaside buildings at Versova have faced with some tidal changes which

some environmental activists believe to be connected to the reclamation work carried out at the mouth of the Mahim Creek in the 1970s to create the area known as Bandra Reclamation[10].

The defanged status imputed to 'nature' in the popular and professional imagination of cities is an obviously modern phenomenon. A variety of planning projects and practices involving the sea suggest a view of the sea and its edge with the city as being less 'alive' or responsive than environmental scientists and activists would believe. Thus the sea continues to be the dumping 'ground' for ever increasing quantities of inadequately treated sewage, and industrial effluents (which in Mumbai, have completely polluted the Mithi river along whose mangrove lined edges a bird sanctuary was active till the 1970s) with the only concession being the increasing length of recent marine outfalls.

In the light of the great increase in the general debate regarding environmental issues over the last three decades it is quite surprising that the mechanism of planning has not been able to integrate ecological concerns into the process of planning, even as lip service has begun to be paid to them. The best illustration of this happens to be the fact that the only law that recognizes the special environmental value of the edge and attempts to protect it, the Coastal Regulation Zone Notification, was introduced by the central government of India (under the instruction of the Supreme Court of India) in 1991, and which the government of the state of Maharashtra, like most other state governments, is actively trying to combat in its tearing hurry to *develop* the city further. It is instructive that the planning establishment of the city- which is in direct touch with the city's peculiar geographical realities- needed a remote agency- the central government in landlocked Delhi- to

[10] The casual attitude of citizens themselves towards the forest is exemplified by an illegal recreation ground in the suburb of Mulund that encroached upon the adjacent Sanjay Gandhi National Park, which is a protected forest. Apparently built by a local elected representative in the state legislative assembly, this park was regularly used by people in spite of the known threat of leopard attacks. It was demolished in September 2004 by the Forest Department. (Newsline, *Indian Express*, September 8, 2004, p. 3)

tell it to care for its coast. This is of course, as true of the rest of the country as of Mumbai (Goenka 2000).

4.8. Description and development

In the foregoing we have sketched the framework of narratives that defines the space of action and discourse regarding the development of the edges of Mumbai city with the wilderness, particularly that with the Arabian Sea to its west. We have argued that urban development has been driven largely by one narrative, even though, as our brief description of the western edge suggests, a richer weave is clearly called for to address the complex interaction of natural, cultural and economic forces that characterizes the inhabited coastline. The differences in the mode of engaging the sea between the modern city and the older villages that were sketched out only emphasize the need for a more nuanced understanding of the 'negotiational' nature of coastal space.

We suspect that the absence of an adequately rich description is involved in the fact that Mumbai's urban development has tended to be driven by a single narrative. Of course, it is true that this developmental narrative equating development with expansion is naturally attractive to most players in the planning establishment and to the social elite of the city. We believe, however, that the absence of a rich description has also contributed to the largely unchallenged run of the dominant narrative. As the increasing influence of the ecological narrative suggests, even in Mumbai, descriptions (and the critiques they spawn) developed from outside the dominant narrative can challenge its power and exert a corrective influence upon the developmental process. The Draft Regional Plan for Bombay Metropolitan Region 1996-2011, for instance, clearly admits that development plans for the city and the region have been progressively influenced by the increasing political and logical power of the ecological narrative (BMRDA 1995).

A richer description addressing the concerns of the very different narratives mentioned earlier is necessary to lift the legitimate demands of ignored people as well as neglected environmental

phenomena involved with the edge between the city and the wilderness around it, into the consciousness of the planning establishment. Such a description will help compel the dominant narrative to engage with other narratives in a realistic and productive manner than in the more traditional adversarial mode. An integrated narrative of development that could be built upon such a rich description is more likely to disallow any single narrative the luxury of considering others as 'enemy narratives' largely irrelevant to its own concerns.

Two issues regarding the prospects of such an integrated narrative need to be recognized here, in conclusion. To begin with, in Mumbai there has always been a dearth of the most elementary description regarding the environmental, social, technological and historical ground realities of the city, in the form of detailed maps and data. Worse still, efforts to build even such a basic description are measly compared to what is needed. Mumbai's planning establishment lacks any significant institutionalized effort at research on the city. This is not surprising in a city that, to begin with, doesn't have any mechanism to ensure that a professionally qualified city planner is in charge of the complex task of city planning. The construction of a rich integrated narrative thus, looks like an unrealistic prospect.

In the event that such a narrative is indeed possible, and this is the second issue, it is important to note that descriptions are politically significant constructions. A description or a narrative is at the heart of all action. The power of producing authorized descriptions usually translates into a power to remake the world in accordance with that description. The collisions and collusions between narratives in the space of developmental action are ultimately related to larger political processes, as they should be. The act of integrating one or more narratives thus, is an intensely political act, in which the relative weightages of different narratives will inevitably be determined through some arbitrary logic or political mechanism. In this context, it would be naïve to think of description as an effective substitute for political action by the proponents of different narratives. However, this issue could be turned around

so that it yields one strategy to address the general inadequacy of descriptions and knowledge regarding the city. Thus, an inherently political process involving a large variety of lobbies and localities in the constant production of a greater range of narratives could be one way of preparing the ground for the development of an ever evolving integrated developmental narrative.

The recent emergence of civil society activism in specific localities of Mumbai city offers one small sign that such a decentralized process of building description and developmental action is possible. Though limited to the upper and middle classes, and to projects with a specific aesthetic or cultural agenda, the qualified success of such activism suggests that there is scope in civil society for the growth of initiatives of description and self-description by other actors and lobbies[11]. This represents an avenue for the development of a range of descriptions and developmental narratives, which may yet persuade the planning establishment to acknowledge the complexity of the ground realities that it has so consistently ignored so far in the case of the natural edges of the city.

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[11] For instance, civil society groups have been able to conduct art festivals and upgrade the physical realities of their localities. The Kala Ghoda Art Festival in South Mumbai became a catalyst for the formation of the Kala Ghoda Association, which comprises of institutions and organizations operating in the small precinct in the Fort area. This association has tried to upgraded streetscapes, introduced new signage, produced its own maps, and a specific narrative regarding the nature of this precinct as an art district. Similarly, a residents association in Bandra has developed a squalid seaside edge into a long promenade (see footnote 3), even as other such associations have tried to address the problem of garbage disposal and general beautification in their localities. A promising initiative in an old heritage precinct called Khotachiwadi has recently put the power of self-description into the hands of local residents, which can change the narrative earlier formed by architects and conservationists.

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PERI-URBAN DYNAMICS : Case studies in Chennai, Hyderabad and Mumbai

Summary

This Occasional Paper is the third and last volume of a series on *Peri-urban Dynamics*. It focuses on selected case studies, drawing from the experiences of peripheral development in Chennai, Hyderabad and Mumbai. The broader context of metropolitan growth in India, as well as the background of the urbanisation pattern in the states where these cities are located, are at the outset introduced by N. Sridharan.

The dynamism of the peripheral areas of Chennai has been captured by Pushpa Arabindoo (chapter 2) by comparing the changes that have occurred over a period of time in terms of socio-spatial transformations in two contrasted peri-urban neighbourhoods.

The outward growth of Hyderabad triggered by the development of the Information Technology sector is examined by Eric Leclerc and Camille Bourgignon (chapter 3) through the case study of the urbanized village of Madhapur and its IT Park (HITEC City). The authors explore and analyse population mobility as a key indicator of the level of integration of an IT cluster within the whole city.

Himanshu Burte and Malini Krishnankutty's essay (chapter 4) adopts a different perspective of the urban edge and conceptualizes it in the form of ecological footprints and how the city invades and expands over natural landscapes on the western coast of Mumbai.

These papers highlight varying conditions of development of the periphery, and how these affect the urban core and the periphery's spatial, economic and other linkages.

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