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Peri-urban dynamics: population, habitat and environment on the peripheries of large Indian metropolises

An Introduction

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1.1 Challenges and scientific issues

As a corollary to the growth of million-plus mega-cities, which marks the evolution of urbanisation on a global scale, unprecedented socio-spatial dynamics come into play. In particular, spatial expansion of such mega-cities is reflected in the specific processes of peri-urbanisation: the formation of 'mixed spaces', midway between urban centres and rural spaces, transitional spaces subject to multiple transformations—physical, morphological, socio-demographic, cultural, economic and functional.

These changes are even more spectacular when seen against the backdrop of rapid urban growth, common to many metropolises in developing countries (Steinberg 1993), including India. Management problems resulting from this growth are correspondingly more complex. Thus, studies that endeavour to throw light on peri-urban dynamics are deemed all the more necessary: a good grasp of the processes of transformation at work is an essential prerequisite for any undertaking on urban and regional planning.

Our initial hypothesis is that within the metropolitan areas 'location' is never neutral. For us peri-urban space does not constitute a simple framework of analysis. The peripheries of the large metropolises are not merely one zone amongst others constituting the metropolitan space, but a space whose use corresponds to diverse and often conflicting stakes, indicative of processes signifying a political and societal vision of the city and access to it. The relevance of a special relationship between periphery and marginality has, in particular, to be explored; in other words, the degree of correspondence between the spatial and social-economic-political dimensions of marginality (see Arabindoo, Schenk in this volume; Sharan 2004).

The process of identifying, and understanding the forces of change at work in peri-urban spaces would firstly, necessitate a study of the settlement pattern in these areas. This calls for an analysis of the modalities of the settlement process in the periurban spaces and an evaluation of its various components in terms of population and housing. Thus, what is the respective share in the total population of the natives (the original villagers) and migrants—settlers from the central zones of the metropolis or migrants from outside the metropolitan area, especially from rural areas—and what is their socio-economic profile? What are the various forms of production resorted to in the built-up areas, their evolution and transformation? How does the overlap between the urban built-up extensions and the existing village clusters and surrounding countryside function? Do we also encounter a social and cultural overlap?

Such an approach involves questioning the traditional dichotomy that compartmentalises populations and human settlements into 'urban' and 'rural'. The evident dilution of these categories on the outskirts of metropolises induces us to forge more appropriate concepts in order to take into account the effective modalities of the settlement process in the areas around metropolises¹, in particular in the context of developing countries marked by rapid demographic growth. To what extent is a peri-urban or a perimetropolitan category operational? How should it be defined and its physical limits determined? In the work of Sébastien Oliveau (2005), a quantitative approach to this question is proposed for South Indian metropolises.

¹ This scientific inquiry was one of the issues dealt with by the working group on urbanisation, coordinated by Tony Champion and Graeme Hugo under the aegis of the International Union for the Scientific Study of Population, leading to the following publications: Champion, Hugo and Lattes (2003); Champion and Hugo (2004), which includes an article on an Indian metropolis (Dupont 2004). For an analysis of the 'challenges of rural-urban classification' in the case of India, see Bhagat (2003). The establishing of urban geotypes beyond the urban/rural divide is also one of the issues studied by French geographers such as Jacques Lévy (1999).

The dynamics of settlement in peri-urban spaces rests in (more or less great) part on intra-urban residential mobility, which in turn gives rise to daily mobility between the place of residence and the place of work. Transport facilities, which often condition the access to employment available in the more central zones, are an important factor that affects the modalities of peripheral urbanisation. To what extent does the increase of private modes of transport popularise far-off peri-urban extensions for a particular category of privileged citizens? On the other hand, what are the limitations imposed on peri-urban housing by the absence or insufficiency of an effective mass transport system serving the metropolis and its region; in consequence what constraints weigh on the daily life of its inhabitants, especially the less privileged? Some illustrations of these issues will be provided through the cases of Delhi (see Schenk in this volume), as well as Chennai and Hyderabad.²

From a broader perspective, the question of accessibility, not only with regard to urban transport and employment, but also with regard to urban infrastructure, amenities and services, is crucial for an understanding of the positioning of the inhabitants of peri-urban spaces. Thus, is it merely a question of living on the periphery (in the geographical sense) or one of being relegated to the fringes of urban society? (see Schenk in this volume).

Starting from the hypothesis that the dynamics of transformation of peripheral spaces is not independent of the dynamics of the more central areas of the metropolis, the study of the peri-urban phenomenon provides also a relevant approach to analyse certain types of mobility and urban restructuring, which significantly affect the development of the large metropolises.

² In a forthcoming CSH Occasional Paper of this series on peri-urban dynamics: Dupont,V. and Sridharan, N. eds, *Peri-urban Dynamics: case studies in Chennai, Hyderabad and Mumbai.*

Mixed spaces, apportioned between populations with contrasting life styles and varied land use, peri-urban spaces are also disputed spaces, bringing into play divergent and even conflicting interests. Thus, the extensions of residential zones or those of industrial and commercial zones compete with the development of green belts, cultivated areas or nature reserves. The arbitration and management of these coveted spaces are rendered problematic when they are situated beyond the administrative limits of the city in zones that are generally not recognised as (specific) entities of planning.

To the extent that the access of the poor to housing and to the city in the major metropolises of the South often implies suburban residential locations, conflicts over the use of peri-urban spaces and environmental issues echo the debate between proponents of the *green agenda* (giving priority to ecological issues in the long term) and those of the *brown agenda* (more concerned with issues of social justice and satisfying the immediate needs of the poor).³ An inquiry into the living conditions prevailing in peri-urban spaces thus enables us to contribute towards a more general reflection on the parameters of sustainable 'human' development in the major metropolises of the South. This means examining not only environmental concerns, but focusing also on the issue of social equity—an issue that frequently figures on the agenda of international forums.⁴

1.2. The context of Indian Metropolises and Metropolitan Peripheries

India, with the second largest urban population in the world (more than 300 million today) and its mega-cities, provides a pertinent

³ Bartone et al. (1994); McGranahan, G. and Satterthwaite (2000), UNCHS (1996).

⁴ World Commission on Environment and Development (1987); United Nations Conference on Environment and Development, 1991; UNDP (1994).

backdrop to examine the issues of population, habitat and environment in the metropolitan peripheries: an emerging country whose total population recently passed the one billion mark, and where the challenges of urban and peri-urban growth echo the demographic pressure.

The world of towns and cities in India, despite its remarkable size, still constitute a minority (28 per cent of urbanites in the total population according to the 2001 census figures)⁵. It has nevertheless engendered million-plus agglomerations. Although there is no glaring imbalance in the urban system at the pan-Indian level, an increasing concentration of urban populations and economic activities in the bigger cities is seen at the top of the hierarchy. Thus, in 2001, there were 35 metropolises (cities or urban agglomerations) of more than a million inhabitants, representing 38 per cent of the total urban population, among them 6 mega-cities with more than 5 million inhabitants.⁶

The rate of urbanisation in India shows moderate progression (24 per cent in 1981, 26 per cent in 1991 and 28 per cent in 2001). Although various demographic, economic and socio-cultural factors contribute to this situation (Bose 1980; Dasgupta 1985; Dupont 2002), the evolution of the official percentages of the urban population also masks a much more powerful socio-economic

⁵ The definition of an 'urban unit' or town that has been applied since the 1961 Census of India is as follows: a) All places which answer to certain administrative criteria, such as the presence of a municipality, a corporation, a cantonment board, a notified town area committee, etc. These are called the statutory towns. b) All other places which satisfy the following three criteria: i) a minimum population of 5,000 inhabitants; ii) at least 75 per cent of the male working population engaged in non-agricultural pursuits; iii) and a population density of at least 400 persons per sq. km. These are called the census towns.

⁶ We are using the definitions in the Census of India, which differentiates between 'cities and urban agglomerations' of more than a million inhabitants—called 'metropolises' or 'metropolitan urban agglomerations and cities'—and cities with more than 5 million inhabitants, classified as 'mega-cities'. In 2001, the six mega-cities were: Greater Mumbai (16.3 million), Kolkata (Calcutta) (13.2), Delhi (12.8), Chennai (Madras) (6.4), Bangalore (5.7) and Hyderabad (5.5).

urbanisation concentrated in peri-urban zones classified as 'rural'. This is a peri-urbanisation, moreover, that leads to greater commuting and other forms of circular mobility within the metropolitan region. Thus, focusing on the peri-urban zones of the Indian metropolises allows us to highlight the eventual gaps between the ground reality and the administrative and statistical classifications and to provide one explanatory factor for the relatively slow rate of urbanisation. The underestimation of the effective growth of urban population by the Census's dichotomous definition into rural and urban has been, for instance, denounced by Bhagat (2003).

The specific forms of urbanisation that emerge on the periphery of the large Indian metropolises have, moreover, to be studied in the context of the high density of the rural population (219 inhabitants per square kilometre in 1991)⁷—a characteristic also found in other Asian countries (Ginsberg et al. 1991; McGee 1991). India's geographical diversity, however, calls for a comparison between regional studies.

On the economic and political front, liberalisation and the induction of international trade and foreign capital (initiated in India in the 1990s), as well as politico-administrative decentralisation reforms—by which more important responsibilities are transferred to the municipalities⁸—have changed the context of development in the big metropolises. The new national strategy in the urban sector hinges on the concepts of decentralisation, deregulation and privatisation.

⁷ Till date, the 2001 Census of India has only released the overall population density figures: 324 inhabitants per square kilometer over the entire Indian territory (Jammu and Kashmir excluded).

⁸ In the field of urban governance, the cornerstone of the reforms was the 74th Amendment to the Constitution that decentralises the strategic level of government and promotes participatory democracy (see for example Mahadevia 2003).

These reforms have favoured the insertion of Indian mega-cities into the larger global movement. According to Banerjee-Guha (2002), this process has been accompanied by a further fragmentation and aggravation of socio-spatial inequalities. In the context of global competition, the peri-urban appears to be a preferential zone for the location of specialised infrastructure: thus, for instance, the creation of growth centres, especially Information Technology or Biotechnology hubs, at the portals of the major metropolises—as exemplified by the cases of Hyderabad and Chennai.⁹

Reflecting the conflicting interests at stake in the use of peri-urban spaces, the judiciary has emerged as an increasingly important actor in urban governance in India, especially through the Public Interest Litigation procedure. This crystallises and often exacerbates the antagonism between environmental considerations in the public's interest and the housing needs of the population, especially of the poor who, forced into illegal forms of urbanisation, are rendered even more vulnerable. Some studies have indeed underlined the environmental vulnerability of the peri-urban spaces (Bentick 2000; Shaw 2005). While focussing on the planning of the urban coast of Mumbai, Burte and Krishnankutty (2004) examine examples of conflicts between the 'emerging ecological and human right narratives'. In legal disputes, the environmentalist argument stresses, for example, the protection of green belts to the detriment of squatter settlements, which therefore should be evicted, as in the case of the Sanjay Gandhi National Park in Mumbai (Zérah 2004). In Delhi, the Ridge, the natural reserve perceived as the lungs of the capital, was thus cleared of structures and encroachments by persistent judicial intervention. In another case in Delhi, a NGO opposed, on environmental grounds a government policy that aimed at regularising unauthorized colonies

⁹ Dupont,V. and Sridharan, N. eds., (2006) *Peri-urban Dynamics: case studies in Chennai, Hyderabad and Mumbai.* CSH Occasional Paper, New Delhi, Centre de Sciences Humaines (forthcoming).

that had proliferated on agricultural land on the outskirts of the capital. The petitioner's argument focused on the conditions underlying the construction of such settlements, i.e. the lack of sanitary and urban infrastructure necessary for a salubrious environment (Dupont 2005).

The evolution of peri-urban zones in India has led to two main theses that will be supported—or challenged—by case studies presented in this Occasional Paper and the two forthcoming ones in this series.

Economic and politico-administrative reforms have affected the economic and social structure of metropolises and their peripheries with, among other consequences, repercussions on the spatial distribution of the poor (Kundu, Schenk, Dash Bal 2002). According to some authors, this has led in particular to a process of '*degenerated peripheralisation*' (Kundu, Pradhan, Subramanian 2002; and in the case of Delhi: Kundu, Schenk, Dash Bal 2002). The resulting peripheral zones are characterized by a preponderance of underprivileged settlers (migration to the cities by the rural poor and the resettlement of slum dwellers from the city after the demolition of their homes), a lack of infrastructure, urban services and amenities, the presence of polluting and heavy industries evacuated from urban centres and a degraded environment.

Several examples do substantiate this thesis. In Delhi, following Supreme Court orders passed in the late nineties, hazardous and polluting industries located in the city were pushed beyond the boundaries of the urban agglomeration (Sharan 2004). We have shown elsewhere how slum clearance and rehabilitation policies implemented in the capital since the sixties (Dupont and Houssay-Holzshuch 2005), and judicial activism since the late nineties (Dupont and Ramanathan 2005), have contributed to a social segmentation of the metropolitan space and the exclusion of the poor from the central zones of the city. This is also the thesis defended in this volume by Hans Schenk, who concludes his contribution by denouncing the trend towards segregation, degeneration and exclusion that, according to him, epitomises India's emerging urban fringe.

Yet, on the basis of a more comprehensive scrutiny of the metropolitan peripheries, we would like to emphasise the greater *heterogeneity and segmentation of peri-urban spaces.* The process of urban fragmentation, mentioned above, also affects the periurban spaces themselves, where new forms of segregation, polarisation, and socio-spatial fragmentation emerge. Metropolitan peripheries are, in fact, complex structures resulting from a mix of planned operations and unplanned, uncontrolled processes and the flouting of regulations. Urbanisation of the rural fringes, in consequence, covers a wide range of modalities. For example, in Delhi these include, as documented in another article (Dupont 2004) overcrowding of original village clusters by the arrival of new migrants, construction of squatter settlements by the poorer people, the forced resettlement of unwanted citizens by the authorities, development of unauthorised colonies for the low income households who aspire to owning property or renting inexpensive accommodation, as well as exclusive colonies or condominiums for the rich in search of a better living environment. The characterisation of metropolitan peripheries by their heterogeneity and fragmentation is a proposition explored in this volume by Pushpa Arabindoo, who relates it to 'the postmodern dynamics of the 1980s and 1990s wherein the dynamics of global capitalism introduces a variety of actors in the metropolitan peripheries and who indulge in hegemonic contestations and conflicts over the spatial prescriptions'.

The two interpretative frameworks proposed above are not necessarily exclusive of each other, depending on the scale and the focus of observation. The examples given in this Occasional Paper as well as the detailed case studies presented in a forthcoming volume of this series on peri-urban dynamics¹⁰, drawing from the experiences of Delhi, Chennai, Hyderabad and Mumbai, will illustrate the wide scope of situations.

1.3. A review of concepts

The papers included in this first volume of the series of three Occasional Papers on peri-urban dynamics highlight the forces that govern peri-urbanisation and reflect upon the main issues at stake, as introduced in the previous sections.¹¹ They also attempt, more specifically, to refine the concepts related to the 'peri-urban' spatial category, and to better define and delimit this research 'object'. The authors examine not only the literature related to the Indian and Asian metropolises (Schenk), as well as other developing countries (Rohilla), but also explore the concepts and models elaborated to analyse the evolution of the western metropolis, drawing in particular on the North American case (Jargowsky, Arabindoo) and the French case (Cadène).

Paul Jargorwsky's contribution provides a pertinent opening for this collection of papers, as it reflects on the definition of periurban areas by contrasting the United States and Indian experiences, with references to the other contributions of this volume. To start with, he notes that 'the concept of "peri-urban" common in

¹¹ The second volume of this series proposes a quantitative approach to peri-urbanisation in South India. The author attempts to delimit a peri-urban fringe through statistical indicators based on census data and with the use of a Geographical Information System. See: Oliveau, Sébastien (2005) *Peri-urbanisation in Tamil Nadu. A quantitative approach*, CSH Occasional Paper No. 15, New Delhi, Centre de Sciences Humaines.

¹⁰ Ibid.

The third volume of the series on Peri-urban dynamics will present detailed cases studies of peri-urban neighbourhoods in Chennai, Hyderabad and Mumbai.

See: Dupont, V. and Sridharan, N. eds (2006) *Peri-urban Dynamics: case studies in Chennai, Hyderabad and Mumbai,* CSH Occasional Paper, New Delhi, Centre de Sciences Humaines (forthcoming).

European and Indian literature on the subject is not in use among scholars in the United States. Rather, the dialogue in the U.S. concerns suburban development or, with pejorative connotations, suburban 'sprawl'".

Pushpa Arabindoo also initiates her reflection with the model of the American metropolis and places the study of peri-urban dynamics under the umbrella of metropolitan development. She proposes a theoretical exploration into the evolution of the western metropolis as a modern and postmodern product and its subsequent importation and adaptation into a non-western crucible of the Third World city, with special references to Indian metropolises. She argues 'for the need to view the peri-urban condition as a *constructed primordialism*—where the edge is primordial to the urban-rural interface, but whose mutations are primarily constructed by the manipulations of post-independent metropolitan planning'.

Philippe Cadène presents a synthetic analysis of the emergence and evolution of peri-urban areas in France, and derives relevant lessons for further research in developing countries. As far as the French definition of peri-urban is concerned, he stresses the primacy of geography that avoids evoking the contents. This spatial category is thus described as 'a mosaic of villages, forming a sort of third ring of urbanised suburb on the fringes of urban areas, but still retaining the characteristics of a rural landscape. It is, therefore, vastly different from the second ring, which is in direct contact with the suburbs and in which real estates and miscellaneous activities take up the major share of the land'.

Expanding beyond the North American and French references, a more comprehensive review of the literature on the 'peri-urban', as proposed by Suresh Rohilla, shows a diversity of definitions as well as terms used: metropolitan fringe, urban fringe, ruralurban fringe, metropolitan peripheries, 'rurban', *desakota*, periurban interface, semi-urbanised or urban transition zone. However, a consensus emerges on the following common feature when defining the 'peri-urban': 'the "peri urban" is an area outside existing urban agglomeration where large changes are taking place over space and time'.

Indeed, the concept of peri-urban zone or interface cannot be a static one, that would refer to distinct and fixed boundaries, but should on the contrary be a dynamic concept. The peri-urban zones undergo a continuous evolution. As aptly underlined by Hans Schenk who draws on the Asian experience, they expand and shrink geographically, 'eating' their way into the countryside, while they are swallowed by the expanding urban core area. Hence, this author suggests 'the concept of a two-fold dynamism in a "rolling" fringe'. To conclude, the peri-urban interface refers in the first place to 'a region of change' (DFID 1999 - Department for International Development report, quoted by Rohilla). As synthesised by Paul Jargowsky, in North America, in Europe or in Asia, 'peri-urban areas are those which have recently been transformed, or are in the process of being transformed, from self-regarding localities to localities which exist in a continuous but subordinate relation to a major city centre'.

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